UNDERSTANDING HOW ACTORS INFLUENCE POLICY IMPLEMENTATION

A COMPARATIVE STUDY OF WETLAND RESTORATIONS IN NEW JERSEY, OREGON, THE NETHERLANDS AND FINLAND

PROEFSCHRIFT

ter verkrijging van
de graad van doctor aan de Universiteit Twente,
op gezag van de rector magnificus,
prof.dr. W.H.M. Zijm,
volgens besluit van het College voor promoties
in het openbaar te verdedigen
op vrijdag 29 augustus 2008 0m 13.15 uur

door

Katharine Amory Owens
geboren op 20 mei 1974
te Valdosta, Georgia, USA

Dit proefschrift is goedgekeurd door de promotor:
Prof.dr. J.Th.A. Bressers

In de reeks Schone Technologie en Milieubeleid worden
milieuvraagstukken belicht vanuit wetenschappelijke visies
op overheidsbeleid, technologie en management.

Deel 1 De effectiviteit van gemeentelijke milieubeleidsplanning
F.H.J.M. Coenen
Deel 2 Bevordering van milieumanagement in organisaties
T.J.N.M. de Bruijn en K.R.D. Lulofs
Deel 3 The feasibility of Dutch environmental policy instruments
Josee J. Ligteringen
Deel 4 25 jaar milieubeleid in Nederland; instrumenten, incidenten en effecten
R.A. van de Peppel, P-J. Klok en D. Hoek
Deel 5 The Endurance of Mexican Amate Paper
R. Citlalli López Binnqüist
Deel 6 Sustained Diffusion of Renewable Energy
Valentina Dinica
Deel 7 Water Governance and Institutional Change
Stefan M.M. Kuks
Deel 8 Innovation and Institutional Change
Peter S. Hofman
Deel 9 Transparancy in the Food Chain
Agni Kalfagianni
Deel 10 Land Markets and Public Policy
Wilbert Grevers
Deel 11 Corporate Social Responsibility and Public Policy-Making
Arno Mathis
Deel 12 Private Equity; Public Principle
David Regeczi
Deel 13 Understanding how actors influence policy implementation
Katharine A. Owens

Colofon

Vormgeving omslag: deel 4 ontwerpers, Jo Molenaar
Editing manuscript: Ada Krooshoop – Universiteit Twente / CSTM
Beeldmateriaal: Katharine Owens
Druk en uitgave: Universiteit Twente / CSTM

ISBN 978 90 365 2698 2

Contents

Appendices

Acknowledgements

Funding for this research was provided by grants from the Institute for Governance Studies, University of Twente, and the Cartesius Institute for Sustainable Innovations of the Netherlands' Technical Universities.

This analysis would not be possible without the participation and support of the process actors, who graciously shared their insight to allow the author to understand this process through their eyes. Thank you for sharing your time and your stories with me.

The work could not have been carried out without the personal and technical support, the encouragement, and the input of my colleagues and promoters at the Center for Clean Technology and Environmental Policy and our sister group Technology and Sustainable Development in North South Perspective. I truly appreciate the opportunity given to me and my family. *Hartelijk bedankt voor alles!* Hans, you have taught me a great deal about what it means to work with and manage a diverse group of people, and also about accepting people as they are. Valentina, you are my model for a hardworking and successful researcher—you do more in one year than most people attempt in a lifetime. *Success*!

It is also important to me to thank the teachers, researchers, and scientists who have inspired me along the way: Stephanie Dellis, Barbra Duval, John Fauth, Angela Halfacre, Maureen Hays, Brad Huber, Jim Neff, John Rashford, Brian Scholtens, Alan Strand, and Reid Wiseman.

To my friends and family I want to express appreciation for all of your support during this long process. To our Enschede friends, you have truly shown us what being *gezellig* is all about. The Grefhorsts, the O'Shaunesey-Egberinks, the Engels, the van Keekens, Judith and Niels, the Biesheuvel-Zimmermans, the Braams, Letteke, Phing, and the rest of the *Wereldvrouwen in Twente* group. We will miss you, but leave with the hope to continue to cross paths in the future. Please come and visit-- you are always welcome.

My older sisters (and their families), who do not have to call me Doctor—thank you Marilois and Elizabeth for always encouraging me, and always keeping me grounded. To Dad, for first planting the idea in my head to become a teacher and to Mom for all imaginable support along the way.

To James and Will — having been born in the Netherlands, I hope the spirit of the country always remains a part of you (be tolerant, enjoy life, save your guilders [or pennies in your case]. I am so glad you are a part of our world now.

For Mike, I cannot imagine what this would have been without you. A longer, much more difficult process filled with fewer happy days, and a poorly edited final product. I am so thankful you were willing to put it all on hold for a few years for me. Don't worry- this is the start of the Mike era.

Chapter 1
Introduction

1.1 Introduction

Though the precise nature of humanity's connection to the planet Earth is debatable, the fact that human activity has caused unprecedented change in the environment is irrefutable. The most elementary need of extracting sustenance from a planet long thought to be blessed with inexhaustible resources has resulted in tremendous environmental impact. During the last century, citizens, scientists, governments, and environmental organizations have worked to better understand the impact of humans on the environment. Unfortunately, their findings show that human impact causes the ecological world to suffer degradation; over-consumption and overuse of natural resources, exacerbated by overpopulation, leads to environmental problems such as habitat damage, resource depletion, species extinction, and global warming (Oskamp, 2002; Sharp, 2002; Van Weenen, 2000). Unchecked misuse of resources inhibits social equity and aggravates situations of poverty (Ebong, 2002). Effects of this abuse may range from permanently altering the natural world that exists today, to seriously threatening the livelihood of future generations (Oskamp, 2002; Sharp, 2002). In order to ensure the same ecological world we enjoy today, or a better one, for future generations— some variables must change. Halting economic or population growth are highly controversial solutions. Discerning new ways to work within the planet's limits is one key to fruitful long-term survival. In this way, we look to societal changes to combat the destruction of the planet.

Society is challenged to implement a plan to progress economically while remaining ecologically viable and socially impartial (Berke and Conroy, 2000; Orr, 2002). The concept of sustainable development is a proposed solution to these problems, emphasizing balanced economic, environmental. and social equity goals (Ebong, 2002; Filho, 2000; Segovia and Galang, 2002; Wheeler, 2000). However, sustainability is not a 'one size fits all' solution. Applying sustainable development in different contexts necessitates customized solutions. In addition, a blanket method of consistently implementing sustainability does not exist (Graedel, 2002). Sustainability is seen as a panacea for the world's environmental problems, but insight about how and when to implement sustainability is lacking. Concerned individuals, groups, and governments grapple with finding sustainable solutions to environmental problems, then applying those solutions in a consistent, useful way.

1.2 Problem definition

Creating changes in society often requires developing and implementing public policy. Across the globe, governments approach the implementation of sustainable development in an effort to enable change. Through efforts such as the European Union Habitat and Birds Directives, the Kyoto Protocol, the Organization for Economic Cooperation and Development, or 'no net loss' countries identify policies, set benchmarks, and create strategies to combat various environmental problems. However, these efforts may fail in their ultimate goal when implementation of policies or projects fails. In making implementation of

environmental policy more effective and efficient we galvanize the work of policy makers, scientists, stakeholders, and all levels of governments seeking to combat environmental degradation. Implementing environmental or sustainability policy is a goal set by countries, institutions, and organizations worldwide. This research builds toward that goal by providing clarification of the process of implementation. By addressing the implementation problematic, this research contributes to a growing body of work in implementation studies. This is accomplished by analyzing several cases of wetland restoration implementation in four states representing areas of high and low population density in both the European Union and the United States.

1.3 The wetlands problematic

Wetlands are the empirical focus of this project due to their importance as functioning ecosystems and their value to humankind. As eloquently stated by Ralph Tiner, wetlands are "the temperate zone equivalent of rain forests, serving vital life-sustaining functions in water-quality renovation, aquatic ecosystem productivity, and biodiversity, as well as providing important socioeconomic benefits such as flood-damage protection, shoreline stabilization, and commercial and recreational fisheries" (1998, preface). Lewis (2001) finds wetlands particularly important in combating non point source[1] pollution. It is noteworthy that there are many types of wetlands featuring different combinations of functions, or said another way: all wetlands are not created alike, a circumstance that can aggravate shortages (Lewis, 2001). Understanding the integral role of wetlands for environmental issues such as water quality, flood control, and wildlife habitat allows nations worldwide to recognize this resource as a vital and irreplaceable ecosystem. Not surprisingly policies and programs to protect, conserve, restore, and create wetlands can be found internationally and at all levels of government. Through refining the implementation of these policies and programs we can enable more efficient and effective problem-solving regarding wetland restorations.

There is further justification for this project based on the kind of implementation addressed. Wetlands protection and renovation do not involve the application of a single instrument, but instead an array of instruments that are relevant for a project. This type of implementation is often neglected in implementation literature. It is complicated and complex to analyze an array of instruments at the same time. We do not address these cases in a deliberate effort to confront dense policy situations, however, wetland restoration projects exist as an amalgamation of policy instruments, with many levels and layers of policy applying to each wetland. Testing the theory in this empirical field provides an added element

[1] Point sources are defined as "specific points of origin of pollutants, such as factory drains or outlets from sewage-treatment plants"; Non point sources are "sources of pollution such as general runoff of sediments, fertilizer, pesticides, and other materials from farms and urban areas" (Nebel & Wright, 2000: 640-642).

of interest for implementation research. The present research deals with this complexity while maintaining linkages to implementation literature.

1.4 Wetland restoration

In both Europe and the United States wetlands have been historically changed or altered for various uses. As areas became more populated over time, and as people shifted to stationary agricultural practices, wetlands were filled or transformed to make them more useful. More recently, policy makers, governments, organizations, and citizens have understood that the world's wetlands require some level of restoration to protect the important functions of these ecosystems. Scientists argue that the distinguishing soil and hydrology of filled or drained wetlands give them a realistic potential for restoration; they describe restoration as an intricate but crucial process requiring "planning, implementation, monitoring, and management" when seeking to renew both wetland function and value (United States Environmental Protection Agency, 2008). In this project we focus on the interesting and complex empirical field of restoration policy. Wetland restoration policy is a distinct element of the varying policies written to address wetland issues. Wetland policies also include those dedicated to conservation, protection, and creation.

1.5 Implementation

To understand implementation it is important first to define the concept as it will be used in the scope of this project. In their early work on implementation, Pressman and Wildavsky (1973: *xiii*) begin with an implementation definition, taken from Webster's 1969 Dictionary: "to carry out, accomplish, fulfill, produce, complete" in this context, "a policy". Implementation researchers continue to create definitions of implementation more specific to its policy application. Definitions may emphasize a number of concepts, ranging from those who see implementation as the realization of a task, to those who envision it as interactions that may include alterations or even blocking the job. Mazmanian and Sabatier (1983: 20-21) explicitly define implementation from the perspective of accomplishing a task:

> Implementation is the carrying out of a basic policy decision, usually incorporated in a statute but which can also take the form of important executive orders or court decisions. Ideally, that decision identifies the problem(s) to be addressed, stipulates the objective(s) to be pursued, and in a variety of ways, 'structures' the implementation process. The process normally runs through a number of stages beginning with passage of the basic statute, followed by the policy outputs (decisions) of the implementing agencies, the compliance of target groups with those decisions, the actual impacts—both intended and unintended—of those outputs, the perceived impacts of agency decisions, and finally, important revisions (or attempted revisions) in the basic statute.

Representing a more moderate definition, John (in Hill & Hupe, 2002: 7-8) refers to implementation as "the stage in the policy process concerned with turning policy intentions into action". Others take approaches that more explicitly recognize the dynamic interactions that may occur at various stages of implementation. Palumbo and Calista (1990: xiv) describe implementation as "a series of interactions and interpretations between the outputs of policy formation and the effects of organizational and inter-organizational impacts, between the latter and street-level bureaucratic behaviors, and between the latter and target group behaviors". O'Toole (2000: 266) defines implementation as "what develops between the establishment of an apparent intention on the part of government to do something, or to stop doing something, and the ultimate impact in the world of action". In this definition, O'Toole recognizes the potential lack of connection between intentions and actions. DeLeon (in Hill & Hupe, 2002: 8) generally refers to implementation as "a comparison of the expected versus the achieved", implying that these two things may not be the same; an acknowledgement of the dynamic nature of the process. Wittrock (1985: 17) takes a practical approach, finding implementation means "translating policy commitments and societal aspirations into real world effects". Clearly researchers define implementation with nuances; in this project, implementation is envisioned as an interactive and dynamic process, which may involve various types of actors performing the roles of implementer and target. Stakeholders and policy actors at many levels can play a vital role in the success or failure of implementation. An interest in the human impact on policy implementation necessitates theory incorporating actor characteristics into analysis. This research takes an actor-centered approach in analyzing the implementation process. Choosing the most appropriate theory requires a better understanding of what existing theories offer in terms of breadth and depth of analysis.

Palumbo and Calista (1990: *xii*) warn that it is a mistake to assume "policies will be effective" once implementation is "taken care of". Inadequate implementation is one important issue, while understanding may be another. In other words, the implicit causal theory behind a policy can be misunderstood. Understanding the relationship between actor characteristics and implementation outputs sheds light on O'Toole's (2000) implementation puzzle, where policy intent translates into effective action to protect important and complex resources. Discovering how to improve existing implementation can be more beneficial than seeking new policy strategies (Bressers, 2004). In this way, comprehending the relationship between actor characteristics and implementation outputs enables effective policies protecting important and complex resources.

1.6 Empirical and theoretical study objectives

This research project has both empirical and theoretical objectives. The empirical work is evaluated to give insight into wetland restoration processes. In particular this work seeks to highlight how successful and failed wetland restoration projects compare. It is important to evaluate how the actors taking part in a wetland

restoration project influence the process. It is also vital to assess how different types of implementation projects can be made more successful. This work emphasizes barriers to implementation, providing practitioners with a road map for addressing these barriers in an iterative and reflexive implementation process. The theoretical objective of the study is to gain insight into the applicability and power of a parsimonious explanatory model. In this vein we chose a new field to employ the theory, challenging its development via an empirical field dissimilar to the field upon which the theory developed. Contextual interaction theory was not developed with wetland restoration or even water management in mind. It has its roots in implementation classics such as permitting and subsidizing, and early applications dealt with different policy instruments, including negotiated agreements. This research project makes a transition, applying the theory to multi-actor projects; making a deliberate scientific choice to measure the theory's applicability and responses in a new arena. This application has the potential to stretch the theory, testing its validity and appropriateness in a different context.

1.7 Structure of this study

Naturally, given time constraints and limitations, no research project can be both limitlessly deep and broad. Concessions are made to produce a comprehensive project that addresses the research questions in an informed and relevant manner. That being said, the model of this study was designed to provide both depth and breadth of assessment as allowable within the time limitations of a PhD study. This study features three in-depth cases seeking to address questions of the impact of actor characteristics on policy implementation. All three cases are found geographically within the Netherlands. They provide holistic descriptions of wetland restoration projects, delving into the interactions of actors involved in these social interaction processes. This aspect of the study provides an element of depth to the research model. Building upon the insights gained in the case studies, a second large-N phase of research seemed feasible. For this aspect of the project, we reduced data-gathering to telephone interviews of two key informants per case. In this way we find, based on comparison to the case studies, that this approach is sufficient to capture the relevant interactions. The large-N phase of the project is an international comparative study, incorporating cases in two European states (the Netherlands and Finland) and two American states (New Jersey and Oregon). This element of the project provides breadth to the research model, allowing the researcher to pick out themes and evaluate patterns when comparing a number of cases. In combination, this structure allows the researcher to focus carefully and gain insight into the very core of interactions in the in-depth cases, while also pulling back and analyzing a number of cases in comparison, building information about trends and patterns via the large-N study.

1.8 Research questions

In this research, the contextual interaction theory (Bressers, 2004) is used to analyze cases. The theory highlights three actor characteristics (motivation, information, and power balance) to better understand their effects on the likelihood to implement at all (policy output), and if applicable on the adequacy of that implementation (policy outcome).

The primary research question is:

How do the actor characteristics of motivation, information and power influence the implementation of wetland restoration policies?

The strategy for answering this question involves breaking this primary question into a series of components:

- How do target and implementer motivation, information, and power influence the likelihood to implement at all (output)?
- How do target and implementer motivation, information, and power influence the adequacy of implementation (outcome)?
- To what extent can these outputs and outcomes be explained by the characteristics of the actors involved?
- Are there significant differences when applying the theory to cases in the European Union and the United States? [comparative study only]
- Are there significant differences when applying the theory to cases in high and low population density states? [comparative study only]

Using the contextual interaction theory and this series of questions, this research will shed light on how actor characteristics influence the implementation of wetland restoration policy.

1.9 Brief introduction of chapters

Chapter 2 provides an overview of what wetlands mean to society and for our ecosystems, as well as what types of wetlands can be found in the study areas. We describe threats and goals to wetlands within these areas, and the policies and programs in place to protect wetlands in the United States, the European Union, the Netherlands, Finland, New Jersey, and Oregon. The chapter concludes with a description of why wetlands make sense as implementation projects to study, and describes the success criteria for restoration projects used in this analysis. Chapter 3 positions the theory chosen to analyze implementation situations in this research project: contextual interaction theory. In this chapter we briefly characterize the implementation field, and then describe the merits of opting for a deductive, parsimonious, and realistic theory. We then compare contextual interaction theory with other deductive approaches such as the institutional analysis and development

framework, and actor-centered institutionalism. Next we trace the development of contextual interaction theory from inception to the present, highlighting the different applications it has experienced in that time. The theory is described in-depth, including justification for the choice of motivation, information, and power as core actor characteristics. The basic model of the theory is outlined and an elaboration for its application to implementation processes is given. Finally the chapter describes changes and extensions of the theory currently being explored through research.

Chapter 4 details the methodological choices made in this research project, delineating what characterizes wetland restoration projects in particular and the decisions made to incorporate these characteristics into the research plan. It describes specification of the independent and dependent variables. In addition this chapter includes information about the type of data gathering employed in the research, as well as the intentions of how to analyze subsequent data. Many of the mechanics of the project are included in this chapter, such as how data was collected, variables measured, and interviews scored.

Chapter 5 provides the first look at these data: the in-depth case study about the *Wierdense Veld* nature area, in the Netherlands. This holistic treatment depicts the interactions of actors in detail as they seek to implement wetland restoration policy. Chapters 6 and 7 follow a similar theme, as they are also in-depth case studies of wetland restoration cases in the Netherlands, namely *De Alde Feanen* and the North *Friesland Buitendijks*. Chapter 8 is an introduction to the large-N study, describing what this aspect of the research project adds to the study as a whole. Here we illustrate how cases were chosen, how the interviews were conducted, and the plan for data to be gathered and analyzed. Chapters 9 and 10 provide the results of analyzing and comparing the large-N study both qualitatively and quantitatively. Chapter 9 is a qualitative assessment of the cases in all four states, while chapter 10 provides a quantitative treatment of the data, analyzing the cases to understand the theory's predictability potential. We evaluate the data with correlation and regression. Chapter 11, the final chapter, is a comprehensive discussion of the data analyzed in this study, including case studies and the large-N study. In combining the analysis of these parts, we create an inclusive assessment of the theory in this application.

Chapter 2
Wetlands

"The notion that wetlands were not as valuable to society in their natural state as they would be with alteration has largely caused the demise of wetlands worldwide … the unique properties and the waterside location of many wetlands destined them for human use."(Tiner, 1998: 98)

2.1 Introduction

Wetlands are valuable and important ecosystems that are in decline worldwide, though precisely counting how many wetlands exist and just to what degree this resource has declined has proven difficult for researchers[1]. One estimate found that while "previous estimates [of the global wetland resource] range from 5.3 to 9.7 million km^2… present analyses now suggest a tentative minimum of 12.8 million km^2" (Finlayson et al., 1999). Another estimate found approximately one percent of coastal wetlands worldwide were lost each year in the late 20th century (Nicholls, 2004). Some sources (OECD, 1996) describe half of the world's wetlands as having been destroyed to date, but we were unable to find confirmation of any organization calculating this number in any peer-reviewed source.

In the United States, it is estimated that half of the historical wetlands have been lost since the 1600s, with the total area dropping from an estimated 890,000 km^2 to 426,000 km^2 (220 to 105.5 million acres) in the lower 48 states by 1997 (United States Environmental Protection Agency, 2008). According to the same source, from 1780 to 1980, the state of New Jersey lost 39% of its wetlands while the state of Oregon lost 38% of its wetlands. Experts agree that wetland losses continue to occur in Europe, but agencies have found it difficult to document these losses for the continent as a whole as wetland inventories vary from country to country (Ramsar, 2008a). In addition, inventory information has accumulated over the last thirty years in the same time that the European Union countries have been defined and then have grown and continue to change. While it is possible to view statistics about wetlands for each European country, this information has not been merged to allow us to say exactly how wetlands have changed in Europe as a whole since industrial times.

There has not yet been a full national wetlands inventory in the Netherlands, though researchers with the Pan European Wetland Inventory Review (2002) estimate the total current wetland area at 9,570 km^2 (957,000 hectares)[2]. This same assessment found that Ombrotrophic bogs fell from 1800 km^2 (180,000 hectares) in the 1600s to 900 km^2 (90,000 hectares) in 1900 and to approximately 36 km^2 (3600 hectares) present currently. Finally, this report states that 33% of the *Wadden* Sea saltmarshes (though this area is not fully contained within the Netherlands) were lost between 1930 and 1987 via embanking. Notably, chapter 7, concerning the North *Friesland Buitendijks*, is about the wetland restoration of an embanked portion of the *Wadden* Sea which occurred after 1987. The Finnish chapter of the Pan European Wetland Inventory Review (2002) places the total current area of

[1] When discussing wetland area, we list size as square kilometers, though sources list many different measurements including hectares, acres, and square kilometers. If the source data is not square kilometers, the original listing will be mentioned after the converted square kilometer.
[2] The earlier GroWI Western Europe report gives an estimate of 7,950 km^2 (795,469 hectares) (Stevenson and Frazier, 1999).

wetland coverage within Finland at 75,000 km^2 (7.5 million hectares)[3], roughly estimating a loss of one-half of original Finnish wetlands. This report estimates of the original mire area of 105,000 km^2 (10,500,000 hectares), 62,480 km^2 (6,248,000 hectares) of mire areas had been lost by 1996. Table 2.1 is a compilation of data about wetlands within Europe and the United States, as well as the study areas for this research. These data are presented with the understanding that wetlands are not always precisely delineated and different states and nations calculate wetland totals in varying ways. It should also be understood that quantifying wetlands loss are by necessity estimations; when historic records exist they are often descriptive, not quantitative (Stevenson and Frazier, 1999). While the exact area lost is indeterminate it is certain that the planet has suffered huge losses in wetland area as human population and settlements have grown. As multi-functioning ecosystems critical to human survival, wetlands are a resource worth protecting, conserving, and restoring. In response, countries throughout the world recognize wetlands as an integral and essential ecosystem, creating policy to protect and restore these habitats.

Table 2.1 Estimates of original and current wetland totals within the study areas[4]

	Estimated original wetlands	**Estimated current wetlands**	**Estimated wetlands loss**
Worldwide	Not quantified	Minimum 12,800,000 km^2	50%
Europe[5]	Not quantified	2,660,000 km^2	Not quantified
Western Europe[6]	Not quantified	288,000 km^2	Not quantified
The Netherlands	Not quantified	9,570 km^2	50%
Finland	Not quantified	75,000 km^2	Not quantified
The lower 48 United States	890,000 km^2	426,000 km^2	50%
New Jersey	6,070 km^2	3,706 km^2	39%
Oregon	8,903 km^2	5,625 km^2	38%

[3] The GroWI Western Europe report gives an estimate of 34,000 km^2 (3.4 million hectares) (Stevenson and Frazier, 1999).

[4] Information gathered from Association of State Wetlands Managers, 2008b and 2008c; Finlayson et al., 1999; OECD, 1996; Pan European wetland inventory review, 2002; Stevenson and Frazier, 1999; and United States Environmental Protection Agency, 2008.

[5] This report covers the European Ramsar region, including Albania, Andorra, Armenia, Austria, Azerbaijan, Belarus, Belgium, Bosnia-Herzegovina, Bulgaria, Croatia, Cyprus, Czech Republic, Denmark, Estonia, Finland, France, Georgia, Germany, Greece, Hungary, Iceland, Ireland, Italy, Latvia, Liechtenstein, Lithuania, Luxembourg, Macedonia, Malta, Moldova, Monaco, Netherlands, Norway, Poland, Portugal, Romania, Russia, San Marino, Slovak Republic, Slovenia, Spain, Sweden, Switzerland, Turkey, Ukraine, United Kingdom, and Yugoslavia (Nivet and Frazier, 2004).

[6] In this report, Western Europe is considered to include Andorra, Austria, Belgium, Cyprus, Denmark (including some sites in Greenland), Finland, France, Germany, Greece, Iceland, Ireland, Italy, Liechtenstein, Luxembourg, Malta, Monaco, the Netherlands, Norway, Portugal, San Marino, Spain, Sweden, Switzerland, Turkey, and the United Kingdom (Stevenson and Frazier, 1999).

2.2 General importance of wetlands for the ecosystem

Wetlands are a critically important multi-functioning habitat. They provide benefits for wildlife species, ecological systems, and the humans living nearby. More specifically, they act as a source of food and protection for fish and wildlife, eliminate pollutants, reduce storm runoff, and soak up excess floodwater like a sponge, then slowly release it downstream, alleviating the destruction of floodwaters (United States Environmental Protection Agency, 2008). Wetlands are responsible for groundwater recharge and discharge, nutrient and waste cycling, erosion and salinity control, climate stabilization and carbon sequestration (Schuyt and Brander, 2004). Though these may be considered more intangible values, wetlands also provide straightforward economic benefits in their contributions to recreational and commercial fishing (United States Environmental Protection Agency, 2008). In addition, wetlands directly supply fish for food, wood for fuel and or building, and water for drinking, cooking, and washing in many parts of the world (Schuyt and Brander, 2004). Wetlands serve myriad functions and provide valuable resources for humans and wildlife. Wetland areas constitute an integral part of healthy functioning ecosystems.

2.3 Wetlands in the United States

Before colonization, Native North American groups including the Calusa, Mayaimi, Tekesta, Ojibway, and Creek used existing wetlands as sources of food, water or materials (Douglas, 1997; Kusler and Opheim, 1996). Rough estimates place the amount of wetlands found upon arrival by colonists of the United States at 894,000 km^2 (Vileisis, 1997). Many wetland areas remained in this natural state for a period of time. Upon colonization, European settlers utilized wetlands in the same manner as Native groups—as areas for hunting, or for gathering shellfish and natural crops such as cranberries (Kusler and Oppheim, 1996). During the initial phases of colonization, wetlands remained relatively unaltered.

In addition to their regular environmental functions, during the short history of colonized America, wetlands played an important cultural role. In the southeastern states of South Carolina and Georgia, plantation owners manipulated existing swamplands, using both slave knowledge and labor to grow rice through submersion (Carney, 2002). Due to the dark and dismal perception of wetlands, these areas served as important hiding places for the rebel or the runaway on several occasions in the United States (Giblett, 1996). Vast and unwelcoming, wetlands offered a free but difficult life for small communities of escaped slaves in the United States southern region before emancipation (Giblett, 1996; Kusler and Opheim, 1996). Wetlands as an area for habitation seemingly offered benefits only to the desperate fringe in the United States during this period.

As the country grew in population and area, two factors encouraged destruction of wetlands. Dependence on resources from the land shifted from hunting and gathering toward farming and raising cattle. Settlers and early governments viewed

wetlands as useful land covered by water, and wanted to use these lands to what seemed to be their full potential. Another cause of destruction was the common reasoning, beginning with the 4th century B.C. and lasting until the late 19th century, that wetlands were sources of sickness and death (Giblett, 1996). This perception was not without merit: wetlands harbored disease-carrying mosquitoes in a time when infection by malaria meant almost certain demise. Between 1849 and 1860 Congress enacted the Swamp Land Acts, giving 15[7] states 263, 045 km^2 to officially encourage drainage, though it did not often occur (Vileisis, 1997). Through various branches the United States government supported both conservation and destruction of wetlands, creating "contradictory policies" (Vileisis, 1997: 193). One example from the 1950s finds that while the United States Fish and Wildlife Service paid to protect 14 $km^2$are kilometers of wetlands, the United States Department of Agriculture "spent 83 times" that amount to convert 1,035 km^2 of wetlands into farms "in the same three states" (Vileisis, 1997: 201). By 1956 the United States Fish and Wildlife Service found approximately 182,000 km^2 of wetlands had been converted (Vileisis, 1997). The trend of filling wetlands continues today, though not necessarily at the same rate.

2.3.1 Wetlands in the United States: Distribution and specific functions

All fifty American states feature wetlands in varying amounts and a variety of types as wetlands contrast in geological, hydrological, soil, vegetation, and salinity characteristics (Scodari, 1997). Three American states —Hawaii, Alaska, and New Hampshire— have maintained more than 80% of their wetlands since the late 1700s (Florida's Wetlands, 2008). The state of Alaska has 687,000 km^2 (170,000,000 acres) remaining while Hawaii was estimated to have about 238 km^2 (59,000 acres) of wetlands in 1780 and has lost only 12% of its wetlands since then; in that same time period, more than twenty-two American states lost over 50% of their original wetland base (Association of State Wetlands Managers, 2008a; Florida's Wetlands, 2008). California has lost the greatest percentage of initial wetlands (91%) while Florida has lost the greatest area 37,600 km^2 (9.3 million acres) (Florida's Wetlands, 2008). Throughout America the conversion of wetlands was encouraged for many decades.

The United States Fish and Wildlife Service describe wetlands as either estuarine (saltwater) or palustrine (freshwater) systems (Scodari, 1997). Table 2.2 depicts an overview of wetlands distribution within the United States. Wetland functions include benefits to water quality, habitat for wildlife and fish, holding floodwaters, and preserving the flow of surface water in dry periods (United States Environmental Protection Agency, 2008). For wetlands within the United States these functions mirror those of wetlands worldwide as described earlier in the chapter.

[7] Alaska, Arkansas, California, Florida, Illinois, Indiana, Iowa, Louisiana, Michigan, Minnesota, Mississippi, Missouri, Ohio, Oregon and Wisconsin (Vileisis, 1997: 77).

Table 2.2 Distribution of wetlands within the United States[8]

Type	Including	Examples	Distribution
Estuarine (5% of US wetlands)	emergent marshes	salt marshes, brackish marshes	Atlantic and Gulf coasts
	Forested scrub shrub wetlands	featuring small wooded vegetation	South Atlantic and Gulf coasts
	nonvegetated wetlands	intertidal flats	Chesapeake Bay, Florida's southern coast, and Texas' Gulf coast
Palustrine (95% of US wetlands)	Forested	Bottomland hardwood and softwood swamps	The Mississippi Valley, Florida, Georgia, South Carolina, and the upper Great Lakes Basin
	Emergent marsh	Prairie pothole wetlands, sandhills, rainwater basin, emergent marshes of southern Florida, Alaska's tundra	Prairie potholes, The Nebraska Sand Hills, The Nebraska Rainwater Basin, the Alaska Tundra wetlands, and various Florida wetlands (the Everglades, Big Cypress Swamp, Kissimmee River, and Lake Okeechobee)
	Shrub	Peat bogs/peatlands, pocosins	New England, Great Lakes States, Virginia to South Carolina, especially North Carolina
	nonvegetated wetlands		

2.3.2 Wetlands in the United States: Current threats and goals

There are several wetland-centered threats in the United States, falling under the categories of ecological and societal. Ecologically, threats exist through both transformation and degradation. According to the United States Environmental Protection Agency threats to wetlands include drainage, dredging and stream channelization, deposition of fill material, diking and damming, tilling for crop production, levees, logging, mining, construction, runoff, air and water pollutants, changing nutrient levels, releasing toxic chemicals, introducing nonnative species, and grazing by domestic animals while natural threats occur via "erosion, subsidence, sea level rise, droughts and hurricanes and other storms" (United States Environmental Protection Agency, 2008). In addition, societal trends can be a threat, often resulting in general confusion or conflict over wetland policies. These include the definition of wetlands, criteria for measuring wetland goals, and private property rights issues.

[8] All information contained in table 2.2 taken directly from Scodari (1997: 8-10).

The definition of wetlands created by the Army Corps of Engineers is controversial. According to the Army Corps of Engineers Wetlands Delineation Manual, the Corps of Engineers (*Federal Register* 1982) and the Environmental Protection Agency (*Federal Register* 1980) jointly define wetlands as:

> Those areas that are inundated or saturated by surface or ground water at a frequency and duration sufficient to support, and that under normal circumstances do support, a prevalence of vegetation typically adapted for life in saturated soil conditions. Wetlands generally include swamps, marshes, bogs, and similar areas. (Environmental Laboratory, 1997: 9)

In protest, the National Association of Home Builders report "many areas that are considered 'wetlands' have little environmental significance, yet receive the same level of protection as pristine wetlands" (National Association of Home Builders, 2003a). The National Association of Home Builders vow to "seek and support legislation" that mandates, among other things, "the use of a single, replicable methodology for delineating wetlands, which is based on a scientific definition of three parameters: hydrology, hydrophytic soils, and vegetation" (National Association of Home Builders, 2003b). One problem with this request lies with the unique properties of wetlands. The term wetland can mean a marsh, swamp, bog, fen, pocosin, Carolina bay, or many other things. Wetlands may become dry for years during a drought, or may never be fully dry. Biologically, healthy wetlands have different pH levels or varying dissolved oxygen levels. Compared to defining rivers or streams, wetlands lack consistent measurable qualities. This makes defining a wetland problematic for all stakeholders.

Related to this problem is a debate in the United States over determining the criteria for measuring wetland goals. The United States national goal of "no net loss" refers to no net loss of wetland area. This criterion especially presents problems when alternatives such as wetland mitigation and creation are utilized to meet "no net loss" goals. Critics argue that replacing the area of a wetland may not be comparable to replacing the wetland's function and/or value[9]. Proposed policy options include measuring wetlands based not only on area, but also encompassing the criteria of function and/or value. Depending on criterion use, a given wetland could rank in different ways. Hypothetically, a large urban wetland may provide socio-economic quality to a community and substantial wetland area, but its ecological function may not be as useful as a much smaller wetland in a different location. Current national policy is most often based on area. This holds special consequences for mitigation and creation programs. These programs allow those who wish to fill wetlands to protect alternate wetlands or create new wetlands. The debate centers on whether area-based mitigation or creation can truly replace a wetland's function in the ecosystem or watershed.

[9] Here area (usually called acreage in the United States) simply denotes size; Lewis (2001: 42) defines function as "all of the processes that occur in a wetland" and value as "attributes about which humans have opinions".

An important tenet of American citizenship is the right to hold private property. Private property activists utilize the American legal system to protect and support this right. The final wetland controversy addressed here involves conflicts over private property rights issues and takings[10]. Private property rights advocates became more involved with wetlands in 1989 following the development of an interagency manual to define wetlands. This manual, produced jointly by the United States Army Corps of Engineers, the Environmental Protection Agency, the United States Fish and Wildlife Service, and the Soil Conservation Services, included more property than previously considered under the definition of a wetland (Vileisis, 1997). In response, property rights activists found "federal wetlands regulations devalued private lands and therefore constituted illegal 'takings' of property by the government" (Vileisis, 1997: 320). In response this manual has not been used to delineate wetlands in the states (Vileisis, 1997). The struggle between private property rights advocates and environmental agencies over wetlands continues to be a divisive force in United States wetlands policy formulation and implementation.

A report resulting from the 1987 Conservation Foundation's National Wetlands Forum recommended an "interim goal of 'no overall net loss of the nation's wetland base' and a long-term goal of 'increasing the quantity and quality of the nation's wetland resource base'" (Quoted in Kusler and Opheim, 1996: 3-4). Presidents George Bush, Bill Clinton, and George W. Bush have taken on the "no net loss" goal for wetlands (Kusler and Opheim, 1996; United States Environmental Protection Agency, 2008). Currently, however, there is no real system of checks and balances to assure "no net loss". Most importantly it is difficult to establish a complete comprehensive baseline wetland inventory of the United States. The United States Fish and Wildlife Service have an ongoing wetland inventory project, the National Wetlands Inventory[11] though different agencies have varying definitions for wetlands delineation. In addition, recording the location, size, function, and value of every wetland in the United States —including small seemingly unsubstantial wetlands—is a herculean task. In general the full data do not exist from which to measure potential wetland losses or gains. Conservation groups and United States environmental agencies encourage governments to pursue adequate baseline data and monitoring to insure this lofty and fundamental goal of "no net loss" can be achieved.

2.3.3 Wetlands in the Unites States: Policies, laws and agencies

The United States, like many countries, participates in global and continental plans to support conservation of wetlands. America has joined the Convention on

[10] A "takings", as defined by Kusler and Opheim (1996: 147), is "the unconstitutional denial of an individual's right to use his or her property. This refers to the Fifth Amendment to the U.S. Constitution and similar provisions in other constitutions, which prohibit governments from 'taking' private property for public use unless they pay just compensation".

[11] The National Wetlands Inventory is available online at www.fws.gov/nwi/ (last accessed on 22 April 2008).

Wetlands (commonly known as Ramsar) but has failed to sign and ratify the United Nations Convention on Biological Diversity. At the continental level the United States participates in both the North American Waterfowl Management Plan and the North American Agreement on Environmental Cooperation. The agencies enacting these programs are listed in Table 2.3. At the global and continental levels wetland conservation more often involves supporting broad plans or programs instead of enacting specific policies or laws. This is a result of a lack of any overarching worldwide government to fund, support, or enforce global policies or laws. When federal-level laws exist in the United States, state-level agencies, or even state branches of federal agencies permit and enforce rules. In addition, as of January 2004 sixteen states[12] have chosen to augment federal laws with state wetland regulatory programs (Association of State Wetland Managers, 2004). Other states may also have policies affecting wetlands, but lack a state-level regulatory program.

Table 2.3 Agencies affiliated with wetland programs and policies of the United States

Level	Policy or Program	Agency or Agencies
Global	Convention on Wetlands (Ramsar)	Conference of the Contracting Parties
Continental	North American Waterfowl Management Plan	Ducks Unlimited The United States Department of the Interior The United States Fish and Wildlife Service Canadian and Mexican governments
Continental	North American Agreement on Environmental Cooperation	Commission for Environmental Cooperation (affiliated with the North American Free Trade Agreement)
National	The Clean Water Act	The Environmental Protection Agency The United States Army Corps of Engineers The United States Fish and Wildlife Service The National Marine Fisheries Service
National	The National Environmental Policy Act	The Council on Environmental Quality
National	The Coastal Zone Management Act	The Coastal Zone Management Program
National	The Farm Bill	Natural Resources Conservation Services of the United States Department of Agriculture

Most wetland protection in the United States can be traced to Section 404 of the 1972 Clean Water Act. According to the Environmental Protection Agency (2003a: 1), Section 404 of the Clean Water Act "establishes a program to regulate the

[12] These states are New Jersey, Rhode Island, Massachusetts, Connecticut, Maryland, New York, Florida, Pennsylvania, Virginia, Michigan, New Hampshire, Wisconsin, Vermont, Minnesota, Maine and Oregon (Association of State Wetland Managers, 2004).

discharge of dredged and fill material into waters of the United States, including wetlands" and covers activities including filling wetlands to develop land for retail/residential use, farming, forestry, dams, levees, or infrastructure. The Army Corps of Engineers administers and enforces this federal policy—usually at the local or regional level. In the new millennium the United States Supreme Court continues to define what constitutes "waters of the United States". Following the 2001 decision *Solid Waste Agency of Northern Cook County (SWANCC) v. United States Army Corps of Engineers* protection for all wetlands as "waters of the United States" changed to protection primarily for waters that are traditionally navigable, tributaries of navigable waters, or waters adjacent to either of these (Petrie et al., 2001). In essence this decision leaves isolated wetlands without protection under the Clean Water Act.

The United States Farm Bill affords protection for some isolated wetlands; a provision of the bill commonly known as "Swampbuster" cuts federal subsidies to farmers who destroy wetlands to produce crops (Petrie et al., 2001). The Natural Resources Conservation Services, under the auspices of the United States Department of Agriculture, administers and enforces the Swampbuster provision. The primary source of wetland loss in the US today is due to development, not farming (Petrie et al., 2001). This trend has the potential to exacerbate the consequences of the *SWANCC* decision.

2.3.4 Wetlands policy in the state of Oregon

The Association of State Wetlands Managers (2008b) estimates that the state of Oregon had 8903 km^2 (2.2 million acres) of wetlands and has since lost 38%, bringing their total to around 5625 km^2 (1.39 million acres) This report states that Oregon's wetlands are made up primarily of palustrine, estuarine, and lacustrine (associated with lake habitat) systems as shown in Table 2.3, with few of the state's wetlands constituting marine or riverine systems. This source affirms that wetlands in Oregon include *tideflats*, eelgrass beds, salt marshes, coastal nontidal fresh marshes, swamps, bogs, ponds, lakes, and sand dune depressions. A number of state agencies administer Oregon's wetland programs according to the Association of State Wetlands Managers (2008b) report. The Department of State Lands regulates fill and removal for tidal and nontidal freshwater wetlands via a program working in concert with the Statewide Land Use Planning Program, while the Department of Environmental Quality governs Clean Water Act section 401 water quality certification. In addition, the Oregon Watershed Enhancement Board is the primary group responsible for wetland acquirement and restoration programs— work that is also supported by the Oregon Department of Fish and Wildlife and the Parks and Recreation Department. The Forest Practices Act requires "best management" for "significant wetlands" and is overseen by the Oregon Department of Forestry (p. 1). Oregon has had a state wetland conservation plan since 1995: *Oregon's Wetland Conservation Strategy*, and in 1998 published a plan in response to the initial strategy: *Recommendations for a Nonregulatory Wetland Restoration Program for Oregon*. Oregon has state-level policy reaffirming the no net loss goal, and

additionally has wetland gain targets. Local government is not normally associated with wetland policy in the state, with the notable exception of the Wetland Conservation Plans, which may be administered through local government with state oversight. Within this study, the West Eugene Wetlands Project is an example of a successful Wetland Conservation Plan. Wetlands losses and gains within the state are tracked via the Department of State Lands, using their own permit database and the Oregon Watershed Enhancement Board restoration database for source information (Association of State Wetlands Managers, 2008b). Oregon wetland regulations include the laws, rules, acts, and statutes found in Table 2.4.

Table 2.4 Oregon state-level wetland regulations[13]

Regulation	Regulation specifics	Description
Removal-Fill Law	ORS 196.800-196.990 OAR 141-085-0005 through 0615	Requires a permit for filling or removing materials from state waters, including tidal and nontidal wetlands
Wetlands Act	ORS 196.668-196.692 Wetland Conservation Plan: OAR 141-86-005 through 060; 141-120-000 through 230 Statewide Wetlands Inventory: OAR 141-086-0180 through 0240	No net loss policy, mitigation sequencing, Wetland Conservation Plans (WCP), Statewide Wetlands Inventory authority, and a public information program
Oregon Mitigation Bank Act of 1987	ORS 196.600-196.665 Estuarine Mitigation Bank Rules: OAR 141-085-0263 Freshwater Wetland Mitigation Bank Rules: OAR 141-085-0400 through 0450	Establishes criteria and procedures for public and private mitigation banks
Comprehensive Land Use Planning Act	ORS sec. 197.005-197.640 Goal 5 requires local governments to inventory, assess, and protect significant freshwater wetlands Goal 16 requires local governments to classify estuaries, dividing them into management units	Requires local governments to adopt planning and regulatory programs in harmony with statewide planning goals.

2.3.5 Wetlands policy in the state of New Jersey

According to information on the Association of State Wetlands Managers (2008c) website, New Jersey's original wetland area totaled approximately 6070 km^2 (1.5

[13] All information found within Table 2.4 is taken from the Association of State Wetlands Managers (2008b) website *State Programs: Oregon* (http://aswm.org/swp/oregon9.htm, last accessed 22 April 2008).

million acres), but has since dropped to 3706 km^2 (915,960 acres) a loss of 39%. This source reports that New Jersey's wetlands are almost fully palustrine or estuarine, including habitats such as swamps (forested and scrub-shrub), freshwater lowlands, and salt and brackish marsh areas. In addition, New Jersey is one of only two American states that have taken responsibility of permitting programs under the federal Clean Water Act's section 404. The state of New Jersey is thus capable of issuing permits which satisfy National and State requirements; technically the Federal program defers to the state program. As stated in this source, the major exception is the Hackensack Meadowlands Development Commission region which remains under Federal jurisdiction for the Clean Water Act and requires permits for activities within the District boundaries. In general, the state standards for 401 permitting mirror criteria from the Freshwater Wetlands Protection and Coastal Zone Management Acts. Wetland management implementation occurs via the New Jersey Department of Environmental Protection though joint permitting is encouraged; wetland losses and gains are tracked via state permit and mitigation databases (Association of State Wetlands Managers, 2008c). The four primary state wetland statutes of New Jersey are described in Table 2.5.

Table 2.5 New Jersey state-level wetland regulations[14]

Regulation	Regulation specifics	Description
Freshwater Wetlands Protection Act	N.J.S.A. 13:9B-1 et seq.	Permits and regulates all activities in freshwater wetlands, and upland buffers adjacent to wetlands Establishes authority and standards external to the Clean Water Act section 401
The Pinelands Protection Act	N.J. S.A. 13:18A-1 to 13:18A-29	Protects and restricts land use within the Pinelands National Reserve, including wetland and buffer protection distinct from that of the Freshwater Wetlands Protection Act
The Wetlands Act of 1970	N.J.S.A.13:9A-1 et seq.	Permits activities within tidal and estuarine wetlands shown on regulatory maps
The Highlands Water Protection and Planning Act (2004)	N.J.S.A. 13:20-1 et seq.	Administers activity in this 400,000 acre preservation area including springs, streams, wetlands, and surface water. Entails creation of a 300-foot buffer adjacent to all Highlands open waters and limits some additional activities

[14] All information found within Table 2.5 is taken from the Association of State Wetlands Managers (2008c) website *State Programs: New Jersey* (http://aswm.org/swp/ newjersey9.htm, last accessed 22 April 2008).

2.4 Wetlands in Europe: Distribution and specific functions

Researchers estimate current European wetland area to be 2,660,000 km^2 (266 million hectares), a figure distributed as shown in Table 2.6 (Nivet and Frazier, 2004). As described earlier, obtaining a comprehensive wetland assessment of distribution and losses within Europe as a whole is complicated. Existing European assessments do not often collect and present data in a uniform, comparable manner. There is one comprehensive collection of European wetland inventories[15] by nation, but unfortunately, merging this information into a European inventory is beyond the scope of this study. As of 2000[16] there were 198,379 km^2 of wetlands of international importance in Europe, with 3249 km^2 in the Netherlands, and 1013 km^2 in Finland (Earth Trends, 2008). Within Europe, wetlands function in much the same manner as they do worldwide, providing the benefits of improved water quality, flood storage, recreational opportunities, and habitat for wildlife.

Table 2.6 Distribution of European wetland types[17]

Wetland Type	Size in hectares
Marine and coastal wetlands	45,900 km^2 (4,591,000 hectares)
Inland wetlands	2,480,000 km^2 (248,604,000 hectares)
Artificial wetlands	19,900 km^2 (1,994,000 hectares)
Area of unspecified wetland types	216,000 km^2 (21,643,000 hectares)
Total	2,660,000 km^2 (266,742,000 hectares)

2.4.1 Wetlands in Europe: Current threats and goals

As is the case worldwide, wetlands have been filled, destroyed, and converted in Europe over the course of history. Researchers with the United Nations Environment Programme (2008) find that 60% of European wetland area has been transformed into agriculture. This group outlines other threats to European wetlands, including water use, transforming wetlands to land, and pollution; the European Environment Agency approximated in 1995 that groundwater overuse endangers one quarter of Europe's most important wetlands. While all European member countries have ratified the global Ramsar convention, this does not necessarily mean that all important wetlands within Europe are now protected (United Nations Environment Programme, 2008). Protecting and restoring wetlands in Europe is an ongoing process, fortified by European Union policies such as the habitat and bird

[15] The Pan European Wetland Inventory.
[16] The date of the last Earth Trends Assessment was 2003 but has wetlands information from 2000 (http://earthtrends.wri.org/text/coastal-marine/country-profiles.html, last accessed 22 April 2008).
[17] All information in table 2.6 taken from Nivet and Frazier (2004).

directives, and the water framework directive. European level policies to protect these landscapes are described more thoroughly in the following section.

2.4.2 Wetlands in Europe: Policies, laws and agencies

There are several compulsory environmental programs to protect wetlands at the European Union level. These include the Biodiversity Action Plan for the Conservation of Natural Resources, utilizing other programs to fulfill its goals such as Natura 2000 (Birds and Habitats Directives), the Water Framework Directive and the Strategy for Integrated Coastal Zone Management. Other European Commission level policies are the Shellfish Waters Directive and the Convention on the Conservation of European Wildlife and Natural Habitats (Bern Convention). The agency promoting each of these programs is The European Union Commission for the Environment.

2.5 Wetlands in the Netherlands

Americans are not alone in using the characteristics of wetlands as a tool in war; the Dutch utilized their country's natural wetlands in the 1500s and 1600s, in defense from the British, French, and Spanish (Giblett, 1996). In 1574 Prince William of Orange used a then new tactic to free the city of Leiden from siege by the Hapsburg army, ordering the breach of dikes on the Maas river, thereby flooding "the regions of Schieland, Delfland, and Rijnland… the first full-scale application of what could be called the 'flooded earth policy' …an important element in Dutch military strategy" (Kaijser, 2002: 540). As with the United States, however, wetlands in the Netherlands have been historically under-appreciated. Throughout their history, the Dutch transformed wetlands for agriculture and human habitation, a trend exacerbated by population density. Wetlands were also manipulated for flood control and navigation. The Dutch are world-renowned for manipulating the water that threatens to engulf their land. Marshes once covered the Western portion of the Netherlands; over half of the country would be regularly flooded without the support of dikes and dunes (Dicke, 2001; Reuss, 2002; Bijker, 2002; Kaijser, 2002). Constantly threatened by flooding, control of the landscape translated into both physical and economic security for the Dutch (Reuss, 2002). The history of Dutch water management can be concisely divided into four phases:

- The first involved dike-building to protect against seawater flooding and began in the Early Middle Ages;
- In the second phase, dating from the 1800s, Dutch water management focused on flood protection, draining wetlands for agriculture, and strengthening shipping channels;
- The third phase accentuated water quality protection; this phase began in the late 1960s and early 1970s with the Surface Water Pollution Act of 1969;

- The final phase combines concern for water systems' quality and utility, with a focus on sustained, multi-functioning use and began in 1985. (Bressers et al., 1995; Dicke, 2001; Kuks, 2002)

Manipulation of land in the Netherlands began with increasing land height for housing through mound building, leading to draining land for farms (Reuss, 2002; Kaijser, 2002). Eventually a built landscape of drainage canals emerged, allowing the additional benefit of a countrywide transportation network connecting the sea to inland Europe (Kaijser, 2002). The mechanical power of windmills allowed use of wind power to lift great amounts of water, allowing humans to control water flow through the landscape to a greater degree (Kaijser, 2002). Methods for draining land became more sophisticated over time, changing from windmills to powered pumping stations to remove water from enclosed areas (Bijker, 2002). The constant threat of flooding galvanized Dutch resolve to tame the waters.

In recent history, the disastrous floods of both 1916 and 1953 encouraged large-scale manipulation of water for protection. From this goal arose two noteworthy projects: reclamation of the *ZuiderZee* and the Delta Works Project. The *ZuiderZee* plan utilized a 29-kilometer long dam to turn the sea into the *Ijsselmeer* Lake (Dicke, 2001). The Delta Project involved a dam separating the *Oosterschelde* bay from the North Sea (Disco, 2002). The Delta Project's centerpiece is an eight-kilometer long moveable barrier against storm surges placed on the Eastern Scheldt river (*Koninklijk Nederlands Aardrijkskundig Genootschap*, 2001). Though the focus on controlling water for protection, transportation, or land reclamation is the essence of Dutch history, the nation's citizens and government have more recently become aware of the benefits of natural wetlands.

The increasingly sophisticated ability to manipulate water necessitated increasingly sophisticated water management techniques from a social interaction perspective. The history of Dutch "regional water authorities" or water boards (*waterschappen*) dates to the twelfth century in the west of the country (Kaijser, 2002: 528). The establishment of water boards occurred later in the north of the country which was not feudal and lacked a centralized political structure; in the 1300s several large northern monasteries created water boards mirroring the feudal model though with "more specific tasks and more limited powers" (Kaijser, 2002: 529). Water boards in general represented sub national forms of democracy featuring voting privilege based on "profit-payment-participation principle (those having an interest in water management may participate and have to pay for water services in proportion to their interest)" (Bijker, 2002; Kuks, 2002: 2). Water board representation consists of "farmers, land owners, owners of buildings, industries and inhabitants", though they were historically composed of a majority of farmers and landowners; therefore water board policy favored agriculture (and safety issues) over the environment, to the detriment of wetland areas (Kuks, 2002: 2). However, a shift by water boards to incorporate ecological issues parallels the countrywide incorporation of these values as described thoroughly in the *Current Threats and Goals* section below.

2.5.1 Wetlands in the Netherlands: distribution and specific functions

The Netherlands have 49 sites constituting a total area of 8,190 km^2 (818,908 hectares) listed as wetlands of international importance via the Ramsar (2008b) convention. The Pan European Wetland Inventory Review (2002) estimates the total wetland area for the country at 9,570 km^2 (957,000 hectares). There is no comprehensive wetland inventory for the Netherlands, though this review includes an inventory of 58 potential Ramsar sites, a list of important bird areas (featuring 75 wetlands), and a report of monitoring on 78 wetlands deemed of international importance, but not necessarily associated with Ramsar (Pan European Wetland Inventory Review, 2002). The primary Dutch wetland types are "coastal ecosystems, large riverine systems, base-rich freshwater systems, and nutrient-poor freshwater systems" (Best et al., 1993). Within the Netherlands wetland areas play an economic role as a destination for tourists in the recreation sector, provide flood control, improve water quality, provide habitat for birds and other wildlife, and indirectly may improve the health of citizens nearby (*Ministerie van Landbouw, Natuur, en Voedselkwaliteit*, 2008). Wetlands in the Netherlands also provide many of the general functions provided by wetlands worldwide described earlier in the chapter.

2.5.2 Wetlands in the Netherlands: Current threats and goals

The Dutch attain a sense of security from their confidence in the technical control of water. This perception makes the transition from a society that controls water to a society that allows water to follow its natural patterns quite controversial. As Eertman et al., (2002: 448) describe it, "the public is still very much used to the idea of taking land from the sea… rather than giving it back". Flooding is a serious issue in the Netherlands; the last major flood occurred in 1953, killing 1,835 people, affecting 750,000 others, and engulfing 2000 km^2 (Bijker, 2002; Dicke, 2001). Vigilant water control has proven to be a matter of life or death in the Netherlands' history: Dutch manipulation of water is variously described as "humanity's struggle to master nature" or the "heroic fight against the water" (Dicke 2001: 162; Reuss, 2002: 472). As wetland protection in the Netherlands often involves full or partial restoration programs, gaining support for these projects can be difficult when water is not trusted (Eertman et al., 2002). Due to the historical, cultural threat of uncontrolled water in the Netherlands, the general public does not always support wetland restoration, and its penchant for providing space for water to roam.

One problematic aspect of the Dutch landscape in relation to wetlands restoration stems from manipulation of peat land. Harvesting peat from bogs results in lower ground water levels, which in turn causes the drained areas to sink (Kaijser, 2002). When land exists just above sea level, sinking translates into increased susceptibility to flooding (Kaijser, 2002). Historically, this manipulation began a complicated interplay between ecology and technology that continues to the present (Kaijser, 2002). The Dutch assure both "safety and prosperity" by increasing predictability and utilizing "calculated risk" (Kaijser, 2002: 521; Reuss, 2002: 468).

It is no coincidence that a team of Dutch experts were dispatched to New Orleans after the Katrina disaster to offer their expertise (Waterland, 2008). The citizens of the Netherlands have successfully remade their environment to meet their requirements for centuries; they are renowned for their ability to control the landscape.

After the 1970s, the Dutch began to focus more on the environmental effects of water management (Dicke, 2001). Some authors find this ecological shift was brought to the forefront during political struggles surrounding the *Oosterschelde* portion of the Delta Works Project, when politicians and the public worked to add ecological concerns to the national agenda of safety. Bijker (2002: 583) describes this not as a change of focus, but a broadening, stating that no one "questioned the basic safety goals of the Delta Law; ecological concerns were added to it". Hereafter, the goals of ecology and safety were both considered in Dutch water policy (Bijker, 2002; Reuss, 2002; Kuks, 2002). While the importance of natural areas is in some ways included in policy, decisions regarding land use feature proponents of all potential uses.

Due to this integration, the idea that natural ecosystems need to be protected is not always highly controversial in theory. However, for this densely populated country, finding the room for natural areas in practice can be controversial. Wetlands protection in any form deals with space, and the constraints against space for a densely populated area can be much different than those of a sparsely populated region. Kuks (2002) writes that water and wetland areas are in competition with myriad interests for the meager amount of space still found in the Netherlands. Wetland area preservation, conservation, or restoration can become controversial due to land constraints in this heavily populated nation.

Kuks (2002: 5-7) explicitly outlines the most substantial threats in the Netherlands regarding water as:

- Water depletion and desiccation;
- Flooding and limited space for water;
- Surface water pollution;
- Contaminated water soils;
- Groundwater pollution;
- Coastal water pollution.

He describes conflicts over groundwater use by two entities: those utilizing water for consumption and industrial uses, and the water required by natural processes and the natural landscape. He also details how intermediate uses of water such as navigation, extraction of sand and gravel, drilling for petroleum products, and recreational uses sometimes conflict with European Union Bird and Habitat Directives or nature interests (Kuks, 2002). The threats to wetlands in the Netherlands include competition with other water users for adequate ground water, pollution issues, and space constraints. The primary nature goal in the Netherlands is the creation of a National Ecological Network, which will include wetlands and other natural areas. This network will connect disparate national nature areas into a comprehensive corridor more useful to wildlife. Policies building the National

Ecological Network incorporate European Union directives such as Natura 2000, Habitat and Bird Directives, as well as national level programs such as the Nature Policy Plan of the Netherlands.

2.5.3 Wetlands in the Netherlands: Policies, laws and agencies

Much like the United States, the Netherlands participates in global or regional level treaties to protect wetlands. These include the United Nations Convention on Biological Diversity, and The Convention on Wetlands (Ramsar); the Netherlands is also the lead country for the African-Eurasian Waterbird Agreement (AEWA) under the auspices of the Convention on the Conservation of Migratory Species of Wild Animals (Bonn Convention). In addition, the Netherlands takes part in compulsory environmental programs to protect wetlands at the European Union level, including the Biodiversity Action Plan for the Conservation of Natural Resources which utilizes other programs to fulfill its goals such as Natura 2000, the Water Framework Directive, and the Strategy for Integrated Coastal Zone Management. Other European Commission level policies are the Shellfish Waters Directive and the Convention on the Conservation of European Wildlife and Natural Habitats (Bern Convention). The agencies promoting each of these programs are listed in Table 2.7. At the national level, the Netherlands supports several policies that protect nature and wetlands. There are four main policies that affect wetlands in the country: the Nature Policy Plan of the Netherlands (1991, 1998, and 2021), the Netherlands' National Environmental Policy Plan, the Programme International Nature Management (1996-2000), and The Structure Plan for Rural Areas (1993). The Dutch Ministry of Agriculture, Nature, and Food Quality (*Ministerie van Landbouw, Natuur, en Voedselkwaliteit*) supports and enacts these policies.

Table 2.7 Agencies affiliated with wetland protection programs and policies of the Netherlands

Level	Policy or Program	Agency or Agencies
Global	United Nations Convention on Biological Diversity	United Nations
Global	Convention on Wetlands (Ramsar)	Conference of the Contracting Parties
Global	The Convention on the Conservation of Migratory Species of Wild Animals (Bonn)	Secretariat under the United Nations Environment Programme provides administrative support to the Convention
European Union	Biodiversity Action Plan for the Conservation of Natural Resources, utilizing: Natura 2000 Water Framework Directive Strategy for Integrated Coastal Zone Management.	The European Union Commission for the Environment
European Union	Bern Convention	The European Union Commission for the Environment
European Union	Shellfish Waters Directive	The European Union Commission for the Environment

The Nature Policy Plan of the Netherlands incorporates the Natura 2000 plan as well as the European Union Habitat and Bird Directives. The goal of the Nature Policy Plan of the Netherlands (1991, 1998, and 2021) is to create a substantial National Ecological Network totaling 400 km^2 of core areas by the year 2021 (110 km^2 were obtained by the end of 1993) (Europa, 2003). This network will include "ecological corridors…to be created around protected natural areas, to protect water tables and ground water and surface water quality"; additionally 3069 km^2 of Special Protection Areas (SPAs) were added under the EU bird directive (Europa, 2003). The Netherlands' National Environmental Policy Plan holds the goal of a 40% reduction of desiccated areas by the year 2010, which includes some flooding of former farms (Resource Renewal Institute, 2003). In addition, the Ministry of Agriculture's Programme International Nature Management (1996-2000) emphasizes protecting wetlands and migratory birds through support of the Bonn Convention, "integral water and wetland management" projects, and by establishing "a conservation policy" for the *Wadden* Sea (*Ministerie van Landbouw, Natuur, en Voedselkwaliteit*, 2003a: 1). The 1993 Structure Plan for rural areas emphasizes protecting the habitats of meadow birds, geese and swans and fortifying the above-mentioned ecological network (*Ministerie van Landbouw, Natuur en Voedselkwaliteit*, 2003b). According to the Ministry (2003b), the plan is also concerned with creating more national parks, making conditions favorable for park conservation and development, and balancing agriculture, nature, forestry, landscape, fisheries, and recreation. Via these programs and policies the Netherlands has a comprehensive, goal-oriented plan for creating and maintaining natural areas, including the protection of wetlands.

2.6 Wetlands in Finland

As a unique biogeographical habitat including both hemiboreal and boreal species, several Finnish species have naturally confined ranges and small populations. This implies that locally occurring species may be especially susceptible to human influence, while it is at the same time complicated to determine whether an extinction risk is due to climatic or human causes (Vuorisalo and Laihonen, 2000). In Finland (as a part of Sweden until 1809) the government has worked to regulate land and game management since the Middle Ages, though not necessarily by current conservation standards. For example, habitat conservation as a game management strategy only emerged in the second half of the last century while early conservationists debated the political and economic justification for extensive conservation measures. In 1881 it was recommended that two national parks, one each in the south and north would be adequate for the country as a whole (Vuorisalo and Laihonen, 2000). A great deal of early game management legislation conferred hunting rights, determined seasons for hunting some species, or dealt with decrees

for the capture and kill of pest species[18]; in addition during the Swedish reign concerns about springtime waterfowl hunting began to emerge. Current Finnish game legislation traces its origins to the alteration of laws occurring during Russian control via the Hunting Decree of 1868, which classified species as those useful and worth protecting, those harmful which were to be eliminated, and others for which there were no rules (Vuorisalo and Laihonen, 2000). While many bird species remained on the list of harmful species, the beginning of the 20th century saw an increase in conservation ethic regarding birds in general, though this appreciation emerged slowly among hunters. Over time, the conceptual understanding of 'useful' or 'pest' species gave way to a broader awareness of habitat and species conservation. In the 1950s some mires became protected in the northern region on Finland, though initially not for their values as mire habitat; the 1960s saw more interest in conserving mire landscape in response to government-supported drainage programs. From the 1970s policy has sought to protect susceptible habitats including but not limited to mires, wetlands essential for waterfowl, shores, and coasts (Vuorisalo and Laihonen, 2000). As with the Netherlands, from the mid 20th century Finland has gradually taken a more comprehensive ecologically-based view of wetlands within the country.

2.6.1 Wetlands in Finland: Distribution and specific functions

Pan European Wetland Inventory Review (2002) estimates place the total area of wetland coverage within Finland at 75,000 km^2 (7.5 million hectares). According to this review, the most common types of wetlands found in Finland are oligotrophic[19] or dystrophic lakes[20] and peatlands (most often called mires in Finland). These researchers estimate that in 1996 Finland's total drained and undrained mires were 89,000 km^2 (8.9 million hectares), including 42,000 km^2 (4.2 million hectares) of undrained mires, just over 10,000 km^2 (1 million hectares) of recently drained mires, 26,000 km^2 (2.6 million hectares) transforming via drainage and 9040 km^2 (904,000 hectares) transformed from drainage. The Finnish government estimates their original mire base totaled 104,000 km^2 (10.4 million hectares), of which less than 40% remain in natural condition (Heikkinen, 2007). A great deal of changes in the mire landscape have happened over the last 60 years, while in the last decade peatlands persistently declined despite few new mire draining programs (Heikkinen, 2007). Some of the wetlands most affected by destruction in Finland include

[18] 'Pest species' included brown bear, wolf, red fox, eagles, goshawk, eagle owl, five *corvid* species, house sparrows, and other *passerine* species (Vuorisalo and Laihonen, 2000).

[19] In an oligotrophic lake "the water is nutrient poor… it will not support much phytoplankton, but it will support submerged aquatic vegetation, which get nutrients from the bottom" (Nebel & Wright, 2000: 641).

[20] A dystrophic lake "develops from the accumulation of organic matter from outside of the lake…often… an input of organic acids (e.g., humic acids) from the breakdown of leaves and evergreen needles. There follows a rather complex series of events and processes resulting finally in a lake that is usually low in pH (acid) and often has moderately clear, but colored (yellow/brown) water" (Kevern, King and Ring, 1996).

nutrient rich mires such as open fens, pine fens, spruce fens, and herb-rich spruce mires, even while the Finnish government currently protects approximately 11,250 km^2 (1.125 million hectares) or 13% of the nation's mires and incorporates 289 sites totaling 747 km^2 (74,750 hectares) under the auspices of the Bird Wetland Conservation Programme. These sites include lakes, bays, deltas, and shore habitats which would not necessarily be categorized as "wetlands" in the context of this study wherein wetland most often refers to areas that moderate between wet and dry on a seasonal, daily, or other basis (Heikkinen, 2007). The European Union level Bird Directive protects 467 sites totaling 31,000 km^2 (3.1 million hectares), or 9% of the total size of Finland while 49 wetlands totaling 7,995 km^2 (799,518 hectares) have been designated as those of international importance via the Ramsar convention (Ramsar 2008b). Wetlands are considered very important in Finland as habitat for key species, especially birds.

2.6.2 Wetlands in Finland: Current threats and goals

According to Heikkinen (2007), nutrient rich mires in Finland, those most useable as farming or forestry conversion sites, suffer extreme endangerment with only one tenth of their total number surviving since the 1950s. Therefore the mires that remain are not only smaller, but also have less connectivity with similar habitats. In 2000, the Finnish government surveyed threatened species and found 67 such species are associated with peat habitats; for some species their global survival depends on their continued existence in Finland (Heikkinen, 2007). While Finland experiences a deceleration in mire changes, and almost no new draining programs, maintenance issues and ditch complexes continue to affect degradation of peat areas. Peat extraction as an energy source also influences these habitats, as extraction can affect river basin hydrology, therefore negatively impacting fisheries (Heikkinen, 2007). According to this report, other challenges to wetland habitats in Finland include reduction of open water, decreased variation of water and land on shorelines, eutrophication, and the overgrowth of plant species such as common reed, all of which play into a trend of biodiversity loss. Threats for wetlands in Finland are not extraordinarily different from that of other countries, and include habitat degradation and the negative affect of habitat loss on species of importance. In critically assessing Finnish wetland conservation, the Pan European Wetland Inventory Review (2002) states that Finland lacks a centralized database on wetlands, and tends in general to focus wetland studies on those areas deemed important for birds.

Active habitat restoration is an ongoing goal of the Finnish government through the Ministry of the Environment (*Ympäristöministeriö*). They have successfully spear-headed projects to restore mire habitats on state-owned land, particularly on ecologically important former forestry areas, converting roughly 110 of 200 km^2 (11,000 of 20,000 hectares) by 2004; they seek to continue this trend in areas that are no longer lucrative as working forests in order to combat nutrient loading as well as potential flooding due to climate change (Heikkinen, 2007). Proposed measures within the National Strategy and Action Plan for Conservation and Sustainable Use

of Biodiversity in Finland 2006-2016 include more monitoring of mire areas, improved restoration efforts made in an ecologically coherent way, limitations on peat extraction, and maintaining drainage networks in a manner that does not degrade peatlands (Heikkinen, 2007). In general Finnish policy goals seek to strengthen the ecological diversity of existing areas and restore degraded areas.

2.6.3 Wetlands in Finland: Policies, laws, and agencies

Finland, like the Netherlands, participates in global or regional level treaties to protect wetlands. These include the United Nations Convention on Biological Diversity, The Convention on Wetlands (Ramsar), the African-Eurasian Waterbird Agreement (AEWA) under the auspices of the Convention on the Conservation of Migratory Species of Wild Animals (Bonn Convention). Finland also takes part in compulsory environmental programs to protect wetlands at the European Union level, including the Biodiversity Action Plan for the Conservation of Natural Resources which utilizes other programs to fulfill its goals such as Natura 2000, the Water Framework Directive, and the Strategy for Integrated Coastal Zone Management. Other European Commission level policies are the Shellfish Waters Directive and the Convention on the Conservation of European Wildlife and Natural Habitats (Bern Convention). Regionally they are involved in both the Nordic Environmental Protection Convention and the Convention on the Protection of the Marine Environment of the Baltic Sea Area.The agencies promoting each of these programs are listed in Table 2.8.

Finnish national policy does not feature a singular wetland plan or program, rather wetland policy is found within the National Action Plan for Biodiversity in Finland 1997-2005 and the more current National Strategy and Action Plan for Conservation and Sustainable Use of Biodiversity in Finland 2006-2016 (Heikkinen, 2007; Ramsar, 2008c). According to Finland's national report to Ramsar (2008c) the earlier plan strives to integrate all relevant areas of biodiversity policy and encourage inter-ministerial cooperation. In addition, Finland implements European level policy such as the Natura 2000 network to protect habitats and species as described by the Habitat and Bird Directives; they also seek to integrate biodiversity considerations into all planning and decision-making. There are several national laws which seek to fulfill this lofty goal as it relates to wetland conservation including the Nature Conservation Act (1996), the Water Act (1961, 1998), the Hunting Act (1993), Forest Act (1996), Building Act (1968, 1998) the Wilderness Act (1991, 1996), the National Mire Conservation Programme (1979, 1981), the Waterfowl Habitats Conservation Programme (1982) [also referred to as the Bird Wetlands Conservation Programme], and the National Programme for the Development of National Parks and Strict Nature Reserves.

Table 2.8 Agencies affiliated with wetland protection programs and policies of Finland

Level	Policy or Program	Agency or Agencies
Global	United Nations Convention on Biological Diversity	United Nations
Global	Convention on Wetlands (Ramsar)	Conference of the Contracting Parties
Global	The Convention on the Conservation of Migratory Species of Wild Animals (Bonn)	Secretariat under the United Nations Environment Programme provides administrative support to the Convention
European Union	Biodiversity Action Plan for the Conservation of Natural Resources, utilizing Natura 2000, the Water Framework Directive, and the Strategy for Integrated Coastal Zone Management	The European Union Commission for the Environment
European Union	Bern Convention	The European Union Commission for the Environment
European Union	Shellfish Waters Directive	The European Union Commission for the Environment
Regional	Nordic Environmental Protection Convention	Courts and/or Administrative Authorities of the contracting countries
Regional	Convention on the Protection of the Marine Environment of the Baltic Sea Area	Baltic Marine Environment Protection Commission

2.7 Conclusions

Clearly wetlands represent diverse and notable ecosystems that contribute to the study areas in specific and important ways, whether harboring bird life in Finland, lessening the impact of flooding in the Netherlands, or filtering groundwater in the United States. Nations and governments worldwide have designated wetlands as areas worth protecting, conserving, and restoring. This project seeks to fortify policies already in place by critically examining how the actors involved may influence the implementation of these policies. This research therefore aims to shed light on the way actor characteristics contribute to resulting interactions, whether cooperative or *combative*. We fulfill this goal by analyzing wetland restoration cases in the Netherlands, Finland, New Jersey, and Oregon, broadening our understanding of societal interactions by evaluating three cases in an in-depth manner and forty-eight cases comparatively. In the following chapter we describe how we use one theory on social interaction processes to explore the relationship between actor characteristics and the implementation of wetland restoration policy.

Chapter 3

Explaining implementation processes

> Politics is about many things. But foremost among these, in modern democratic polities, is the function of selecting and legitimating public policies that use the powers of the collectivity for the achievement of goals and the resolution of problems that are beyond the reach of individuals acting on their own or through market exchanges. (Scharpf, 1997: 1).

3.1 Introduction

Creating large scale changes in society often requires developing and implementing public policy. Yet the implementation of public policy is not necessarily a simple endeavor. When filtering policy through circumstances of reality (such as the various goals, cognitions, resources, and capacities of actors) public policy goals may not correspond with policy outputs or outcomes. Empirical research discloses implementation as one significant impediment to change (Bressers, 2004; Hill and Hupe, 2002; Palumbo and Calista, 1990; Pressman and Wildavsky, 1973). As described in chapter 1, our working definition of implementation for this study incorporates the connection between the expectations of public policy and the eventual impact of a given policy in the world, or in translating public policy intention into results. We have established in chapters 1 and 2 that goals of this research include building knowledge about the implementation process via analysis of wetland restoration projects in the Netherlands, Finland, and the American states of New Jersey and Oregon.

Achieving efficient and fruitful analysis requires a guiding theory to direct data gathering, producing insight and replicable, comparable results. This chapter first succinctly positions the theory chosen for this research within the concepts and literature of implementation. We begin by briefly characterizing implementation studies, describing the typically inductive work found therein, as well as both top-down and bottom-up approaches. We briefly discuss two prominent deductive approaches, namely the institutional analysis and development framework and actor-centered institutionalism with game theory. We argue for a deductive and parsimonious yet realistic approach, contextual interaction theory, establishing its usefulness and relevance for implementation studies. We conclude this section by discussing the theory's traits as they apply to implementation studies.

We next trace the history of the theory's development over time; providing a clear image of the theory, current elaboration, and potential areas for expansion. This begins by exploring the past: briefly outlining the development of the theory since its creation in the 1980s. Next we portray the present: discussing the choice for three core independent variables, sketching the basic model, describing the critical theoretical assumptions, and elaborating the dependent variable within the context of implementation. Then we address the future: discussing potential improvements and expansions of the theory. Finally, we summarize the chapter and draw conclusions about what the application of the contextual interaction theory provides for this research.

3.2 Characterizing the implementation field

It is constructive to first clarify why implementation is being singled out as the analytical focal point of this research. In the book *Theories of the Policy Process*, Sabatier (1999) argues in favor of dropping the stages heuristic as a policy process framework finding it ineffective. Sabatier's criticism is that the stages do not represent a causal theory and are therefore useless for hypothesis development, that

the arrangement of stages is inaccurate, that the stages reflect a bias toward top-down approaches, and that they represent a falsely simplified depiction of policy reality (Sabatier, 1999). Though these are valid concerns, they do not merit renunciation of the stages concept in its entirety (Saetren, 2005). In favor of the stages heuristic, deLeon (1999) remarks that the research it spawns enriches policy sciences, specifically in widening the political science scope from its focus on public administration and institutions. Utilizing the stages heuristic allows one to isolate the stage of implementation for further elucidation of the policy process. Many scholars find it fruitful to treat implementation as a distinctive element within the process with an ability to shed light on the whole (Bressers, 2004; Hill and Hupe, 2002; Palumbo and Calista, 1990; Pressman and Wildavsky, 1973). This research project focuses on the stage of implementation as a useful point for analysis, at the same time recognizing that implementation studies are most capable of building knowledge about policy studies when connected to the greater policy process.

In their 1973 study, Pressman and Wildavsky prominently isolate implementation as a stage in the policy process for separate analysis and disseminate this knowledge within the policy studies community. The authors choose this emphasis after finding a lack of connection between policy goals and results regarding one federal policy in California. They found the barriers to implementing the Economic Development Agency policy were not extraordinary, but mundane, for example maintaining agreements throughout the process, or effectively steering projects through a number of approvals and clearances (1973). According to the researchers, these “technical details” not only cause delays but also frustration, particularly for the sponsors of a given policy (p. 35). The book ends with a thorough description of the authors’ unsuccessful quest to discover a body of implementation literature. However, utilizing advances in library sciences, Saetren (2005) finds that research on the subject of implementation studies began approximately ten years before Pressman and Wildavsky’s 1973 publication, and continued at an increasing rate thereafter. Next, we cursorily examine the body of work that has been the product of these years of implementation research.

The first generation of implementation research consisted primarily of solitary case studies featuring negative reports of the way *governments* implement their own programs (Sabatier, 1986, my emphasis). Later studies, called the second generation, featured an increase in comparative analysis, seeking to clarify differences in the success of policy implementation through a focus on precise variables and theoretical frameworks, generally upholding the top-down perspective of first generation work (Sabatier, 1986). Critics found this body of research failed in developing testable, elucidatory theory and in creating a thorough, fused methodology (Schofield, 2001). More recently, Goggin et al. (1990) promote a third generation of research to illuminate the variability within implementation scenarios by using more stringent scientific methods. A great deal of work has been accomplished using various approaches; the three generations of implementation studies have not yet produced a single unifying theory for analysis.

In the past, theories approached implementation studies from two aspects, often referred to as top-down and bottom-up. The top-down approach begins from the position that once policy objectives are set forth in legislation the implementation

process linearly follows (Mazmanian and Sabatier, 1983; Schofield, 2001). In contrast, the bottom-up approach emphasizes not central government but local implementers, who in turn tend to emphasize the problem instead of strict policy goals (Hjern 1982; Schofield, 2001). After years of debate[1] between proponents of the two perspectives, most researchers concede the merits of both approaches (Bressers & Ringeling 1989, 1995; O'Toole, 2002; Wittrock, 1985) with several scholars recommending synthesis of the two points of view into one unifying model (Elmore, 1982, 1985; Goggin et al., 1990; Matland, 1995; Sabatier, 1986). While some scholars seek a unified theory for policy studies, others worry that instead of meeting the complex challenges of implementation studies researchers have moved on to other fields. Some argue that implementation studies have fallen out of popularity in recent times (Lynn, 1996; Schofield, 2001; Seatren, 2005), while at the same time O'Toole (2000) claims relevant work continues but under different labels such as governance or network management (citing the work of Bardach, 1998; Provan and Milward, 1995; and Stoker, 1991 among others). In this research we choose not to flee, but to address the challenges of implementation studies, applying a theory that avoids the pitfalls of both top-down and bottom-up aspects. One can briefly characterize the field of implementation since its inception as having produced a great deal of work, including many case studies producing numerous variables and having a heavy emphasis on inductive approaches. This is not to say that large-N empirical work is nonexistent but that it has also failed in producing a parsimonious generally accepted explanatory theory of implementation interactions (O'Toole, 2000). In the next section we discuss an approach combating these issues plaguing implementation theory building.

3.3 The need for a different kind of implementation research

In characterizing the field of implementation research, it is clear that there has been a great deal of work on the topic since the 1970s. Often implementation theory building developed from meticulous examination via case studies to generalization to a larger set of circumstances (Goggin et al., 1990; Hull and Hjern, 1987; Mazmanian and Sabatier, 1989; Pressman and Wildavsky, 1984). Neither case study research nor inductive work is necessarily problematic. In fact this dissertation features several case studies, arguing for their ability through precise methodology to produce information that can be applied to a more general population (see chapters 5-7). However for implementation *theory building*, a history of primarily inductive work leads to limitations that may prove significant within this discipline. One such limitation is the volume of variables found to be useful by implementation theory researchers (Matland, 1995, O'Toole, 1986). O'Toole (1986) found hundreds of variables deemed "important" by researchers in the field. It is infeasible to address all of the currently identified variables within any research agenda.

[1] A debate which Saetren (2005) credits with causing many researchers to flee implementation studies altogether.

Infeasible because it is impractical, but also because such an exploit fails to conscientiously separate the most useful variables from others which may apply in a given case, but may not be relevant for a unifying, general theory of implementation studies. One goal of theoretical work is to make informed choices to separate variables with greater explanatory power from a sea of all available options. In theory building, including endless numbers of variables regardless of their purported importance ultimately weakens analysis. In this way it is valid and practical to utilize a theory that segregates and emphasizes the most critical variables.

The field can also be portrayed as lacking parsimony. A bevy of possible theories, approaches, and frameworks has yielded an inability to amass knowledge over time (Bressers, Klok, O'Toole, 2000). When scholars make recommendations about implementation based on research it can be contradictory, imprecise, unconvincing or strongly reflect the goals of the target audience (O'Toole, 1986). This does not imply that all recommendations from the past are poorly conceived or incorrect, but emphasizes that when each researcher pursues a different channel of research, building knowledge in a consistent, efficient way is impossible. Lacking a unifying theory also makes uniting varying studies via meta-analysis extremely difficult.

What might deductive approaches offer a field in need of an efficient and unifying theory? The inductive nature of previous theory building has created theoretical options that can be both informative and illuminating of processes. When studying complex social interactions, however, it is unlikely that an inductive approach can adequately condense reality. When utilizing an inductive approach it may be difficult to build knowledge over time that can apply to many types of implementation situations. With this in mind we shift our focus to deductive theories, discussing their merits and shortcomings for policy analysis.

3.4 Progress in deductive approaches

This section briefly discusses two prominent deductive approaches, namely institutional analysis and development framework, and actor-centered institutionalism with game theory. Each is a useful deductive theory of the policy process, but both have design drawbacks upon close inspection. We discuss these theories in relation to the theory chosen for analysis in this research: contextual interaction theory. We only point out relevant features of each theory; a thorough comparison is beyond the goal of this analysis. Elements of the contextual interaction theory will be alluded to in this discussion, though the full description of the contextual interaction theory occurs later in this chapter.

3.4.1 Institutional analysis and development framework

The institutional analysis and development framework devised by Elinor Ostrom and colleagues takes the policy actors as a starting point, concentrating on institutional rules, governmental associations, and policy decisions (Sabatier, 1991). Fenger and Klok (2000) posit that institutional analysis and development framework and contextual interaction theory have several assumptions in common. Those

relevant here include analysis level (actors, interactions, and outcomes), the relationship between a central arena and external context, and that independent variables are inter-connected. In their paper the authors link institutional analysis and development to contextual interaction theory, finding their conceptualizations highly comparable. The institutional analysis and development framework does not focus on the implementation of policies or programs. In addition, it is neither a parsimonious approach nor does it create hypotheses. While conceptually rich, the framework can be difficult to apply. For example, it features a rule-based framework to define an action arena, but the values of institutional rules are not related in the model to actual interaction behavior predictions. Any 'informal rules' must be discovered by observation, which puts the model at risk of being confined to illuminative description. Fenger and Klok (2000) envision contextual interaction theory as sharing many qualities with institutional analysis and development framework but with an emphasis on implementation. They find this narrowing allows contextual interaction theory to take the shared concepts further, giving the theory capabilities of explanation and prediction when dealing with realistic policy interactions (2000). Institutional analysis and development framework is a rich tool for some types of analysis, but lacks parsimony, is complex in application, and does not produce hypotheses for testing.

3.4.2 Actor-centered Institutionalism

A second deductive approach is actor-centered institutionalism; this method seeks to equally consider the dealings of actors and the interplay of institutional structures and norms (Scharpf, 1997). Actor-centered institutionalism offers the advantages of its association with the more generally known and accessible game theory (Scharpf, 1997). It also provides a more general scope than that offered by contextual interaction theory; like institutional analysis and development it does not focus on implementation. Contextual interaction theory in contrast centers on implementation, this reduces its applicability to a larger field while making it much more appropriate in its assumptions about implementation processes (Bressers, Klok, O'Toole, 2000). Both models offer a large reduction in complexity through the use of basic assumptions[2] and contain similar actor models, with comparable connections between context and actor characteristics (Bressers, Klok, O'Toole, 2000). Additionally, both feature strategic choice as the logic for generating outcomes, though implicitly in contextual interaction theory (Scharpf, 1997). The distinctions between the two theories highlight contextual interaction theory's applicability for implementation studies. By concentrating on implementation it, as a deductive approach, has a foundation of true-to-life assumptions with the benefit of sufficiently specific predictions which are useful not only for building a comprehensive body of research, but for informing practitioners in a practical and useful way (Bressers, Klok, O'Toole, 2000). Scharpf's (1997) work with actor-centered institutionalism and game theory presents possibilities, but some of the

[2] Contextual interaction theory basic assumptions are explained further in chapter 4.

game-theoretic assumptions are problematic. For example, formal approaches such as these are difficult to apply *ex ante* (O'Toole, 1993). In addition, game theory often assumes relatively equal power among the actors (Bressers, Klok, O'Toole, 2000). Actor-centered institutionalism may also overemphasize actor objectives. Contextual interaction theory includes elements that make it more useful in addressing implementation issues, placing actor motivation, information, and power as equal independent variables within a process.

3.5 A deductive, parsimonious, and realistic approach

Contextual interaction theory is one deductive, parsimonious, and realistic theory that can be useful in analyzing implementation. In this section we explore these qualities of the theory more fully, however, the full description of the theory takes place in the section: *The contextual* interaction *theory: past, present, and future* found later in the chapter. The theory is deductive in its use of logic to investigate the effects of the three variables on implementation outputs and outcomes. In other words, it is deductive in its ability to accumulate data and bridge this to a given supposition. In contrast to an inductive approach, the theory hypotheses are developed independently of empirical details and information. The theory logic encompasses the range from independent to dependent variables, fully connecting the beginning to the end of the journey. Contextual interaction theory channels the three independent variables into two phases of analysis, yielding one of seven outputs or one of eight outcomes (discussed more thoroughly below, and in the following chapter). Deduction and prediction within theory application is limited to these combinations of independent and dependent variables, while impact from external elements is more compliant (Bressers, 2004). This provides the capability to deal with complex issues while avoiding getting bogged down in these complexities.

Contextual interaction theory is also parsimonious, distilling a sea of options for implementation variables into three core variables of motivation, information, and power. The theory is receptive to external elements, however, it channels these through three core variables, as discussed more thoroughly later in this chapter. Practically speaking, utilizing only three independent variables limits the possible number of combinations of actor characteristics. Scharpf (1997) writes that overly parsimonious theories "ignore" either actors or institutions in pursuit of the other (p. 36). At the same time, an all-inclusive approach may present a realistic picture yet lacks descriptive simplicity and comparability. A useful theory, however, must condense the mass of reality into less detailed but informative ingredients. It is important to note that these variables are not arbitrarily chosen as three important variables among others, but because they have high explanatory power; in essence because they are variables at the core of interaction processes. In this way the theory seeks to have the best of both worlds, parsimony without a great expense in realism.

In addition to its parsimony, the theory represents a realistic take on interaction processes. The precise variables of motivation, information, and power are seen as important in the literature. Of course other variables are also considered imperative by various researchers. Later, in Table 3.1 we view these variables, considering how

they correspond to motivation, information, and power. The three core variables of this research are capable of channeling these other variables, making the core variables a realistic estimator for use in implementation studies. The theory chosen for this research is contextual interaction theory: a deductive, parsimonious, and realistic approach that allows one to effectively analyze empirical settings.

Contextual interaction theory's focus on implementation allows it to combine factors into empirically useful hypotheses; this theory connects to the actor-centered institutionalism outlook and identifies with major topics in other recent policy theory. Limiting combinations of the three independent variables allows methodical, efficient analysis as well as capabilities to incorporate a broader range of factors that scholars find critical (elaborated more fully below). The following sections show the theory's development to date, the settings in which it has been applied, describe the theory in its present state, and discuss prospective developments.

3.6 The contextual interaction theory in the past: roots in the 1980s and 1990s

Contextual interaction theory developed in the early 1980s, first under the name of 'policy instrument theory'. In his dissertation *Policy effectiveness and water quality policy*[3], Bressers (1983) assessed and causally linked the connections between multiple inputs and outputs in a multi-actor process. This publication used the subjective rational decision-making model to create a typology of policy instruments. In addition, the work conceptualized target group reactions, as well as the probability of actual implementation based on actor goals, information, and power. Theory development in 1984 considered that the combinations of independent variables create situations explaining various response patterns, as well as development of a module addressing instrument legitimacy (Bressers and Huzen, 1984). In the next year, Bressers (1985) used the theory to compare two forms of market based instruments (charges and tradable permit markets), whereby the criteria became broader, comprising effectiveness, costs, distribution equity, flexibility, uncertainty, and feasibility; in addition researchers (Bressers, Van Emmerik, and Praas, 1985) created a comprehensive summary of studies on the efficiency of Dutch environmental policies. In both cases the conclusion of analysis was an inability to produce new theoretical insights. Continued development throughout the 1980s involved building on the original theoretical concepts, a number of empirical applications, furthering the theory's methodological development, and illumination of the theory's assumptions (Bressers and Klok, 1987; Bressers and Klok 1988; Bressers, Klok, Kuks, and Lulofs, 1988; Bressers and Ringeling, 1989; Klok, 1989a; Klok, 1989b). In the 1990s the evolution of the theory persisted with dissertations and publications expanding, revising, and testing theory concepts (Arentsen, 1991; Arentsen and Bressers, 1992; Bressers, 1993;

[3] In Dutch titled *Beleidseffectiviteit en waterkwaliteitsbeleid.*

Bressers and Kuks, 1992; De Bruijn and Lulofs, 1996; Kampa 2007; Klok, 1991; Ligteringen, 1999; Minang 2007).

3.7 The contextual interaction theory in the present

Given the theory's development over time, it is interesting to see what has been built upon these early foundations. The following section paints a portrait of the theory as it stands today. We explain why the variables of motivation, information, and power are integral in understanding social interaction processes and how they influence implementation interactions. Next we give the basic model of contextual interaction theory including its assumptions and elaboration for implementation processes both for the likelihood to implement at all and the adequacy of a given implementation.

3.7.1 Motivation, information, and power as core actor characteristics

In a field where researchers find copious variables important in explaining interactions, determining the most important among these can be a daunting task. It is critical to defend why we consider motivation, information, and power the most valuable points for analysis of actor characteristics. First, implementation is a social interface, and motivation, information, and power are recognized as critically explanatory regarding such processes (Bressers, 2004). When one considers the accomplishment of any given task, it is logical to presume this requires a motivating objective, expertise, and the capacity to achieve the undertaking (Bressers, 2004). We argue these factors are not only three significant variables taken from a domain of other, similarly significant variables, but instead exist as fundamental traits when considering a social interaction. In 1986 O'Toole compiled an extensive list of variables that researchers deem important in implementation studies by assessing over one hundred works. As an exercise in comprehending how the three contextual interaction variables resonate through the implementation literature, Table 3.1 shows every instance in which one of the "important" variables can be directly linked to the concept of motivation, information, or power found in this study. Potentially unclear variables are omitted (i.e., Bowman's "contextual factors").

Table 3.1 Overview of important implementation variables from the literature[4]

Author(s)	Motivation	Information	Power
Ackermann and Steinmann (1982)			Resources
Alexander (1985)	Stimulus		
Ball (1976)	Consensus; personnel attitudes; homogeneity of issue public	Role of local media	Enforcement resources; reputational authority; role of local media
Baum (1976, 1981)	Interests of subordinates; subordinate policy preferences	Clarity of directives; accuracy with which decisions are communicated	Authority; sanctioning; persuasion
Berman and McLaughlin (1976); Berman (1978); McLaughlin (1976)	Organizational climate; motivations of participants	Materials development; staff training	
Berman (1980)	Implementers degree of resistance, ineffectualness, or inefficiency	Clarity of policy goals	Degree of control exerted from top
Bowen (1982)	Persistence		
Browne and Wildavsky (1984)	Validity of theory of causality	Clarity of objectives and priorities	Sufficiency of financial resources
Browning, Marshall, and Tabb (1981, 1984); Browing and Marshall (1976)	Ideology of local dominant coalitions		Ideology of local dominant coalitions
Bryner (1981)	Level of general political support	Clarity of statute	
Bullock (1980)	Attitudes of the agency's sovereigns	Clarity of statutory standards or objectives	Degree of agency support
Bunker (1972)	Issue salience	The degree to which an organization: (a) is consensually clear about its task; (c) is integrated by information exchanges… (d) has clear knowledge about its performance	Power resources

[4] Taken from O'Toole, 1986.

Chase[5] (1979)	Likelihood of a favorable response with higher levels of government; involvement of special interest groups	Complexity of discrete functions; coordination among functions; controllability of program; availability and usability of supplies; importance of technology	Flexibility of funds; nature of personnel in place; numbers, kinds, and quality of personnel needed; issues of capacity in dealing with private sector providers; involvement of special interest groups; power of the press
Cleaves (1980)		Clarity of goals	
Davies and Mason (1982)	Legitimacy		Resources
Durant (1984)	Socio-political environment; validity of policy's causal theory; implementers dispositions	Complexity of joint action	adequacy and credibility of enforcement resources
Edwards (1980)	Disposition or attitudes of implementers	Communication (transmission, clarity, consistency); complexity	Resources (staff, information, authority, facilities)
Elmore (1976, 1977, 1978, 1979-80, 1985)	Structure of incentives		Structure of power relationships; resources
Grindle (1980, 1981)	Content of policy (interest affected…program implementers); context of implementation (interests)	Content of policy (types of benefits, extent of change envisioned)	Content of policy (resources); context of implementation (power)
Gross et al. (1971)	Degree of staff motivation	Needed skills and knowledge; availability of materials	
Gunn (1978), Hogwood and Gunn (1984)	Nature of policy; valid theory		Control over implementers; resources
Hambleton (1983)	Policy message; multiplicity of …perspectives and ideologies		Resources

[5] Chase's 44 'factors for consideration' are not listed in the O'Toole (1986) article. This portion of the chart was created from the original source.

Ingram and Mann (1980)	Accurate causal theory; incentives		
Kelman (1984)			Organizational capabilities
Larson (1980)	Policy goals	Complexity	
Levitt (1980)	Outside pressure; public opinion; trends in interest groups' perceptions	Certainty of benefits from action	Elements of …power after governmental change; media
Luft (1976)	Incentives		
Majone and Wildavsky (1978)	Objectives; theory underlying policy		Resources
Mazmanian & Sabatier (1981, 1983); Sabatier & Mazmanian (1979, 1981, 1983); Sabatier and Klosterman[6] (1981)	Initial implementation success; clear objectives; sound underlying causal theory; commitment and skill of critical implementing officials; continuing support from constituency groups and sovereigns; priority not undermined by changing socioeconomic conditions; public support; attitudes of constituency groups	Structuring implementation to promote compliance; availability of technology; clear and consistent objectives; integration among implementing institutions; media attention to the problem	Commitment and skill of critical implementing officials; financial resources; media attention to the problem; resources of constituency groups
Mead (1977)	Incentive structure		Weakness of provider institutions; administrative weaknesses
Mechling (1978)		Technical uncertainty	
Montjoy and O'Toole (1979); O'Toole and Montjoy (1984); O'Toole (1983)	Agency goals		Resources
Moore (1978a and 1978b)	Incentives		Resources
Mueller (1984)	Level of community support		
Murphy (1971, 1973, 1974,	Degree of support among		Adequacy of staff

[6] Variables were not detailed in the O'Toole (1986) article, and were therefore compiled from the original sources.

1976)	implementers; constituency pressure		
Nakamura and Smallwood (1980)	Motivations	Technical limitations; communication networks	Resources
Nixon (1980)		Clarity and consistency of communication	
Pesso (1978)			Supervision
Porter (1976)		Task technology	
Pressman and Wildavsky (1984)	Perspectives; intensity of preferences		Resources
Raelin (1980, 1982)			Power, authority and mandate distributions
Rawson (1981)	Support of organizational leaders		Degree of discretion over means and ends
Rein and Rabinovitz (1978)	Goal saliency	Complexity	Nature and level of resources
Rodgers and Bullock (1976)	Perceived costs and benefits for the implementers	Whether the law specifies the type and amount of compliance required	Degree of agreement with legal standard; degree to which law clearly defines who is responsible; whether beneficiaries are cohesive and able to take strong actions
Rosenbaum[7] (1980)		A straightforward unambiguous mandate; precision of geographic boundaries of regulation	Statutory stringency in deterring noncompliance; scope of regulatory jurisdiction; precision of the permit approval criteria established by law
Ross (1984)	Personal and institutional dispositions of actors, support of leaders	Clarity	Extent of power diffusion; adequacy of resources
Sapolsky (1972)		Ability to manage complexity	Resources
Scheirer (1981)	Incentives	Technical requirements; communication flow	Decision and control processes; resources
Thomas (1979)	Blend of policy incentives with conditions		
F. Thompson (1982)			Capacity of oversight actors

[7] In this case the detailed variables were not listed in O'Toole (1986) and have been gleaned from the original document.

Van Meter and Van Horn (1975), Van Horn (1978, 1979a, 1979b), Van Horn and Van Meter (1976)		Communications	Resources; characteristics of implementing agencies
Weatherly and Lipsky (1977)			Resources
Weiler et al. (1982)	Agency attitudes		Resources
Williams (1980, 1982)		Information process	Resources

This exercise exhibits the sheer frequency with which these themes appear in the literature as important variables. It is critical to understand that any additional variables associated with implementation are connected to the logical design of this theory *as they influence* the core variables (Bressers, 2004, my emphasis). This idea will be explored further in the sections below. Clearly, various researchers consider variables pertaining to the concepts of motivation, information, and power to be essential elements of implementation processes. This justifies the perception of these three variables as integral to understanding implementation processes.

3.7.2 The basic model of contextual interaction theory

Accepting that these variables are integral to implementation, it is important to understand how motivation, information, and power exert their influence on the process. The model used in this research is taken largely from Bressers' (2004) description, as this research began in late 2003. Since that time there have been additions to the theoretical conceptualization. This is a living theory, actively evolving as research is gathered. Figure 1 incorporates later developments of the theory during 2004-2008. So while this figure was not used to develop the initial conceptualization for *this* study, it is appropriate and useful to discuss the theory in its most recent adaptation. As this discussion takes place, more recent developments will be highlighted.

Figure 3.1 displays the dynamism of the three variables within the context of a social interaction process as they influence and in turn are influenced by this process[8]. This basic model displays not just the elements which comprise each of the variables (note: information is called 'cognitions' while power is shown as 'capacity and power') but also the manner in which they integrate into the process and influence each other. In the simplest terms, motivation incorporates own goals, potential external factors such as those from higher authorities, and self-effectiveness. Information, called cognition in the figure, acknowledges the subjective nature and importance of reference frames, though these facets are not yet fully elaborated in the current conceptualization. For the application of the theory used in this research, information deals with issues of process knowledge, transparency, and accessibility. In comparison Figure 1, taken from a later estimation of the theory, refers to observations of reality, frames of reference, and interpretations. In the later theoretical estimation the emphasis is more about interpreting as opposed to cataloging information. In the conceptualization found in this application, the emphasis is on process knowledge, transparency, and accessibility of information necessary to carry out a given task. At the same time we recognize that all interview responses feed through an actor's frame of reference and in that sense represent interpretations of events. In this way the current conceptualization of information has clear links to the ideas in the figure, but also offers room to grow. Power includes resources and control, also integrating an actor's reputation of power as perceived by themselves and others within the

[8] The source of this figure is Bressers (2007).

process. A thorough description of the conceptualization of each variable as they apply to this project is found in chapter 5. In the following section we elaborate on the basic model as it is applied to implementation processes.

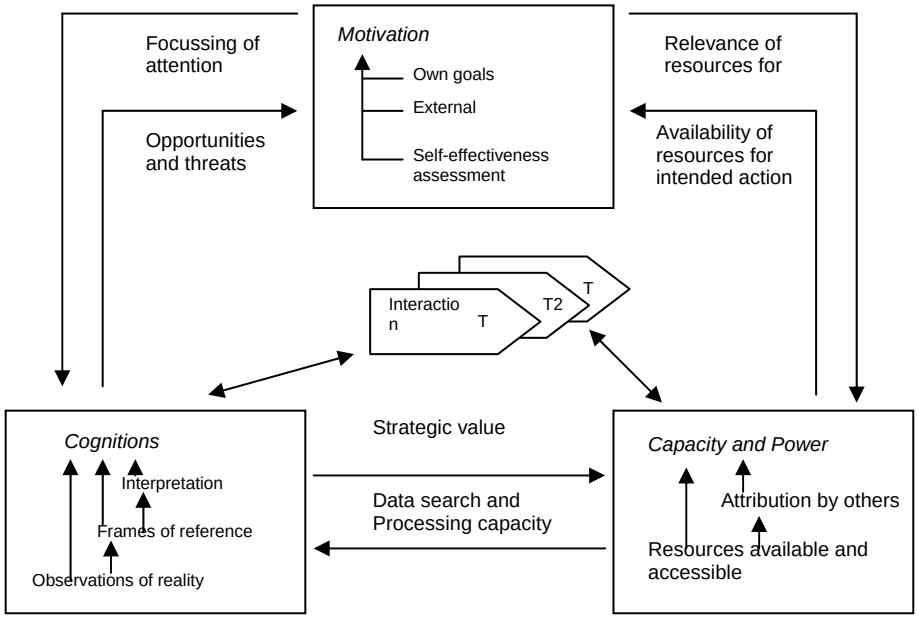


Figure 3.1 Understanding how the three variables interact within social processes

3.7.3 Basic assumptions of contextual interaction theory[9]

This section details the basic assumptions made in the development of contextual interaction theory. As described in the previous chapter, this research emphasizes actor-centered analysis. Bressers envisions policy processes as participatory social interactions, therefore one primary assumption of contextual interaction theory is that the mechanics and results of a policy process are not solely a product of inputs, but fundamentally depend on actor motivation, information, and power. More precisely, these variables are considered the point of distillation for all other potentially influential factors. The theory recognizes the possibility of such factors but posits that the preferred way to understand them is through their influence on motivation, information, and power. In addition, the theory presupposes that policy implementation includes the accomplishment of implementation, the avoidance of implementation, and efforts to alter the substance of a given policy implementation. Contextual interaction theory presumes that the actors in a given interaction are likely to work together (or have a history of working together) on other issues. In

[9] The bulk of this information is a paraphrasing of Bressers' (2004) theoretical assumption description.

fact, the theory application assumes that to such actors a given implementation situation may represent just one of several interactions these actors take part in. In such a case, the new policy under study does not constitute a novel process, but may join other processes underway to form a larger interaction. Therefore Bressers recommends comprehending the nature of general interactions between the two groups as well as understanding interactions in the context of the policy implementation under study (Bressers & Ringeling 1989, 1995). In summation, basic theory assumptions include that these variables are the point of distillation for all other potentially influential factors; that policy processes may include implementation accomplishment, avoidance or alterations; and that a given implementation situation can represent just one of many interactions these actors take part in with each other.

3.7.4 Elaboration for implementation processes

Using the contextual interaction theory we examine how the variables of motivation, information, and power influence an implementation interaction. There are other potential dependent variables of focus within the literature, such as timing, effectiveness, extent of implementation, or efficiency of implementation. It is not true that the contextual interaction theory variables are necessarily more important; in this case the choice of the dependent variable is influenced by what one attempts to explain. Timing and efficiency as potential variables are not inevitably critical in the context of wetland restoration implementation, where actors may shelve projects for years or decades while building support (social or financial) to carry out a project. It should be noted that in this research, getting a project ‘off the ground’ to begin with, or likelihood to implement at all appears as a much more critical point for analysis. Effectiveness and extent are closely related to the concept of adequacy as envisioned in this application of the theory, which is more fully described in the following chapter. In essence, adequacy in this project is seen as recognizing the extent of wetland restoration implementation as a reflexive multi-stage process that strives toward long term sustainability of the ecosystem. Therefore the dependent variables in this application, likelihood to implement at all and adequacy of implementation, are suitable for the study of wetland restoration projects, while at the same time not far removed from dependent variables found within the literature

When explaining implementation via the theory, we distinguish two phases for the dependent variable, the likelihood to implement at all and the adequacy of a given implementation. This designation is necessary to capture two critical moments within the policy process. It is possible that implementation of a given policy never begins, or that implementation sputters out soon after primary initiation (Bressers, 2004). The second phase focuses instead on a proceeding implementation which fails to accomplish the intentions of a given policy. When analyzing actor characteristics it is likely that never beginning is quite a different situation than one in which implementation takes places but fails in meeting policy intentions. As both circumstances occur, and may represent different interactions of actors, it is imperative that each is included in analysis when applicable.

3.7.5 The likelihood to implement at all

Policy implementation normally involves interactions between implementers and the target of the policy. Bressers (2004: 293) describes these actors as "government" and the target group, but as mentioned in chapter 3, when dealing with wetland restoration projects we remain open to the possibility that implementers are not necessarily government agencies. Whether or not a government agency is given the role of implementing a particular policy, we must never assume that in practice implementation automatically follows (this is the primary criticism of a stringently top-down perspective). The theory remains open to the possibility that policy implementation does not necessarily work in such a straightforward manner, and therefore considers the likelihood to implement at all the primary *result* of an implementation process (Bressers, 2004, my emphasis). Given various combinations of the variables motivation, information, and power within the first phase of analysis, the theory provides a prediction for the type of interaction which will occur, and a hypothesis about each interaction. Interaction predictions for the likelihood to implement at all can be found in Appendix A, which corresponds to the hypotheses given in Table 3.2. Bressers (2004) differentiates among three potential interaction types: cooperation, opposition, and joint learning. Cooperation may be realized as active (actors have a joint ambition, though this is not necessarily proper implementation of the policy), passive (one party is impartial about this policy implementation), or forced (a forceful actor compels passive cooperation) (Bressers, 2004). Opposition stems from one actor attempting to inhibit the other actor from implementing the policy (Bressers, 2004). Joint learning is seen as a scenario in which only deficiencies in information block application (Bressers, 2004). Finally, no interaction, or the possible absence of an interaction eliminates the likelihood to implement at all.

These interaction types are also referred to in this text as the degree of cooperation, as they follow what can be seen as a scale of cooperative behavior. This scale, in the most general terms is (shown as decreasingly cooperative interactions):

- Active cooperation, cooperation [1,7];
- Learning towards 1, 7 [2, 8];
- Cooperation (forced) [3, 12];
- None / Learning towards 3, 12 [6, 13];
- Opposition [4, 11];
- Obstruction [5, 10];
- None [9, 14].

Table 3.2 Corresponding hypotheses for likelihood to implement at all interactions[10]

Situation number from flowchart	Hypothesis
9, 14	For any interaction to evolve, it is necessary that application of the instrument would contribute positively to the motivation of at least one actor.
2, 8	If application of the instrument would contribute positively to the objectives of one actor (motivation), while the other actor is also positive or neutral, but the information of the positive actor(s) is insufficient to apply the instrument, then a joint learning process will evolve that will sooner or later create another situation.
6, 13	If application of the instrument would contribute positively to the objectives of one actor, while the other actor is negative, and the information of the positive actor is insufficient, then there will initially be no interaction, but the positive actor will try to learn on its own and thereby to create another situation.
1, 7	If application of the instrument would contribute positively to the objectives of one actor, while the other actor is also positive or neutral, and the information of the positive actor(s) is sufficient to apply the instrument, then the interaction process will have the character of cooperation. When both actors are positive there will even be active cooperation.
3, 12	If application of the instrument would contribute positively to the objectives of one actor, while the other actor is negative, and the information of the positive actor is sufficient, then the character of the interaction process will be dependent on the balance of power between the actors. Dominance of the positive actor will lead to (forced) cooperation.
5, 10	If application of the instrument would contribute positively to the objectives of one actor, while the other actor is negative, and the information of the positive actor is sufficient, then the character of the interaction process will be dependent on the balance of power between the actors. Dominance of the negative actor will lead to obstruction.
4, 11	If application of the instrument would contribute positively to the objectives of one actor, while the other actor is negative, and the information of the positive actor is sufficient, then the character of the interaction process will be dependent on the balance of power between the actors. A relatively equal balance of power will lead to opposition. Opposition can take the forms of negotiation and conflict.

In his most recent theoretical description Bressers (2004) emphasizes that a complete failure to launch represents a highly variable circumstance with great potential to progress into a more productive scenario. Therefore such situations are dynamic with probability of changing over time.

[10] Information contained within this table taken directly from Bressers (2004: 315).

3.7.6 Adequacy of a given implementation

Contextual interaction theory also posits that initiation of implementation does not automatically lead to the envisioned changes in target group behavior. When an implementation situation is seen as progressing through the first phase, the next step is analysis of how well actual implementation meets policy intention. Bressers (2004) defines this as the resilience of the instrument in impacting target behavior throughout the process of implementation, emphasizing that this does not necessarily entail abiding by all policy legalities. For example, this would not be a problem when deviations from policy prescriptions result in enriched policy effectiveness (Bressers, 2004). Such dynamic adaptations, ideal in reflexive and flexible policy implementation, may have the ultimate effect of strengthening or supporting policy intentions.

Considering the second phase of analysis, the types of predicted interactions are different than those for likelihood to implement at all. Most basically, since this phase represents a progression past initiation into physical implementation, the result of none or no interaction is no longer an option. In addition, Bressers (2004) posits that the second phase generally represents an increase in complexity as actors work to physically address a real world problem, perhaps including negotiations, reworking of plans, or other interactive problem solving exercises. Interaction predictions for the likelihood to implement at all are shown as Appendix B which corresponds to the hypotheses given in Table 3.3. Bressers (2004) differentiates among three potential interaction types: cooperation, opposition, and symbolic application. Cooperation may involve active constructive (actors have a joint ambition, here implying that the goal is to implement the instrument), or active obstructive (both actors benefit from improper implementation; can also happen in passive cooperation when one or both actors wish to implement as a matter of form, but have no actual interest in adequate implementation). Opposition may incorporate negotiation (both actors work to maximize their goals via compromise) or conflict (most often the target group ceases communication, displaying power by, for example, bringing the policy's legality into question). The final possibility is symbolic application (the policy is realized through bureaucratic channels, but only weakly in a physical sense) which has potential to incorporate learning over time to alter the interaction (Bressers, 2004).

Whether to understand changes over time, such as the influence of learning on an interaction, or to characterize multiple instrument application at various stages, one may apply the theory many times to create a thorough understanding of events. Further theoretical development includes conceptualization of a formula which produces an increasingly nuanced value for the independent variables as predicted outcomes (Bressers, 2005). A brief expose of theoretical formulation for the first phase of analysis appears in chapter 10 and is utilized to produce values for the likelihood to implement at all for the large-N cases.

Table 3.3 Corresponding hypotheses for adequacy of implementation interactions[11]

Situation number from flowchart	Hypothesis
10, 15	If adequate application of the instrument would contribute negatively to the objectives of one actor and also negatively or neutral to the other actor, then obstructive cooperation will evolve. In case both actors are negative this will be active (obstructive) cooperation.
9	If adequate application of the instrument would contribute relatively neutral to the objectives of both actors, there will be symbolic interaction.
1, 7	If adequate application of the instrument would contribute positively to the objectives of one actor and also positively or neutral to the other actor, and these actors have sufficient information, then constructive cooperation will evolve. In case both actors are positive this will be active (constructive) cooperation.
6, 8, 14	If adequate application of the instrument would contribute positively to the objectives of at least one actor, but it / they have insufficient information for adequate application, then there will be initially symbolic interaction, but also learning by the positive actor(s), leading later to other situations.
2	If adequate application of the instrument would contribute positively to the objectives of at least one actor, but it / they have insufficient information for adequate application, then there will be initially symbolic interaction, but also learning by the positive actor(s), leading later to other situations. If the implementer is positive and the target is also positive or neutral, symbolic interaction will quickly become a process of joint learning; more so if the target is also positive.
3, 13	If adequate application of the instrument would contribute positively to the objectives of one actor and negatively to the other actor, and the positive actor has sufficient information, then the character of the interaction process will be dependent on the balance of power between the actors. Dominance of the positive actor will lead to (forced) constructive cooperation.
5, 11	If adequate application of the instrument would contribute positively to the objectives of one actor and negatively to the other actor, and the positive actor has sufficient information, then the character of the interaction process will be dependent on the balance of power between the actors. Dominance of the negative actor will lead to negotiation (not obstructive cooperation since by nature of this aspect some sort of application will result anyhow).
4, 12	If adequate application of the instrument would contribute positively to the objectives of one actor and negatively to the other actor, and the positive actor has sufficient information, then the character of the interaction process will be dependent on the balance of power between the actors. A relatively equal balance of power will lead to negotiation or conflict.

[11] Information contained within this table taken directly from Bressers (2004: 316).

3.8 The contextual interaction theory in the future: discussion of areas for extension

As is the case with any living theory, utilization and application reveals potential areas for expansion. This section discusses potential areas for theoretical model extension, including a section focusing on explicitly connecting core variables to broader concepts. This is not to say that the theory in its current state is not ripe for use; this section instead provides an informed vision of potential channels for development. The work of this study and others (notably Bressers and Xue, 2006), highlights areas for expansion and improvement of the theory. For example, one improvement could involve using multiple applications to understand learning, while an expansion might involve clarifying the influence of traits external to the core process characteristics of motivation, information, and power.

The current model could be advanced by elaborating the dynamics between core factors over time, especially as these may be reshaped by the ongoing process. Via multiple applications one can use the existing model to evaluate changes in a process over time. In the current format, multiple applications may yield data suggesting actor learning within the process (i.e., a great increase in information score over time). However, the existing model can be further enhanced by unambiguously connecting these dynamic interactions. This is not only useful, but also extremely fitting to the theoretical assumptions. Theoretical hypotheses already envision the role learning might play toward various changes in scenarios, making the elaboration and testing of this capability extremely appealing.

We might visualize the core characteristics making up the essence of interaction while external traits exist in multiple layers around the core. Currently, the influence of layers beyond the core characteristics is only partially specified, and has not been assimilated into the model. The theory assumes that any relevant important variables beyond motivation, information, and power can be channeled into analysis through the core variables. Yet the analysis of some processes may be further enriched by examining policy processes beyond the core (e.g., at the levels of network, institution, or culture). One can imagine that each tier represents a different perspective to tell the story of a multi-actor implementation process. This is not to say that we necessarily need any or all external layers in telling every story—in fact one theoretical assumption is that the story can be effectively told via only the core variables. In fact adding multiple layers and perspectives to every analysis could prove confusing, time consuming and counter-productive. The utility of a theory is often its ability to simplify complex scenarios into manageable units. Applying an expansion to every case ignores the theoretical assumption that the variables of motivation, information, and power are *core* to the process. Contextual interaction theory centers the analysis on two primary actors (target, implementer) and three central variables (motivation, information, power), efficiently providing analysis of the essence of the process. As described above, we consider that influences via these three variables have the strongest explanatory power. At the same time, it may be wrongheaded to assume that contextual interaction theory always channels *all* characteristics via these variables influencing implementation performance.

Could it be productive to expand the core model in a way that allows a more external analysis when necessitated by the case? We might envision these added

strata of analysis as shown in Figure 2. External to the core process we find increasingly broader layers of network, institution, culture, and background factors. In many ways these so-called external layers are already funneled into the core variables. All that might be needed is more explicit clarification of *how* they influence the actor characteristics. Examples of network influences could include the motivation to keep good relations; ways of interpreting other actor's behavior; judging power as a counterpoint to one's perception of own power; or any perception of self-effectiveness as it necessarily incorporates effectiveness in comparison to other actors. Examples of institutional influences include the way actors respond to implementing authorities, or power derived from procedural rights. Another ring of context could be via examining external pressure sources, currently incorporating normative, economic, social and political pressures. Please note Figure 2 is an estimation of relationships, meant to show how the theory emphasizes a focus on the core process instead of centering analysis on, for example, network relationships, institution, or culture. It does not definitely claim that network is in all cases closer to the core process than institutions, or that institution is necessarily closer to the core than culture. It only opens critical examination of the theory to the possibility that it could be important to more prominently describe how external influences can be channeled through the core variables.

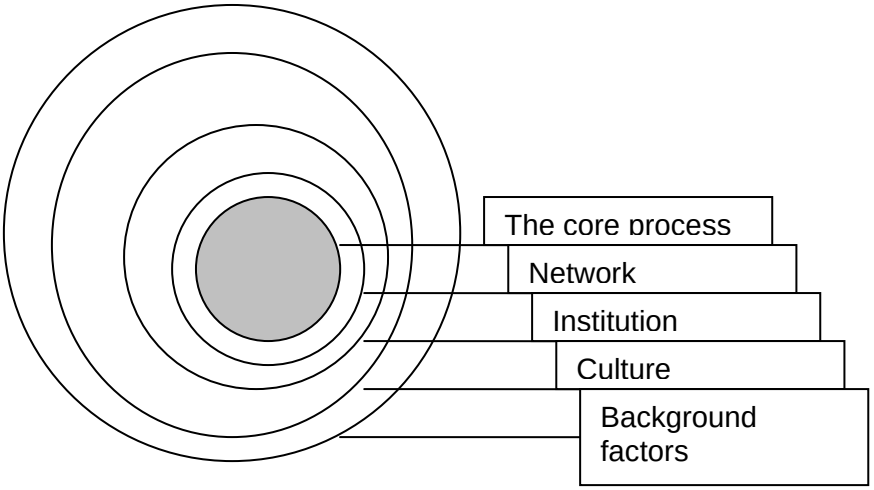


Figure 3.2 Visualizing multiple levels of influence within social interaction processes

It could be argued that the 'contextual' aspect of contextual interaction theory is problematic in the sense that it deliberately focuses on the inner core of circumstances; its basic assumption is that these capture or channel all influences from wider layers of the onion. However, it can also be argued that the theory in its current interpretation begins to explicitly channel broader influences. Many researchers laud building connections between micro, meso, and macro layers of

implementation (Berman, 1978; McLaughlin, 1987). Future contextual interaction theory enrichment can occur by *specifying* the ways these outer layers of factors influence the inner core. One example is recent work (Bressers and Xue, 2006) on the success conditions for negotiated agreements, where the process level variables are those of contextual interaction theory, the well studied case-comparison factors are labeled as 'network level' and the outer layer of stable and changing 'background factors' is specified and the relation with the other factors is briefly stipulated. In particular the in-depth cases may be valuable as arenas for continued elucidation of links between core processes and more external layers of influence.

Again, the theory presupposes that in many ways these external layers are already funneled into the core variables. Explicitly incorporating many external elements might improve realism at the cost of parsimony. It is critical to maintain the added value of the three core variables and their parsimonious qualities. This section does not suggest one should add all of these layers to every analysis, or even one layer to each analysis, but instead maintain awareness of the implication that the core variables by definition channel broader social characteristics. Again, in future work a conscientious research may need to explicitly clarify connections between broader concepts and core actor motivation, information, and power.

3.9 Summary and conclusions

This chapter succinctly characterizes implementation studies, discusses two prominent deductive approaches, and argues for the value of a deductive, parsimonious, and realistic approach such as the contextual interaction theory. Contextual interaction theory works from a systematically deductive perspective and remains open to power differences while incorporating applicable information through core variables. The three independent variables allow efficient analysis with capabilities to incorporate a broader range of factors as necessary into analysis. We have provided an overview of the contextual interaction theory, allowing a glimpse of the theory's history, the variation used for this study, its current state, and potential extensions for its future. Strengths of using the theory include its capability to create clear hypotheses for the manner in which actor characteristics influence implementation process and results. The theory manages to crystallize broad and complex themes into a workable analysis method. The theory represents a straightforward, consistent tool for analyzing implementation processes. This allows comparability and the ability to replicate research. The treatment in chapters 8-10 via the large-N study in particular displays contextual interaction theory's strength in this kind of approach. In addition, the flowcharts coupled with hypotheses provide an uncomplicated view of what is occurring in a given situation, while also indicating what can be changed (e.g., a shift from negative motivation, an upset in the balance of power) to enable a different interaction. This is particularly relevant for practitioners seeking to highlight barriers to implementation. Granted, contextual interaction theory does not *promise the ability to change* the balance of power or the motivations of others. That being said, it does clearly indicate where an interaction succeeds or fails in creating a cooperative endeavor, which might enlighten practitioners about a given process. This utilization of the theory is extensively

applied within the large-N study descriptions (Appendices E, F, G, and H). Barriers to implementation are discussed for each not yet implemented and not implemented case. This use of the theory provides insight for policy actors about what changes might encourage implementation of projects.

The contextual interaction theory developed via classical implementation situations, or those featuring a clear task with institutionalized responsibilities for implementation. To date, contextual interaction theory has most often been applied in specific settings (i.e., permitting, subsidizing, negotiated agreements). It is analytically relevant to apply this to a new and different empirical policy field than the one(s) from which it was developed. One challenge for this thesis is applying the theory to implementation situations less characterized by such circumstances (e.g., multi-actor processes, wetland restoration cases). It will be interesting to see how the theory responds in these new and different contexts. The particular challenges of the wetland project context are described in chapter 4. How the theory responds in such applications will be discussed more extensively in each in-depth case study chapter (chapters 5, 6, and 7) as well as the large-N study chapters (chapters 9 and 10). Understanding the past and present of the contextual interaction theory sheds light on its utility for implementation studies, while thinking critically about its current application enables future growth. In the next chapter we outline and describe in detail the methods used in applying the contextual interaction theory to the cases in this research project.

Chapter 4
Methodology

4.1 Introduction

The contextual interaction theory developed in the context of "classic implementation" situations, or those featuring a clear task with institutionalized responsibilities for implementation. Reality, however, does not always follow the format of the "classic" implementation case. One challenge for this thesis is applying the theory to implementation situations less characterized by such circumstances (i.e., multi-actor wetland restoration projects). This work contributes a new and distinctive application in multi-actor projects to theory development. This is a useful but challenging proposition, because while the two-actor model is a logical simplification, it might not be considered useful in a multi-actor context, when many researchers are happy to apply network analysis. It is a deliberate scientific choice to apply the theory in this situation, with the hope that this challenging elongation produces insights and boosts what might be thought of as the theory's applicability. In other words, we use a living theory, taxing it in a new manner to build insights into its ongoing development.

How will we analyze the cases in this project in a way that provides useful information? This dissertation includes three in-depth cases, which intensely explore how actors work together in making decisions about wetland restoration projects. These cases not only allow us to test the theory's usefulness as a descriptive tool, but also provide a platform for critically reassessing the theory in the new domain of wetland restoration projects, featuring complex interactions, myriad policies, and multiple actors. This research also features a large-N comparative study, which tests the predictability potential of the theory, as described more thoroughly in chapters 9-11.

The last chapter included a description of elements of the contextual interaction theory and their bearing on implementation research. This chapter outlines and describes the methods used in applying the contextual interaction theory to this research project. First we consider the empirical focus wetlands, and how to tackle the unique characteristics of this policy field when applying the theory. In the first section we address questions such as: What considerations should be made when applying the theory to these multi-actor, multi-level processes? How might we account for the multiple institutional settings of different policies involved? and, How does the policy field influence the way we address the concept of adequacy in the second phase of the theory application? After concentrating on the distinctive qualities of wetlands, the second section specifies both independent and dependent variables as they are conceptualized for this research application. Next we illustrate the general goals and format of the case study design used in chapters 5-7, describing the case study protocol including variable measurement and a detailed look at interview instrument scoring. The chapter ends with a summarization and conclusions about the use of these methods to address this research.

4.2 Characteristics of wetland restoration projects and how to deal with them

As a policy implementation field wetland restoration has several distinctive qualities that should be accounted for in the application of theory. First, wetland restoration projects often include multiple actors, and may only occasionally include just the two actors (target and implementer) envisioned by the theory. Generally speaking, wetland restoration projects involve a host of actors including those from government and non-governmental organizations, as well as actors representing for-profit and not-for-profit groups. It is important to be aware of this circumstance and to contemplate before-hand how this might affect the two-actor model found in the contextual interaction theory. First we must recognize that different types of actors exist within a given policy process. Following the conceptualization of Dente et al. (1998) we see a division among actors between those holding content and those having process objectives. By Dente et al.'s (1998) definition, content objectives stem from the perception that a potential measure will result in either costs or benefits while process objectives denote an emphasis on playing a role in the decision making process rather than promoting, or having a stake in, one particular solution. In this way, many actors can be included in a process while not necessarily playing a key actor role such as implementer or target. Considering the actors with content objectives in this research, we apply the theory to cases with the ex ante assumption that within each case actors can be divided along meaningful lines into actors supporting either a target or implementer perspective for a given issue. In these analyses, the relevant issue is the restoration project. This implies that actors fall into groups or coalitions along these lines, though with the understanding that these can be formal or informal groupings or coalitions. Of course, whether this assumption holds true or not should be demonstrated in practical application.

Next we must be wary of the multi-level nature of wetland restoration policy. In many cases the protection of a given area is realized through layer upon layer of policies that can focus on various themes such as habitat, species, use restrictions, or functions. When analyzing policy implementation, this creates problems in understanding the effect of a single policy or program on a given area. In reality, ecological outputs may be a result of several policies, working in concert through a network of support at multiple levels. Pragmatically, the solution for the case studies in this research is to examine the implementation of a restoration project as such, including all policies applied within a project. In this way we build a line of demarcation around the process of implementing a project, defining the relevant actors as those who join (or try to join) the process, and defining the relevant policies as those used in implementing (or those actors attempt to use in implementing). Therefore the analysis produces information about implementation for wetland restoration projects, while not necessarily providing information about the implementation of one specific policy or program.

Wetland restoration projects also incorporate multiple institutional settings when considering the policies involved. Wetland restorations integrate a broad range of policies, while justification for restoration may connect with one or a number of assorted issues such as safety, wildlife, habitat, or recreation. As we expect to find varied policies combating diverse issues, it stands to reason that

actors may inhabit unique roles within the process. It is not safe to assume when dealing with wetlands that a governmental organization will always implement a policy. For this reason it is important to have an open approach when considering who plays the roles of implementer and target. The case studies proceed with this open approach.

Finally, while the concept of likelihood to implement at all is rather straightforward when comparing observations with predictions, the idea of adequacy of implementation may be less so. Bressers (2004: 10) explains that the essence of this idea is "that the instrument being applied actually supports rather than weakens the intended policy incentives". This may be especially broad when considering the complex ecological nature of wetland restorations. Physically measuring the ecological success of a given wetland restoration is beyond the scope of this research. It is possible, however, to understand adequacy of implementation in a general way that can be made more specific as it is applied to each case study. In the sections Specification of dependent variables and Measuring dependent variables we outline the steps taken to conceptualize adequacy of implementation in a manner that makes it consistently applicable to these case studies.

Through application of the theory in the three cases studies we test these assumptions, gleaning knowledge of the strengths and weaknesses of this approach. In the Lessons learned section at the end of each case study chapter we reflect on how well these assumptions apply to a particular case.

4.3 Specification of independent variables

Contextual interaction theory draws connections between actor characteristics and degree of cooperation in an implementation situation. When applying contextual interaction theory, the independent variable of actor characteristics is defined in terms of the motivation, information, and power of both target and implementer. Bressers (2005: 1) envisions the implementer as the actor "officially commissioned with promoting the envisaged measures", while considering the target the "actor necessary to realize [the measures]". In this section we describe the concepts underlying the definition of motivation, information, and power within this study, explaining how these broad variables are de-constructed into components and connected with concepts for use in this application of the theory.

4.3.1 Motivation

As discussed in chapter 3, contextual interaction theory conceptualizes motivation as the way (in wetland restoration terms) the implementation of the project is understood to play a part in the achievement of an actor's objectives (Bressers, 2004). Within this research, the variable of motivation incorporates themes such as an actor's own motivation and potential sources of external pressure. Building a composite of an actor's own motivation includes aspects such as compatibility with the goals of implementation, work-related motivation, the actor's attitude to the implementation objective, attitude to the target group, and self-effectiveness assessment. Understanding potential sources of external pressure includes

examining normative, economic, social, and political influences. Tables 4.1 and 4.2 give a more detailed specification of these elements of the variable from first the implementer and then the target's perspective.

Table 4.1 Motivation conceptualization from the perspective of the implementer

Own motivation	
Compatibility with goal of implementation	Alignment with implementer and goals
Work- related	Motivation to accomplish task as one's job
Attitude to implementation objective	Personal beliefs about implementation goals
Attitude toward target group	Alignment with target group and goals
Self-effectiveness	Confidence about capacity to perform chosen activity
External pressure sources	
Normative	Civic duty in participation, project's value in the community
Economic	Financial reasons for compliance
Social	Social pressure to comply
Political	Political pressure to comply

Table 4.2 Motivation conceptualization from the perspective of the target

Own motivation	
Compatibility with goal of implementation	How do the target's goals compare to those of the implementer?
Work- related	Is the target's job-related motivation in support of or opposition to implementation?
Attitude to implementation objective	Personal beliefs about implementation goals
Attitude toward implementing group	Alignment with implementer goals
Self-effectiveness	Confidence about capacity to perform chosen activity
External pressure sources	
Normative	Is there civic or community support or pressure influencing the target's perspective?
Economic	How will the project affect the target financially?
Social	Is there social support or pressure influencing the target's perspective?
Political	Is there political support or pressure influencing the target's perspective?

4.3.2 Information

For this conceptualization, information includes general knowledge about the policy and how to comply, accessibility to materials, and the transparency of the process for both targets and implementers. In application, we consider reported lack of information as important as reported possession of information. General information encompasses aspects such as policy awareness for relevant actors, including an understanding of policy requirements and benefits, and knowledge of other stakeholders and their role in the process. Transparency incorporates accessibility and the level of documentation available to process participants or interested parties. It also touches on the simplicity or usefulness of this information. Equally important regarding transparency and accessibility are the lack of them. In other words, this involves difficulty in finding and using information or encountering uncertainties that affect the process. Table 4.3 provides details about how information of 'active'

actors is measured for this project. It is important to understand the limitations of an information measurement as an estimation. One cannot measure an actor's information level within a sea of all available information, most notably because it is impossible to calculate 'all available information'. Information often is reported as it exists—in the sense that actors describe the information they received during the process. With this in mind several questions are asked about information the actor would like to have seen, to understand what information may be missing from the process.

Table 4.3 Conceptualization of information

General information	
Policy awareness	Basic awareness of the policy
Policy requirements	Knowledge of policy requirements
Policy benefits	Awareness of potential benefits
Knowledge of actors and qualifications	Knowledge of participants and their roles in the process
Transparency	
Documentation	Types of information; quantity and quality of this information
Accessibility of knowledge	Level of difficulty or ease in finding information
Process complexity, uncertainties	Are actors confronted with uncertainties

4.3.3 Power

The conceptualization of power used in this application of the theory includes aspects of capacity and control. Power may be associated with capacity or resources such as inputting finances, personnel, or time. In practice, the lack of resources represents as important a factor in a given process. Capacity or resources have the ability to strengthen or weaken the position of a given individual, organization or agency. Power as control divides further into formal and informal facets. Formal power is that given to a group, individual or agency through legal channels or areas of responsibility. Examples of positions of formal power or responsibility in wetland restoration projects include project initiator, decision-making roles, reporter of results, project or site monitor, project financial supporter, or fulfiller of policy requirements. Informal power stems from other avenues and may be an important balance to formal power sources (Bressers, 2004). Informal power may derive from roles as site users or stakeholders, or actors having the ability to use expertise, coalitions, or media to their advantage in a process. Informal sources of power may also stem from the ability to convince others to comply with one's own goals. When considering formal or informal power, it is important to reflect on the difference between power and a reputation of power. Reputation of power involves how actors perceive each other in the process. In essence, the reputation of power is real in its consequences unless later experiences prove to others that the reputation is not grounded in reality. For this reason, it is extremely important to understand how the actors comprehend their own power in relation to that of others in the process. When understanding power as a variable in these case studies, it is critical to appreciate who has the formal power to implement a given project (and to what degree), to observe how actors try to build power through the process, and to

recognize who actually exercises power in each case (Bressers, 2004). Table 4.4 depicts the conceptualization of power for this research.

Table 4.4 Conceptualization of power

Capacity	
Resources	Financial, administrative, and time support toward the process
Lack of resources	Financial, administrative, and time support lacking in the process
Control	
Formal	Responsibilities and legal powers held by an actor
Informal	Control within the process via less formal channels

4.4 Specification of dependent variables

In this research, the implementation task is defined as restoring a given wetland, which is often a multi-stage process. The methodology of Vedung (1997) is a useful general guide in structuring the dependent variable evaluation. Vedung's own definitions of these ideas are displayed in a figure created from his work (Figure 4.1). In the simplest terms, he sees public policy following the stages of input-conversion-output-outcome; more specifically finding implementation centers on the stages of conversion and output (Vedung, 1997, my emphasis). It is useful to refer to what happens in a policy process in terms of output and outcome; we associate Vedung's conceptual definitions of these terms with the likelihood to implement at all, and the adequacy of implementation, respectively. This is a pragmatic way of addressing concepts initially used to reflect aspects of the same interaction process, rather than a separate stage. Here we connect these ideas with operational stages as found in the implementation of a wetland restoration project.

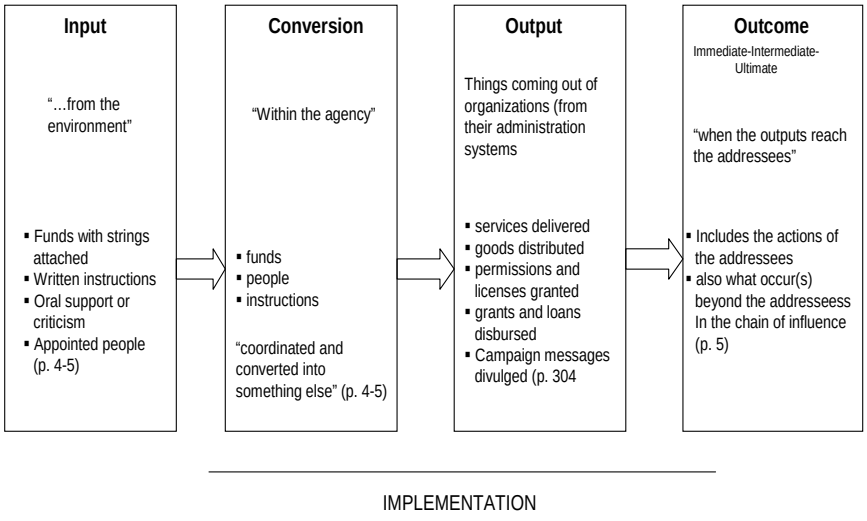


Figure 4.1 Concepts of input, conversion, output and outcome in relation to implementation; all quotes and concepts are taken directly from Vedung (1997).

At some point in the restoration process, actors decide whether or not to begin to implement a restoration project. This decision may occur before or after intermediate or extensive planning about a project. It is possible that actors input time and effort into a potential project, but through such exploratory methods some or all actors come to a realization that the project is not workable. This decision —to continue or not— is the moment within the process where likelihood to implement at all can be deemed successful or unsuccessful. After such a decision in favor of continuing, changes are made in the physical environment, constituting implementation, which may then be judged as adequate or inadequate. In reality this process may resemble more elaborate stages as described here, and depicted as a flowchart in Figure 4.2:

- Actors work to *plan* a project in a simple or elaborate way (input).
- Actors *make a decision* whether or not to implement a restoration project (likelihood to implement at all; output). If a decision is made to restore, the process continues; if a decision is made to stop, the process ends.
- Actors *agree on action* to restore the area, sometimes as a pilot project, sometimes as the entire project (adequacy of implementation; immediate outcome).
- *Changes are made* in the physical environment (adequacy of implementation; intermediate outcome).
- For problems to be effectively addresses, *evaluation* should occur (feedback).
- Based on evaluation, the project can *proceed* as envisioned in the original plan, *or* may *alter* to incorporate learning based on the measures implemented (feedback); a project may cycle between making physical changes to the environment and evaluation many times.
- *Sustainable restoration* of the area in terms acceptable to the criteria of restoration ecologists (adequacy of implementation, ultimate outcome).

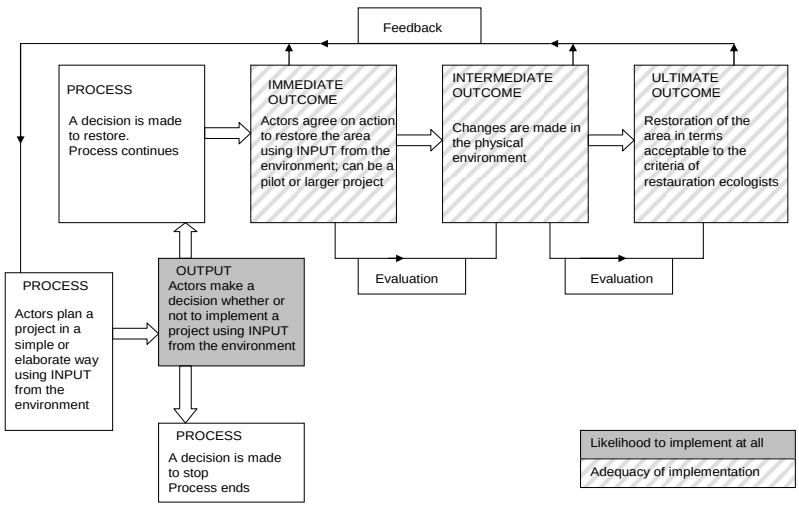


Figure 4.2 Flowchart applying concepts of Vedung (1997) and Easton (1966) to wetland restoration project implementation.

In this conceptualization, phases one and two are not considered parallel processes, but instead occur sequentially. In short, first order decision-making is not about adequacy because at this initial phase it hovers on the decision to proceed. The central question of this research focuses on implementation, and this is applied to the empirical field of wetland restoration. The likelihood to implement at all asks if the project progresses from initiation, while adequacy of implementation asks how well the project addresses the intentions of a given policy (Bressers 2004). These ideas are somewhat broad, and may produce an infinite number of questions about what defines initiation, progression, adequacy, or intention. It is essential to clearly state what these ideas mean in the context of this research. A blueprint for understanding how these ideas are applied to the case studies in chapters 5-7 appears in the Measuring dependent variables section. Within each case study chapter we also detail how this blueprint specifically fits the decisions and processes occurring in a given case.

4.5 General case study methodology

In this research, the unit of analysis for the application of contextual interaction theory in all cases will be the interaction at the project level (i.e., a physical wetland). A case study enables the researcher to analyze interactions not only as the sum of their parts, but in a realistically whole manner (Yin, 2003). A case study explores an event in a true to life framework, depending on several channels of substantiation which together form a more complete picture of events (Yin, 2003). Examination of the cases in chapters 5-7 is via the case study method, incorporating assessment of relevant documents and key actor interviews. Background research includes compiling data from outreach materials, project reports, and planning documents. This information was supplemented by interviewing relevant actors. Interviewing is one way to understand more about participant motivations, information level, and the power balance. Interviewing gives insight into how participants connect meaning with events (Berg, 2001). The semi-standardized interviewing method was used, which entails asking predetermined questions in a systematic manner, but also includes an expectation that the interviewer probe beyond answers given (Berg, 2001). Each method of gathering scientific evidence produces a different aspect of reality; combining several methods helps produce a complete view of events.

The case studies in chapters 5-7 are analyzed with the intent of understanding how the contextual interaction theory applies to wetland restoration projects, including its potential to predict interactions based on actor characteristics. We seek to understand whether the theory can capture reality in these cases and also envision this application as an opportunity to refine methodology. These cases serve as an exercise in applying the measurement tools described throughout this chapter in a piecemeal way, refining the application with each subsequent case. Both Yin (2003) and Gerring (2004) posit that individual case studies have the potential to produce information about a greater population of cases. This is in contrast to criticism that case studies provide no ability to generalize about a population (Yin, 2003). Yin (2003) warns, however, that it is essential to acknowledge that case studies rarely

achieve this through the sampling logic found in statistical studies. Instead, any ability to generalize is understood to stem from replication logic, which is likened to a scientist accumulating knowledge via multiple experiments (Yin, 2003). One may choose between two methods of replication for analyzing cases in such a way: literal replication ("predicts similar results") or theoretical replication ("predicts contrasting results but for predictable reasons") (Yin, 2003: 47). The contextual interaction theory utilizes scores for motivation, information, and power to create hypotheses about how actors will interact in an implementation situation. The theory uses these independent variables in predicting one of fourteen possible interactions for the first phase of analysis, and one of fifteen potential interactions for the second phase of analysis (see Appendices A and B for clarification). For this research, cases were not chosen to represent each possible combination of factors and prediction. Instead, cases were chosen (as described fully in the next section) with the understanding that they represented both finalized and not yet finalized implementation situations. In this research, the cases were chosen with the assumption that they would exhibit the qualities of theoretical replication. It is assumed the cases will produce variations on the types of interactions possible in a predictable manner; it is also understood that not all types of interactions will be represented by these three cases.

The case study method for chapters 5-7 is of what Yin (2003) calls a multiple-case holistic design. In such a design each case constitutes an entire experiment and the conclusions of a given case are understood as the data which must be replicated by other cases (Yin, 2003). Feedback loops are an intrinsic element of this design, indicating the researcher's openness to having any preconceptions challenged over the course of the case study research (Yin, 2003). A reflexive approach also allows the researcher to refine theory application and methodology between cases, as would be expected with multiple experiments.

4.6 Case study protocol: data gathering and data analysis methods

The in-depth case studies were not chosen from a random sample, but were instead picked from a small group of potential cases suitable for in-depth research. Again, this emphasizes that the cases do not represent sampling logic, but instead replication logic. The cases were discovered through speaking with key actors in government, nature management, water management, and policy studies in the Netherlands. There were no explicit limitations imposed based on the scale of restoration, the success of the project, the actors involved, or the type of wetland involved. However, the choice of potential cases was limited within the broad category of wetland restoration. After visits to four sites, the three cases featured in chapters 5-7 were chosen. It was known that the cases were complex and featured many actors. It was clear that both De Alde Feanen and Wierdense Veld- east featured incomplete and ongoing processes, in essence that all final decisions had not been made about proposed measures. It was also clear that Wierdense Veld-west and the North Friesland Buitendijks cases featured measures which had been implemented to some degree. In this way the cases represented two undecided and two decided cases. Analysis clarified that the cases together produce a foundation

especially relevant considering the large-N study, as these represent three types of implementation, namely, restoration measures:

- not implemented: *De Alde Feanen*
- not yet implemented: *Wierdense Veld*- east, and
- implemented: *Wierdense Veld*- west, North *Friesland Buitendijk*s

In this way the choice of in-depth cases mirror the types of cases found in the large-N study. Case study reports are built through assessment of relevant documents and interviews with key actors. Background research included compiling data from outreach materials, project reports, planning documents, and newspapers. This information was supplemented by interviewing relevant actors. Interviewing is one way to understand more about participant motivations, information level and the power balance. Interviewing gives insight into how participants connect meaning with events (Berg, 2001). The semi-standardized interviewing method was used, which entails asking predetermined questions in a systematic manner, but also includes an expectation that the interviewer probe beyond answers given (Berg, 2001). To provide insight into policy interactions both process- and content-oriented actors were interviewed. These actors provided invaluable information about local history, a history of interactions, the development of plans, and knowledge about the core process interaction(s). Each method of gathering scientific evidence produces a different aspect of reality. In contrast to the large-N study found later in this book, the case studies in chapters 5-7 include more data points, more interviews, and the influence of broader sources of information. Though it should be noted that as contextual interaction theory is a two-actor model, analysis for hypotheses determination consists of only implementer and target motivation, information, and power scores. A case study explores an event in a true to life framework, depending on several channels of substantiation which together form a more complete picture of events (Yin, 2003). For these case studies, combining several methods of data gathering helps glean an enhanced view of reality. The case study chapter presentation follows the order of data collection in time, namely Wierdense Veld (chapter 5), De Alde Feanen (chapter 6) and the North Friesland Buitendijks (chapter 7). This is relevant as each subsequent case, representing an experiment, should benefit from knowledge gained in the previous case. Following Yin's suggestion for reflexive feedback loops, we assess each case in its role as one experiment within the study at the end of each case study chapter.

4.7 Measuring independent variables

These three independent variables are complex; connecting conceptualizations to interview questions requires conscientious planning. This section describes how the various factors listed in Tables 4.1-4.3 contribute to calculating an actor's motivation, information, or power score. Attaching a number to broad concepts like these variables has advantages and disadvantages. While this method produces a consistent and practical system for comparing actor characteristics, it could potentially offer a less holistic understanding of actor traits. To combat this

disadvantage, development of the interview instrument incorporates many facets of the variable concepts. Thorough analysis stems from systematically asking all relevant questions, and triangulating some responses by asking for details or substantiation for claims. It also implies critically assessing the responses of actors who may offer highly variable descriptions of a common event[1]. In this way we find that the various facets of each variable described above and developed via the interview instrument are capable of producing a holistic view of a given actor's traits and policy experiences. Please note that the researcher critically assesses the credibility of calculated scores against the potential impact of singular but perhaps crucial facets of the concept ("we agree almost completely but fight each other rigorously on that one issue"). In other words, there is an emphasis on awareness with the analysis of all interviews, an open-minded approach to the collection of information. Chapter 11 discusses whether this approach made sense in the context of this study, and describes cases where there may have been doubts about the ability to capture the actor traits in these scores.

4.8 Interview scoring

Developing motivation, information, and power scores is based on calculating responses to interview questions—in essence a proportion. The interview instrument includes 26 points of assessment for motivation, 17 for information level, and 22 for power, though not all questions apply to every actor. The full interview instrument is available as Appendix C. Points are distributed as derived from responses and are described in Appendix D. Other questions on the interview instrument deal with obtaining background information (Questions 1, 9, 41), gathering details to support a response (Questions 9, 10b, 15b, 16b, 17b, 21, 30b, 30c, 31b, 35, 42, 43), and cataloging resources dedicated to the project (Questions 37a, 37b, 37c, 38). Table 4.5 lists which interview questions link with each underlying concept for motivation, and includes one example from the interview for each concept.

Concerning motivation, responses are given positive and negative points based on whether they reflect motivation for or against the project. The resulting score is the proportion of pro-implementation responses divided by the total number of responses. In this way the scores exist on a scale from 0.0 to +1.0. However, within the theory conceptualization motivation is talked about in terms of "lack of" motivation, or in terms of positive or negative motivation. With this in mind, we transform the score to a positive/negative scale by first subtracting .50 from all original scores, changing the scale of (0.0 to +1.0) to (-.50 to +.50). Finally, this (-.50 to +.50) scale is transformed to a scale of (-1.0 to +1.0) by multiplying the score on the previous scale by 2. By this configuration, the different types of motivation can be thought of as:

[1] If actors offer divergent descriptions of events or roles, these are discussed thoroughly within the given case study chapter.

Table 4.5 Motivation linked to interview questions with examples

	Examples	**Interview questions**
Own motivation		
Compatibility with goal of implementation	What were the goals of this project?	8, 9
Work- related	Does your organization have goals for wetlands in the area?	10a, 10b, 11, 12, 27, 29
Attitude to implementation objective	Do you find wetland restoration an important part of wetland policy in general?	13a, 13b, 16a, 17a, 18a, 18b, 21
Attitude toward target group choice	Would you describe any of these stakeholders as being targeted by this project (positively or negatively)? For example, if the project is implemented, who has the most to gain and who has the most to lose?	8
Self-effectiveness	During this process, if something is important to your group and others disagree, what do you think are your chances of attaining goals important to you?	33, 40
External pressure sources		
Normative	Do you feel it is your civic duty to participate in this restoration project	13c, 19
Economic	Was this restoration project important to your community?	19
Social	Was the community at large involved in this decision?	14, 20, 22, 23
Political	Did politicians support this project?	15a

-1.00 to -0.21 = negative motivation
-0.20 to +0.20 = neutral motivation
+0.21 to +1.00 = positive motivation

For example, if an actor responds in favor of motivation for 20 of 25 applicable questions, they receive a score of (+.60), via

20/25 = 0.80
0.80 - 0.50 = 0.30
0.30 x 2 = +.60

Whereas a respondent who answered only 5 questions of 25 in favor of motivation would have a score of (-.60), via:

5/25 = 0.20
0.20 - 0.50 = -0.30
-0.30 x 2 = -0.60

Though this may seem complicated, it is simply a way to take the interview results and make them follow a scale that not only fits with the theory conceptualization, but is also easily accessible to many audiences. The positive, neutral and negative

monikers provide a straightforward way of understanding what the scores mean and how they compare to each other. The range (-1.0 to +1.0) presents a standard which is readily comprehended (i.e., a percentage scale common in everyday usage). Next, we evaluate the information level of actors in the process. Table 4.6 lists the concepts underlying the information score, as well as the interview questions linked to each concept, with an example of each.

Table 4.6 Information linked to interview questions with examples

	Examples	**Interview questions**
General information		
Policy awareness	What is the policy or program supporting this wetland project?	24
Policy requirements	Are the requirements of this policy clear to you?	25, 26
Policy benefits	Does implementing this policy bring benefits to your organization?	27
Knowledge of actors and qualifications	Can you name other actors or stakeholders involved?	4, 29
Transparency		
Documentation, including lack of	How would you describe the information your organization receives about this policy program?	28, 30a, 30b, 30c, 31a, 32
Accessibility, including lack of	During the decision making process did you find yourself dependent on others for information?	28, 30a, 31a, 32
Process complexity, uncertainties	Are there things you are uncertain about which hamper your activities regarding this project?	33

For information, responses are given positive or negative points as they depict the level of information held by each actor. The interview score is based on responses indicating positive levels of information as a proportion of total number of relevant questions. Contextual interaction theory development work conceptualizes information on a scale of (0.0 to +1.0). Therefore the information score undergoes no transformation, existing only as a number on a scale from (0.0 to +1.0). Finally, we examine the power scores for each actor. Table 4.7 shows the interview questions linking with each underlying concept for power, and includes one example from the interview instrument for each.

A difference of (0.0 to 0.14) between the two scores indicates the power is balanced between the actors. A difference of (0.15) points or greater indicates that one actor holds the balance of power over the other actor. For example, in the Dutch case Korenburgerveen for phase one, likelihood to implement at all, the implementer holds the balance of power as the actors have a difference in scores of (0.19) points. In contrast, in the Dutch case Water op Maat phase one, likelihood to

implement at all, neither actor clearly holds the balance of power as the scores have only (0.07) points difference when compared (see Tables 4.8 and 4.9).

Table 4.7 Power linked to interview questions with examples

	Examples	Interview questions
Capacity		
Resources	Did this project involve a financial commitment by your organization?	37a, 37b, 37c, 38
Lack of resources	Were there resources you needed but did not have access to during the project?	39a, 39b, 39c
Control		
Formal	Is your organization responsible for seeing that policy requirements are fulfilled?	1, 2, 7, 26, 34, 36, 37a, 41
Informal	Did your organization support the project in other ways?	3, 4, 5, 6, 21, 38, 40

Table 4.8 Assessment of likelihood to implement at all scores from Korenburgerveen case

Actors	Motivation	Information	Power
Implementer: *Vereniging Natuurmonumenten* (Association of Nature Monuments)	15/18 (+.67)	11/16 (.69)	6/8 (.75)
Target: *Stichting Marke Vragender Veen* (Foundation of the *Marke Vragender* Peat)	6/13 (-.08)	7/11 (.64)	5/9 (.56)

Table 4.9 Assessment of likelihood to implement at all scores from Water op Maat case

Actors	Motivation	Information	Power
Implementer: *Waterschap Reest en Wieden* (Waterboard *Reest* and *Wieden*)	12/17 (+.41)	13/15 (.87)	5/8 (.63)
Target: *Staatsbosbeheer* (the Dutch State Forestry Service)	6/14 (-.14)	14/17 (.82)	5/9 (.56)

After calculating each actor's motivation, information and power score those of target and implementer are funneled into the contextual interaction theory formulation to produce a prediction based on the combination of characteristics. Predictions for phase one are for interactions such as cooperation, learning, forced cooperation, opposition, obstruction, or no interaction. One example of a theory prediction for likelihood to implement at all is:

> If application of the instrument would contribute positively to the objectives of one actor, while the other actor is negative, and the information of the positive actor is sufficient, then the character of the interaction process will be dependent on the balance of power between the actors. Dominance of the positive actor will lead to (forced) cooperation. (Bressers, 2004: 32).

Predictions for phase two are for interactions such as constructive cooperation, conflict, negotiation, learning, symbolic interaction, or obstructive cooperation. One example of a theory prediction for likelihood to implement at all is:

> If adequate application of the instrument would contribute positively to the objectives of at least one actor, but it/they have insufficient information for adequate application, then there will be initially symbolic interaction, but also learning by the positive actor(s), leading later to other situations. (Bressers, 2004: 33) (All potential combinations of variables and predictions for phases one and two are listed in full as Appendices A and B).

We can then compare this prediction to the degree of cooperation that occurred in each case, as determined by analyzing where the case falls along the continuum of input-conversion-output-outcome.

4.9 Measuring dependent variables

The central question of this research focuses on implementation applied to the empirical field of wetland restoration. The likelihood to implement at all asks if the project progresses from initiation, while adequacy of implementation asks how well the project addresses the intentions of a given policy (Bressers, 2004). These ideas are somewhat broad, and may produce an infinite number of questions about what defines initiation, progression, adequacy, or intention. It is essential to clearly state what these ideas mean in the context of this research.

In wetland restoration cases, site managers may engage in long term monitoring of changes to better understand the impacts of implementation. In many cases, however, this is not a component of the policy implementation, and is in no way guaranteed or expected. Often, consistent and useful monitoring depends on the budget and goals of the management agency. In reality many managers do not or cannot always make efforts to understand the impact of changes over time. Restoration ecologists continue to debate how to define success in ecosystem restoration and assessment criteria can be complex and extensive (Hobbs & Harris, 2001). While the ultimate policy outcome may be (explicitly or implicitly) long term ecological sustainability, measuring wetland cases against this ultimate outcome is not the goal of this research. It is also important to note that ecologically similar wetland restorations were not chosen for this research project; in-depth cases were chosen based on recommendations from policy actors working with wetlands in the Netherlands. Within the large-N study, wetland projects under study include inland and coastal areas, fens and bogs, freshwater and tidal systems. For the in-depth cases wetland projects under study include fens, bogs, peat extraction areas, and coastal marshes. In other words, neither measuring ecological sustainability nor comparing the relative success of the restorations to each other is a useful way of evaluating what happens in these cases.

Ecological success of the project is not judged, adequacy from a policy perspective is; whether implementation as discussed and agreed upon by actors is enacted. For this case study, evaluation follows the process to its present state focusing on policy interactions, evaluating where the project can be found along the process continuum and how successfully the project has met the challenges of each stage. Hill & Hupe (2002: 11) find that using the term output implies ruling on some level whether a process is a success or a failure. They find this usually entails a

"normative" designation after weighing observations against some value-laden expectations. Despite this dark forecast, a conscientious researcher can avoid normative judgments about a given process. This is accomplished by independently qualifying the reports of actors involved in a given process with external documentation of events.

How can one independently judge if a case has merited the theoretical predictions for likelihood to implement at all and adequacy of implementation? The first phase of analysis should be relatively simple to discern—whether a project has begun or not. In this research, this moment centers on the decision by actors to implement or not implement a restoration project. To independently qualify the existence of such a decision, *at the very least* there should be agreement among actors that such a decision has been made. In addition, this decision should exist in the real world in some tangible way, whether through the reports of independent actors, via a financial trail, or the traceable resolution of a decision-making body. When comparing theory predictions with reality, it is necessary to produce independent indications of a decision reported in interviews. Any assessment of the likelihood to implement at all by the researcher must be backed by documentation.

The second phase of analysis, adequacy of implementation, may be more difficult to determine. We examine adequacy from a policy rather than an ecological perspective. It is important to be specific about what this means when comparing theoretically predicted results to reality. As with the first phase, we should at minimum observe that process actors find that the previously agreed upon decision is being implemented. To understand whether this has reached the level of immediate, intermediate, or ultimate outcome, we would also expect to find a clear trail between the agreed upon decision and action. This could include finances delivered, changes in the physical environment, species counts, the implementation of a pilot project, and so forth. Again, it is the responsibility of the researcher to produce documentation supporting any assessments of the adequacy of implementation. To give a full picture of the current state of the project, information is included in each case study chapter on what is being done by managers, site owners, or independent researchers to measure or evaluate the long term ecological sustainability of the wetland.

4.10 Summary and conclusions

This chapter sketches the methodology used for the case studies in chapters 5-7. We first establish what factors must be taken into account when applying the theory to wetland restoration projects. Next we clarify the conceptualization of both independent and dependent variables as they are conceived for this research application. Then it is important to establish the case study protocol used in chapters 5-7, highlighting variable measurement and interview scoring, as well as establishing the steps taken to insure independent case evaluation. This research project seeks to produce insight into the way actors influence policy implementation. The contextual interaction theory posits that certain combinations of actor characteristics produce various types of interactions. It is useful to apply the theory, compare the predicted results with reality, and understand what insight the

theory might provide about those policy interactions. It is also important to critically examine the application of contextual interaction theory in the analysis of wetland restoration projects. The following case studies not only provide information about actors interacting in Dutch wetland restoration projects, but should also be seen as a series of steps taken to apply and refine the application of the contextual interaction theory in case study research. The Lessons learned section at the end of each case study chapter focuses on this reflexive analysis of cases as multiple experiments within one research project.

Chapter 5
Het Wierdense Veld

"The project is dependent on the cooperation of …other interests in the area. We cannot make this a success on our own, and that is nice but also difficult"
--*Landschap Overijssel* representative

5.1 Introduction

The goal of this chapter is to facilitate a rich understanding of the policy implementation process in the *Wierdense Veld* nature area. For this purpose, the interactions are divided into two sub-cases based on geography (those on the west and on the east of the *Veld*). The *Wierdense Veld* is a lateral moraine: a low-lying area found between hills of soil formed by glaciers in the last ice age. It features two types of peat areas, bogs (high peat or *hoogveen* in Dutch) and fens (low peat or *laagveen* in Dutch). Tiner (1998: 249) defines bog as a "type of wetland forming on acidic peats (peatland), typically formed by the accumulation of peat moss (*Sphagnum* spp.) in a nutrient–poor environment and colonized by ericaceous shrubs like leatherleaf or evergreen trees like black spruce". A bog is rain water dependent. Fens are a "type of wetland growing on variably mineral-rich peats, typically with significant groundwater inflow, and dominated by sedges and mineral-loving species; characteristic of boreal and glaciated regions" (Tiner, 1998: 250). A fen is chemically basic and dependent on the water table. In the 1940s cultivation began on the *Wierdense Veld*, which at the time was an approximately 1100 hectare wetland, turning surrounding peat areas into agricultural land. This transformation stopped in the late 1960s when the Dutch government deemed natural areas more important, and a portion of *Wierdense Veld* became a protected area. Limitations on water constrain proper functioning of the wetland, evidenced by two plants[1] indicating drying along the *Wierdense Veld*'s borders. Restoring the *Wierdense Veld* involves managing local water to provide sufficient water levels to support these peat areas while taking into account the water needs of neighboring agricultural and residential interests.

The *Wierdense Veld* lies in the center of the Overijssel Province (Figure 5.1), near the municipalities of Wierden, Hellendoorn, which includes the town of Nijverdal, and Rijssen-Holten (Figure 5.2). A channel, the *dwarsdijk*, runs along the eastern border of the *Wierdense Veld*. Past this channel lie farmlands and the municipality of Wierden. Southwest of the *Wierdense Veld* are farms and the town of Nijverdal, west is the neighborhood of Kruidenwijk, to the north are agricultural areas. In the Netherlands, designation of rural areas for planning is divided into four distinct categories ranging from pure agriculture to pure nature, as shown in Table 5.1. Difficulties arise from the proximity of two very different categories of land use: the *Wierdense Veld* is classified as category four, and is adjacent to category one agricultural areas and category two residential zones (see Figure 5.3).

Table 5.1 Dutch rural planning categories and descriptions

Category Number	Description
1	Pure Agriculture
2	Agriculture and landscape elements
3	Agriculture, landscape and nature elements
4	Pure nature

[1] An invasive species of grass (*Molina* spp.) and beech shrubs.

Figure 5.1 The location of the Wierdense Veld and the Province Overijssel within the Netherlands.

Figure 5.2 The location of the Wierdense Veld within the Overijssel Province.

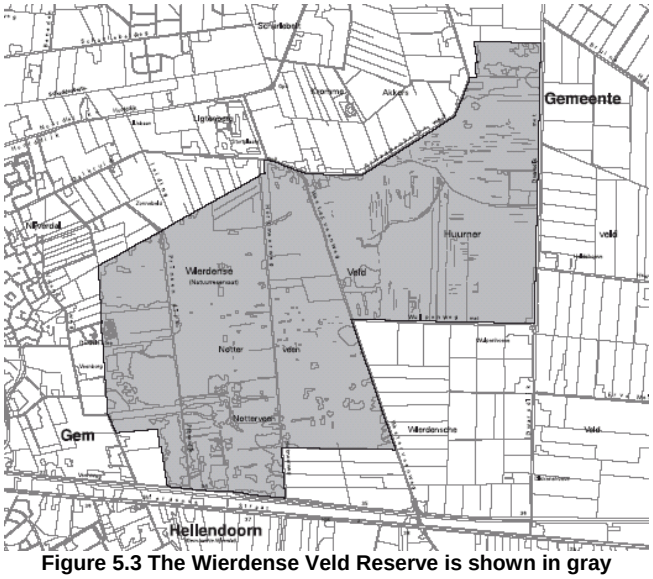


Figure 5.3 The Wierdense Veld Reserve is shown in gray

5.2 Methodology specific to this case

The implementer is the actor promoting the given measures; the target is the actor necessary to bring the measures to fruition (meaning the target can help or hamper this process). In both the western and eastern cases the implementer is *Landschap Overijssel*, a nonprofit nature protection organization in the province. The group manages 20 nature reserves with a total surface area of over 4000 hectares (Landschap Overijssel, 2008). As land owner and manager, this organization is responsible for the proper implementation of any nature-oriented policy regarding the *Wierdense Veld*. In the Western case, the municipality of Hellendoorn acts as policy target, as their cooperation is necessary for any real changes in area management to take place. The eastern case is more complex, and is therefore broken down into two interactions. In the first interaction the drinking water company Vitens acts as policy target, while in the second interaction local farmers serve the role of policy target.

This case was discovered by making contact with a local waterboard (*Waterschap Regge en Dinkel*) in an effort to find wetlands undergoing restoration. An introductory interview was made in July of 2004 with a waterboard hydrologist to learn about the project and get an overview of the ongoing interactions. This waterboard employee provided extensive information about the hydrology of the area, including a day-long tour of the region. He also supplied introductions to other key actors, including representatives from the Municipality of Hellendoorn, *Landschap Overijssel*, the drinking water company Vitens, *De Landbouw Voorlichting*, and one farmer. Seven[2] interviews were conducted in the summer and fall of 2004. These actors shared their first-hand experiences of ongoing interactions as they worked to reach an agreement about the area. In addition all available documents about the process and interactions were accessed and analyzed for inclusion. Of the seven interviews for this case, all were recorded with a hand-held tape recorder. Extensive notes were also taken during each interview to ensure documentation. Each recorded interview was transcribed then analyzed to determine motivation, information, and power scores. All respondents appeared willing to engage in interviews and eager to share their experiences. In three cases language constraints led to conducting the interview with a translator present. During the interview with the representative of the *Landschap Overijssel* a native Dutch speaker and fellow PhD candidate translated all researcher questions from English to Dutch and all interviewee responses from Dutch to English. When meeting with the farmer, his wife sat in on the interview and helped by occasionally translating terms between the farmer and the researcher. Two representatives from the Municipality of Hellendoorn took part in the interview; one representative of the Municipality occasionally helped by translating between the researcher and the other Municipality representative.

[2] Two interviews took place with the representative of the *Waterschap Regge en Dinkel*, one interview featuring two representatives of the Municipality of Hellendoorn, and one interview each with representatives of the *Landschap Overijssel*, the drinking water company Vitens, *De Landbouw Voorlichting*, and farming interests.

5.3 Policies

The Wierdense Veld is part of the Dutch National Ecological Network (Ecologische Hoofdstructuur), formed in 1992 by the Nature Policy Plan of the Netherlands (Natuurbeleidsplan). It has also been declared a part of the European Union Natura 2000 network as created through the Habitat and Bird Directives (Habitatrichtlijn and Vogelrichtlijn). Potential agreements and negotiations made by actors about the area can be incorporated into lower levels of policy, such as the municipal bestemmingsplan as shown in the Western case.

5.4 Western case study narrative: Actors

In this case the *Landschap Overijssel* uses its role as manager to demand proper water levels, forcing the implementation of protective policies, therefore playing the role of implementer. The municipality of Hellendoorn acts as policy target, their cooperation is necessary for any real changes in area management to take place. This area was set aside primarily in an effort to protect peat areas, though also supports bird species attracted to this habitat and protects specific vegetation. The *Wierdense Veld* has two functions: landscape conservation functions including any intrinsic cultural benefits, and a recreation function. The *Landschap Overijssel* seeks a balance between the functions of protecting the natural habitat and providing recreation space. Both local resident use and financial support are critical to the *Landschap Overijssel*, but the organization must first protect the nature found in the *Veld*. The municipality of Hellendoorn represents the interests of local residents and homeowners. These residential areas require lower water levels than those required for supporting peatland. In addition the municipality seeks to encourage residential development, which may conflict with the water needs of the protected area. Residents use the *Wierdense Veld* recreationally for walking and biking; these groups are highly supportive of the nature reserve and its benefits to recreation. The municipality's primary goals are in conflict with those of the *Landschap Overijssel* but secondarily the municipality supports the *Veld*.

Other relevant actors include the *Waterschap Regge en Dinkel* and the *Provincie Overijssel*. The history of Dutch regional water authorities or waterboards (*waterschappen*) dates to the twelfth century in the west of the country (Kaijser, 2002). Currently in the Netherlands waterboards manage the water and guarantee both its quantity and quality (Dicke 2001). Waterboards in general represent sub-national forms of democracy featuring voting privilege based on a "profit-payment-participation principle (those having an interest in water management may participate and have to pay for water services in proportion to their interest)" (Bijker, 2002; Kuks, 2002: 2). It is not the task of the *Waterschap Regge en Dinkel* to own or restore nature areas, instead the Waterboard attempts to provide the proper levels of water to the area incorporating land use desires of actors as sanctioned by provincial and municipal policies. The *Provincie Overijssel* is the governmental agency ultimately in charge of spatial planning throughout the province. The Province has the ability to enforce land use priorities dictated in policy, but does not always utilize this power. One concept to note is that one may

or may not choose to use power given the situation or context. In the Western case, the Province takes an active problem-solving role, using power to encourage actors into a negotiation, then reverting to a non-active role. In the eastern case the Province does not use power to facilitate a resolution. Table 5.2 displays responses from interviews for the implementer, the targets, and *De Landbouw Voorlichting* about the roles different actors play in the process. In this table one can see how different actors in the process connect roles and responsibilities to other actors. The *Landschap Overijssel* recognizes its own role as a project leader, and connects its responsibilities both to those of the Waterboard and the National *Ministerie van Landbouw, Natuur en Voedselkwaliteit*. The Municipality of Hellendoorn recognizes the leadership role of the *Landschap Overijssel* as well as the connections with and responsibilities of the Province of *Overijssel*. Vitens recognizes the primary role of the *Landschap Overijssel* and also mentions more technical partners within the process, such as *De Landbouw Voorlichting*, the Waterboard *Regge en Dinkel*, and T&O. The farmer clearly views *De Landbouw Voorlichting* and the Waterboard *Regge en Dinkel* as primary actors in the process, though recognizing the *Landschap Overijssel* and the Municipality of *Wierden* as stakeholders. As discussed more fully later, both *De Landbouw Voorlichting* and the Waterboard *Regge en Dinkel* have historic connections to farming interests and goals. In this way it is not surprising that farmers associate more closely with these actors in the process. This may also reflect a strategic move by *Landschap Overijssel* to promote trusted actors (e.g., *De Landbouw Voorlichting* and the Waterboard *Regge en Dinkel*) to take the lead when working with the farming community. *De Landbouw Voorlichting* has the most inclusive perception of the process, seeing all of the core actors, as well as the Waterboard *Regge en Dinkel* as nearly equal participants and contributors within the process.

Table 5.2 Actor roles according to interviews

	Implementer: *Landschap Overijssel*	**Target: Municipality Hellendoorn**	**Target: Vitens**	**Target: farmers**	***De Landbouw Voorlichting***
Who is the initiator?	*Landschap Overijssel*	*Landschap Overijssel*	*Landschap Overijssel*	*De Landbouw Voorlichting*	*De Landbouw Voorlichting*, *Landschap Overijssel*, *Waterschap Regge en Dinkel*, farmers, Vitens
Who are the users of the area?	Nature and landscape conservation, agriculture, local residents, recreation	Residents, nature watchers, fauna	Only by ecologists	farmers	*Landschap Overijssel*, *Waterschap Regge en Dinkel*, farmers, Vitens
Who are the stakeholders?	Residents, farmers	Province of *Overijssel, Landschap Overijssel, Waterschap Regge en Dinkel, Millieuraad*, Municipality of Hellendoorn	*De Landbouw Voorlichting, Landschap Overijssel, Waterschap Regge en Dinkel,* T&O	*De Landbouw Voorlichting, Landschap Overijssel, Waterschap Regge en Dinkel,* farmers, Municipality of Wierden	*Landschap Overijssel*, *Waterschap Regge en Dinkel*, farmers, Vitens
Who reports the results of this project?	They report to the *Ministerie van Landbouw, Natuur en Voedselkwaliteit*	*Landschap Overijssel*	*Landschap Overijssel*	*De Landbouw Voorlichting*	*De Landbouw Voorlichting* made a report of the process with information from *Waterschap Regge en Dinkel,* farmers, and Vitens
Who monitors the site after implementation ?	*Landschap Overijssel* for the *Ministerie van Landbouw, Natuur en Voedselkwaliteit*	*Landschap Overijssel*	*Landschap Overijssel*	*De Landbouw Voorlichting, Waterschap Regge en Dinkel*	*Waterschap Regge en Dinkel,* Vitens, and some farmers measure groundwater levels
Who does the public think is primarily responsible?	Reserve: *Landschap Overijssel* Flowing water: *Waterschap Regge en Dinkel*	*Wierdense veld: Landschap Overijssel* Buffer zone: Municipality of Hellendoorn	*Landschap Overijssel*	*Waterschap Regge en Dinkel*	I do not know if they even know about it, the farmers know about us but people who live in the city don't
Who sees that the policy requirements are fulfilled?	Did not ask	The national government delegates this to the Province of Overijssel	'not us'	Did not ask	Did not ask

5.5 Western case study narrative: History

The Netherlands is a densely populated country. Even in the less-dense eastern region, land is considered a precious commodity. The municipality of Hellendoorn, on the western border of the *Wierdense Veld*, began experiencing development pressure in the early 1980s. The *Landschap Overijssel* realized the effects of future development in this area: namely any proximal neighbors would require lower water levels than those desired for the *Veld*. With this in mind, the *Landschap* approached the municipality of Hellendoorn about the necessity of a buffer zone by writing a letter in November of 1980. A buffer zone would allow a gradual change between higher water levels desired by the *Veld* and lower levels required by human habitation or agriculture. To begin negotiations, the *Landschap* requested a buffer zone of 500 meters. While the municipality respects the value of nature, it also holds the mandate to encourage municipal growth through development. The community of Hellendoorn is bordered in the west by the *Sallandse Heuvelrug*, a 3500 hectare national park, which serves as a limit for westward expansion. The municipality hesitated to thwart eastern expansion by dedicating 500 meters of open land to nature support. In response to the *Landschap Overijssel* request, the municipality offered to create a 200 meter buffer zone. At this stage in the process intense discussions over the size of the zone resulted in a stalemate; with neither side willing to meet the other's request. After about one and a half years of discussion with no agreement, the Provincial government stepped in to make a decision. In February of 1982 the Province first described a compromise for the area, averaging the difference in the two requests to suggest a 350 meter buffer zone. Both the *Landschap Overijssel* and the municipality of Hellendoorn submitted to the Province suggestion. This agreement eventually became part of the *bestemmingsplan*, which categorizes the buffer zone as a nature border area with limited development.

After a decision was made at the Provincial level, previously tense interactions between actors relaxed allowing the two groups to work together to fulfill mutual goals. This phase, an ongoing process, involves fine-tuning the development of the buffer zone, buying or trading lands within the zone and managing its use. The municipality now sees the *Veld* as a selling point for potential residents. The zone holds no nature function of its own, serving instead as a support area with use constraints. Maintenance of the buffer zone is a continuous and amicable process requiring cooperative communication between the *Landschap Overijssel* and the municipality of Hellendoorn. The *Landschap Overijssel* has specific requests regarding the type of activities allowed in the buffer zone. The municipality of Hellendoorn continues to evaluate applications for land use within the zone, often following the desires of the *Landschap Overijssel*. For example, the municipality of Hellendoorn recently rejected applications for horse stables and dog kennels, relatively hard uses of the land which require low water levels. In addition, both use types are likely to greatly increase recreation pressures on the *Veld*. These decisions by the municipality support the goals and desires of the *Landschap Overijssel* for the *Wierdense Veld*. The municipality consider themselves fully sympathetic to the needs of the *Wierdense Veld* within the buffer zone.

5.6 Western case study narrative: Scores and summary

The implementer *Landschap Overijssel* is motivated towards implementing the policy; this organization's goals are compatible with implementation, and the *Landschap Overijssel* describes a strong desire to maintain the ecological qualities of this important landscape. He remarks that the *Landschap Overijssel* needs the support of the local community, but finds the community has mixed feelings about the area. In describing the process on the western side, the *Landschap Overijssel* states, "I have the idea that we in cooperation with the civil authorities… can succeed to agree on what happens on [the western] border". In this way the *Landschap Overijssel* feels positively about the chances of successful restoration of the *Veld* on the western side. The *Landschap Overijssel* describes a situation with adequate information, finding actors willing to share information, and no problems with information quality. The *Landschap Overijssel* is knowledgeable of other process actors and their qualifications, and well versed in the benefits and constraints of the policies used to protect the *Veld.* This actor remarks that having more information could be helpful to the process, and that procuring funding is a constant uncertainty for conservation managers. The municipality of Hellendoorn is not motivated toward implementing the policy. The municipality is not "for" or "against" nature, but working to balance the goals of the municipality with those of conservation policy. Their motivation in this stage of analysis is to protect the development goals of the municipality by minimizing the buffer zone size. The municipality also describes the level of information within the process as high: they are knowledgeable of actors and their qualifications, and explicitly understand the policies that apply to the area. They describe their role in information sharing involves providing local knowledge, while the Waterboard brings technical information to the process and the *Landschap Overijssel* provides information about the habitat. They describe no problems with information quality within the process, but detail some information gathering that took place after the buffer-zone decision was made. This will be described fully below. The balance of power from the perspective of the implementer is +0.11[3], according to this analysis there is no power dominance of one actor over another. The implementer has sources of power as a project initiator and stakeholder, and additionally is responsible for monitoring the site and reporting results. They also contribute financially as the primary landowner and site manager. The target has sources of power as a stakeholder. Both actors report working together in the past and anticipating working together in the future.

[3] The balance of power is the difference in the power scores between the implementer and target. In this application of the theory, a difference of 0.15 points or more indicates power imbalanced between actors (i.e., that one actor holds the balance of power over the other actor) while a difference of 0.0 to 0.14 points between actors indicates balanced power (i.e., that neither actor definitively holds the balance of power). Scoring is explicitly described in the previous chapter, in the section *Interview Scoring*.

Table 5.3 Scores for the likelihood to implement at all, western case

	Motivation	Information	Power
Implementer: *Landschap Overijssel*	+0.75	0.67	0.78
Target: Municipality of Hellendoorn	-0.25	0.88	0.67

Given the scores above, for the likelihood of application contextual interaction theory produces the hypothesis:

> If application of the instrument would contribute positively to the objectives of one actor, while the other actor is negative, and the information of the positive actor is sufficient, then the character of the interaction process will be dependent on the balance of power between actors. A relatively equal balance of power will lead to opposition. Opposition can take the forms of negotiation or conflict. (Bressers, 2004: 32)

The theory predicts that opposition will occur, taking the form of negotiation or conflict. In actuality opposition between actor objectives led to opposition about the buffer zone size, in which neither actor would change position. After a period of impasse, the process was revived by the *Provincie Overijssel*. The province felt motivated to solve this conflict, acting as an arbitrator, and utilizing the power it holds to force a compromise between the core actors. As a result a decision was made by the province on buffer zone size, which chose to take the average of both actors' wishes. Actor characteristics led to a situation of opposition and conflict, after a period of stalemate predicted by the theory another actor stepped in, changing the setting and making an authoritative decision.

In the second phase (adequacy of implementation) the implementer *Landschap Overijssel* remains motivated to implement the policy, even increasing its motivation score. Through the designation of the buffer zone they gain community support for the recreation use these areas provide. The implementer's information score remains high in this second phase of analysis. The municipality of Hellendoorn, the target, is now motivated to implement the policy. As they describe it, the buffer zone decision was the 'most painful' while the development of the buffer zone is more cooperative. After the buffer zone decision is made, they are content to promote the recreational benefits of this landscape. They find the area is now "a magnet for tourism". At the same time, the municipality makes a distinction between emotional thinking and rational thinking about this project. One interviewee states: "this is an achievable goal, not an obsession" and also remarks they are not just restoring wetlands for wetlands sake, but to achieve a bigger goal. The target has sufficient information, showing an increase between stages of analysis. The Municipality of Hellendoorn describes hydrological testing conducted to provide more information about the benefits of a buffer zone of this size. He remarks that there were some fears that these tests would show a much larger buffer zone was needed, but this was not the case. All actors felt satisfied that the 350 meter buffer zone would be adequate. The balance of power between the two actors remains the same in the second phase of analysis.

Table 5.4 Scores for the adequacy of implementation, western case

	Motivation	Information	Power
Implementer: *Landschap Overijssel*	+0.88	0.67	0.78
Target: Municipality of Hellendoorn	+0.75	1.00	0.67

For this scenario of adequacy of application, contextual interaction theory produces the hypothesis:

> If adequate application of the instrument would contribute positively to the objectives of one actor and also positively to the other actor, and these actors have sufficient information, then active constructive cooperation will evolve. (Bressers, 2004: 33)

In reality, active constructive cooperation describes the interactions that have taken place and which continue during the management of the buffer zone. After the decision on buffer zone size, the municipality has been content with achieving a secondary goal: embracing the value this nature area brings to its citizens and its reputation as a municipality. The municipality positively describes the recreational benefits of the *Veld* and then later the buffer zone for local residents. Clearly they work to balance several goals for the municipality including development and recreation. Conservation is not necessarily an explicit municipal goal, but they respect the designation of the *Veld* as a nature area and have come to value its tangible contribution to their residents.

5.7 Western case study narrative: Synopsis

In terms of input-output-outcome, this process reaches the range of steps four through seven. Actors from the *Landschap Overijssel* made a plan (input) to create a buffer zone, and communicated with the Municipality of Hellendoorn about this plan. Though actors did not formally agree to discuss options, a tacit agreement to do this was created when the municipality responded to the *Landschap*'s offer with a counter-offer. The target did not agree to the original plan, however, and in turn its counter-offer was not accepted. A stalemate occurred, and eventually a higher power, the *Provincie Overijssel*, entered the process, and made a decision about the buffer zone size (likelihood to implement at all; output). Creation of the buffer zone was planned and actors agreed on action to help restore the ecology of the *Veld* (adequacy of implementation; immediate outcome). Creation of the buffer zone was implemented, resulting in changes in the physical environment (adequacy of implementation; intermediate outcome). The interactive nature of the ongoing management of the buffer zone represents an evaluation and feedback process. Management of the buffer zone is an ongoing process that will continue as long as land is bought and sold within the area. The ongoing nature of this process, however, does not preclude ecological evaluation by the *Landschap Overijssel*. While *Veld* managers continue to monitor the site, more time is required before a judgment can be made on whether this support area allows the peat habitats to function in a truly sustainable way. Currently the western case is moving along the fourth through seventh stages of this process. Over time, the Landschap will

continue to evaluate the habitat to determine long-term sustainability (adequacy of implementation; ultimate outcome). Now actors are working to maintain the buffer zone in a way that supports the water levels in the *Veld*, and subsequently evaluate the hydrology of the *Veld* to understand impacts over time. An ultimate outcome of "sustainable restoration" is not necessarily automatic as a result of these steps, but actors continue to work together in a reflexive process to protect the landscape of the *Wierdense Veld.* It is quite possible that this restoration project cycles through these stages (four through seven) for decades as land changes hands, and land managers seek to understand how changing land use and buffer zone support affect the *Veld*'s habitat.

5.8 Eastern case study narrative: Actors

The interactions on the eastern border involve more actors and become more complicated. This process includes a series of meetings where stakeholders were brought together by the *Waterschap Regge en Dinkel* to create a comprehensive plan for the area. Though coordinated by the local waterboard, this working group is a result of the *Landschap Overijssel* demanding implementation of policy protecting the *Wierdense Veld.* During the course of these interactions, two measures are eventually recommended by the group. After collecting more data, actors decide to move forward with just one measure, which requires agreement from both a local drinking water company and area farmers. As contextual interaction theory is a two actor model, we break the analysis of the eastern case into two interactions incorporating two actors per interaction. This solution will be discussed more thoroughly at the end of this chapter. In both interactions the *Landschap Overijssel* is the implementer; in the first interaction Vitens plays the role of target, while in the second interaction local farmers play the role of target.

The core process actors are the *Landschap Overijssel*, Vitens, and local farmers. The *Landschap Overijssel's* goals for the *Wierdense Veld* are consistent throughout the reserve: to alleviate landscape degradation by obtaining proper water levels. The company *Vitens* provides drinking water to local residents via the *Wierden* water plant and the *Hoge Hexel* pump station. These water plants require large volumes of water, exacerbating the *Veld's* low levels. The water company does not oppose higher water levels; instead their actions create low water levels in the region. In this case Vitens has the ability to change their demands on the system in a way that would benefit the nature area. Vitens tries to work in what they describe as a sustainable way, though their primary goal is to maintain profitable drinking water plants. In contrast, local farmers are concerned about increasing local water levels. Dairy farming is ubiquitous in the Province of Overijssel. Farmers prefer water levels best suited to agriculture, which are often lower than those required by peat areas.

Other actors included in the process are the *Waterschap Regge and Dinkel*, *De Landbouw Voorlichting*[4], *Gewestelijke Land- en Tuinbouw Organisatie*[5] now called *LTO Noord*[6], *Stichting Stimuland Overijssel*[7], and the Municipality of Wierden. In this case the *Waterschap Regge and Dinkel* works to facilitate a process that will produce a win-win situation, or that which incorporates the land use desires of all actors. This actor is not a supervisor of the process, but acts instead as a stabilizer, lending a compromise-seeking climate to the process. *De Landbouw Voorlichting* (hereafter referred to as *DLV*) began as a division of the Dutch government with ties to farming, but privatized in 1990. In 2000 they merged with a large Dutch engineering firm, Arcadis. *DLV* was hired by the Waterboard as an environmental consultancy group. In their own words, *DLV* "speaks with each actor and makes the impacts of the new situation clear for the actors". They do not represent the Waterboard in the process but they are paid by the Waterboard. This creates some dependence or at least association with the Waterboard. In this case, however, as neither the Waterboard nor *DLV* have a stake in one particular solution this relationship does not influence the analysis. In the project report, *DLV* is described as having two roles: process leader and knowledge supplier (DLV, 2002). *DLV* describes their role as educators. They find that giving all actors the same information allows them to "make a good discussion about water management". Like the Waterboard, *DLV* is an organizer and stabilizer of the process, indirectly influencing the process climate towards finding a solution. *Gewestelijke Land- en Tuinbouw Organisatie* (*GLTO*), now called *LTO Noord*, supports the interests of farmers and horticulturists in nine Dutch provinces. This group works as advocates of farmers and horticulturalists, serving as representatives of farming interests. *Stichting Stimuland Overijssel*[8] was set up in 1997 by the *Provincie Overijssel* and the *Gewestelijke Land- en Tuinbouw Organisatie*. *Stimuland* supports economic development for local farmers, for example informing them about agro-tourism or regional product branding. They often serve a role similar to that of the *DLV*, calculating impacts of water management for farmers. Occasionally *Stimuland* and the *DLV* work together on projects, but in this case only *DLV* was hired by the Waterboard to manage this process, therefore *Stimuland* remained only as an observer of the process. The Municipality of Wierden was asked to participate in the process because changes in drinking water plant extraction would take place within this municipality.

[4] *De Landbouw Voorlichting* translates as "Agricultural Public Relations".
[5] *Gewestelijke Land- en Tuinbouw Organisatie* translates as "Regional Agriculture and Horticulture Organization".
[6] *LTO Noord* translates as "Agriculture and Horticulture Organization North".
[7] *Stichting Stimuland Overijssel* translates as "Stimuland Foundation *Overijssel*".
[8] Stimuland Foundation *Overijssel*.

5.9 Eastern case study narrative: History

On the eastern border, the land use is currently too dense to allow water level transition through a buffer zone. Seeking an alternate solution, in 2000 the Waterboard *Regge and Dinkel* hired the environmental consultancy group *DLV* to host meetings to discuss water issues within the area of the *Wierdense Veld*. These initial meetings took place in 2000-2001 and included 22 farmers, Vitens (then called *Waterleiding Maatschappij Overijssel*[9]), *Stichting Stimuland Overijssel, Gewestelijke Land- en Tuinbouw Organisatie*, Waterboard *Regge and Dinkel*, the local municipalities of Wierden and Nijverdal, the *Landschap Overijssel* and the *Provincie Overijssel*. The participants worked towards developing a *Gewenste Grond Oppervlaktewater Regime* or "Desired Regime for Ground and Surface Water" incorporating the water needs of as many actors as possible (DLV, 2002). According to the report from these meetings, the actors found that this process should involve:

- making an inventory of actor expectations;
- finding win-win situations, and
- formulating solutions. (DLV, 2002: 8)

More specifically, these meetings had the following objectives:

- actors work together to create a "Desired Regime for Ground and Surface Water" garnering complete support from all actors;
- implementing the pilot project "Integral Water Management *Hooge Laarsleiding*" with the objective of developing a methodology for the establishment of the "Desired Regime for Ground and Surface Water" both for testing and realization;
- encouraging growth of awareness and support to accompany integral area-specific water management;
- growth of insight into the wishes and interests of the different actors;
- providing insight into the development of research results, reports and theories and exploring possibilities to realize results in the area;
- complete growth of knowledge and insight about arable land, businesses and area levels with the objective of seeking a win-win situation for area water management;
- development of ideas regarding efficient and lasting water use; and
- solution of the dehydration problems (DLV, 2002: 9).

Each actor brought information to the meetings about area hydrology and shared information about their desired water levels with the group. These groups performed calculations about hydrology in the area, looked at water modeling data, and discussed technical options to solve area water problems. With this information the group produced a water management plan, including several proposed measures to target the lack of water in the *Wierdense Veld*. These potential measures were:

[9] *Waterleiding Maatschappij Overijssel* (Water Management Corporation *Overijssel*).

1. *Water pumping:* pumping water to the *Wierdense Veld* from a lower location;
2. *Water extraction reduction*: decreasing the amount of water used by two drinking water pumping stations;
3. *Dwarsdijk broadening*: making the channel that runs along the eastern border of the reserve wider and more shallow, therefore creating less of a sink;
4. *Water conservation*: water conservation via holding more water in higher regions in the area, and
5. *Water draining:* to have farmers drain specific high water-level areas.

In the winter of 2002 the Waterboard presented a ground water report modeling the effects of each potential change. After discussions the group agreed to move ahead with the second and third proposed measures, as modeling the options of water pumping, conservation, and draining showed these options to have limited effects. A decision was made by the stakeholder group that only teams with interests in the measures chosen for further consideration would continue to meet. It was also decided that more data should be collected before taking further action.

The third measure listed above requires making the *dwarsdijk* wider and shallower. For initial modeling, the Waterboard used standard discharge amounts of water, yet had reason to believe that these standard amounts were an overestimate. As amount of land needed for widening would be critical for future negotiations, the Waterboard decided during the winter of 2002 meeting to measure actual discharge amounts on the *dwarsdijk* to understand exactly how much water passes through this channel. By the winter of 2004, further investigations showed that this option would not fulfill its promise as a potential solution. Using actual data instead of standard discharge data revealed that widening the *dwarsdijk* would not improve the situation as hoped, especially compared to the benefits of the water extraction reduction measure. The decision to stop pursuing measure three was described by one actor, who stated “everyone knows that changing the pumping will be the best [option]”. As of early 2005 the *dwarsdijk* option has been deferred at least until the impacts of measure two are determined, if not indefinitely.

Implementing measure two will affect core actors in key ways. This measure requires the cooperation of the drinking water company Vitens in greatly reducing its extraction of water in the area. The *Wierden* water plant and the *Hoge Hexel* pump station currently extract 6 million and 2.5 million liters of water per year, respectively. Reduction in water extraction places resource limitations on the drinking water company; it will provide more water for the *Wierdense Veld* but in turn will mean more water for the farmers whose land exists literally across the street from the eastern *Veld* border. Agreement with this decision requires both Vitens and local farmers to submit to measures that could potentially damage their businesses.

5.10 Eastern case study narrative: Scores and summary, the Vitens interaction

The implementer, *Landschap Overijssel*, is motivated to implement the policy. As with the case above, their motivation for the whole area is to fully protect the values

of this designated habitat. The *Landschap Overijssel* describes sufficient information levels in the eastern process. This actor is knowledgeable of other actors involved and their qualifications, as well as of the policy protecting the area. The implementer states that unknown data were collected by actors throughout the process, yielding no problems with a lack of information. Vitens, the target, is motivated against implementing the policy but is on the borderline of motivation against, and neutrality in motivation. This will be discussed further in the section below. While Vitens describes a desire to maintain good relations in the neighborhood, their primary goal is providing drinking water. They do not want to make changes that prevent them from exploiting their drinking water extraction licenses. Vitens also finds the *Wierdense Veld* is not a significant reserve in comparison to larger nature areas nearby. Vitens reports sufficient information throughout the process, and describes the different kinds of information shared by the various actors within the process. In this analysis, the *Landschap Overijssel* is clearly dominant in terms of power; they gain power as the agency who initiates the process, as a stakeholder, and as managers and monitors of the land. Vitens is a stakeholder, but fulfills few other roles in terms of the nature reserve. Distinctions in realms of power as they apply to this case will be discussed further in the *Lessons learned* section.

Table 5.5 Scores for likelihood to implement at all, Vitens interaction

	Motivation	Information	Power
Implementer: *Landschap Overijssel*	+0.87	0.73	1.0
Target: Vitens	-0.23	0.90	0.0

Based on these ratings, the contextual interaction theory hypothesis for likelihood of application is:

> If application of the instrument would contribute positively to the objectives of one actor, while the other actor is negative, and the information of the positive actor is sufficient, then the character of the interaction process will be dependent on the balance of power between actors. Dominance of the positive actor will lead to (forced) cooperation. (Bressers, 2004: 32)

In this case, no physical changes have been made, so it is difficult to determine whether forced cooperation will take place. To date, these meetings do not have the tone of forced cooperation. There are two primary reasons for this: it may be more accurate to describe Vitens motivation as neutral instead of negative, and Vitens agreed to be open to certain reductions before entering the process.

As stated above, Vitens score is within the negative zone, but very nearly neutral[10]. In the prescribed delineation used for this analysis, a motivation score of (-0.20 to +0.20) is considered neutral, while a score of (-0.21) and below is considered motivation against and a score of (+0.21) and above is considered

[10] It may be useful to utilize intermediate values for actor characteristics. In the comparative analysis of chapter 10 we use a formula that enables more gradation in actor scores.

motivation in favor of. This distinction was chosen before analyzing any cases, to ensure that it would not be influenced by existing motivation scores. Vitens has goals for water extraction, but must also maintain good relations in the neighborhood. If Vitens' motivation were considered neutral, the prediction given by contextual interaction theory would be:

> If application of the instrument would contribute positively to the objectives of one actor, while the other actor is also positive or neutral, and the information of the positive actor(s) is sufficient to apply the instrument, than the interaction process will have the character of cooperation. (Bressers, 2004: 32)

Cooperation has been the tone of these interactions to date. Vitens mentions several times that scale and lack of recreation opportunities makes this project less appealing as an investment in sustainability. Though they are not particularly supportive of the *Veld*, Vitens finds managing the greater area is very important for groundwater quality. This involves changing the extraction pattern in the area, to the benefit of the *Wierdense Veld*. In this way Vitens, while not interested in restoring the *Veld* per se, is supportive of some measures that have the effect of bringing water to the *Veld*. Vitens' cooperation is likely influenced by agreements made before beginning the process. This interaction involved predetermined, mutually agreed upon boundaries; namely, Vitens set a maximum extraction reduction they would be willing to make before entering the process. In this way they were open minded about changing extraction patterns within their own set boundaries. In other words, Vitens has presented the group with a wide margin within which they are willing to change. Fifteen years ago Vitens created a groundwater study regarding the area, making extensive calculations about the water system including options for revitalizing the *Veld*. At this point Vitens became aware of the impact their extraction policy has on the *Veld*. Therefore, any information presented during the current process about the impact of water extraction on the *Veld* is not new information to Vitens. In this case the theory prediction does not match with the interactions to date, though this may be due to the borderline neutral motivation on the part of the target, and the fact that because of previously agreed upon limitations in extraction, Vitens does not describe the current situation as 'forced' cooperation.

One interesting aspect of this remedy is that Vitens does not have a direct stake in finding a solution to this problem. Indirectly, they are dependent on the area from which they extract water in two ways. First, they prefer to maintain good relations with people nearby, as their water extraction is determined by contracts requiring local approval. Second, they are closely connected to the environment: Vitens influences the environment, and the environment in turn influences water quality. Vitens tries to work in a sustainable way, though their primary goal is to maintain profitable drinking water plants.

5.11 Eastern case study narrative: Scores and summary, the local farmer interaction

In this interaction, *Landschap Overijssel* is motivated toward the policy implementation. As with the previous cases this land management organization wants to protect the habitat and ecological quality of the landscape within the *Veld.* The *Landschap Overijssel* describes no problems with sharing information during interactions with farmers. Instead, the *Landschap Overijssel* relates that a great deal of new information was shared during the process about how higher water levels may not be as bad for agriculture as previously believed. The farmers are neutral in respect to motivation for or against the implementation. The farmer describes a situation in which the current extraction from Vitens helps keep his land dry, but can produce a situation where the land is too dry for his neighbors who farm across the street. While farmers might not necessarily be motivated toward a project that would increase water on their land, in this case the meetings included information provided by *DLV* and the waterboard which indicated that an increase in water levels would not necessarily be a bad thing. The *Landschap Overijssel* interviewee remarks, “agriculture is finally realizing that it is good for them that the water level is higher instead of lower”. According to the target, “farmers are frightened by the *Landschap Overijssel* because they want to make the *Veld* very wet, it is better for the plants and birds, but we need it dry because otherwise we cannot work on the ground”. This indicates why their motivation is neutral—despite information from these agencies about water levels not being a threat, the farmers apparently still feel some trepidation about the proposed changes. The farmer reports no problems with information sharing during the process, and is knowledgeable of actors and their qualifications. The balance of power from the perspective of the implementer is +0.03, meaning that in this analysis neither actor holds the balance of power. The *Landschap Overijssel* is the project initiator, and a user of the area, and hold responsibility for the area as land manager, monitor, and reporter of the results. Farmers are a stakeholder and a user of the area but hold no legal responsibility for the *Veld*.

Table 5.6 Scores for likelihood to implement at all, famer interaction

	Motivation	Information	Power
Implementer: *Landschap Overijssel*	+0.60	0.67	0.78
Target: farmers	+0.14	0.89	0.75

For likelihood of application contextual interaction theory provides this hypothesis:

> If application of the instrument would contribute positively to the objectives of one actor, while the other actor is also positive or neutral, and the information of the positive actor(s) is sufficient to apply the instrument, than the interaction process will have the character of cooperation.

The theory predicts cooperation, and in fact cooperation has occurred to date. The actions of local farmers are an interesting aspect of this sub-case. It seems illogical that farmers agree to measures which will only increase the amount of water on their

land. However, the *Wierdense Veld* is not alone in suffering landscape degradation; local farmers experience damage from both drought and flood conditions. This may partially explain their willingness to continue to work with local actors to increase water levels. When modeling each potential measure in meetings, the group of process actors as a whole looked at both wet and dry damage, seeking to lower total damage. Process oriented actors provided technical information proving that damage from drought is much greater than that from flooding. This measure seeks to lower *total damage*, which means a decrease in drought damage, but an increase in flood damage to farmers. The *Landschap Overijssel* provided data regarding farming with higher water levels. According to the *Landschap Overijssel*, this data indicates "that the agricultural production will increase when the water level goes up" which is in many ways "a cultural shock" to the farmers. The *Landschap Overijssel* found these meetings were especially useful as a way of informing farmers about this new data. *DLV* gave the farmers information about how their own actions influence water levels. For example, they found the topsoil layer was being compressed because farmers begin working with heavy equipment in their fields early in the spring when the topsoil was saturated with water. In response *DLV* informed them that slightly changing their own behavior can benefit their own land. As *DLV* describes it "you must also look at your own management, not only what the waterboard does in this area". According to the waterboard, conversations with actors revealed a change in the understanding of water levels. Groundwater levels, as an unseen component, were not well understood in the past. Formerly, above-ground levels were the primary sources of water information. In an effort to broaden the conception of water levels, the waterboard now posts area groundwater level readings on the internet. In addition, channel water level decisions are based not on the visual "level" but on the ground water level. The farmers agreed to the measure, and will wait to see its effects. The level of trust they exhibit toward the process may be due to the inclusion of actors historically associated with representing farmer interests, namely the Waterboard and *DLV*.

It is notable that actors such as the *Landschap Overijssel* and *DLV* describe a learning process taking place, particularly stating that the farmers experienced learning. One wonders if a much earlier assessment of the project might have indicated farmers motivated against implementation and a lower information score for farmers. As this case study involves a one-time assessment, the data collection was unable to capture changes in the variables during the process.

5.12 Eastern case study narrative: Synopsis

In terms of input-output-outcome, this process reaches the third step. After being contacted by the Waterboard and DLV, actors within the process make a plan (input) to discuss options as a group, seeking a 'win-win' situation for area water management. After the discussion of everyone's desires for the area, they evaluate several potential options for implementation, eventually making a decision to move forward with two options: reducing water extraction and widening the dwarsdijk (likelihood to implement at all; output). In this reflexive process, actors decide to take the time to collect more data before continuing with implementation. After

further study, experts deem the dwarsdijk option unacceptable, and agree to move forward with one measure: the reduction of water extraction by Vitens (likelihood to implement at all; output). This brings us to stage three, when actors agree on action to restore the area (adequacy of implementation; immediate outcome). At the conclusion of data collection for this research in 2005, no changes had been made in extraction by Vitens. As the process currently stands the eastern case completes the third stage; this evaluation can continue when physical changes are made, or of course if any decision is made to alter the measure. The process to date has been relatively smooth, especially considering the variety of actors involved. Now, all actors are awaiting the first changes to be made by Vitens.

5.13 Discussion

In this case assessment, the impact of powerful external actors, the complex motivations of actors making changes, and the influence of learning on the process rise to the forefront as topics for discussion. Each theme is described in detail below.

5.13.1 External sources of power

In the western case the province plays a part by entering the interaction between the *Landschap Overijssel* and the municipality to resolve their disputes about the size of the buffer zone. In essence the province uses some power to encourage the actors to agree, or force a compromise. In this analysis, the power was balanced between the implementer and target (*Landschap Overijssel* and municipality of Hellendoorn). The municipality of Hellendoorn representative states “the province makes the rules …provincial decision is influenced by the waterboard and *Landschap Overijssel*”. This actor acknowledges the power of the province, but also presents the perception that both the waterboard and the *Landschap Overijssel* have the ability to influence the province. Taken in the context of implementing policy to protect a wetland this does not seem unreasonable. The *Wierdense Veld* is registered both nationally as a part of the National Ecological Network and at the European Union level with the Habitat and Birds Directives. The province will be ultimately responsible with higher authorities for balancing development and nature protection within the province as a whole. It is not surprising that there is a perceived loyalty between the *Landschap Overijssel* and the province. Individuals may take part in business or development, but rarely take part in nature development as this is not generally considered a business enterprise, though of course elements related to nature like tourism and recreation can be. The protection of nature is not left to market forces but instead taken on as a goal of government or non profit agencies without considering its profit potential. Therefore while the municipality likely encounters many actors from various agencies and organizations as well as individuals promoting development, business, or farming, they perhaps learn about nature from

only a handful of sources, in the Dutch context these would be *Landschap Overijssel, Vereniging Natuurmonumenten,*[11] *Staatsbosbeheer,*[12] local waterboards, and the provincial authorities. In this case the province used its influence to have actors agree to an appropriate buffer zone size. It is also important in this case that the province represents a powerful outside authority with the potential to force a solution to any problem on which they fail to agree.

Though the municipality perceives loyalty between the *Landschap Overijssel* and the province, when making their decision the province did not choose the buffer zone size promoted by the *Landschap Overijssel.* Instead they appear to have taken a measured approach, attempting to incorporate the wishes of both actors simultaneously. In this way, having a powerful external actor enter the process ended the disagreement, but also meant that each actor—implementer and target—accept a modified version of their desired buffer zone size. This provides an added incentive to work together and continue to communicate with other actors in the process.

5.13.2 Beneficial changes implemented for other reasons

In the eastern case, Vitens interaction, the target appears to consent to an action that limits their rights to water extraction in the area. Is this beneficence without any logical explanation or reasoning, or do they do this because of the predetermined limits and their desire to maintain a good reputation? According to Vitens, their decision to change extraction in the area is not the result of a request or action from other actors-- their reasoning for the change involves water quality and protection issues. When changing pumping regimes they work "to cooperate with as many parties as possible"; describing benefits to the *Veld* as "a nice side effect". It is important to note that before discussions began, explicit constraints regarding the maximum reduction amount were made by Vitens. These constraints were a prerequisite for their involvement in the project. However, the Vitens hinted throughout the interview that one or more actors are trying to change this predetermined extraction limitation. The interviewee states: "one partner is trying to break out of the constraints…changing the maximum amount Vitens has agreed to consider". Vitens describes this as a troubling development that may threaten the entire process. The target states: "the measures …will be easy to realize, except [when] trying to change the constraints about extraction". It is very clear that Vitens is satisfied to work with actors to make changes in their extraction pattern within the agreed upon limitations. Vitens makes it equally clear that moving beyond that predetermined and discussed boundary would threaten their cooperation within the process.

[11] *Vereniging Natuurmonumenten* is an "independent association which secures nature, the landscape, and cultural history for the present and for future generations through purchasing, managing and protecting sites" (description accessed from the *Natuurmonumenten* website at www.natuurmonumenten.nl/natmm-internet/natuurmonumenten/natuurmonumenten.htm on 28 April 2008, then translated from Dutch).

[12] *Staatsbosbeheer* is the Dutch State Forestry Service.

5.13.3 Influence of trusted information

In the eastern case farmer interaction, many actors describe a situation where conflict may have existed in the past, but describe a learning process taking place over the course of the meetings. In the course of these meetings, several actors remark that new information provided in the process may give farmers confidence about the effects of increasing water levels. Yet farmers may not perceive benefit from raised water levels, despite education to the contrary. As described by *DLV*, "the farmers said to us, 'we will see what the impacts are exactly, what they will be in the future. It is not a good option, but we will see what will happen'". The *Landschap Overijssel* representative remarks, "the importance of the …project is that it could provide some evidence to show this [higher water] would be alright". As mentioned in the analysis above, the acceptance of this information is very likely due to the fact that it comes from trusted actors such as *DLV* and the waterboard. Waterboards historically consisted primarily of landowners, meaning that they strongly represented the values and goals of agricultural interests in the Netherlands. Though waterboards arguably have a much broader base in current times, they are in general trusted by farmers to provide honest information and data about area hydrology. In addition, *DLV* has a strong history of established trust with agricultural interests. This case is a marked contrast to the following case, *De Alde Feanen*, where actors do not believe or trust information presented by a local waterboard about the impact of use on a wetland. This shows that not all actors trust a given waterboard as a matter of course throughout the Netherlands. In this instance, local farmers believe the information about flooding and drought damage provided to date. When analyzing the eastern sub-case it is imperative to remember that when these data were collected, no changes had yet taken place. When changes loom more closely in the future or begin, perhaps many groups will realign their perceptions, motivations, and objectives in this process. That may test the limits of the level of trust among the farmers, the waterboard, and *DLV*.

5.14 Barriers to implementation

In each of these cases, the predictions of the contextual interaction theory present no barriers to implementation. In the western sub-case, in the first phase opposition, yielding negotiation or conflict eventually gave way to a second phase of cooperation. In the eastern sub-case, Vitens interaction, a negative motivation of Vitens yields a prediction of forced cooperation, though we argue that this interaction does not have the tone of being forced at present. This may be due to the borderline-neutral nature of Vitens' motivation or the fact that Vitens is working within their pre-set boundaries for extraction reduction. In a sense they are only being 'forced' to reduce within a limit they set themselves. However, it seems very likely that if actors attempt to move outside these pre-set boundaries, it would influence the tone of meetings. If actors were to attempt to change these boundaries, the relative power of the different groups would likely be forced into some kind of reconciliation. The long term results of such a move are of course outside the scope of this analysis. The contextual interaction theory cannot predict the more distant

future, it can only indicate how actors might interact given their characteristics at a given point in time. In interviews it is clear that Vitens feels strongly about actors remaining within the limits set before this process began. Changing these limits would produce a different interaction that would necessitate another analysis. Also understanding how power within one interaction might be critical to an actor's power within another interaction would be of utmost importance in such a case. The dynamic interaction of characteristics throughout past and future processes has been explored to a degree by Arentsen and Bressers (1992). The constraints of the two-actor model as they relate to measuring relative power in this case are described more thoroughly in the *Lessons learned* section. In the eastern sub-case, famer interaction, there are also currently no barriers to implementation. Cooperation is predicted in this case, and though the farmers are taking a 'wait and see' attitude, because of the high level of trust they have for actors within the process they seem willing to tolerate changes in water extraction at this time.

5.15 Lessons learned

What might the *Wierdense Veld* offer in terms of information applicable to wetland restoration projects in general? The western sub-case is an extraordinary example of actors working together to make the buffer zone a success. Though initially the municipality may not have chosen to forgo development rights within this area, when forced to accept a buffer zone, they fully embrace the positive benefits of this area. It is not difficult to imagine actors bitterly continuing their battle throughout every stage of the development of the buffer zone, and it is refreshing to see these actors working together. Though as mentioned above, having a powerful outside actor enter one's field of interest may be incentive to work together with other actors in the future. It is also notable that the municipality embraces the benefits of the buffer zone in a nearly clinical fashion—they remain staunch supporters of the goals of the municipality and do not become maniacs for nature, but simply welcome the challenge of working to create the buffer zone.

The eastern sub-case portrays a complex and complicated interaction where actors are challenged to create a win-win situation when various actors have very different needs for the area. The Vitens interaction exemplifies how actors can satisfy the goals of others while fulfilling their own diverse goals. In this situation, Vitens has entered the process with an open-minded willingness to change their extraction, stating they find it important to work sustainably and maintain good relations with their neighbors. However, they also make it clear that their willingness to cooperate exists within distinct boundaries that should be respected by other process actors. The farmer interaction depicts a scenario where the changes to be made by Vitens have the potential of influencing the land of farmers near the *Veld*. In the farmer interaction, it must also be remembered that the interviewee remarked that his neighbor across the street suffered problems from drought conditions. Clearly even among the local farmers there can be variation in perception of the changes to be made. Regardless, this case shows that actors with varying objectives can be open to change when working with trusted counterparts.

An important lesson from this case study is to build understanding about the two-actor interaction process of the contextual interaction theory. We approach this problem by breaking interactions into those distinctly between pairs of actors. This is possible, and seems to work in this case. Particularly this is applicable in the distinction between the eastern and western sub-cases, where different actors deal with different sets of problems in the context of different processes. But is this also a good solution when dealing with the interactions of the eastern sub-case? It is theoretically possible that the 'games' being played in one interaction could influence the 'games' played in other interactions. How might such an external force influence an interaction? For example, could the power balance between actors in one interaction be influenced *by* the interface of power of another interaction? Is it possible to understand how different process interactions influence each other? The two actor model as it is currently described does not explicitly illustrate how one might analyze such a case. However, at the same time it can certainly allow for such a situation. One can argue that *if* this were the case, actors would likely describe this throughout the interview process, in a way that would channel this information into the core variables of motivation, information, and power. It is likely for example, that if (using the above actors for illustration) the *Landschap Overijssel* entered a lengthy battle with farmers over the future of the *Wierdense Veld*, they would expend resources in such a battle, including time and money, but also possibly their clout in gaining support for their cause, therefore decreasing their ability to maintain power in interactions with Vitens. It could be the case that such a protracted battle would weaken their power in respect to Vitens, causing the entire interaction to evolve into a different situation. From a research standpoint, this is another incentive to continue to follow this case over time. Until changes are made in the physical environment on the eastern side of the *Veld* we cannot be sure that the interactions of actors will continue along this path.

5.16 Conclusions

In the west, this process has been successful to date, with actors cooperating to fulfill the goal of creating a nature support area that allows proper water levels to exist within the borders of the *Wierdense Veld*. Actors continue to communicate about the buffer zone, working together to make this area a success. As a result the *Landschap Overijssel* can work to maintain water within in the Veld without negatively effecting neighbors on its western side. At the same time, the municipality of Hellendoorn has gained a selling point to promote living in the town: close access to nature and pleasant views for people living nearby. In the east, actors continue to work together to create a situation that protects the *Veld* habitat while not damaging the multiple interests that exist nearby. The many actors have worked together for several years in a process to manage water throughout the area in a constructive and beneficial way, seeking win-win scenarios. The first interaction for analysis, involving the drinking water company Vitens, appears to be working in a cooperative manner. Due to evidence presented over the course of many meetings, Vitens has agreed that changing extraction patterns will positively benefit the Veld. As they agreed to a maximum that they would be asked to change

before meetings began, they are willing to work within these boundaries to satisfy the greater water management needs. Changing water extraction amounts will not only bring water to the Veld, but will also bring water to agricultural land nearby. This means the needs of these farmers must be taken into account in the planning of this project. In the second interaction for analysis, we examine how farmer characteristics might influence this process, finding that at present they are willing to tolerate changes in water extraction, though this is after learning a great deal about the damaging potential of drought conditions. As mentioned above, we may not fully understand every actor's objectives within the process until changes are actually made in the physical environment or when these changes loom more readily on the horizon.

Chapter 6
De Alde Feanen

"We see it as destroying the goose that lays the golden eggs"
--*Friesland* water authority representative

6.1 Introduction

De Alde Feanen[1], a 2500 hectare wetland in the center of the Province of *Friesland*, was the final area in the Netherlands under discussion to potentially gain national park status. This process entailed formation of a deliberative body, the *overlegorgaan*, to discuss and develop a management plan for the area. This governing group did not make policy but rather worked to create a plan within regulation boundaries. The group comprised 19 individuals, including an independent chairman and representatives from government, environmental organizations, recreation organizations, and a water management organization. Within this group, two organizations held opposing views about setting aside core park areas and limiting access to these areas by some recreational boaters. The nature organization *It Fryske Gea* supported access restrictions as a way to halt what they described as ecological degradation within *De Alde Feanen*. The primary group opposing these measures was the recreation organization *De Marrekrite* who maintained that the decrease in boating access prescribed by the measures would negatively affect recreation rights in the park. This analysis seeks to understand how actor characteristics influence policy implementation. The location of the province of *Friesland* is displayed in Figure 6.1. Figure 6.2 shows the area within *Friesland* known as *De Alde Feanen*. Figure 6.3 is another image of this parcel. The areas under discussion for being set aside to some types of boat traffic are the lines from Figures 2 and 3 indicated with small arrows.

Figure 6.1 The location of *De Alde Feanen* and the Province of *Friesland* within the Netherlands.

[1] *De Alde Feanen* translates from the Frisian language as “The Old Marshlands”.

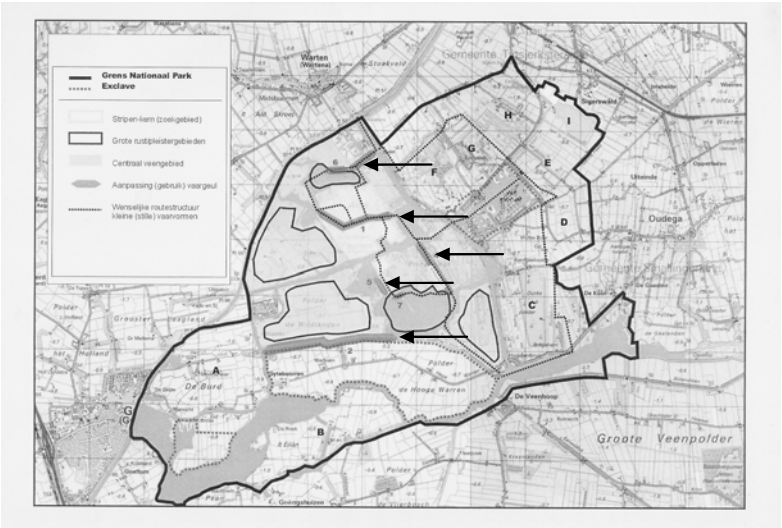


Figure 6.2 The area under discussion to become the national park De Alde Feanen. Contended areas include the areas indicated by the thick, medium tone lines on this image, indicated by small black arrows[2].

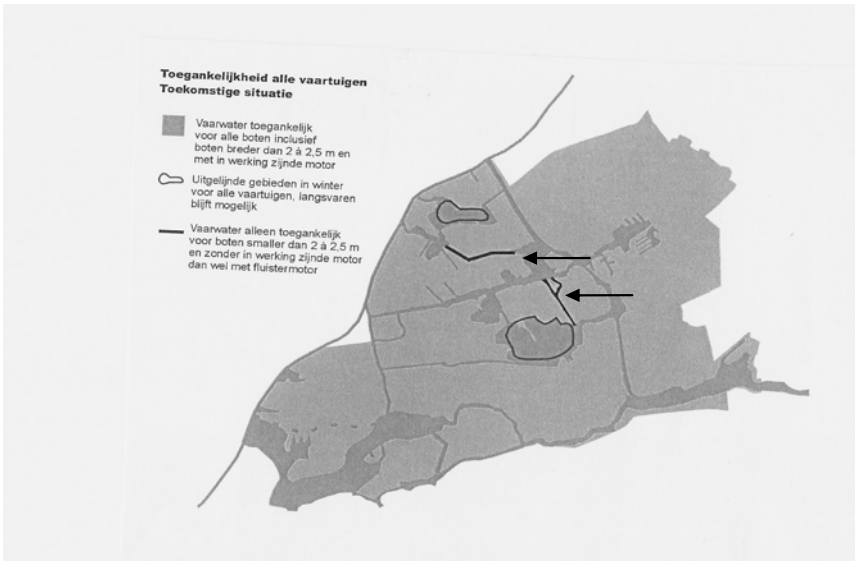


Figure 6.3 Another view of the parcel under discussion to become the national park *De Alde Feanen*. Contended areas include those shown by the black line on this image, indicated by small black arrows[3].

[2] Image: Hemmen, 2005.

6.2 Methodology specific to this case

The implementer is the actor promoting the given measures; the target is the actor necessary to bring the measures to fruition. In this case, *It Fryske Gea* is the policy implementer as they advance the implementation of strict protective guidelines. *De Marrekrite* plays the role of target; the agreement of all *overlegorgaan* members is required, but as the primary *overlegorgaan* member championing no change in access, *De Marrekrite's* agreement is critical to change the management guidelines in this way.

An introductory interview with the *overlegorgaan* secretary was conducted in 2004 to understand key issues and designate interview participants. There are two advisory committees within the *overlegorgaan* (the advisory group for management, design, and monitoring, and the advisory group for information, education, and recreation) as well as a research committee (research platform *Alde Feanen)*. The advisory group for management, design, and monitoring is a smaller group of important stakeholders within the *overlegorgaan* particularly critical to the decision to change access in the park. The *overlegorgaan* secretary describes members of this committee as "the actors with the ability to change things within the process". In addition to analyzing all available documentation, interviews were conducted in 2004 and 2005 with five members of the management, design, and monitoring advisory committee[4], the *overlegorgaan* secretary (2 interviews), and a representative from the *Friesland* Water Authority, for a total of eight interviews. These actors provided invaluable information about local history, plan development, and process interactions. Of the eight interviews for this case, six were recorded with a hand-held tape recorder. One interview was not recorded as it took place over the telephone, and there was one occurrence of tape recording difficulties during an in-person interview. Explicit notes were taken during each interview to ensure documentation. Each recorded interview was transcribed then analyzed to determine motivation, information, and power scores. All respondents appeared willing to engage in interviews and eager to share their experiences.

6.3 Policies

The unit of analysis for the application of contextual interaction theory is interaction at the project level (i.e., the physical wetland). Currently, multiple levels of policy are being applied to *De Alde Feanen* wetland area as shown in Table 6.1. Internationally, this wetland has been recognized since 1993 by the Ramsar Convention as a Wetland of International Importance (Ramsar, 2006). Policies at several levels (European, national, provincial, and local) apply to this area. In general it can be said that in the Netherlands, realization of European laws often

[3] Image: Hemmen, 2005.

[4] Representatives from the municipalities of Smallingerland and Boarnsterhim, the Province of Friesland, *De Marrekrite,* and *It Fryske Gea*.

happens via more specific laws and policies at lower levels of government. While all of these laws provide different benefits and constraints for the area, none specifically address the issue of this analysis, namely access within core park areas. The actors developing a management plan for the national park must make a plan that meets the approval of the national government. The exact details, however, could take many forms within a broader conceptualization of what is appropriate management for a national park.

Table 6.1 Policies applying to *De Alde Feanen*[5]

Policy	**Level**	**Year**
Ramsar wetland of international importance	International treaty	1971
Water framework directive (*Europese Kaderrichtlijn Water)*	European Union	2000
Bird directive, special protection zone *(De Vogelrichtlijn, Speciale Beschermingszone)*	European Union	1979
Habitat directive *(Habitatrichtlijn)*	European Union	1992
Nature policy plan, national ecological network (*Natuurbeleidsplan, Ecologische Hoofdstructuur*)	National	1990
Memorandum: Nature, Woods and Landscape 21st century *(Nota Natuur, Bos en Landschap 21e eeuw)*	National	2000
Flora and Fauna law *(Flora- en Faunawet)*	National	2002
Nature protection law (*Natuurbeschermingswet)*	National	1998, 2004
Greenspace structural frameworks I and II (*Structuurschema's Groene Ruimte I en II)*	National	1995
Water policy for the 21st century (*Waterbeleid voor de 21e eeuw)*	National	2000
Memorandum: Choose Recreation *(Nota Kiezen voor Recreatie)*	National	2002
Memorandum: Nature Management *(Nota Natuurbeheer)*	Province of *Friesland*	1998
Regional Plans (*Streekplannen)*	Province of *Friesland*	1994
Regional Plan effecting the Blue Zone (*Streekplan uitwerking De Blauwe Zone)*	Province of *Friesland*	1995
Design project Swette-De Burd *(Herinrichtingsprojecten Swette-De Burd)*	Province of *Friesland*	2000
Design project *De Alde Feanen (Herinrichtingsproject De Alde Feanen)*	Province of *Friesland*	2005
2nd water household plan *Friesland* (*Dreaun troch it wetter)*	Province of *Friesland*	2000
Friesland lakes project *(Friese Meren Project)*	Province of *Friesland*	2000
Policy memorandum: recreation and tourism *(Beleidsnota Recreatie en Toerisme)*	Province of *Friesland*	2002
Zoning plan for rural areas *(Bestemmingsplan Buitengebied)*	Municipality of Tytsjerksteradiel	1997
Zoning plan for rural areas *(Bestemmingsplan Buitengebied)*	Municipality of Boarnsterhim	1998
Zoning plan for rural areas *(Bestemmingsplan Buitengebied)*	Municipality of Smallingerland	2002

[5] From Hemmen (2005: 39-49)

6.4 Case study narrative: Actors

The *overlegorgaan* was comprised of 19 individuals: 18 people representing 17 groups (*It Fryske Gea* was the only group with two representatives in the *overlegorgaan*) and a secretary who also served as its independent chairman. Table 6.2 lists and describes all *overlegorgaan* members. "Objectives" of all actors, except for that of the secretary, are direct translations from Dutch, taken from a document for *overlegorgaan* members about the project (Hemmen, 2005: 22).

Table 6.2 Members of the *overlegorgaan* and their objectives

Organization	Objectives
Overlegorgaan secretary and independent chairman	Has the responsibility of coordinating all actors in a deliberative body that agrees on a management plan for the park.
Province of *Friesland*	Administration and coordination of the Province of *Friesland* and attending to the interests of the inhabitants
Smallingerland, Boarnsterhim and Tytsjerksteradiel	Administration and coordination of the municipality and attending to the interests of the inhabitants
Friesland Water Authority	Care of the water management, sea defense, and dikes in the province
Waterboard *Lauwerswalden*[6]	Care of the water management in an area including, among other things, *de Alde Feanen*
De Friese Millieu Federatie	Strengthening nature and landscape in the Province of *Friesland*
It Fryske Gea	Conservation, preservation, and development of nature and landscape in *Friesland*
De Vereniging voor Dorpsbelang van Earnewald, Oudega, en De Veenhoop	Attending to the interests of their members (the entire village, therefore not individual interests) as well as to the municipalities and other authorities
De Vereniging voor Dorpsbelang van Warten, Grou, and Wergea	Attending to the interests of their members (the entire village, therefore not individual interests) as well as to the municipalities and other authorities
De Verenigingen voor Vreemdelingen Verkeer	Attending to tourism interests, for tourists as well as for local recreants
De Noordelijk Land- en Tuinbouworganisatie	Standing up for a healthy agricultural sector with good future perspectives
De Noord Nederlandse Watersportbond	Representing the interests of water sport participants in the north of The Netherlands
Het recreatieschap De Marrekrite	Balanced and coordinated development of water sport, particularly caring for suitable infrastructure
De Vereniging van Friese Rondvaartondernemers	Representing the interests of Frisian boating manufacturers
De HISWA- vereniging en de RECRON	Representing the interests of recreation entrepreneurs and water sport participants
De Vereniging De Princehof en Eigenaren Recreatievestiging Friesland	Attending to the interests of the homeowners of vacation and recreation homes and houseboats
Ministerie van Landbouw, Natuur, en Voedselkwaliteit Regio Noord	In relation to *de Alde Feanen*, protection of an important ecosystem. The establishment of a National Park with accompanying objectives

[6] The Waterboard *Lauwerswalden* integrated into Friesland Water Authority on 31-12-2003.

Several questions in the interview instrument ask about the roles various actors might have played in the process. These answers are shown in Table 6.3. *It Fryske Gea* recognizes the roles of many actors in the process, seeing its own primary role, as well as distinguishing connections between the *overlegorgaan* and higher authorities. *De Marrekrite* acknowledges the participation of *It Fryske Gea*, but focuses more on the management structure of the national park that will be in place in the future. The municipalities remark often about the role of the Province within the process; *Smallingerland* refers more often to *It Fryske Gea* while *Boarnsterhim* connects the *overlegorgaan* more often with monitoring and future reporting. The Province focuses on its own role within the process, while also recognizing roles played by *It Fryske Gea*, the *overlegorgaan*, and the future organization structure of the national park. The Frisian Water Authority similarly sees the roles of the province, *It Fryske Gea*, the *overlegorgaan* and its own responsibilities over water quality within the park. This information strengthens the assumption that *It Fryske Gea* is the implementer of the project. It also displays how perceptions of things such as usage, stakeholders involved, and monitoring for the area differs among actors.

There are three primary subgroups within the structure of the *overlegorgaan*:

- The *Advisory Group for Management, Design, and Monitoring* included representatives from the municipalities of Smallingerland, Tytsjerksteradiel, and Boarnsterhim, the Province of *Friesland*, *De Marrekrite*, and *It Fryske Gea*. The *overlegorgaan* secretary oversees this committee.
- The *Advisory Group for Information, Education, and Recreation* included the IVN Consultancy *Friesland*, National Park *De Alde Feanen* Secretary, National Park *De Alde Feanen* Coordinator for Information and Education, National Park *De Alde Feanen* Administrator for Information and Education, *It Fryske Gea*[7], Province of *Friesland*, Municipalities of Smallingerland, Boarnsterhim, and Tytsjerksteradiel, *Dienst Landelijk Gebied*[8] (DLG), Village representatives of Earnewald, Oudega, De Veenhoop, Warten, Grou, and Wergea, *Algemene Nederlandse Wielrijders Bond*[9] (ANWB), *Watersportverbond Noord*[10], *Recreatieschap De Marrekrite*, TROEF, and *De Verenigingen voor Vreemdelingen Verkeer*[11].
- The Research Platform *Alde Feanen* scientifically monitors the national park and consists of the Van Hall Institute[12], *Wetterskip Fryslân*[13], *It Fryske Gea*, and *Dienst Landelijk Gebied*.

[7] Literally "The *Frisian* Landscape".
[8] The Agency for Rural Areas.
[9] The Dutch Automobile Association.
[10] The Northern Watersport Association.
[11] Dutch National Tourist Association.
[12] Institute for Higher Education in Food Technology, Environment and Agriculture.
[13] The Friesland Water Authority.

The implementer, *It Fryske Gea*, is a nonprofit nature protection organization in the province. The group manages more than fifty nature reserves with a total surface area of over 19,000 hectares and has more than 25,000 members (*It Fryske Gea*, 2006). In this case, *It Fryske Gea* advocates incorporating strict guidelines about accessibility into the framework of the national park management plan. They argued for a reduction in motorized boat traffic to core areas of the park, which they felt would help maintain the area's ecological integrity as befits a national park. The target, *De Marrekrite* (founded in 1957) promotes creation and maintenance of infrastructure facilities for recreational boaters (*De Marrekrite*, 2006). They advocate boating recreation in general and in this case argued for no limitations in the current level of access within the nature area *De Alde Feanen*.

Table 6.3 Actor roles according to interviews

	Implementer: *It Fryske Gea*	**Target: *De Marrekrite***	**Municipality of *Smallingerland***	**Municipality of *Boarnsterhim***	**Province of *Friesland***	**Frisian Water Authority**
Who is the initiator?	The Province with *It Fryske Gea*	Did not answer	The province	The province	I think the province	The Province and *It Fryske Gea*
Who are the users of the area?	Locals, tourists from around the country	Water recreation and nature	Nature tourism and recreation, local residents,	Tourists and recreational house owners, recreational boaters	Tourists and local inhabitants	Recreation, commercial boat traffic, agriculture, fishermen, reed cutters
Who are the stake-holders?	*overlegorgaan*, Province, municipalities, recreation sector, business related to recreation, farmers, water management, and the *Ministerie van Landbouw, Natuur en Voedselkwaliteit*	Nature, recreation, *It Fryske Gea*, and other groups with links to nature	Recreation, nature and municipalities	Nature, those representing nature, fishermen, reed cutters, neighboring inhabitants, organized water sport, area municipalities, province, tourists, motor boaters	*It Fryske Gea* municipalities inhabitants and tourists	Users, plus village committees, Frisian environmental society, members of the *overlegorgaan*
Who reports the results of this project?	*Overlegorgaan* reports to the *Ministerie van Landbouw, Natuur en Voedselkwaliteit*	National park will hire groups to report results	An objective group hired for this	Secretary of the *overlegorgaan*, the province and the national government	Secretary, representing the *overleg-orgaan*	The platform group reports to the *overleg-orgaan*

Who monitors the site after implementation?	*It Fryske Gea* monitors their own sites and the *overlegorgaan* has a monitoring program	National park will hire a group (platform group) to monitor	*It Fryske Gea* and an objective group (platform group) hired for this	"I do not know… but suppose it is the province and the *overlegorgaan*"	Secretary of the National Park, National Park employees	The platform group
Who does the public think is primarily responsible?	I think they agree it is *It Fryske Gea*	Not sure who the residents would say	*It Fryske Gea*	Difficult to say, it is a national park like any other	Local residents would not say *It Fryske Gea*	Formally it is the Province; in practice it is *It Fryske Gea*
Who sees that the policy requirements are fulfilled?	*It Fryske Gea*	Did not ask- not a policy worker	Did not ask- not a policy worker	Did not ask- not a policy worker	The Province	The water authority for water; the Province and *It Fryske Gea* for terrestrial values

6.5 Case study narrative: History

De Alde Feanen is a unique landscape featuring former peat extraction areas, in this case a result of 17th and 19th century "turf cutting" (*Ministerie van Landbouw, Natuur en Voedselkwaliteit*, 2006a). Peat extraction creates long thin bodies of water as well as large lakes formed by the collapse of land connecting these extraction channels. Collapse can occur from weakening over time or from pressure during flooding. *De Alde Feanen* is a *laagveenmoeras* habitat, literally a 'low peat swamp', but here meaning a fen complex. Fens are a "type of wetland growing on variably mineral-rich peats, typically with significant groundwater inflow, and dominated by sedges and mineral-loving species; characteristic of boreal and glaciated regions" (Tiner, 1998: 250). A fen is chemically basic and dependent on the water table. *De Alde Feanen* hosts more than 450 plant species, 100 bird species, and over 200,000 recreational users each year (*Ministerie van Landbouw, Natuur en Voedselkwaliteit*, 2006a). *It Fryske Gea* owns approximately 1500 hectares within the larger area to become a national park, and has managed its portion of the park since the 1930s. Around 1960, part of the area outside *It Fryske Gea* ownership was designated for recreation-based development in a municipal zoning plan (*bestemmingsplan)* for Tytsjerksteradiel. The plan made allowance for approximately 300 holiday houses but had gone unrealized for a long period. In approximately 1992 the municipality and other promoters became interested in developing this holiday house project. *It Fryske Gea* and other environmental interests protested the development, which was nevertheless eventually realized. After this, there was an agreement among actors,

particularly *It Fryske Gea* and the provincial government, that there should be a committee to discuss *De Alde Feanen* in a broader context, to help promote actors working together to determine the future of the area.

The committee formed in 1992, and in 1995 proposed submitting this area for consideration as a national park. In 1995 this committee became the *overlegorgaan*, and from 1995 to 2004 this group discussed, among other things, potential management plans for a park. This discussion centered on agreeing about the balance of nature and recreation. National parks are primarily created for nature and nature protection; each national park within the Netherlands has specific ecological qualities. *De Alde Feanen* supports a great deal of recreation activity in comparison to other national parks. There are two large bungalow parks with camping sites and docking harbors; recreational users may sail, canoe, kayak, walk, or bike within the park. This analysis focuses on a proposal to create core park areas that cannot be accessed by larger boats. These areas would remain accessible by canoe or kayak, but protected from the more intense use of larger watercraft with underwater motors. Differences in how actors understand the primary goals of a national park are the crux of this interaction.

After a decade of discussion about the area, *It Fryske Gea* remained unable to convince other actors of the necessity of reducing boating access. The *overlegorgaan* confirmed park borders on 26 April 2006, with the condition of implementing a monitoring plan to better understand how this inaction will affect core park areas.

6.6 Case study narrative: Score and summary

The implementer is positively motivated toward these measures (limiting access to some categories of boats) while the target holds strong motivation against this proposal. Both display information levels adequate for implementation, though comparatively the target's information level is moderate while the implementer's is high. Target and implementer have comparable power scores as shown in Table 6.4. According to this analysis neither target nor implementer decisively holds the balance of power.

Table 6.4 Scores for likelihood to implement at all

	Motivation	Information	Power
Implementer: *It Fryske Gea*	+0.83	1.0	0.63
Target: *De Marrekrite*	-0.62	0.56	0.67

Given these scores, the contextual interaction theory's hypothesis states:

> if application of the instrument would contribute positively to the objectives of one actor, while the other actor is negative, and the information of the positive actor is sufficient, then the character of the interaction process will be dependent on the balance of power between actors. A relatively equal balance of power will lead to opposition. Opposition can take the forms of negotiation and conflict. (Bressers, 2004: 32)

This case agrees with the theory prediction. A qualification of decision-making for a Dutch national park is that actors must reach decisions by consensus. For a number of years implementer and target have been in opposition, ultimately leading to negotiation and compromise. Specifically, these two factions compromised in a vote to maintain the management of the park as the status quo, while incorporating monitoring into the management plan to allow a better understanding of how this access affects the nature the park is designed to protect.

The management plan is the initial output for assessment of this process. When actors can agree on a management plan, stakeholders receive the benefits of this area becoming a national park, including financial support and services. Some actors see the outputs of a national park in negative terms, finding increasing publicity and visitors might not be best for this area. The first point for analysis is the decision to implement measures offering increased protection to the core areas of the park, which failed in this case. Due to this failure, adequacy of implementation cannot in turn become a point for analysis. In terms of input-output-outcome, this process ends after the second step, when the decision is made not to implement these measures. While *It Fryske Gea* failed to convince other stakeholders about current degradation, there is a system in place to understand all future changes in park ecology and address them through the *overlegorgaan*. In this way the compromise creates a sphere for potential learning to take place. Therefore it may be possible to reassess this process later from a policy perspective if actors agree that changes should be made in the area in the future. Learning towards another scenario is one potential prediction of the contextual interaction theory[14]. In this case, the theory analysis did not predict learning, though actors have inserted a potential learning mechanism into the process as a part of the compromise. This may be related to the balanced power among actors, using tools available to prevent a complete breakdown of communication within the process. In this way, perceiving they are somewhat equally powerful actors, target and implementer offer a series of trade offs to enable resolution.

6.7 Discussion

In this case assessment, issues of trust among stakeholders and providers of information became important to the process. In addition, some actors were able to increase their impact on the process by building support via lobbying in the community. Finally, this case shows the potential result when actors maintain conflicting concepts of the goals for, in this case, a national park. Each theme is described in detail below.

[14] In the *Wierdense Veld* western sub-case a new actor stepped in to change a stalemate. Here this is not a possibility, as agreement to the current management plan was a precondition of its designation as a national park. In other words, there is no stalemate in this case, as actors (reluctantly) agreed to keep the park boundaries as the *status quo*.

6.7.1 Trust

Managers have water quality data from 1987 for several areas within the site, and in some cases there are species list data from the late 1950s. These data show vast changes in the area's ecological structure over time. In the advisory group for management, design, and monitoring meetings, *It Fryske Gea* was unable to show a *causal* relationship between the degraded habitat and recreational use, despite the fact that these data give a clear picture of the area when recreational activity was much more limited. According to the *Friesland* Water Authority, this causal relationship was made difficult because of "other influences ….in the area like water table management and agricultural pressure". The *Marrekrite* also mentioned that they did not trust "the experts" involved to present a true picture of the ecological status of the area. They believed these experts were aligned with the nature organization. Clearly, this lack of trust did not help *It Fryske Gea* in their quest to establish causality between recreational boat use and ecological impact.

6.7.2 Lobbying

A single analysis does not give insight into how the power balance changes over the course of the process; interviews with actors, however, provide information about these interactions. The *Marrekrite* found *It Fryske Gea* was initially "better organized" in building support for their cause. As *De Marrekrite* described it, the municipalities were not communicating with those they represented, as they were too closely connected to nature interests. *De Marrekrite* found that the link between the municipalities and nature interests was stronger than the link between municipalities and those they "should be" representing (i.e., local citizens and residents).

De Marrekrite found informal lobbying an important way to notify the public of this situation. It is clear that *De Marrekrite* sensed a shift in power balance toward nature (and perhaps toward what the contextual interaction theory predicts for such a case: forced cooperation). To remedy this, the recreation agency used its informal network to inform the public about how they were being represented on the advisory group for management, design, and monitoring, taking a chance that the public would disagree with the pro-nature tone of the meetings. In essence *De Marrekrite* had nothing to lose by lobbying for this type of support. This strategy paid off for *De Marrekrite*, who correctly judged the interests and goals of the general public. After lobbying for support from local residents, these residents in turn made their views clear to their municipal representatives on the *overlegorgaan*. *It Fryske Gea* lost support as the municipalities shifted and aligned themselves with *De Marrekrite*. *It Fryske Gea* failed to garner municipal support to reduce access to core areas of the park. With power balanced between target and implementer, opposition channeled into a negotiation process. The advisory group for management, design, and monitoring did not recommend an increase in protection.

6.7.3 Primary and Secondary Goals

The reasons individuals find nature important can influence priorities in management. Some actors support nature for its own sake, while others support nature only as it enhances recreational activities. Interview responses to one question (shown in Table 6.4) display how actors internalize this difference. The implementer, the Province of *Friesland*, and *Friesland* Water Authority speak of the value of nature for nature's sake. In contrast, the target equated nature with recreation and its economic benefits. One municipality reacted similarly, describing wetlands as a place for recreation and therefore "good business". The other municipality acknowledged a trade-off between nature values and the economic benefits of recreation, voicing concern that nature protection limits recreation goals. Actors found that there was a shift of municipality support from nature to recreation during the process, pressed by public opinion and publicity. Though interested in the ecological quality of the area, maintaining access to all parts of the park proved to be more important to the leaders of these municipalities.

Table 6.5 Actors responses to one interview question

Interviewee	Do you find wetland restoration benefits your community? If so, how?
Implementer: *It Fryske Gea*	"Yes… in the first place for the birds… also for a lot of people who enjoy birds and also for some other forms of recreation, not only water recreation… and a source of employment"
Target: *De Marrekrite*	"Recreation is economically good; more work, more money, but not always easy for the farmer… recreation is a very important part… nature is water in *Friesland*"
Municipality of *Smallingerland*	"Changing from farmland into wetland with use for recreation, I think, is a good business"
Municipality of *Boarnsterhim*	"In some way it prevents some plans we have for recreation and tourism … in the end we say we must consider the possibility to protect bird and water life; in the end we say it is okay though we are limited"
Province of *Friesland*	"The intrinsic value of nature. Man or people cannot live without nature, people cannot live in a concrete environment…so it has value for nature itself, but also for the people because in Holland people decide they find it important that nature exists"
Friesland Water Authority	"It is more and more clear that nature, natural values, and natural areas give distressed people [a place] to spend their free time… so it has economic values, it is good for your health to be there, and we have a kind of moral duty to [maintain] …biodiversity"

6.8 Barriers to implementation

Application of the contextual interaction theory identifies barriers to implementation, offering a systematic way for actors to work towards eliminating them, potentially strengthening future implementation success. According to this analysis, there are two ways to create cooperation toward the implementation of this restoration measure:

- Change the motivation of the *De Marrekrite* to motivation toward implementation or neutral motivation, yielding active cooperation or cooperation.
- Change the power balance of actors so that *It Fryske Gea* holds the balance of power, yielding forced cooperation.

It Fryske Gea makes it clear that their data point to a degradation of park habitat. As stewards of this resource, they feel a strong obligation to correct this degradation in early stages to provide long term sustainability. Recreational users *De Marrekrite* cannot yet see negative physical changes in the park, and do not trust the source of environmental quality data. Specifically, *De Marrekrite* felt that water quality information and other ecological data came from sources with ties to nature. This lies in stark contrast to the interactions in the eastern sub-case between farmers and other actors detailed in chapter 5. In that case, local famers adopt a 'wait and see' attitude toward potential changes, instead of fighting their implementation. In that case it is most likely relevant that the sources of information, *DLV* and the local Waterboard, have historical ties to farming. In this case, a lack of trust is an obvious barrier to effective information sharing and use, and may complicate group decision-making. One potential solution is to have actors agree on an independent group to make an ecological assessment. The cost and inconvenience of this measure would likely prove a worthwhile investment over time. Although this may not solve all the problems regarding trust in this case, it could eliminate one perceived source of misunderstanding. This recommendation has the potential to influence motivation of stakeholders toward implementation. In other words, with more information, and group learning as a result of the monitoring of the national park, all actors can gain insight into how boat traffic may or may not be impacting habitat quality.

Similarly, if *It Fryske Gea* can effectively gain the support of the municipalities, they could turn the power balance in their favor. The municipalities seem sympathetic to the motivations of both target and implementer. If *It Fryske Gea* wants to utilize the municipal support they must either gain the municipalities' trust (see above) or convince these process participants that the goal of nature must outweigh the goal of recreation in a national park. One way to do this is to establish a legal basis for placing environmental goals first. It is also possible that *It Fryske Gea* seek to control the situation through other means, for example altering the membership of the decision-making committee. This could be an effective but short-sighted solution which further decreases trust other actors have for *It Fryske Gea*. That being said, the advisory group for management, design, and monitoring represents a balanced set of actors within the greater structure of the *overlegorgaan*. As this cursory history shows, actors have disagreed about the primary goal of the area for at least fifteen years. Perhaps it is time to build trust to help actors without a scientific background to understand how current use degrades core park areas.

6.9 Lessons learned

This case study produces insight into the way actors influence policy implementation. The contextual interaction theory posits that certain combinations of actor characteristics produce various types of interactions. How can this analysis enlighten understanding in other cases dealing with wetland restoration, nature protection, resource management, or implementation in general? Support for project implementation often necessitates the inclusion of a wide range of stakeholders, perhaps involving some with similar but not identical goals. In this case both the target and implementer strongly support both nature and this conservation area, but the focus of their support is different: *De Marrekrite* supports nature as it enables recreation while *It Fryske Gea* supports nature for nature's sake. As one municipality representative stated, "*It Fryske Gea* wanted to make nature first and recreation second throughout the process, while *De Marrekrite* wanted to make recreation first and nature second". This particular municipality wanted a plan which "tries to make both nature and recreation number one". Though this type of compromise is certainly a valid goal for an actor in a decision making process, it does not necessarily represent the ambition of a national park, which unequivocally holds nature as the primary goal. When policy actors utilize inclusive stakeholder processes to make decisions about nature, the benefit is in integrating the opinions of many, or perhaps all, relevant groups. This translates into a broad base of support for decisions. Arguably, when not only scientists, but also citizens strongly influence decisions about important resources, there is a risk that they push for the over-use of the resource whether due to ignorance or short-term orientation. In the above description, one notes that our static model is not capable of recording changes in power balance over time. This is not due to the structure of the theory, but instead is a reflection of how this tool is utilized in this case. Analysis of this case involved only one application, though the theory can easily be applied more than one time to an ongoing process to better understand how variables change over time. In other words, though the theory is static, it can be applied dynamically to further illuminate an implementation situation.

How can this analysis be used to inform the growth of the contextual interaction theory? In this case, it is clear that differences in how actors understand the primary goals of a national park are at the heart of interactions. In other words, perceptions frame the problematic for these actors. Their differing perceptions of the goals for the area can be described as their social interests coupled with cognitions. Envision it as the place where motivation and information intersect. While one person or organization sees "national park" and thinks: Nature, another person or organization sees "national park" and thinks: Recreation. Perhaps the lesson learned from this case for theoretical development is to continue to expand the information variable to touch more on perceptions and the framing of realities. In comparison, the information variable in this treatment focuses on transparency, and the availability and potential for sharing information. In truth, expansion of the theory is already heading in this direction, as shown most clearly in Figure 3.1. It is possible to add

questions about information to the interview instrument without increasing its size to a degree that makes it less operational in practice.

6.10 Conclusions

A plan allowing the status quo coupled with monitoring is not necessarily a clear-cut manner of understanding long term change in the area. It is now the responsibility of the manager, *It Fryske Gea*, to prove that some access to certain areas is harmful to nature. To prove that ecology is suffering is difficult, but to then prove causation, absolutely linking any aspect of boating to any aspect of ecological degradation is an extremely intricate task. Changes in the natural world exist in a tapestry of endless factors and variables, making causal links extraordinarily difficult to prove. In addition, currently many shores in the area are artificially protected, making further degradation hard to detect. In this case, the burden of proof lies with nature supporters. Despite this, with the support of the *overlegorgaan*, *It Fryske Gea* has developed a monitoring plan for the area. The research platform oversees a comprehensive monitoring program whose results will be regularly presented to the *overlegorgaan*. A network is in place to watch the development of *De Alde Feanen* over time, including the impact of use on the ecological system. Ideally this safety net has the capability to catch and remedy any potential ecological problems, therefore guaranteeing the preservation of the ecological system this national park was developed to protect.

The theory represents a straightforward, consistent tool for analyzing implementation processes which allows comparability and the ability to replicate research. It also provides a consistent way to highlight barriers to implementation. Granted, contextual interaction theory analysis does not promise the ability to change the balance of power or the motivations or information levels of others but does clearly indicate where an interaction succeeds or fails in creating a cooperative endeavor, which may enlighten practitioners about a given process. This use of the theory provides insight for policy actors about what changes might encourage implementation of projects over time.

Several actors involved in this case stated that they felt this was a situation of destroying the goose that lays the golden eggs. In that fable attributed to Aesop, a farmer has a goose that lays one golden egg per day. Over time the farmer and his wife become convinced that the goose must be full of gold, and so slaughter the goose only to find it is just like any other. It is a story about protecting valuable things. In this case, some actors fear that the individuals and groups who enjoy spending time recreationally in *De Alde Feanen* are in danger of loving this area to death. In the case of *De Alde Feanen* actors have spent many years debating the risks and benefits of creating protected zones within the structure of a national park. To date, actors have agreed to proceed without this protection, and only time will show us whether the fears of nature and water management groups were well-founded or perhaps unmerited.

Chapter 7
North Friesland Buitendijks

"It is important, that history of our ancestors and that hard work… that is a part of the history of this area, but this is a good choice, looking toward the future "
--*Plan A Committee* representative

7.1 Introduction

The North *Friesland Buitendijks* lie on the northern coast of the province of *Friesland* in the Netherlands (Figure 7.1). Following World War II the Dutch government developed work projects for the unemployed, including the creation of valuable farmland from the *Wadden* Sea on the *Friesland* coast via a series of embankments. The North *Friesland Buitendijks* are an area just outside of this farmland (called summer polders, shown in Figure 7.2) that are flooded by sea water in winter, but also have limited seasonal agriculture use. More precisely, the Common *Wadden* Sea Secretariat (1997) defines summer polders as:

> embanked parts of the salt marshes with dikes that are high enough to prevent flooding during the growing season. The frequency of inundation varies between only once per 2 or 3 years to several times per year, depending on the height of the dikes. Remains of natural gullies and salt marsh cliffs can sometimes be found. When inundation takes place during winter, the influence of the sea water on the vegetation is often negligible. The soil is saturated with fresh water and the sea water is drained off very rapidly within a few days after flooding. (p. 37)

In other words, the embankment process began in these areas, but at the time the interactions included in this analysis began in 1974, had not been completely diked into fully functioning farmland. A continuation of embankment in the 1970s would have resulted in an increase of valuable farmland by up to 4000 hectares[1]. Continuing embankment would benefit local farmers and the local economy while halting embankment would benefit populations of migratory birds that utilize these marshy areas during migration. This chapter details a 20 year struggle to determine if this area would undergo further embankment, or if embankment would stop and the area would again be subjected to natural tidal processes, restoring over time into a natural marsh landscape. Several Plans (called Plans A, B, C and D, described in Table 7.1 and depicted in Figure 7.3) were discussed as potential alternatives for the development of the area. In this case, actors used advocacy, lobbying, and media outlets to promote their respective positions. These interactions culminated in a series of decisions made by a national-level politician and later a judge which determined the fate of the *Buitendijks*. This case study describes the series of policy decisions determining whether the *Buitendijks* would be developed into fully embanked farmland or into a functioning salt marsh.

[1] While Plan D involves a choice of 2080 hectares, it would necessarily support the embankment of the land considered for both Plans B (1210 hectares) and C (710 hectares), which total 4000 hectares.

Figure 7.1The location of the North Friesland Buitendijks and the Province of Friesland within the Netherlands.

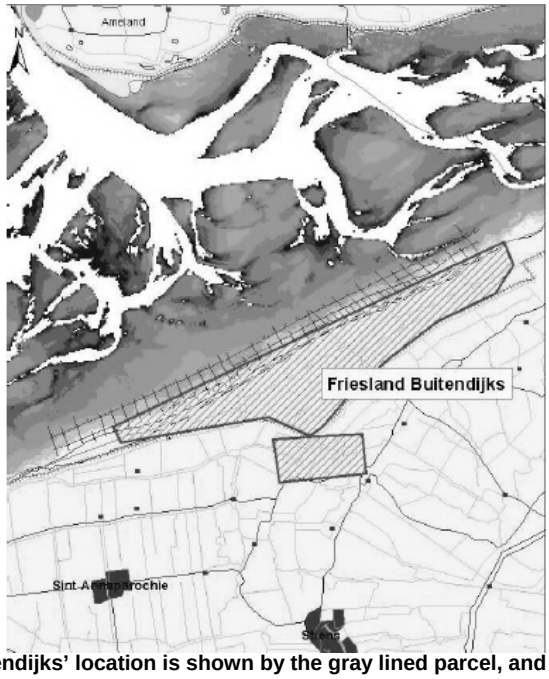


Figure 7.2 The Buitendijks' location is shown by the gray lined parcel, and is found between the villages of Zwarte Haan and Holwerd [2]

[2]Image from *Projectteam Adviesgroep Waddenzeebeleid* (2004: 42); formatted to grayscale.

Table 7.1 The four options for the development of the North Friesland Buitendijks

Plan	Description[3]	Amount of farmland to be gained
A	Strengthening and heightening the existing sea dike	0 hectares
B	Placing a sea dike on the existing summer dike	+/- 1210 hectares
C	Placing a sea dike halfway through the existing land reclamation work	+/- 710 hectares
D	Placing a sea dike on the entire existing land reclamation work	+/- 2080 hectares

7.2 Methodology specific to this case

In the interactions involving the North Friesland Buitendijks, a battle ensued over whether to continue the process of strengthening and heightening dikes within the Buitendijks area. The supporters of Plan A promoted halting further embankment of the sea dikes in favor of supporting a marsh habitat, and played the role of implementer (of nature protection policies) in this case. The supporters of Plan D promoted the strengthening of the dike to create the maximum possible amount of farmland, and served in the role of project target. Both sides fought for more than 20 years to promote their respective sides, encountering small losses and victories along the way. Learning about this case entailed travelling to Friesland in January of 2004 to meet with and conduct an introductory interview with an employee of the Province of Friesland who worked throughout the history of these interactions as a member of the Wadvogel Werkgroep (the Wadden birds workgroup). This actor not only gave an account of the interactions in detail, but also provided the researcher with a tour of the entire area in question, from Zwarte Haan to Holwerd. For many hours over a two-day visit this actor provided information and a tour of the district. Invaluably, this actor also provided the researcher with collected newspaper clippings spanning the 20-plus years of the project, beginning in 1974, additionally providing a list of relevant actors, which served as a guide for finding interviewees. One actor listed, representing the nature organization It Fryske Gea experienced medical problems during the data collecting portion of this research, and was therefore not included. Another individual on the list, who later worked with the European Union LIFE funding for the project, failed to return emails and phone calls, and was also not included. Interviews included a representative of the Municipality of Ferwerderadeel, who also served as the chairman of a citizens group fighting for strengthening of the sea dike, a representative of the Provincial government, a representative of the Wadvogel Werkgroep, and a representative of It Fryske Gea.

[3] Translated from a letter from the municipality of *Ferwerderadeel* to M. Engelmoer, dated 21 February 1974.

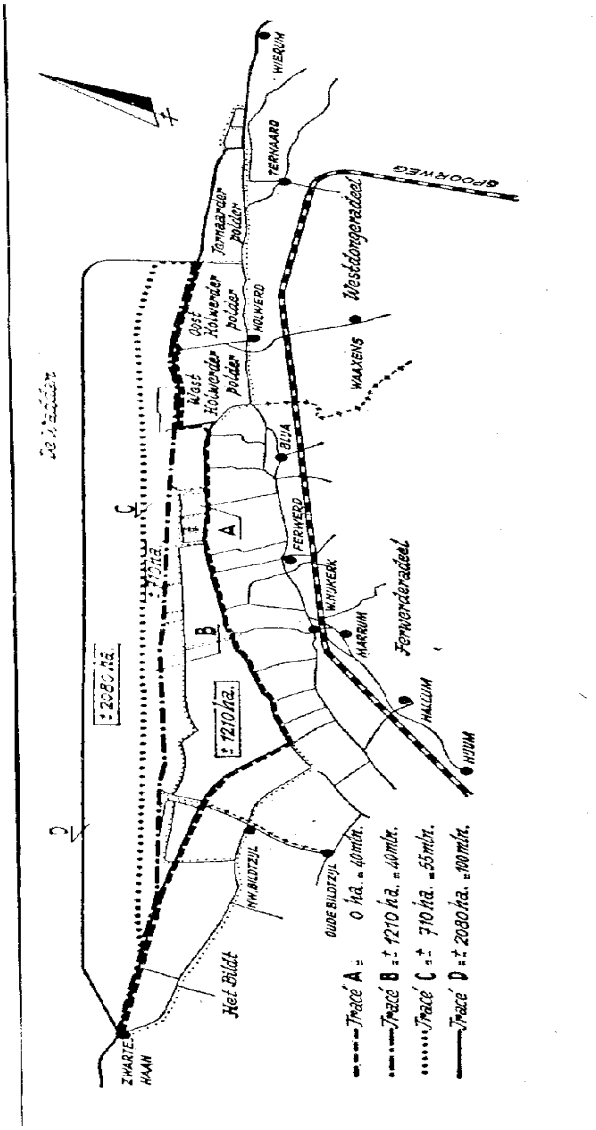


Figure 7.3 The potential plans are shown by lines marked with their respective letters, A, B, C, and D[4]

[4] Image taken from Reitsma, 1974.

All actors listed were interviewed once, with the exception of the Wadvogel Werkgroep member, who was interviewed twice, producing a total of five interviews. Of the interviews conducted for this dissertation, these actors produced the longest interviews-- one taking up the entire available cassette (180 minutes), and then continuing for approximately 20 minutes through the remainder of the interview questions. This is likely due not only to the level of passion these actors have about this case, but also its long history. All interviews for this case were recorded with a hand-held tape recorder. Notes were taken during each interview to ensure documentation in case of tape recording difficulties; however no tape recording difficulties took place. All interviews were transcribed from tape recordings, and then analyzed to determine motivation, information, and power scores. Respondents were not only willing to engage in interviews but were eager to participate and intensely passionate about their roles in this process.

7.3 Policies

The unit of analysis for the application of contextual interaction theory is interaction at the project level (i.e., the physical wetland). Currently, multiple levels of policy are being applied to the North *Friesland Buitendijks.* At the European Union level, the *Buitendijks* are a part of the Habitat and Bird Directives *(Habitatrichtlijn and Vogelrichtlijn),* as incorporated into the Natura 2000 policy. Nationally this area is a part of the National Ecological Network (*Ecologische Hoofdstructuur*) as formed by the Nature Policy Plan of the Netherlands (*Natuurbeleidsplan*), and also a Nature Protection Area (*Gebied van natuurbescherming*). As a nature area, it is included in the provincial-level plan (*streekplan*) and in municipal level plans (*bestemmingsplannen*) for the municipalities affected. The province gives their approval to municipal level plans. In addition to these policy layers, internationally this area is part of the trilateral association between the governments of Denmark, Germany, and the Netherlands for protection of the *Wadden* Sea.

7.4 Case study narrative: Actors

Many actors took part in this case over its 20 year history. In addition, it is not unusual for actors involved in this case to wear many ‘different hats’ within the process. In example, the individual representing the *Wadvogel Werkgroep* in interviews is also an employee of the Province of *Friesland*. The individual representing the Province in interviews is not only both a provincial policy advisor and ecologist but also assisted with bird counts during the project for the *Wadvogel Werkgroep*. The contact representing the Plan A Committee is currently employed by *It Fryske Gea*, while the former chairman of the Plan A Committee (not interviewed) is now the chairman of *It Fryske Gea*. The representative of the citizens group in favor of strengthening these dikes also worked as a civil servant during these interactions with the municipality of *Ferwerderadeel*. This citizens

group played a major role in lobbying for Plan D with the national government in The Hague.

The implementer, supporting the goals of the Plan A committee, promoted halting embankment of the area, arguing for the importance of the *Buitendijks* to migratory birds. The target, supporting the goals of the Plan D committee, represents the views of both local citizens of the municipality of *Ferwerderadeel* and local farmers. They have an interest in promoting the further embankment of this area for both its cultural history and for economic reasons. In addition to core actors, several actors play supportive roles in the process:

- The *Wadvogel Werkgroep* was created to maintain up-to-date assessments of bird life in the *Wadden* Sea area. By systematically producing bird counts of the region they provided important information to relevant parties regarding the numbers and species of birds utilizing the *Wadden* Sea and the *Buitendijks* throughout the year as well as over time. This group provides this information as advocates of bird life but additionally support the Plan A Committee goals throughout the process.
- *Landelijke Vereniging tot Behoud van de Waddenzee (Dutch Society for the Preservation of the Wadden Sea)* referred to as the *Waddenvereniging*. The *Waddenvereniging* is a self described "environmental Non Governmental Organization promoting the protection and sustainable use of the *Wadden* Sea area" (*Waddenvereniging,* 2006). This group is a key supporter of the Plan A Committee.
- *Local farmers*. Farmers in the region held ownership rights to the land that was slated to become the embanked *Buitendijks* while maintaining other substantial agricultural properties in the area. Farmers strongly support the Plan D Committee.
- *De Noordelijk Land- en Tuinbouworganisatie (NLTO)* now *LTO Noord*. The Northern Agriculture and Horticulture Organization, now LTO North, supports the interests of farmers and horticulturists in nine Dutch provinces. This group works as advocates of farmers and horticulturalists, serving as representatives of farming interests and in this case is a primary supporter of the Plan D Committee.
- *It Fryske Gea* is Frisian for 'The Frisian Landscape', and is a nonprofit nature protection organization in the province. The group manages more than fifty different nature reserves with a total surface area of over 19,000 hectares and is supported by more than 25,000 members (*It Fryske Gea*, 2006). Later in the process, when the area is officially dedicated to nature, *It Fryske Gea* took the lead in securing funding, purchasing land from farmers, and subsequently became the managers of this area.
- The Province of *Friesland* is charged with coordinating spatial planning duties within the province and is therefore a significant governmental power. In this case, especially during the embankment decision, the Province attempted to remain neutral. It is interesting to note that several actors mention that Provincial *politicians* are often more supportive of agriculture while National *politicians* are more supportive of nature.

- *Ministerie van Landbouw, Natuur en Voedselkwaliteit*. The Dutch Ministry of Agriculture, Nature, and Food Quality has authority over "agriculture, livestock, animal welfare, horticulture, outdoor recreation, biotechnology, food, and water quality" (*Ministerie van Landbouw, Natuur en Voedselkwaliteit*, 2006b). Later in the course of this process the Ministry worked with *It Fryske Gea* and the Province of *Friesland* to promote the project at the European Union level, assisting in securing funding as a LIFE project.

Table 7.2 shows how actors describe key process roles during interviews. Different actors take varying perspectives on how the initiation of this process takes place. This may be attributable to the length of this interaction, lasting approximately 20 years, in which actors shifted positions, moving to the forefront or taking a back seat in different stages of the process. It is not under question whether some responses were more accurate than others in this case. Instead, all responses focus on different elements of the process. In essence, as explained further in the following sections, it was understood that embanking would continue in this area. In the early 1970s nature organizations began to protest the inevitability of this policy decision. In 1989 the decision was made to stop embanking the *Buitendijks*; later the farmers requested that this area, if already not useable as agricultural land, be officially dedicated as a nature area. During this time the nature organization *It Fryske Gea* took a more formal leadership role, working to gain funding and support for the *buitendijks* as a nature reserve. In interviews actors described different aspects of these events. It is clear that everyone agreed that farmers are the primary users of the *Buitendijks*. In addition the lists of stakeholders provided are comparable. Regarding roles such as site monitoring, reporting results, responsibility, and understanding who sees that the requirements are fulfilled, almost all actors describe the central role of *It Fryske Gea*.

Table 7.2 Actor roles according to interviews

	Implementer: Plan A committee chairman	**Target: Local citizens group**	***Wadvogel Werkgroep***	**Province of *Friesland***
Who is the initiator?	The farmers and the Province understood that the embankment would continue, and we disagreed with this plan	These changes sprang from a discussion between farmers and the national government about continuing embanking the land	In 1989 the decision was made to stop embankment, around 1995 the decision was made to restore the area led by *It Fryske Gea*	After the embankment decision the farmers themselves asked to define this area within the nature development plan
Who are the users of the area?	Farmers	Farmers	Farmers	Farmers and crofters

Who are the stakeholders?	Citizens whose ancestors created this land and *It Fryske Gea*	Farmers, Province of *Friesland*, municipality of *Ferwerderadeel*, national politicians with the parties Christian Democratic Appeal (*Christen Democratisch Appel* or CDA) and People's Party for Freedom and Democracy (*Volkspartij voor Vrijheid en Democratie* or VVD)	Province of *Friesland*, *It Fryske Gea*, *De Noordelijk Land- en Tuinbouw-organisatie*, *Rijkswaterstaat*, *Waddenverenigin g*, *Wadvogel Werkgroep*	Municipalities of *Ferwerderadeel* and *Het Bildt*, The Province of *Friesland*, *It Fryske Gea*, and two private land holding companies
Who reports the results of this project?	*It Fryske Gea* in conjunction with the enviornmental research institute *Alterra* and scientists from the University of *Groningen*	Did not ask	*It Fryske Gea* reports to Brussels	*It Fryske Gea* reports information to the platform group
Who monitors the site after implementation?	*It Fryske Gea*	Did not ask	We monitor bird species and report it to *It Fryske Gea*	*It Fryske Gea* manages the site
Who does the public think is primarily responsible?	*It Fryske Gea*	For the ministerial decision, the local government (Municipality of *Ferwerderadeel*) and the group I represented. For the judge's decision, the other side (Plan A)	*It Fryske Gea* now but along the way the *Waddenverenigin g*	*It Fryske Gea*
Who sees that the policy requirements are fulfilled?	*Waddenverenigin g* and *It Fryske Gea*	In my role as a civil servant I worked with the permitting necessary for the project, but not fulfilling policy requirements	We assist *It Fryske Gea* by continuing bird counts and informing them about how species numbers change over time	The Province must meet requirements of this national policy

7.5 Case study narrative: History

Historically, farmland in the northern region of *Friesland* was extremely important for its cultivation of seed potatoes. The seed potato maggot *Hylemya platura* arrives yearly in the north of the Netherlands later than in other areas of Europe, at a time when they can no longer harm developing seed potatoes. Seed potatoes grown in the Netherlands are replanted worldwide to grow potatoes for consumption. Therefore,

when plans were initially created to embank this coastal region, it was with the expectation of the contribution this area could make to worldwide seed potato production. This case study analyses policy decisions that have been taking place since the 1970s as representatives of Plan A and Plan D committees joined in combat over the future of the *Buitendijks* (as shown in Table 7.3). The Plan D committee sought to strengthen the regional agricultural economy and also maintain the historical and cultural values of the embanked land, "as an honor to those people who worked there and who died there". The Plan A committee sought to protect this as an important habitat (marshlands) critical to many species, particularly the global populations of some bird species. Both committees used tools such as media coverage, lobbying the national government, and data-gathering to push forward their respective agendas, eventually demanding a decision be made at the Ministerial level to continue with embankment or halt this process in favor of migratory birds.

Table 7.3 A general timeline of developments in the North Friesland Buitendijks case

1970	Continued embankment of the *Buitendijks* was considered inevitable. Concerned nature supporters begin to question this policy.
Mid 1980s	Decisions occur at varying levels in support of either side
1986	The ministerial decision is made to embank more land
1988	The judicial decision is made to halt further embanking
1988	The request is denied for a farmer compensation package
1989-1990	Farmers and the farmer's union bring forward an offer to sell the *buitendijks* to the province.
1990	The province begins a feasibility study. Representatives from the province, the ministry of agriculture and *It Fryske Gea* join to promote this project in Brussels.
1991	*It Fryske Gea* secures LIFE funds to buy this land.
1993	The province creates two working groups, one to define nature limits within the *Buitendijks* and the confidentiality group.
Mid 1990s	*It Fryske Gea* purchases the land from the farmers and begins to develop it into salt marsh.
Early 2000s	Creation of the *Friesland Buitendijks* platform group

Both Plan A and Plan D committees and their supporters were intensely passionate about their goals within this fight. The bitter struggle between pro-nature and pro-farming elements was described by participants from both sides as a war. The *Wadvogel Werkgroep* states "we were yelled at, kicked at… spit upon". Plan A supporters see this area as a critical habitat within the shrinking *Wadden* Sea zone, often crucial to the world populations of some bird species. The *Wadvogel Werkgroep* describes a situation where local citizens would see the great numbers of some species of birds seasonally visiting the area (e.g., 10,000 barnacle geese) and assume because of these large numbers it was acceptable to hunt them. In fact at that

time in the early 1970s what appeared seasonally in the *Buitendijks* area was the entire world population of that species[5]. On the other side of the argument, the chairman of the local citizen's group describes the circumstances the men who built the area endured: "this land has all been made by men's hands… people made it under very bad circumstances… almost always bad weather… often during the night…[hauling] very heavy clay [by hand]". Though devoted to the cultural and historical importance of the area, Plan D Committee used economic arguments to make its case for embankment. Representatives of both Plans describe making trips during this time to lobby ministers of the Dutch national government in The Hague to create support for their respective sides. The Plan D committee notes building support with two political parties in particular: the Christian Democratic Appeal (*Christen Democratisch Appel* or CDA) and People's Party for Freedom and Democracy (*Volkspartij voor Vrijheid en Democratie* or VVD). Newspaper headlines from the time indicate support by both CDA and VVD for Plan D, while Plan A appears to have gained support over time from the Dutch Labor party (*Partij van de Arbeid* or PvdA)[6]. In addition to building support via lobbying, the Plan D committee received a great deal of support in the local newspaper the *Leeuwarder Courant*, and also promoted their views via advertisements in this media outlet (Figures 4 and 5). At several points during the late 1970s and early 1980s newspaper documentation indicates decisions supporting each side at different times. From roughly 1976 to 1986 the national government discussed potential options, including alterations on Plan D (including Plans F, C and Ct)[7] and constraints with funding for continued embanking. Political support for the different sides varied in the early 1980s. In late 1983 one article signified that Ministers will not support further embankment[8], however just a few days later an article indicates embankment will occur[9], then in early 1984 it appears that embankment is again defeated[10]. Around 1986 the Minister of Transportation and Water Management made a decision to continue with embanking. Members of the Plan A Committee continue to work to appeal the ministerial decision, eventually requesting a judicial

[5] Since the *Buitendijks* were restored as a marsh, the number of barnacle geese visiting on a yearly basis has grown to 400,000-500,000.
[6] *Leeuwarder Courant.* March 18, 1976 "Deputy Eringa (CDA): not 90, but at most four million"; *Leeuwarder Courant.* March 18, 1976 "Deputy Spiekhout (PvdA): A lot of questions and doubts"; *Leeuwarder Courant.* March 23, 1976 "Mr Hilarides from VVD to *Holwerd*: we shall find possibilities in The Hague for Plan D: short term construction for the D-dijk on demand" *Leeuwarder Courant.* May 28, 1979 "Old motion from 'hippe *Wadvogels*' with 194 against 90 votes: PvdA *Friesland* changes from Plan D to Plan A: Agriculture pleads again for Plan D".
[7] *Leeuwarder Courant*. May 5, 1979 "The government considers less embanking on the North *Friesland Buitendijks*: Plan F looks like a compromise in the fight between A and D" *NDC.* July 7, 1983 "Mayor Bouwers 'We've never seen fish swimming between the cows': In the chamber there is a majority for C". *Leeuwarder Courant.* October 8, 1983 "Still support for the embanking opposition: Numbers from 12 years of bird counts turn on Plan Ct".
[8] *Leeuwarder Courant.* December 16, 1983 "Ministerial council nearly certain against embankment".
[9] *Volkskrant.* December 24, 1983 "Land development in the *Wadden* Sea may go through".
[10] *NvN.* January 11, 1984 "Friesland angry, no new dike".

decision. From the time these discussions began in the early 1970s until the final decision was made in 1988, a shift was occurring that altered the way politicians thought of this area. First, the global seed potato market began to weaken, while concurrently environmental issues became increasingly more important. Due to the decreasing value of seed potatoes, the economic argument became less compelling over time while an interest in supporting nature became more important to the national government. In 1988 a judge decided in favor of the Plan A Committee, a decision which cannot be appealed and is final.


(ADVERTENTIE I.M.)

tracé Delta ijk

is afronding van werk van 100 jaar en het bereiken van het doel, waarvoor buitendijks is gewerkt.

Nu er geen voldoende argumenten zijn om dit plan niet uit te voeren is **Plan D zonder meer noodzakelijk** *en verdedigbaar.*

Figure 7.4 This pro-Plan D advertisement states: "Plan D Delta Dike concludes the one-hundred year old task, attaining the goal of a functioning Buitendijk. Now there are no sufficient arguments against conducting this plan. Plan D is therefore both inevitable and justifiable. (Leeuwarder Courant, March 10, 1976)


15-3-'76

tracé Delta ijk

REGIONAAL COMITÉ TRACÉ D
spreekt de verwachting uit, dat
Provinciale Staten
zich evenals G.S. met de grootst mogelijke meerderheid uitspreken voor uitvoering van
TRACÉ D,
geleid door de belangen van de Friese bevolking.

Figure 7.5 This advertisement states: "Plan D Delta Dijk: Plan D Regional Committee declares the expectation, that the Provincial Parliament will, as with the Provincial Government, with the largest possible majority pronounce the execution of Plan D therefore administering the interests of the Frisian population" (Leeuwarder Courant, March 15, 1976)

After this decision, the land remained a summer polder under the ownership of a number of individual farmers and two large holdings comprised of land from many individuals in a designation of incorporation[11]. It is important to understand that this land was in no way useless to agriculture, the land owners continued to actively utilize these areas, but they had lost the opportunity to create fully embanked farmland. After losing the battle, provincial politicians communicated with the national government about a compensation package for the farmers due to the loss of agricultural value incurred from a lack of continued embankment. This request was denied. Simultaneously, however, the provincial government was working toward dedicating 13,000 hectares of land throughout the province under the auspices of the Dutch Nature Policy Plan (*Natuurbeleidsplan*) to create the National Ecological Network (*Ecologische Hoofdstructuur*). In the late 1980s the farmer's union expressed the farmers' interest in selling the North *Friesland Buitendijks* to the province for nature conservation development. As described by an interviewee from the province of *Friesland*, at first they thought, "this land is already nature or half-nature… it is summer polder… it is [not to our benefit] to use this, to lose 2000 hectares of the 13000 hectares [for the Nature Policy Plan]". After some consideration, however, the province decided, "if this farmer's organization [offers this possibility] then we should welcome that … perhaps it is a very good idea". The province agreed to work towards developing this area for use as part of the National Ecological Network within the Nature Policy Plan, but only if the area could become primarily nature, not agriculture with a secondary nature function.

At this time, provincial bureaucrats began to play a primary role in the process, beginning a feasibility study of the area and working towards funding the purchase of this land. Representatives from the province, the Ministry of Agriculture, and *It Fryske Gea* joined to promote this project in Brussels at the European Union level. At this time (around 1990) a slow, careful cooperation began between the farmers and *It Fryske Gea*. This is an ongoing process, and significant considering the tension between pro-nature and pro-farming groups in this area in the past. Soon *It Fryske Gea* took the lead in finding funding to develop the area and provincial bureaucrats took a secondary role. *It Fryske Gea* then learned about LIFE funding and succeeded in obtaining the largest LIFE grant (at that time) for the purchase of the *Buitendijks*. Policy makers felt this funding served as the final fulfillment of the compensation requested for the farmers in the late 1980s. The Province took the lead in this stage, beginning two parallel and corresponding process lines. First, they created a group to work through the procedural, bureaucratic task of defining limits of the nature area. They also created a confidentiality group to discuss the future of the area and facilitate trust building. This group included a former mayor of *Ferwerderadeel*, farmers, representatives of the Province, and of the two incorporated land holdings. After obtaining LIFE funding *It Fryske Gea* worked toward purchasing the land and developing a marsh habitat in the *Buitendijks*. Over time, the confidentiality group became the *Friesland Buitendijks* Platform, a group

[11] *BV*, or *Besloten Vennootschappen.*

of stakeholders that works with *It Fryske Gea* to support their role as managers of the restored habitat.

7.6 Case study narrative: Score and summary

7.6.1 Phase One

The implementer is positively motivated toward these measures (halting further embankments, or marsh restoration) while the target is motivated against this restoration, and is in favor of continued embankments. Both display extremely high information levels and have comparable power scores as shown in Table 7.4. According to this analysis neither target nor implementer decisively holds the balance of power.

Table 7.4 Scores for likelihood to implement at all

	Motivation	**Information**	**Power**
Implementer: Plan A supporters	(+14/16) +0.75	(17/17) 1.0	(5/9) 0.56
Target: local citizens group in support of Plan D	(+5/16) -0.38	(14/14) 1.0	(4/7) 0.57

Given these scores, the contextual interaction theory's hypothesis states:

> if application of the instrument would contribute positively to the objectives of one actor, while the other actor is negative, and the information of the positive actor is sufficient, then the character of the interaction process will be dependent on the balance of power between actors. A relatively equal balance of power will lead to opposition. Opposition can take the forms of negotiation and conflict. (Bressers, 2004: 32)

This case agrees with the theory prediction. Over the course of these interactions these actors worked in opposition of each other, and for a long period of time existed in conflict as they fought to advocate their own agendas for the *Buitendijks*. In this case actors never reached a stage of negotiation in an effort to work through their oppositional differences. Instead, on several occasions these actors sought a decision from increasingly higher levels of government, both legislative and judicial. While there were many small victories and losses in the course of these interactions, the most important decisions come when a Minister (Neelie Kroes, Minister of Transportation and Water Management) decided in favor of further embankments in 1986, then later when this decision was appealed in the courts to a judge who in a final verdict decided in favor of halting embankments in 1988. Both of these decisions, in addition to the large number of small pronouncements along the way, fall under the auspices of likelihood to implement at all, since it is not until the judicial decision that the matter is fully settled. These decisions in total determine that the *Buitendijks* will no longer be embanked. The full scale restoration of this area into a tidal marsh is not inevitable. After this decision was made, the

area became a semi-agricultural region owned and utilized by local farmers. It was only later, after the purchase of the land and management that we are able to assess the adequacy of implementation.

7.6.2 Phase Two

In the second phase for analysis, the implementer remained positively motivated toward these measures (ecological marsh restoration) while the target was motivated against this restoration. Both display extremely high information levels, but since the earlier phase the responsibilities and power for the given actors have shifted. In the second phase, adequacy of implementation, the implementer holds the balance of power, as shown in Table 7.5.

Table 7.5 Scores for the adequacy of implementation

	Motivation	**Information**	**Power**
Implementer: Plan A supporters	(+15/16) +0.94	(17/17) 1.0	(5/8) 0.63
Target: Plan D supporters	(+5/16) -0.38	(14/14) 1.0	3/10 0.30

Given these scores, the contextual interaction theory's hypothesis states:

> If adequate application of the instrument would contribute positively to the objectives of one actor and negatively to the other actor, and the positive actor has sufficient information, then the character of the interaction process will be dependent on the balance of power between the actors. Dominance of the positive actor will lead to (forced) constructive cooperation (Bressers, 2004: 32)

This is also an adequate description of events. After the second judicial decision, pro Plan D supporters acknowledged defeat. As the Plan D representative states: "when permission for building the dike on this place was destroyed… it was clear that …the struggle was over". In measuring input-output-outcome, this process reaches the sixth step. The decision is made that no new embankment will take place (likelihood to implement at all), however, the fields remain in the possession of farmers and other land holders. Local and regional nature interests worked to promote this project as a full marsh restoration. Provincial bureaucrats began a feasibility study of the area (adequacy of implementation; immediate outcome) and began seeking funds to purchase this land. *It Fryske Gea* obtained LIFE funding to purchase the *Buitendijks*, then began the physical restoration of the site (adequacy of implementation; intermediate outcome). Ongoing management occurs at the site through the combined forces of *It Fryske Gea* and the *Friesland Buitendijks* Platform group (evaluation and feedback).

As this is not a newly implemented case, we can understand how altering the landscape has already affected the environment. In addition to information about the rebounding barnacle geese population mentioned earlier, we are fortunate to have access to scientific data collected about the site. A group of researchers from the

University of Groningen in the Netherlands and the Centre for Ecology and Hydrology in the United Kingdom published an evaluation of salt marsh restorations in northwest Europe in 2005. A section of the North *Friesland Buitendijks* totaling 135 hectares, breached in 2001 is included in this evaluation. In their analysis they describe both the soil salinity and the re-establishment of target species. According to Wolters et al. (2005) balanced soil salinity can be a positive factor for salt-marsh vegetation. Specifically, high salinity can thwart seeds germinating and developing while low salinity allows "glycophytes to outcompete halophytes" (Wolters et al., 2005: 257). In the *Buitendijks* case, the researchers compared the soil salinity of the breached site to that of the "fronting upper marsh" finding that by one year after this breaching, *Buitendijk* salinity levels were 70% of that of the comparative marsh. In addition these researchers track the re-establishment of target native species, comparing the "established vegetation and the soil seed bank" both before and after dike breaching, showing that 54% of the target species became established in the first year after de-embanking[12] (Wolters et al., 2005: 258). In this case, there is a strong argument for the adequate restoration of this site as a functioning marsh habitat. Naturally, continued evaluation and feedback are necessary to understand how the marsh continues to change over time, before it can be deemed a sustainable ecosystem (ultimate outcome).

7.7 Discussion

During the course of this case analysis, factors such as power from higher agencies, lobbying, and the role of media served important roles within the process, as described in detail below.

7.7.1 Power from higher agencies

In the first phase of analysis actors found themselves in a stage of intense conflict. Both actor groups relegated the power over the decision, whether by choice or by necessity, to a higher power. After the ministerial decision, the result proved unsatisfactory to the Plan A supporters. They appealed their case to another branch of government: the judicial power. The judicial power was able to overrule the minister by basing their decision on binding laws and treaties. This second decision, unsatisfactory to the Plan D supporters, was nonetheless final. This scenario is similar to the western sub-case of the *Wierdense Veld* (Chapter 5), in which a higher authority (the Provincial government) made a final decision about the size of the buffer zone. Unlike that sub-case, this situation did not swiftly turn into a cooperative endeavor. Both sides accepted the judge's decision, but even 20 years later, actors are emotional about the pronouncement. Over time, in a slow and

[12] It should be noted that this does not mean the target species counts went from 0% to 54% in one year; some target species were already present before the breach occurred (Wolters et al., 2005).

consistent manner, trust and cooperation has built up between pro-nature and pro-agriculture forces in the area. In interviews the Province of Friesland credits this more content, but by no means completely harmonious, status to the creation of the confidentiality group and the ultimate financial compensation of the farmers. The Province of Friesland describes the formation of the confidentiality group as an important measure in rebuilding relations in the area. Through purchase via European Union LIFE funding the former landowners were at least financially compensated for their loss, though according to the Plan D representative, it was not the level of financial restitution they could obtain from selling the *Buitendijks* as farmland.

That being said, the idea of selling and truly restoring the *Buitendijks* as a salt marsh originated with the farmers and their union. Their strategy was to transfer control of an area that, while useful for agriculture, could never become a fully realized agricultural landscape. In turn, sacrificing this land allows them to protect other agricultural lands from becoming pawns in this debate. The Province agrees with the farmers' suggestion, with the stipulation to dedicate the *Buitendijks* fully to nature, ending their semi-natural status.

7.7.2 Lobbying

In the course of the interactions of this case, actors on both sides of this debate lobbied to seek support for their given side by provincial or national level politicians. As stated by the Plan D representative, "every two weeks… we took a car to The Hague and we talked with chamber members,…sometimes to ministers". Lobbying is mentioned as a strategy in all interviews for this case, however it is difficult to measure the impact of reported lobbying by actors. Based on results it is clear that lobbying worked to the benefit of the Plan D faction, likely supporting the Ministerial decision about the *Buitendijks*. This lobbying, however, was clearly not enough to promote a further embankment plan to its final realization. Despite the ultimate decision, the Plan D supporters do not see their lobbying efforts as a failure. In contrast, their representative states "the people learned they could grab a phone and call a member of the *Tweede Kamer* in The Hague… the distance between the local people and …the members of the *Tweede Kamer* were reduced, and the people learned to deal with politicians, to not be afraid of them… that they are just people". In this way the participants of this process describe their lobbying efforts in positive terms, whether or not they represent the successful side.

7.7.3 The Press

Outreach and information via local media such as newspapers played a crucial role in this case. From the beginning of this social interaction process in the 1970s one local newspaper in particular sought stridently to affect public opinion and garner support for Plan D through informative articles about the process. Articles not only described the ongoing situation, but also emphasized pride in the toil and struggle that workers who built the *Buitendijks* underwent. The affect of this media outreach

on local citizens is arguable. It is possible that this paper, the *Leeuwarder Courant*, was simply voicing the opinions of the majority of locals and its readers. It is telling, however, that one actor in support of Plan A mentions that if he could 'do it all over again' he would *begin* the process with a media outreach plan in support of Plan A. Based on this analysis it seems clear that those in support of Plan A were in the minority (at least in the localized community) at the beginning of these interactions. As was the case with lobbying, it is difficult to measure the effects of the media and the press on subsequent interactions. It is equally possible that the onslaught of media coverage in support of Plan D could serve either a demoralizing or a galvanizing role for those who backed Plan A.

7.8 Lessons Learned

How can this analysis enlighten understanding in other cases dealing with wetland restoration, nature protection, resource management, or implementation in general? For the North *Friesland Buitendijks* the time span of these interactions is one of the most fascinating elements of the case. These interactions, and their eventual result, make a compelling argument for passionate and dedicated 'underdogs' working for years to accomplish a seemingly impossible task. In regard to wetland restoration, in this case it is remarkable that such a highly managed landscape quickly rebounded into a viable salt marsh, though of course monitoring must continue over time to understand how this site will fare in the long term.

How can this analysis be used to inform the growth of the contextual interaction theory? It is an ongoing goal of this research to maintain a reflexive view of the theory and methodology used in analysis. In this case the two actor model proved again capable of managing the analysis of this case. As an individual only capable of short term research falling within the time constraints of a PhD contract, the luxury of following such an enthralling case for the last 30 years was not possible. One set of interviews enables only a single assessment at a given time in the process, in this case at the end. In the course of this research, both the benefits and disadvantages of an *ex post* analysis were clear. Arriving at the end of the process, and especially many years after the divisive embankment decision, allowed interviews with process participants whose tension about the situation had dissipated to a degree. Due to these circumstances it was possible to gain the trust of actors on both sides of the conflict in a way that may have been difficult in the midst of the conflict. On the other hand, it is complicated to assess changing behaviors and characteristics at different moments throughout the process. This is notably so when actors tell the story within the context of its eventual result. That being said, as actors remain passionate about their roles in the process, some of the emotion of that time remains palpable in interviews. In general, it remains a recommendation of this study to apply the contextual interaction theory multiple times during the course of case interactions. It is not to say that this analysis is not sufficient, instead it should be understood that an *ex post* standpoint cannot compare to multiple analyses throughout the project in real time. It should be noted, however, that given the lack

of trust among actors during this case, it seems highly debatable that either side would discuss the details of the process at that time. Given the circumstances, this analysis offers an inclusive depiction and analysis of the events of the past that may not have been gathered in any other manner.

The eventual decision of halting further *Buitendijk* embankment is also connected to other factors occurring at the time. The *Wadvogel Werkgroep* representative, also a Provincial employee, states that often the provincial government waits over time to accumulate several controversial nature-related decisions. In such a situation they may decide in favor of nature in some cases, and in favor of industry in others, creating together a more balanced plan for the future. During this time, in addition to questions over embanking the *Buitendijks*, the provincial government was making decisions about increasing the size of a local harbor and oil drilling in the *Wadden* Sea. Eventually the province made decisions about all three projects, halting the embankment, choosing not to increase the size of the local harbor, but allowing some oil drilling within the *Wadden* Sea. This decision, as is the case with most policy decisions, exists within a greater fabric of other events and circumstances. It is interesting to obtain this level of insight about how on-the-ground decisions and interactions may work within the context of other external events during the course of interviews. This may provide the best example of how when using the contextual interaction theory one might channel much broader themes or background factors into the analysis at hand, as discussed more thoroughly in chapter three. In this case, the factors at hand provide sufficient explanation about 'why' the decision was made. In this case, any provincial-level 'juggling' of nature decisions does not merit inclusion in the *core* of this analysis[13], but at the same time it does allow us more insight into why things happened as they did. Several actors attribute the judicial decision to both the decreasing price of seed potatoes on the market and the increased emphasis on designating nature areas to qualify for both Dutch national and European Union policies. That being said, gaining knowledge of the possible influence of other provincial decisions on the process provides a richer understanding of how implementation—in this case—works.

7.9 Conclusions

The case of the North *Friesland Buitendijks* is described by many involved in the process as a 20 year long war. Members of the pro-Plan D faction are not only economically, but also emotionally and personally tied to the cultural history of the *Buitendijks*. For them it represents more than just a public works project, it

[13] Most notably because the final decision was not at the provincial level; this does not mean, however, that dealing with several nature-related issues within the province has absolutely no effect on the ministerial or judicial decisions. One can argue that the emphasis placed on the project by provincial government and politicians has an impact on the eventual ministerial and judicial decisions.

represents their neighbors and ancestors who lived and died to create the land. During the building of the *Buitendijks*, when lives were lost, local citizens were reminded of the importance of this area and of this project for the entire country. For them, to understand this hard work would be erased by the tides was a personal affront. In contrast, those on the pro-Plan A side feel they are conserving a habitat (marshland) that is not only scarce in the Netherlands but also in the other *Wadden* Sea countries of Germany and Denmark. In addition to habitat conservation they find they are protectors in some cases of the world's entire population of a given bird species. When these critical decisions were taking place in the late 1980s emotions among actors ran high. Since that time actors have worked to build relationships and create connections between the two groups. The relations between these two sides have evolved a great deal since the 1970s. The development of trust, however, between pro Plan D and pro Plan A elements is a slow, ongoing exercise. The land is now dedicated to nature and the local residents are gradually becoming accustomed to this reality.

Chapter 8
Setting the stage for the large-N study

8.1 Introduction

The case studies found in chapters 5, 6, and 7 give a detailed view of how actors make decisions within an implementation process. Using the contextual interaction theory, the case descriptions analyze actor motivation, information, and power balance to illuminate the interaction in which actors participate. Without such intense analysis some aspects may have been lost during application. Due to this in-depth treatment, however, the depictions include rich details such as ongoing compromises among Vitens, farmers, and the *Landschap Overijssel* in the *Wierdense Veld* case, the influence of municipal leaders with the *overlegorgaan* in *De Alde Feanen* case, and how the Plan A committee uses the appeal process to their advantage in the North *Friesland Buitendijk*s case. Each case portrays how multiple actors working over long periods of time influence policy implementation. Subsequent analyses produce a nuanced look at what people do, why people claim to do what they do, and how actors balance sometimes conflicting goals and desires in working with others to determine the fate of an area.

An additional goal of this research is to test the predictability potential of the contextual interaction theory within a larger set of cases. This is done through inclusion of a comparative study, incorporating forty-six cases from two European Union and two American states. This chapter describes the value added to this research by the inclusion of a large-N study and provides justification for an international comparison. The final sections describe the differences between theoretical application in the in-depth cases and the large-N cases, as well as detailing methods employed for case and interview selection.

8.2 The value of a large-N study

The in-depth Dutch cases highlight the theory's usefulness as a descriptive instrument: one that illuminates interactions through analysis of core actor characteristics. In-depth cases are an important element of this study because of the inherent difficulty in understanding complex variables such as motivation, information, and power. Case study research allows one to convince the reader that the analysis of these three variables is capable of capturing the core interactions of implementation. In-depth analysis allows the researcher to underpin the manner in which other variables may also work in the background.

In addition to analysis of the in-depth cases, it is important to add an element of breadth to this study. A large-N analysis demonstrates the predictability potential of the theory better than would be possible with a single or multiple case-study design. It tests the reliability of the connection between measured actor characteristics and resulting cooperation behaviors by applying the analysis to many cases. Goals of the large-N analysis include understanding the theory's potential to capture reality, explain circumstances, and predict interactions. Understanding the potential of contextual interaction theory to predict interactions is an important aspect of this research, and requires applying the theory to a large number of cases. In answer, the

dissertation includes a comparative study of forty-six wetland restoration implementation projects. Employing the theory in this way provides insight about methodology and sheds light on the theory's value in predicting interactions among a broad array of cases.

8.3 The value of an international comparison

Since the theory was developed within the Netherlands, it is important to understand how it applies to cases in a broader context. Replicating results of any study in different circumstances demonstrates a theory's external validity. The rationale for applying this theory to the empirical field of wetlands is explored in chapters 1 and 2. When designing this research project, it became important to ensure a diversity of wetland cases, while limiting the potential pool of cases in a manner that made them comparable to each other in a meaningful way. In other words, one wants to guarantee that cases offer circumstances stretching the capabilities of the theory but within significant boundaries. For this research that seemed best achieved through sampling for wetland restoration cases within four states with generally comparable wetland policy systems.

United States and European Union wetlands policy are similar in that they both offer a general plan which must be made more specific at lower levels of government. Though the United States has the overarching goal of "no net loss" for wetlands, states decide how to enact more specific state-level policy. Thirty-five of fifty states have some type of state-level wetland policy in place (Association of State Wetland Managers, 2006). In the European Union, Natura 2000 habitat and birds directives are made concrete within nations, for example in the Netherlands via the Nature Policy Plan of the Netherlands (*Natuurbeleidsplan*) and the National Ecological Network (*Ecologische Hoofdstructuur)*. These similarities make it possible to compare implementation of wetland restoration policies within America and the European Union. Within both areas policies may also exist at lower levels such as Province, County, City or Municipality. The first delineation is to limit cases to within the European Union and the United States.

Comparing the entire European Union to the whole United States is not justifiable in this research for several reasons including but not limited to the uneven distribution of wetlands geographically, time constraints of this PhD project, and language considerations. The next step is to develop a research design of approximately 40-50 cases from four states within these areas: two in the United States and two in Europe. It is then necessary to choose these states in a way consequential for understanding implementation of wetland restoration policy. The second limitation is to choose two states each within the European Union and the United States.

In the most basic sense, throughout history wetlands have been threatened by constraints in land availability and use (Lewis, 2001; Vileisis, 1997). Population density puts pressure on land use and therefore on decisions about land (or wetland) conservation worldwide. Wetlands protection in any form deals with space, and the

pressure of space for a densely populated area may be much different than that of a sparsely populated region. Therefore issues of space may prove to be an important contextual factor introduced by the chosen policy domain. To ensure any results are not unduly influenced by variations in population density, two densely populated and two sparsely populated states were chosen. Initially the American states with the highest and lowest population densities (New Jersey and Alaska, respectively) were chosen, as well as the EU states closest in density to these (the Netherlands and Finland). However, on closer examination it became clear that the state of Alaska does not make an adequate comparison with the country of Finland. First, Alaska has a much lower population density than Finland; Alaska's population density is 0.4 people/kilometer^2 compared to Finland's 15 people/ kilometer^2. In addition, exploratory research indicated Alaska has not historically undergone a transformation from wilderness to cultivated land, yielding few wetlands to restore. Due to these extenuating circumstances, Oregon was chosen as a state closer in population density to Finland. Both New Jersey and Oregon have state-level wetland policies (Association of State Wetland Managers, 2006). The third limitation is that of population density; cases were chosen to represent one dense and one sparse state each within the European Union and United States.

Table 8.1 Study areas with population density and historically dominant political ideology

State	Population density (people/kilometer^2)	Historically dominant political ideology
The Netherlands*	382	Socio Democrat
New Jersey**	455	Anglo Saxon
Finland	15	Socio Democrat
Oregon	14	Anglo Saxon

*EU data (EU2001, 2004)

**USA data (United States Department of Commerce, 2006)

These delineations also provide other interesting concepts for testing if any significant differences in cases arise. This research design will indicate if any potential differences in cases can be attributable to population density as outlined above. Yet it is also interesting that America exemplifies the (liberal) Anglo Saxon state while Finland and the Netherlands are examples of socio-democratic welfare states within the European Union. Epsing-Andersen (1990: 74), classifies both the Netherlands and Finland as having "strong" and America as having "low" "socialist regime attributes". Distinguishing between a socio-democratic welfare state and a more liberal historically dominant political ideology is done in a simple manner: both the Netherlands and Finland have much higher social spending than the United States as a percentage of Gross Domestic Product, as shown in Table 8.2. In this way both the Netherlands and Finland represent socio-democratic systems, while the United States represents a more liberal regime.

Table 8.2 Social spending as a percentage of gross domestic product [1] in 1993

Country	1993 spending percentage
Finland	28.49
The Netherlands	23.44
USA	9.79

One perceived characteristic of a welfare-oriented historically dominant political ideology, cooperation, may be particularly important to this research. Axelrod & Keohane (1985: 226) define cooperative actors as "adjust[ing] their behaviour to the actual or anticipated preferences of others". Aspects of consensus-based systems may impact implementation interactions: a socio-democratic welfare state may approach cooperation and competition in a manner different from a liberal (Anglo Saxon) state. As Egonsson (1999) writes, "the functioning welfare state *is* a cooperation project, where everyone does her share" (p. 13, original emphasis). Inclusion of both types of historically dominant political ideologies can account for the potential influence of this difference on results. Incorporating an international comparison in the research design clarifies how other broad issues may affect the case sample. This research design not only expands the pool from the environment in which the theory developed, but can also control for the impacts of both population density and historically dominant political ideology.

8.4 Theoretical application as different from in depth cases

The theoretical application is in many ways the same as that for in-depth cases. After clarifying analytical tools and measurement through the first case study application (the *Wierdense Veld*), the interview instrument and the analysis of all data remain consistent between the in-depth cases and the large-N study. The most important difference is the number of actor interviews per case. For all in-depth cases, collecting many documents and interviews allow insight into understanding multiple perspectives. In contrast, the large-N study questions if one can attain a basic understanding of implementation using fewer interviews and less time than allowed for in-depth cases.

It is important to note that contextual interaction theory limits analysis to two actors: implementer and target. Therefore in in-depth and large-N applications, the number of motivation, information and power scores used to analyze each case remains consistent. While an in-depth case incorporates several interviews, analysis centers on two interviews. Additional interviews made during the course of an in-depth study offer more details, but not more points for analysis.

[1] Data table information taken directly from Goodin, Headey, Muffels & Dirven (1999, p. 81)

8.5 Case selection criteria

Case selection began by trying to create a list of wetland restoration projects within the focus areas. Building a potential case list for each state began by pinpointing agencies and programs promoting restoration in the study areas. In the United States this led first to the Wetlands Reserve Program of United States Department of Agriculture. However, further investigation showed that due to privacy issues federal agencies do not release contact information for private landowners who have opted to restore wetlands under the Wetlands Reserve Program. Therefore Wetlands Reserve Program rosters were eliminated as a possible source for cases. Creating lists of wetland restoration projects for each state began by finding all projects funded through two United States programs and one European Union program[2]. For the United States, an initial list of cases were found through the United States Environmental Protection Agency River Corridor and Wetland Restoration Project Directory[3], which included cases from 1985-2003, and the United States Environmental Protection Agency 5 Star Grant Program Directory[4] which included New Jersey cases from 1999-2005 and Oregon cases from 1998-2005. For the European Union cases, projects were found via the European Union LIFE projects database[5] including all wetland restoration proposals granted in Finland or the Netherlands from 1992-2004. From these databases lists of potential projects for each state were constructed, totalling 13 in Finland, 10 in the Netherlands, 14 in Oregon, and 11 in New Jersey.

The research process begins with determining which cases to include in the study, then pinpointing key actors for interviewing. The comparative study follows the parameters shown in Table 3. This element of the dissertation sought 48 comparative cases (12 each from New Jersey, the Netherlands, Oregon, and Finland). It was necessary to not focus solely on cases of successful restoration. The cases fall into three broad categories:

- Implemented: 16 cases (four per state) were implemented successfully from a policy standpoint (i.e., the project as agreed upon by actors was implemented). These cases represented successfully implemented projects.
- Not yet implemented: 16 cases (four per state) are those in which actors have agreed to implement the case, but implementation has not yet occurred. Often in these cases actors intend to implement, but for various reasons this has not yet happened, therefore they represent cases still within the implementation process.

[2] These funding programs are: The United States Environmental Protection Agency (USEPA) Five Star Program, the United States Environmental Protection Agency (USEPA) River Corridor and Wetland Restoration Program and the European Union LIFE fund (Financial Instrument for the Environment).
[3] (United States Environmental Protection Agency, 2007a).
[4] (United States Environmental Protection Agency, 2007b).
[5] (Europa, 2007).

- Not implemented: the final 16 cases (four per state) are projects in which actors, after discussing or planning decide to halt the project; in other words these cases represent a failure to implement.

The three types of cases were chosen with the intention of understanding in a general way how these situations differ. Including "not yet implemented" cases provides an excellent source of material for future explorations, as it catches projects in the process of implementation. It was also important to include both successful and unsuccessful cases to ensure the results were not skewed toward only projects that have been implemented.

Table 8.3 Research project parameters

Case type	Likelihood to implement at all (n=46[6])	Adequacy of implementation (n=16)
Implemented	4 New Jersey 4 Netherlands 4 Oregon 4 Finland	4 New Jersey 4 Netherlands 4 Oregon 4 Finland
Not yet implemented	4 New Jersey 4 Netherlands 4 Oregon 3 Finland	
Not implemented	4 New Jersey 4 Netherlands 4 Oregon 3 Finland	

Initial talks with stakeholders about the cases on these lists indicated some were not wetland restoration projects, shrinking the original list of cases appropriate for this research. In addition, seeking three different types of cases which exist in mutually exclusive groups (implemented, not yet implemented, not implemented) produces a second limiting factor on case lists. Through snowball sampling the initial lists grew and changed to eventually produce twelve cases per state fitting the study parameters (Table 8.4).

[6] Despite seeking 48 cases for inclusion in the large-N study, only 46 cases were complete enough for comparative work. In two Finnish cases only one actor was available for interviewing. Qualitative treatment of these two cases is possible, but only ten Finnish cases are included in the quantitative study: four implemented, three not yet implemented, and three not implemented.

Table 8.4 Snowball sampling results in detail

	The Netherlands	Finland	New Jersey	Oregon
Number of cases on original list	10	13	11	14
Number of these dropped	5	7	8	9
Number of these cases eventually included in analysis	5	6	3	5
Number of cases added through snowball sampling	10	6	11	8
Number of snowball cases dropped	3	1	2	1
Total number of cases accumulated to find 12 cases for analysis	20	19	22	22

8.6 Interview selection

The initial research plan included producing a large sample by surveying relevant actors in the four study areas. The intention was to survey many actors with a mail or internet-based survey. It became clear that for analysis via contextual interaction theory, obtaining surveys for both the project implementer and target would be essential. Realizing the typical constraints associated with blind surveys regarding response rates as well as the limited pool of available cases, this method seemed inappropriate. At the same time, it was important to find an efficient and timely way of obtaining the data necessary for analysis. When identifying cases it became obvious that puzzling out the target and implementer would be difficult based on sometimes sparse case descriptions. After some consideration, another method was developed for this research. First, it was important to communicate with the person listed as the primary contact for each case and ask this individual for an interview. This interview would not only provide the basic details of the case, but also lead to contacts with the case target and implementer, who might then be interviewed. Cases would be considered complete when a full interview from both a target and implementer were obtained. Considering a total of four states and twelve cases per state this could lead to between 96 and 144 interviews, a reasonable task weighing both the project goals and time constraints. In this way, the data collection method changed from a proposed mail/internet survey project to a limited series of more direct interviews.

In practice, some elements of this plan were not successful. Communicating with primary contacts in this way proved difficult for two reasons. After initiating communication with several “primary contacts” it was apparent that the individuals listed on website project descriptions were seldom able to offer real information for cases. Many knew little in practice about the projects. For some projects and grants, individuals listed on internet case descriptions exist at the top of the funding chain. While these individuals could not always speak personally about the case, they

could often refer the researcher to someone knowledgeable about the project at a lower level; occasionally there were several rounds of referral down the chain of command until reaching someone directly knowledgeable about the case. In many instances, this was a person in an agency using funds to conduct the project or a scientist or manager assigned to the project.

Another stumbling block in locating the proper interview respondent was the effect of time: in some cases people listed for the project no longer worked with the parent organization, and occasionally organizations no longer had any employees familiar with the project. Working through this web of contacts and stakeholders in cases, it was often true that the first individual knowledgeable about the case fulfilled the role of either target or implementer. Therefore for the majority of cases, interviews of only two individuals were necessary to provide the needed information. For two Finnish cases it proved impossible to locate or complete a second actor interview. In one case (Central Finland Restoration Project) the project implementer could not provide contact information for an English-speaking target interviewee. The targets, local landowners, did not speak English, while attempts to locate a representative of the local municipality were not fruitful. In another Finnish case, (Yyteri Penninsula) the target contact was not available for an interview, and could not find the time to submit the interview via e-mail. This may have been due to language difficulties, which could make answering questions via email a long arduous task for a busy person. Despite many attempts to conduct the interview over the telephone, with the goal of simplifying the process and reducing time input of the target, the target contact insisted on submitting the interview via e-mail. However, this individual never found time to complete the interview in this way. Assisting this research is of course an extra task for any of the interviewees, who are often busy workers with many responsibilities. For this research the interview process led to 96 interviews for this study. In 46 cases, two interviews were completed for each case (yielding 92 interviews), for two Finnish cases only one interview was possible, and in another two cases an ‘extra’ third interview occurred. Therefore, of the 96 interviews sought (two for each of 48 cases), 94 were completed, providing a 98% response rate. As compared to traditional survey methods, this approach provides not only the information most suited for analysis (i.e., implementer and target perspectives) but also yields an extremely high response rate for interviewees.

8.7 Data gathering and analysis

For the comparative study, semi-standardized interviewing occurred with both the target and implementer of each case. This method entails asking predetermined questions in a systematic manner, but also includes an expectation that the interviewer probe beyond answers given (Berg 2001). Most interviews were conducted via telephone. Given the geographical distance between study areas and the gradually-built nature of a snowball sample, this seemed the most efficient way to produce the needed information. Telephone interviews were from a minimum of

45 minutes to two hours at the lengthiest. Of 96 interviews, nine were submitted via email in lieu of a telephone interview. In all instances these were Finnish cases, and this option was offered to actors who were reluctant to submit to a telephone interview given their comfort-level with English. Any omissions in response from email interviews were clarified with subsequent emails or a quick follow-up telephone call. Seven interviews were conducted in person, six in the Netherlands, and one in the United States.

Interview questions are about the organization, the individual's personal and professional motivations regarding the project, how information is shared among actors, whether there are significant lapses in information, and about decision-making. Details about how interview questions are connected to the concepts of motivation, information and power are available in chapter 4, while the interview instrument is available as Appendix C. The three independent variables of motivation, information, and power are measured in the same manner for the in-depth cases and the large-N study; Appendix D specifies scoring. The documents in both of these appendices hold true for the in-depth cases as well as the large-N study. As the majority of large-N case interviews were conducted by telephone or e-mail[7], there are no recordings or transcriptions of the interviews. Instead careful notes were taken of all responses and comments made during the interview.

This research consists of a snowball sample dependent on the input of actors for suggestions of some cases. This method also depends on stakeholders to provide contact information for interviewees. This approach could lead to a bias toward successful cases or cases actors feel proud to talk about, however this did not prove true in practice. In each state it became clear that actors were willing to provide information for actors in direct opposition to their own goals. In fact the interviewees were incredibly honest, and several (at least one per state) made contact after interviews to ensure that some details about these processes would not be printed in this dissertation. In each case these details were not essential elements of the analysis. For example, one actor called another "a fascist", while in another case the interviewee revealed unflattering personal opinions about a state regulatory agency, and in a third case a stakeholder vented frustration about the policies of a well-known international environmental organization. In only one instance was there the sense of withheld information, namely a strict unwillingness to provide contact information for a second actor. In this Dutch case the implementer felt reservations in providing contact information for a contentious actor involved in an ongoing process. Despite reassurances that this research would be conducted with the utmost care and take years to reach publication, this actor insisted that the case was too controversial. Out of respect for the stakeholders conducting this work, the case was dropped from the case list. In another instance within the Netherlands, primary contacts showed concern that the involvement of a researcher might upset a delicate balance within the negotiation process. To appease actors in that case, elected political representatives were chosen from each side of the situation (a water

[7] Eighty of the interviews were conducted by telephone, nine were submitted by email, and the remaining seven were conducted in person.

board and a local municipal government) as opposed to administrative workers. In this way, each side provided the same type of information from comparably transparent actors within the policy process.

As evidenced by Table 8.4, many cases were dropped during the course of the project. Table 8.5 depicts the reasons these cases were dropped from the sampling pool. It was simplest to find "implemented" cases while most difficult to locate cases for which a decision has been made to not continue with implementation. Perhaps people are more willing to discuss success stories, but it may also be true that once actors invest time in developing a restoration plan they are unwilling to drop these cases. Many cases can exist in a "not yet implemented" state indefinitely while actors work to gather support or funds to implement the project.

Table 8.5 Reasons for cases being dropped from sample by state

	The Netherlands	Finland	New Jersey	Oregon
Not a wetland restoration case	2	3	5	2
No one in the organization knows about this case		1	1	1
Enough "implemented" cases already found	3	4	1	
Does not want to provide second actor's name	1			
No target involved in the process	1			
Located outside the study's geographical barriers	1			
Had no information about this case, suggested another case			1	3
Does not have time to participate				2
Contact has already been interviewed, and does not wish to be interviewed again			1	
Did not respond despite repeated contact attempts			1	2
Total dropped	8	8	10	10

Analyzing subsequent data can differ between the large-N and in-depth cases, in that the researcher must sift through the responses of actors to distill the facts of the case. Interviewing multiple actors in an in-depth case helps triangulate events to understand what happened as each actor envisions their own role and the role of others in the process. It may even reveal differences in presentation of past events, though there were no conflicting depictions from actors in the in-depth cases of chapters 5 through 7. However, a conscientious researcher should be aware of the potential for actors to present past events and their own roles in a process in the most flattering light. The interview instrument features several questions meant to

triangulate responses or ask for details about stated actions[8], with the intention of creating checks and balances as actors present their stories. As mentioned above however, within the large-N study actors proved extremely honest, some to the point that they later asked that not all their revelations reach a public audience.

That being said, in two instances actors seemed less inclined to present an unbiased account of events. In one New Jersey case, actors presented the results of interactions in the same way, but gave very different reasons for why the interactions happened in the manner described (Allied Junction Rail Project). In that case, the target felt his organization halted the proposed project and describes this as an environmental victory. In contrast, the implementer credits the concerns of a state committee with the project's demise. All descriptions are sifted through the experiences of the interviewees, and these actors necessarily leave an imprint on their retelling of events. However, in this case it is easy to imagine that both perceptions are correct—that the target put up a fight to protect this area, and that over time the implementer saw a less controversial solution that only became available after the process began. It is important to note that both actors describe events in a consistent manner, and are only inconsistent in acknowledging who is responsible for the changes. In this way the basic facts remain constant.

In one Dutch case, an actor's initially described goals and motivations did not ring true. This case, which will remain anonymous, featured an actor who adamantly insisted their organization represented pro-nature goals. This actor's responses immediately raised a red flag for several reasons. First, the actor does not work for an organization that supports nature goals in general. While it is conceivable that an organization not traditionally associated with nature might join a project with nature goals, in this instance there was no convincing evidence to support this claim. In addition, this actor's organization was opposed by a well-respected water management group providing ecologically-sound arguments for why the project was not best for nature. Over the course of the interview it became apparent that despite pro-nature claims, this organization was interested in the project for other reasons. This example is included to show that the researcher treated each actor interview with a critical eye, insuring all data was fully supported by the actor's own responses and other accounts of events. While for most interviews the actor's responses were solidified and supported through other actor accounts, conscientious application of the interview instrument and a discerning eye allow extricating the full story from two core actor interviews per case.

[8] Namely questions 9, 10b, 15b, 16b, 17b, 21, 30b, 30c, 31b, 39b, 39c, 41, and 42, refer to Appendix C.

8.8 Reliability and validity

8.8.1 Reliability

Several steps are taken to produce reliable, or consistent, measures of the independent variables. Reliability can be divided into features of stability, equivalence, and internal consistency (O'Sullivan, Rassel, and Berner, 2008). Regarding stability, we must question whether the measures are capable of producing the same results every time. In terms of equivalence, we evaluate if other researchers would measure these factors in the same way, or if variations of a measure produce the same value. Internal consistency asks is all elements of a measure relate to the same underlying concept (O'Sullivan, Rassel, and Berner, 2008). Operational definitions for variables were created after an extensive literature review and also included contextual interaction theory-based conceptualizations. The interview evaluation, though conducted by a single researcher, took place in a thorough and consistent manner as described in Appendix D. Several interview questions served to triangulate responses or prod interviewees to elaborate on claims. In addition, interviewing both target and implementer was essential to producing a reliable and holistic view of events.

8.8.2 Internal validity

Considering internal validity, each study area includes several cases that take place within a relatively limited period of time (roughly 1985-2005). This should address any blatant concerns with the effect of history as a threat to internal validity. The three types of cases (implemented, not yet implemented, and not implemented) were integrated into the design scheme to combat issues of selection as a threat to internal validity. Cases were not 'selected' in the sense that the researcher did not seek out extreme scenarios for inclusion in the study. This should account for statistical regression as a threat to internal validity. The interview instrument was applied to each interviewee only once during the course of the study, and did not change throughout the process, which eliminates testing effects and instrumentation as threats to internal validity. As this research does not incorporate human subjects, maturation is not a threat to internal validity. Experimental mortality was also not a threat to internal validity in this research, as no subjects who began the study later asked to leave. All interviewees who agreed to enter the interviewing process were interviewed to completion. Design contamination has not been a threat to internal validity in this process. Though interviewees may present events in a manner that put them in the best possible light, using more than one interview per case and triangulating responses in the course of the interview make it difficult for any respondent to change a description of events in a meaningful way.

8.8.3 External validity

Considering external validity, unique program features are not an issue in this case, as the research does not focus on any one program—instead it includes the implementation of many programs and policies dealing with wetland restoration. History as a threat to external validity does not appear to be a problem in this case—no major events took place during data collection that might influence subsequent responses. The highly publicized Hurricane Katrina disaster took place before interviewing all but one respondent (the exception is the interview of the implementer from the New Jersey Meadowlands Mitigation case which took place in the Fall of 2004, all other large-N interviews took place after August 2005). The release of *An Inconvenient Truth*, Al Gore's film about global warming, took place after interviewing was complete. In addition, testing issues are not a threat to external validity in this study, as neither pre-test, nor multiple testing were part of the research design. Reactive effects of experimental arrangements are also not a threat to external validity in this case as choosing implemented, not yet implemented, and not implemented cases should combat any such threat. This project represents both the potential and limitations of effects of selection and setting as threats to external validity. This research expands the current external validity of contextual interaction theory by applying it to a new field (wetland restoration policy) and new situations (multi-actor projects). It establishes external validity through application to diverse types of cases, in various geographical locations, and in different types of states. With the results of this research we can address other cases of wetland restoration in European and American states, but perhaps can say little at this time about wetland restoration projects, for example, in developing countries. To increase the external validity of the contextual interaction theory researchers should continue to apply it to different policy fields and situations.

8.9 Research notes

In many cases it seemed that calling from a great distance (from the Netherlands to the United States or Finland) was an asset in convincing potential respondents to agree to interviews. It appeared to validate the research for many respondents; they seemed impressed that someone from far away was making an effort to understand the given project. For this or perhaps other reasons, most respondents were willing to spend a great deal of time answering questions— interviews ranged from 45 minutes to several hours in length, though on average lasting between 1- 1 ½ hours. Some researchers argue that average individuals as well as policy or public administration workers have become overrun with surveying in recent years (O'Sullivan, Rassel, and Berner, 2008). For this study, choosing personal telephone interviews instead of internet or mailed surveys was a fruitful choice that most likely contributed heavily to the high response rate.

8.10 Summary

The necessity of leaving out some known American wetland cases (e.g., the Wetland Reserve Program), and the constraints which led to the use of a snowball sample mean the cases are not randomly selected from the population of all potential wetland restoration cases occurring in these areas over the last 20 years. However, pains have been taken to produce a thorough, if arguably not exhaustive list of potential wetland cases. A great deal of effort was also made to make contact with all cases on the list, and to include cases involving difficult-to-contact respondents. Efforts were also made to maintain a high response rate by thoroughly tracking down and including both the target and implementer for cases. The large-N element of this research provides added value to the case studies detailed in chapters 5 through 7. The large-N study has the ability to extend and challenge the contextual interaction theory application. Applying the theory to a broad sample of cases allows understanding theory accuracy as well as pinpointing areas for improvement. An international research component takes the theory out of its country of origin, providing a broader array of comparative cases. Though cases may prove uniform across countries and states, building differences of historically dominant political ideology and population density into design allows controlling for these factors if differences arise. Methodological application (i.e., interview instrument and its analysis) remained consistent between the in-depth and large-N studies. Treating the interview data with a critical eye and relying on triangulation within the interview instrument produce useful data which illuminate process interactions for wetland restoration projects.

Chapter 9
Qualitative analysis of wetland restoration cases

"I believe I am one of the most grateful that this project came about. I was born in the first house on Allen Street which was built in the early 1900s by my grandfather who was a Civil War veteran. The hundred year old horse chestnut tree that he planted in the backyard is still there. My brother and I used to climb up as far as we dared and we would sit up high and dream our childhood dreams. Now the tree will be sharing the ground with new green growing things, as the land around it becomes a natural part of nature all over again."

(Elinore Polacco, Rahway, New Jersey, 2002, in Obropta and Kallin, 2007)

9.1 Introduction

The resoundingly positive sentiments of Elinore Polacco regarding the Rahway River flood plain restoration project are of course not the tone of actors involved with every wetland restoration project. Though there are cases where all actors are motivated toward a project and enjoy the full support of local organizations, citizens, and politicians, there are also cases involving parties with oppositional motivations. The Rahway case is a clear example of a win-win situation where all actors are in favor of the project, but just as often groups with contentious goals try to come to agreement about the future of an area. This chapter is a comparative qualitative examination of 48 wetland restoration projects. Specifically, this research uses the contextual interaction theory to understand how the actor characteristics of motivation, information, and power can influence implementation processes.

As described in chapter 8, the comparative study includes twelve cases each from four European Union and American states (The Netherlands, Finland, New Jersey, and Oregon). Additionally, within each state are three types of implementation scenarios: those implemented, those not yet implemented, and those not implemented. In this chapter we assess the 48 cases in a qualitative manner. By describing the sample as a whole and the cases in each state, one learns more about trends within the sample and how the cases compare to each other. Case presentation is seen from the perspective that wetland restoration implementation is the ideal. Please note this is not to suggest that every opportunity for wetland restoration worldwide is positive or that every failed wetland restoration project reflects negatively on policy actors. Many sites do not necessitate restoration and not every wetland restoration plan is the best solution for citizens, government, or the environment. This dissertation addresses questions of policy implementation and applies this to the empirical field of wetland restoration. It is for this reason that we treat implementation as the ideal; within Appendices E, F, G and H case analysis pinpoints barriers to implementation, providing insight for policy actors about what changes might encourage implementation of these projects.

The first section portrays the sample as a whole, briefly describing the results of the analysis. We next depict how the observed interactions differ based on case type. We then address the sample by state, giving the reader a sense of wetlands restoration projects in each area. This section is a qualitative description of the results of analysis of each group of cases. We explore again the reasons these states were chosen for the study, and discuss whether the characteristics of population density or social welfare system effect cooperative implementation from a qualitative perspective. Throughout this enterprise we point to the thorough and detailed descriptions of each case found in Appendices E, F, G, and H. This section is the qualitative counterpart to the quantitative treatment of the data found in the following chapter. As the theory is envisioned, it is meant to be tested in the qualitative manner featured in this chapter. This qualitative treatment is the foremost analysis of the correctness of the theory. In the following chapter, we evaluate how separating variables as statistical factors influences the theory's predictability potential by using a quantitative analysis. These two facets of analysis, quantitative

and qualitative, bolster each other, supporting and triangulating the conclusions found in the other aspect of study. As described in the previous chapter, this study necessitated interviews rather than surveys as a data gathering method; we use this qualitative discussion to fully utilize the rich data produced from the interviewing process.

9.2 Qualitative results for the whole sample, phases one and two

Please note that these cases are thoroughly described in appendices by state, in the order: The Netherlands (Appendix E), Finland (Appendix F), New Jersey (Appendix G), and Oregon (Appendix H). The qualitative exposition found in each appendix offers a description of approximately three pages per case. This allows the reader to gain familiarity with the cases, providing information about case history, actors, issues and interactions. In this chapter, we pull limited information from the more thorough Appendix descriptions, focusing discussion on many of the 'not yet implemented' and 'not implemented' cases. This should in no way detract from the fascinating and descriptive accounts of the 'implemented' cases found in the appendices. These successful cases are only discussed briefly in this qualitative section in deference to other complicated, contentious, or incorrectly predicted cases.

The contextual interaction theory produces fourteen hypotheses for the likelihood to implement at all (phase 1) and fifteen hypotheses for the adequacy of implementation (phase 2). Each hypothesis is the result of the unique combination of actor motivation, information, and power scores. The combinations of factors and resulting hypotheses are available as Appendices A, B (phase 1) and C, D (phase 2). One example of a hypothesis for likelihood to implement at all is:

> If application of the instrument would contribute positively to the objectives of one actor, while the other actor is negative, and the information of the positive actor is sufficient, then the character of the interaction process will be dependent on the balance of power between the actors. A relatively equal balance of power will lead to opposition. Opposition can take the forms of negotiation and conflict. (Bressers, 2004: 32)

One example of a hypothesis for adequacy of implementation is:

> If adequate application of the instrument would contribute positively to the objectives of one actor and also positively or neutrally to the other actor, and these actors have sufficient information, then constructive cooperation will evolve. In case both actors are positive this will even be active (constructive) cooperation. (Bressers, 2004: 32)

Table 9.1 gives the frequency of each type of interaction observed for the sample in phase one (n=48). When looking at these cases in total, it is clear that there are a high percentage of active cooperation cases. The observed results of the sample also include instances of opposition, cooperation, obstruction, learning, none, or no

interaction, and forced cooperation. In two cases it was not possible to obtain interviews for both core actors, which means for 4% of the cases prediction is not feasible. In essence, for well over half (64%) of the cases we observe active cooperation, cooperation or forced cooperation and in far fewer cases (23%) we observe non-cooperative interactions such as opposition and obstruction. In addition, there are a few cases of no interaction, or learning toward another interaction (4%).

Table 9.1 Frequency of observed results[1], phase one (n=48)

Type of interaction	Frequency of occurrence in the sample	Frequency percentage	Cumulative percentage
Active Cooperation	27	56%	56%
Opposition	8	17%	73%
Cooperation	3	6%	79%
Obstruction	3	6%	85%
Learning	2	4%	89%
None	2	4%	93%
Incomplete cases, prediction impossible	2	4%	97%
Forced Cooperation	1	2%	100[2]%

Table 9.2 shows the theory prediction for each case based on motivation, information, and power scores and notes whether the observed results agree with this theory prediction. Again it should be noted that in two cases prediction was not possible due to a lack of information. In only one case was the theoretical prediction not in accordance with the observed reality of the project, the New Jersey case Farnham Park. Therefore in an overwhelming proportion of the cases contextual interaction theory generated predicted results regarding the case that described the realities of the case process well. This overview also clearly shows that each state produces a variety of interaction types.

Only those cases classified as 'implemented' reach the second phase of analysis. For phase two, all cases (n=16) are predicted as active constructive cooperation, and in each case the observed results match the theoretical prediction, as shown in Table 9.3. Therefore all cases (100%) that reach the second phase of analysis produce the interaction of active constructive cooperation. In the concluding section we address why all adequacy cases behave in a similar way.

[1] This means when theory prediction did not match with observations, the observed interaction is included.
[2] Cumulative percentages do not add up to 100% because of rounding.

Table 9.2 Case results by state, phase one, likelihood to implement at all

Case	Case type	Contextual interaction theory prediction	Is the prediction corroborated by observation?
The Netherlands			
Korenburgerveen	Implemented	1:Active Cooperation	Yes
Tiengemeten	Implemented	1:Active Cooperation	Yes
Fochteloerveen	Implemented	1:Active Cooperation	Yes
Bargerveen	Implemented	1:Active Cooperation	Yes
Water op Maat Project	Not yet implemented	1:Cooperation	Yes
Meijegraslanden	Not yet implemented	1:Active Cooperation	Yes
Drents Fries Wold	Not yet implemented	1:Active Cooperation	Yes
Ameland Dune Fringe Project	Not yet implemented	8: Learning	Yes
Randmeer	Not implemented	4:Opposition	Yes
Tjongerkanaal	Not implemented	4:Opposition	Yes
Ottershagen	Not implemented	4:Opposition	Yes
Horstermeer	Not implemented	4:Opposition	Yes
Finland			
Siikalahti	Implemented	1:Active Cooperation	Yes
Hainikaruapa	Implemented	1:Active Cooperation	Yes
Koitajoki	Implemented	1:Active Cooperation	Yes
Lake Vaahersalonlampi	Implemented	1:Active Cooperation	Yes
Yyteri Peninsula	Not yet implemented	Incomplete Information, (prediction impossible)	Not applicable
Alhonlahti	Not yet implemented	1:Active Cooperation	Yes
Sääperinjärvi	Not yet implemented	1:Active Cooperation	Yes
Iso Huppio	Not yet implemented	1:Active Cooperation	Yes
Central Finland REC	Not implemented	Incomplete Information, (prediction impossible)	Not applicable
Site within Paljakka Nature Reserve	Not implemented	9: None	Yes
Viikki Vanhankaupunginlahti	Not implemented	14:None	Yes
Hyoteikonsuo aapa mire	Not implemented	5:Obstruction	Yes
New Jersey			
Meadowlands Mitigation Bank	Implemented	1:Active Cooperation	Yes
Rahway River Flood Plain Restoration	Implemented	1:Active Cooperation	Yes
Franklin Parker Preserve	Implemented	1:Active Cooperation	Yes
PSE&G Wetland Restoration	Implemented	1:Active Cooperation	Yes
Teaneck Creek Wetland Restoration	Not yet implemented	1:Active Cooperation	Yes
Pond Creek Wetland Restoration	Not yet implemented	1:Active Cooperation	Yes
Stone Harbor Point	Not yet implemented	1:Active Cooperation	Yes
Liberty State Park	Not yet implemented	1:Active Cooperation	Yes
Eagle Manor Farm	Not implemented	4:Opposition	Yes

Allied Junction Rail Project	Not implemented	4:Opposition	Yes
Fenwick Manor	Not implemented	4:Opposition	Yes
Farnham Park	Not implemented	1:Cooperation Observed interaction: opposition	No
Oregon			
Chocktoot Drain	Implemented	1:Active Cooperation	Yes
Kunz Marsh	Implemented	1:Active Cooperation	Yes
Lower Powell Butte Restoration	Implemented	1:Active Cooperation	Yes
West Eugene Wetlands Project	Implemented	1:Active Cooperation	Yes
McKay Clagget Creek	Not yet implemented	5:Obstruction	Yes
Rose Dairy	Not yet implemented	3:Forced Cooperation	Yes
Wilson-Trask Wetland	Not yet implemented	1:Active Cooperation	Yes
Cedar Hill Farm	Not yet implemented	1:Active Cooperation	Yes
Mouse Lake	Not implemented	1:Cooperation	Yes
Warren Slough	Not implemented	2:Learning	Yes
Marshland Restoration	Not implemented	1:Cooperation	Yes
Boone Slough	Not implemented	5:Obstruction	Yes

Table 9.3 Case Summary by state, phase two adequacy of implementation

Case	Case type	Contextual interaction theory prediction	Is this prediction correct?
The Netherlands			
Korenburgerveen	Implemented	1:Active Constructive Cooperation	Yes
Tiengemeten	Implemented	1:Active Constructive Cooperation	Yes
Fochteloerveen	Implemented	1:Active Constructive Cooperation	Yes
Bargerveen	Implemented	1:Active Constructive Cooperation	Yes
Finland			
Siikalahti	Implemented	1:Active Constructive Cooperation	Yes
Hainikaruapa	Implemented	1:Active Constructive Cooperation	Yes
Koitajoki	Implemented	1:Active Constructive Cooperation	Yes
Lake Vaahersalonlampi	Implemented	1:Active Constructive Cooperation	Yes
New Jersey			
Meadowlands Mitigation Bank	Implemented	1:Active Constructive Cooperation	Yes
Rahway River Flood Plain Restoration	Implemented	1:Active Constructive Cooperation	Yes
Franklin Parker Preserve	Implemented	1:Active Constructive Cooperation	Yes
PSE&G Wetland Restoration	Implemented	1:Active Constructive Cooperation	Yes
Oregon			
Chocktoot Drain	Implemented	1:Active Constructive Cooperation	Yes
Kunz Marsh	Implemented	1:Active Constructive Cooperation	Yes
Lower Powell Butte Restoration	Implemented	1:Active Constructive Cooperation	Yes
West Eugene Wetlands Project	Implemented	1:Active Constructive Cooperation	Yes

In essence the sample includes several types of interactions, with each state exhibiting a diversity of interaction types. In the next section we more fully discuss these interactions from a qualitative perspective, focusing on each state.

9.3 Results based on implementation status

The research design allows for discovering unique traits about the different types of cases. For example, with 'implemented cases', analysis sheds light on how interactions led to the successful results found in reality, often times including how actors worked through problems in the course of implementation. The 'not yet implemented' cases are those in the *process* of implementation, the theory may be especially useful in highlighting barriers to implementation if applicable. When studying the 'not implemented' cases one can use theoretical analysis to better understand what happened to derail a particular project, and in some cases the theory may indicate what could change to enable implementation. A summary of observations for all 48 cases divided by implementation type are shown in Table 9.4. For all 16 'implemented' cases the result of observation is (active) cooperation. Within the subgroup of 16 'not yet implemented' cases, there are a variety of interaction types, with the majority observed as active cooperation but others present including learning, forced cooperation, obstruction, cooperation, as well as one case with incomplete information. Within the subgroup of 16 'not implemented' cases, half of the observations are of cases of opposition, but other interactions represented include learning, obstruction, cooperation, no interaction, and one case with incomplete information.

Table 9.4 Observations by case type, likelihood to implement at all[3] (N=48)

	Implemented	Not yet implemented	Not implemented	Total
Situation: Phase 1				
1. (Active) cooperation	16	11		27
2. /8. Learning		1	1	2
3. (Forced) cooperation		1		1
4. Opposition			8	8
5. Obstruction		1	2	3
7. Cooperation		1	2	3
9. /14. None			2	2
Incomplete information, prediction impossible		1	1	2
Total	16	16	16	48

[3] Again, when theory prediction did not match with observations, only the observed interaction is included.

9.4 Results by state

9.4.1 The Netherlands

The 12 Dutch cases are the result of interviewing 21 actors from 14 agencies, one municipal politician, an elected waterboard representative, and one representative of local nature interests, or 24 interviewees. Each actor was interviewed for only one case, however, several agencies are involved in multiple cases: *Vereniging Natuurmonumenten* (Association of Nature Monuments, four cases), *Dienst Landelijk Gebied* (Service for Rural Territory, two cases), and *Staatsbosbeheer* (Dutch Forestry Service, three cases). Other interviewees include representatives of nature interests on the island of *Ameland*, the *Algemene Nederlandse Wielrijders Bond* (The Dutch Automobile Association), *Land- en Tuinbouw Organisatie* (a farmers Union), a national park organizational committee (*Overlegorgaan Drents Fries Wold*), the Province of *Friesland*, the non-profit *Stichting Marke Vragender Veen* (Foundation of the *Marke Vragender* Peat), five Waterboards (*Reest* and *Wieden*, *Amstel*, *Gooi*, and *Vecht*, *Regge* and *Dinkel*, *Waternet*, and the *Friesland* Water Authority), and representatives of three municipalities (*Korendijk*, *Dinkelland*, and *Wijdmeren)*.

Table 9.5 depicts the actors interviewed by case type though naturally does not depict all of the agencies involved in each case, which may number from a few to dozens. This should not imply that actors implementing cases are successful while those actors involved in 'not implemented' cases have failed. Instead, this table depicts the variety of actors involved in each sort of case. In other words, when seeing how actors 'divide up' based on case type and (later) interaction type one can see that, for example, government agencies, non-governmental agencies, and private firms appear in a diversity of roles in all four states. Governments, either at the municipal or provincial level, and waterboards are represented in each kind of case. Two of the primary Dutch national institutions that deal with land preservation and conservation (*Staatsbosbeheer* and *Vereniging Natuurmonumenten*), nature-oriented non-profits (*Stichting Marke Vragender Veen* and *Ameland* nature interests), and a governmental integrated planning implementing agency (*Dienst Landelijk Gebied*) can all be found in both "implemented" and "not yet implemented" cases—but did not serve as core actors for interviewing in "not implemented" cases. The final 'not yet implemented' actor is the National Park *Overlegorgaan Drents Fries Wold*. The final 'not implemented' cases include actors representing tourism interests (*Algemene Nederlandse Wielrijders Bond*) and farming (*Land- en Tuinbouw Organisatie*).

Table 9.6 shows each case's interaction type and the actors involved. As with actor and case type, connecting actor and interaction type does not mean that in reality, or in this study, that cooperation is necessarily positive and opposition necessarily negative. In one case (*Randmeer*) representatives blocked a wetland restoration project that they felt focused more on recreation than nature. In another opposition case (*Horstermeer*), implementers dropped a contentious restoration case when it became clear that local citizens did not support the project. A common

theme in Dutch interviews is the concept of *draagvlak*, or support: many actors describe working to build support for unpopular projects over long periods of time (decades if necessary). While it is likely that forced cooperation does happen in the Netherlands, in several cases actors describe scenarios where this may be a theoretical possibility, but never one truly considered by implementers (*Ottershagen*, *Horstermeer*, *Water op Maat*, *Meijegraslanden*). Instead they describe actively choosing to build positive relationships in efforts to further their goals in the future. This table shows that actors participate in varied interactions in The Netherlands. Governments at the municipal or provincial level and waterboards are involved in active cooperation, learning, and opposition cases. Nature oriented non-profits are involved in both active cooperation and learning cases. National Dutch institutions for conservation and preservation (*Vereniging Natuurmonumenten*, *Staatsbosbeheer* , National Park *Overlegorgaan Drents Fries Wold*) and planning (*Dienst Landelijk Gebied*) are involved only in active cooperation and cooperation cases in this assessment. Recreation (*Algemene Nederlandse Wielrijders Bond*) and agriculture (*Land- en Tuinbouw Organisatie*) interests are involved in opposition cases.

For the Netherlands there are twelve complete cases; in six of these the theory predicts active cooperation which is supported by analysis. These six cases of active cooperation incorporate all of the 'implemented' and two of the 'not yet implemented' cases. There are two remaining 'not yet implemented' cases, one predicted as cooperation and one as learning; in both cases the theoretical predictions match with reality. There are four accurately predicted 'not implemented' cases, all examples of opposition. These interactions are described fully below.

'Implemented' cases in the Netherlands (*Korenburgerveen*, *Tiengemeten*, *Bargerveen*, *Fochteloerveen*) include a non-profit nature organization, a municipality, a waterboard, national conservation agencies, and national planning agencies managing often large-scale, lengthy and complicated projects. Projects included installing dams and dikes to enable water retention, restoring natural processes to an island, holding rainwater in a bog to promote peat growth, and creating a dike and water retention areas to encourage peat and moorland growth. In all four cases the theory predicts active cooperation, which is substantiated in observation. As these cases represent cooperative endeavors, they will be discussed only briefly here. Elaborate descriptions of each case can be found in Appendix E. This brief treatment should not belie the importance of these cases, which are remarkable as intricate technical and complex social interaction processes.

Table 9.5 Actors interviewed by case type, the Netherlands

	Case Type		
	Implemented	**Not yet implemented**	**Not implemented**
Actors interviewed	*Vereniging Natuurmonumenten* (Association of Nature Monuments, 3 cases) *Stichting Marke Vragender Veen* (Foundation of the *Marke Vragender* Peat) Municipality of *Korendijk* Waterboard *Amstel, Gooi,* and *Vecht* *Dienst Landelijk Gebied* (Service for Rural Territory) *Staatsbosbeheer* (Dutch Forestry Service)	Waterboard *Reest* and *Wieden* *Staatsbosbeheer* (Dutch Forestry Service, 2 cases) *Vereniging Natuurmonumenten* (Association of Nature Monuments) *Dienst Landelijk Gebied* (Service for Rural Territory) National Park *Overlegorgaan Drents Fries Wold* Province of *Friesland* *Ameland* nature interests	*Algemene Nederlandse Wielrijders Bond* (The Dutch Automobile Association) Waterboard *Reest* and *Wieden* *Friesland* Water Authority *Land- en Tuinbouw Organisatie* (a farmers Union) Waterboard *Regge* and *Dinkel* *Dinkelland* municipal council member *Waternet*, the association of the Waterboard *Amstel, Gooi,* and *Vecht* and the municipality of Amsterdam. Municipality *Wijdmeren*

Table 9.6 Actors interviewed by interaction type, the Netherlands

	Interaction type			
	Active cooperation	**Cooperation**	**Learning**	**Opposition**
Actors interviewed	*Vereniging Natuurmonumenten* (Association of Nature Monuments, 4 cases) *Stichting Marke Vragender Veen* (Foundation of the *Marke Vragender* Peat) Municipality of *Korendijk* Waterboard *Amstel, Gooi,* and *Vecht* *Dienst Landelijk Gebied* (Service for Rural Territory, 2 cases) *Staatsbosbeheer* (Dutch Forestry Service, 2 cases) National Park *Overlegorgaan Drents Fries Wold*	Waterboard *Reest* and *Wieden* *Staatsbosbeheer* (Dutch Forestry Service)	Province of *Friesland* *Ameland* nature interests	*Algemene Nederlandse Wielrijders Bond* (The Dutch Automobile Association) Waterboard *Reest* and *Wieden* *Friesland* Water Authority *Land- en Tuinbouw Organisatie* (a farmers Union) Waterboard *Regge* and *Dinkel* *Dinkelland* municipal council member *Waternet*, the association of the Waterboard *Amstel, Gooi,* and *Vecht* and the municipality of Amsterdam. Municipality *Wijdmeren*

Three of the Dutch 'not yet implemented' cases (*Water op Maat*, *Meijegraslanden*, *Drents Friese Wold)* are quite similar, involving the beginning stages of wetland restoration projects with predictions of active cooperation or cooperation. Standing in contrast is the final 'not yet implemented' case (*Ameland* Dune Fringe Project) which has been ongoing for several years and features actors who have fallen out of communication in deciding the future of this island landscape. In the *Water op Maat* project the waterboard *Reest en Wieden* seeks to seasonally control variation in water levels in a large water retention area in Northwest *Overijssel*. The Dutch forestry service (*Staatsbosbeheer*), however, questions the project's potential effects on nature. To comply with European Union regulations, *Staatsbosbeheer* must show that target species remain at certain levels. In contrast the *Waterschap Reest en Wieden* focuses not on species, but on the entire water system. In this case the theory predicts cooperation, and this assessment is validated in observation. The implementer will work toward convincing the target that proposed changes will benefit their interests. *Waterschap Reest en Wieden* has frozen the project in its current stage to gather more data and build support for the project. The *Meijegraslanden* project seeks to link conservation areas, restoring farmland into a wetland of approximately 200 hectares (500 acres) bordering the *Nieuwkoopse Plassen* nature area. The implementer is *Vereniging Natuurmonumenten* while *Dienst Landelijk Gebied* plays the role of target. Local farmers are not obliged to sell their land for this project, meaning the implementer must wait for their cooperation. In this case the theory predicts active cooperation, and this assessment is corroborated in observation. The cooperation of farmers may become a limiting factor in this project, but at the time of interviews this was not the case. With the sensitive nature of this project in mind, the implementer chooses to move slowly. Therefore the project is in the beginning stages: a project group has not yet been formed to direct the process. Whether the project continues in a cooperative manner clearly depends on how process actors manage project meetings, as well as the amount of care they take in working with local farmers. The *Drents Friese Wold* case entails looking at options to improve habitat within a national park. Alternatives include reducing drinking water extraction and/or buying and restoring farmland lying within the park boundaries. The national park *Overlegorgaan* is the project implementer while *Staatsbosbeheer* plays the role of project target. The implementer must gather funding to enable buying the farmland, or convince Vitens, a drinking water company, to change their extraction patterns. In this case the theory predicts active cooperation, and this assessment is confirmed in observation. Further action requires the willingness of the farmers to move, and/or the willingness of Vitens to make a comprehensive solution. While cooperation has been the tone to date, this process is in the earliest phases, and will require more work before implementation can be realized. The project is planned to take place over the next three to five years.

The final 'not yet implemented' case has a much different tone; the *Ameland* Dune Fringe Project began as a rural planning project in the late 1980s. The project sought to shift land from agricultural use to restore a natural dune landscape and develop a hotel-golf course complex. The hotel-golf course project was immediately

implemented but the nature development project has stalled. The source of land for both projects was primarily agriculture; it became clear over time that farmers on the island supported the goals of the development project but not the nature project. If interviewed and analyzed, it is likely the famers would produce a score of motivation against the project, however, the implementers are the Province of Friesland, and the *Ministerie van Landbouw, Natuur en Voedselkwaliteit* (Ministry of Agriculture, Nature and Food Quality). The implementer is not motivated against the project, but instead neutral about it. The theory predicts "a joint learning process will evolve that will sooner or later create another situation" and this is substantiated in observation. There is not an interaction taking place at present, and one of the few ways its might progress into an interaction would be through learning. In essence joint learning is one avenue by which another situation may emerge, though joint learning is not guaranteed. The target in this case, *Ameland* nature interests, describes being shut out of communication and information channels within the process. The implementer is privy to project information channels and could use this position to enable implementation, however, this actor displays a neutral motivation score: in this analysis they describe close association with the interests of the farming community of *Ameland*. While they may not fully support these interests, on some level the province accepts the farmers' position. The province must balance dual and perhaps conflicting goals—promoting both economic prosperity and environmental protection. The implementer interviewee is hopeful that the project will proceed eventually. Due to the complications found in this project, the province reports that plans for nature and recreation are now more closely linked from inception, then presented and financed as one plan. This project has served as a learning experience for implementers in future projects, but stakeholders are also concerned about whether the nature portion of this project will ever come to fruition.

The final four cases in the Netherlands (*Randmeer*, *Tjongerkanaal*, *Ottershagen*, and *Horstermeer*) are all examples of 'not implemented' cases. In each case the theory predicts opposition, and is confirmed by observation in all four cases. In the *Randmeer* case the *Algemene Nederlandse Wielrijders Bond* (Dutch Automobile Association) seeks to convert an area between two polders into a large lake to reduce infiltration and provide room for water. The waterboard *Reest en Wieden* felt the primary incentive of project leaders was to create recreation opportunities rather than improve the environment. In particular the waterboard felt the hydrological evidence in support of the project was inconclusive, most notably when considering the site's proximity to the nature area *Weerribben*. In 2002 parliament decided not to fund the project, in part due to the loss of coalition power (over an unrelated issue) of its primary supporter. The target, however, calls this a 'ghost project' that reappears occasionally, remarking he would not be surprised to see it examined for implementation again in future. The *Tjongerkanaal* case began as part of a larger rural planning initiative within southeast *Friesland*. This initiative, projected to include several elements, included connecting nature areas and bringing natural patterns back to the canalized river *Tjongerkanaal*. Actors agreed some agricultural areas would change to nature, with the caveat that the

maximum amount of farmland lost could not exceed 2000 hectares (4940 acres). This element of the initiative was conceived late in the process, by which time its implementation would push the total number of converted hectares above 2000. For this reason, the farming community rejected this element of the initiative and the actors decided not to proceed. The implementer dropped the project because they did not have the authority to override the 2000 hectare limit. The *Ottershagen* project seeks to create a water retention area to fulfill goals of the European Union Water Framework Directive. Fulfilling the project as currently envisioned will require inundating farmland. Local farmers and citizens have informed the *Waterschap Regge en Dinkel* that they are currently uninterested in this plan, which must be voluntary among actors. The project to date has been rejected, but actors on both sides remain communicative and open within the process. The implementer states they will not begin a 10 year battle with stakeholders. They instead work in a stepwise manner, and when resistance is too great they will stop the project, then perhaps try again some time in the future. The target promotes a different plan; instead of dedicating one large piece of land, he suggests broadening the entire water system to allow water retention without threatening farmers. Both representatives state the importance of balance and speak about the potential of compromise. While these cases are categorized as 'not implemented', in each case actors describe scenarios where implementing the original project may become a possibility in the future. This is not so in the *Horstermeer* case, where actors have soundly rejected one plan and are instead pursuing a different project for the future. This case involves a deep polder with seepage problems lying in an area of shallow lakes. Actors sought to change the polder back to a lake to stop water loss and improve water quality, but local residents found the project unacceptable. Having failed in this project, around 2004 implementers decided to change to another plan which would create a much smaller but more acceptable restoration for the area. The first project is the focus of this analysis. The target remarks that the implementer failed to garner support (*draagvlak*) for the project, not incorporating enough of working groups and committees featuring local citizens and local politicians typical for this type of interaction. Upon realizing the lack of support the implementers halted the project, instead working to create an acceptable alternative plan using the first process as a learning experience. In contrast to the other three 'not implemented' cases, in this case neither actor spoke of the possibility of reviving this project in the future.

9.4.2 Finland

The twelve Finnish cases result from interviewing 22 actors from 17 agencies or organizations. Two Finnish cases (*Yyteri* Peninsula, Central Finland Restoration Project) could not be completed as it was not possible to find a second core actor for interviewing. Each actor was interviewed for only one case. One agency, *Metsähallitus*, is involved in multiple cases; in addition eight regional branches of the national Finnish environmental agency (Regional Environmental Centers) take part as core actors in cases. Other interviewees include representatives of a

municipality (Parikkala*),* two cities (Pori and Helsinki*),* one bird watching organization, a game management district, a steering group, a forestry center, and communal forest owners.

Table 9.7 depicts the actors interviewed for this analysis by case type, though does not include all of the agencies involved in each case, which may be far greater than only the implementer and target. This does not mean that actors implementing cases are successful while those actors involved in 'not implemented' cases have failed in any way. Instead, this table depicts the diversity of actors involved in each sort of case. For example, *Metsähallitus,* Regional Environmental Centers, and governments (municipal or city) are involved in all three types of cases. The bird watching organization *Oriolus* is the final actor involved in an implemented case, the *Satakunta* game management district and a steering group member are the two final actors involved in 'not yet implemented' cases, and *Hyöteikkö* communal forest group is the final actor included in a 'not implemented' case.

Table 9.8 shows each case's interaction type and the actors involved. This should also not be read as necessarily a commendation for actors participating in cooperation or conversely a criticism for actors in other case types. Of the interaction types that can be predicted based on gathered data, most Finnish cases qualify as cooperation. Of these cases four include *Metsähallitus* and five cases include Regional Environmental Centers. A municipal government, a bird watching organization, a game management district, a member of a project steering group, and a representative of a Forestry center also take part in cooperation cases. Cases garnering the prediction of no interaction also include *Metsähallitus* and Regional Environmental Centers, as well as the City of Helsinki. The single obstruction case again includes *Metsähallitus*, joined this time by *Hyöteikkö* communal forest members.

Table 9.7 Actors interviewed by case type, Finland

	Case Type		
	Implemented	**Not yet implemented**	**Not implemented**
Actors interviewed	*Metsähallitus* (3 cases) Municipality of *Parikkala* *Lapland* Regional Environmental Center North *Karelia* Regional Environmental Center South *Savo* Regional Environmental Center *Oriolus* a bird watching organization	*Metsähallitus* City of *Pori* *Pirkanmaa* Regional Environmental Center *Satakunta* game management district North *Karelia* Regional Environmental Center Steering group member South *Savo* Forestry Center	Central Finland Regional Environmental Center *Kainuu* Regional Environmental Center *Metsähallitus* (2 cases) *Uusimaa* Regional Environmental Center City of *Helsinki* *Hyöteikkö* communal forest members

Table 9.8 Actors interviewed by interaction type, Finland

	Interaction type			
	Active cooperation	**None**	**Obstruction**	**Cannot predict due to one interview**
Actors interviewed	*Metsähallitus* (4 cases) Municipality of *Parikkala* *Lapland* Regional Environmental Center North *Karelia* Regional Environmental Center South *Savo* Regional Environmental Center *Oriolus* a bird watching organization *Pirkanmaa* Regional Environmental Center *Satakunta* game management district North *Karelia* Regional Environmental Center Steering group member South *Savo* Forestry Center	*Metsähallitus* *Kainuu* Regional Environmental Center *Uusimaa* Regional Environmental Center City of *Helsinki*	*Hyöteikkö* communal forest members *Metsähallitus*	City of *Pori* Central Finland Regional Environmental Center

Within the Finnish assessment there are ten complete cases; in seven of these the theory predicts active cooperation which is supported by analysis. These seven cases of active cooperation incorporate all of the 'implemented' and three of the 'not yet implemented' cases. The remaining 'not yet implemented' case is one of two instances where analysis is not possible due to incomplete data gathering. One 'not implemented' case can also not be analyzed, as it features only one interview. Of the three remaining 'not implemented' cases, analysis of two cases produces the prediction of no interaction, while the final case is predicted as obstruction. In all three cases the predictions are supported by observation. One theme among Finnish cases is cooperation and inclusive participation. Finland is a large, sparsely populated country, but a great deal of land is privately owned, whether by single owners, families, or in communal partnerships. Implementers routinely remark in

interviews that they must have the permission of landowners to proceed, either to make changes to an owner's land, or to gain permission to buy their land. In some cases, actors relate stories where they have attempted to move forward with nature or conservation policy without first building support, a strategy they found counter-productive (*Siikalahti*, Central Finland Restoration Project). The current of 'everyman's right' exists below the surface of the group of Finnish cases as a whole. Everyman's right evolved from an "unwritten code of practice" that in modern times has become a legal right (Finnish Ministry of the Environment, 2007). By this right, everyone has "the basic right to roam freely in the countryside, without needing to obtain permission, no matter who owns or occupies the land" (Finnish Ministry of the Environment, 2007). This right is extended with the understanding that damaging the environment or disturbing others is not permissible. This concept seems deeply ingrained in the minds of the Finnish interviewees. Within nature sites, the extension of everyman's right may be modified or curtailed, to prohibit disturbing nesting birds or protecting important species. In this way, everyman's right and the interests of nature may occasionally come into conflict. Perhaps due to the long tradition of everyman's right, Finnish policy implementers in these analyzed cases seem especially cautious and aware of building support for projects and informing the public about how their rights may be impacted by the designation of a nature area. The Finnish interactions are described fully in the section below.

'Implemented' cases in Finland (*Siikalahti, Hainikaruapa peatland, Koitajoki, Lake Vaahersalonlampi*) include an assortment of actors creating partnerships to implement complex and intensive projects. Implementation projects included two cases of decreasing overgrowth in wetlands, one by creating new basins, getting rid of vegetation, and seasonally manipulating water levels, and the second via removing reed beds, as well as two cases involving re-hydrating a wetland by damming the channels dug to drain the wetland in the past. In all four cases the theory predicts active cooperation, which is corroborated in observation. More extensive descriptions of each case can be found in Appendix F. These cursory descriptions should not underestimate the importance of the implemented cases, which are often elaborate processes involving a great deal of effort over many years.

One Finnish 'not yet implemented' case (*Yyteri Penninsula*) cannot undergo full analysis as it includes the perspective of only one actor. It proved impossible during the course of this research effort to obtain a second interview from a relevant actor. The project involves purchasing areas that can later be restored, and beginning to restore areas already owned by the state. Technically, restoration includes opening coastal meadows, and clearing reed beds, shrubs and trees that have encroached on the area. The implementation has begun on the property owned by the state. The privately owned area is popular for hunters, fishers, and small boat recreation. From the implementer's perspective the remaining land may be difficult to purchase, as local landowners are apprehensive about how rights within the site may change in the future. According to the implementer, this problem may be compounded by the often low purchase price offers made by the government. The remaining three 'not yet implemented' cases are all theory predictions of active cooperation that are confirmed when evaluating the cases. In the *Alhonlahti* case, restoration entails

combating overgrowth and decreasing predators through hunting in four sub-sites. The *Alhonlahti* sub-site areas are privately owned; project managers have created a working group including representatives from birding interests, tourism, the municipality, and hunting groups who will work together to create a restoration plan. After plan creation, the implementer will work toward getting landowner approval for the project. The implementer is in this stage of the process, working to obtain the consent of each individual landowner who will be affected by the project. The *Sääperinjärvi* wetland restoration project follows a similar theme. In this case, actors are working towards restoring conservation values in a drained lake by either dredging open water areas or increasing water levels. As with the *Alhonlahti* case, the implementer includes the opinions of others in the planning process, this time via a 16 member steering group. The implementer must later obtain permission of all potentially affected landowners not represented on the steering committee. At analysis, the implementer was in the planning stage of the project, and was at that time working to gain the support of landowners. As with several Dutch cases (*Meijegraslanden, Drents Friese Wold*), these projects were analyzed in early stages. The subsequent interactions may change over time as actors work through the conditions and details of land purchase or implementation. The final 'not yet implemented' case is *Iso-huppio*. In this project, actors are working to restore peatland within a state-owned conservation area that historically underwent changes to improve forestry. This restoration occurs on state-owned land, therefore the greater community is not involved in decision-making for the specifics of this project. Some of the affects of the project, however, may encroach on privately held land. In this case, actors describe evaluating and refining their plans to create a proposal that would avoid affecting local private landowners.

The final four Finnish cases (Central Finland Restoration Project, Site within *Paljakka* Nature Reserve, *Viikki-Vanhankaupunginlahti***,** *Hyöteikönsuo aapa* mire) are examples of 'not implemented' cases. The Central Finland Restoration Project cannot be fully evaluated, as we lack a second interview for analysis. In this case, the project sought to improve this area's biodiversity values while enhancing tourism opportunities. The proposed project site lies near an established Natura 2000 site. This wetland was drained to create farmland in the past, though as farmland, the area suffered seasonally from relatively high water levels. The proposed project planned to increase these water levels to improve habitat and recreation opportunities. The implementer designed the project without input from local landowners who subsequently would not approve the restoration plan. The implementer remarks that this project served as a learning experience, and now their procedure includes local landowners in the process. Two 'not implemented' cases (Site within *Paljakka* Nature Reserve, *Viikki-Vanhankaupunginlahti***)** produce the prediction of no interaction that prove accurate descriptions of events. The *Paljakka* Nature Reserve case involves raising water levels in a mire by filling ditches and building dams. After further analysis, however, actors discovered insurmountable technical problems involving the mire's slope and lack of access via roadways. These actors realized that implementing the project could easily cause more harm than good and subsequently dropped the case. The implementer states that at the

time satellite imagery and geographic information systems were not in widespread use. He finds that given the current access to technology, they likely would have not begun the project at all. At the time, however, actors began planning the project, but after site visits realized it was not feasible. *Viikki-Vanhankaupunginlahti* is the second 'not implemented' case garnering a prediction of no interaction. In this case, actors worked on planning a project for a Finnish wetland located in the heart of Helsinki. A *Viikki-Vanhankaupunginlahti* working group actively evaluates several projects at a time, appraising their potential effectiveness and planning the financing of these projects. In this case, when actors began to look more closely at this particular project they found that while it benefitted bird species, it could potentially harm other species within the protected site. After closely evaluating the project, actors decided to stop it in its initial stages. The final 'not implemented' Finnish case is one of predicted opposition, substantiated in analysis. This area, the *Hyöteikönsuo aapa* mire, is partially owned by a communal forest group. In the early 1900s it was drained for agriculture; implementers sought to restore natural processes by filling in ditches created to drain the area. Members of the *Hyöteikkö* communal forest proved unwilling to sell their land to *Metsähallitus*, obstructing this project. The implementer then continues with a smaller project not incorporating private land.

9.4.3 New Jersey

The twelve New Jersey cases are the result of interviewing 23 actors from 13 agencies and one local citizen, or 24 interviewees. One actor was interviewed for two cases, yielding a total of 25 interviews. Some agencies are involved in multiple cases, including the Army Corps of Engineers, United States Fish and Wildlife Service, the Natural Resources Conservation Service, and various divisions of the New Jersey Department of Environmental Protection. Other interviewees include representatives from the Louis Berger group, TRC-Omni environmental consultancy, the City of Camden, Union County Parks Department, the New Jersey Conservation Foundation, Hackensack Riverkeeper, PSE&G, Teaneck Creek Conservancy, and the New Jersey Pinelands Commission.

Table 9.9 depicts the actors interviewed for each type of case, though it should be noted this does not reflect all of the agencies involved in each case, which can number in the dozens. Again, this is not to say that actors implementing cases have done a good job or that those actors involved in 'not implemented' cases have failed in some way. The New Jersey cases are excellent examples of the reality that not all wetland restorations are "good", and that not all failed restorations are "bad" environmentally. In one case (Allied Junction Rail Project) a wetland restoration involving mitigation is halted by an environmental organization which feels the proposed project is not best for the environment. In one 'not yet implemented' case (Stone Harbor Point), actors continue to debate whether the project merits implementation on grounds of species protection. It is also true that several actors involved in 'not implemented' cases (Farnham Park, Eagle Manon Farm) describe situations where projects were halted by checks and balances in place to protect the

environment of the state. Not surprisingly the Army Corps of Engineers and the New Jersey Department of Environmental Protection are involved in all types of cases. There are three for-profit companies with representatives interviewed in the New Jersey cases—two environmental consultancies and one nuclear power company. Interestingly, all three of these companies were involved in 'implemented' cases. The New Jersey cases are somewhat unique in the involvement of for-profit agencies successfully engaged in wetland restoration projects. In contrast stands the Oregon case of Marshland Restoration, where actors cannot yet justify a wetland restoration project as a part of their business model. Notably, two of the New Jersey for-profits are environmental consultancies hired to implement a project, and the for-profit actor is a nuclear power plant using restoration to address regulation issues.

Table 9.10 shows actors involved in cases by interaction types. It should be emphasized again that this is not meant to say that cooperation is always positive while opposition is considered negative. Instead it shows that the same types of actors take part in both kinds of interactions in New Jersey. In several cases the same organization is represented in both columns (e.g., Army Corps of Engineers, Natural Resources Conservation Service, the United States Fish and Wildlife Service, and various divisions of the New Jersey Department of Environmental Protection). Different non-profit nature groups are included in both types of interactions, as well as different government agencies. The active cooperation column additionally includes all three for-profit organizations included in the New Jersey cases, and one local resident. The opposition column also includes the New Jersey Pinelands Commission, a unique regulatory agency within the state.

Table 9.9 Actors interviewed by case type, New Jersey

	Case Type		
	Implemented	**Not yet implemented**	**Not implemented**
Actors interviewed	Louis Berger Group (environmental consultancy) Army Corps of Engineers TRC-Omni (environmental consultancy) Union County Parks Department Natural Resources Conservation Service New Jersey Conservation Foundation PSE&G New Jersey Department of Environmental Protection	Army Corps of Engineers (2 cases) New Jersey Department of Environmental Protection Division of Fish and Wildlife (2 cases) New Jersey Department of Environmental Protection, Office of Natural Resource Restoration Teaneck Creek Conservancy Local resident United States Fish and Wildlife Service	Army Corps of Engineers (2 cases) Natural Resources Conservation Service (2 cases) New Jersey Department of Environmental Protection, Division of Land Use Regulation United States Fish and Wildlife Service Hackensack Riverkeeper New Jersey Pinelands Commission City of Camden

Table 9.10 Actors interviewed by interaction type, New Jersey

	Interaction type	
	Active cooperation	**Opposition**[4]
Actors interviewed	Louis Berger Group (environmental consultancy) Army Corps of Engineers (3 cases) TRC-Omni (environmental consultancy) Union County Parks Department Natural Resources Conservation Service New Jersey Conservation Foundation PSE&G New Jersey Department of Environmental Protection Teaneck Creek Conservancy Local resident United States Fish and Wildlife Service New Jersey Department of Environmental Protection Division of Fish and Wildlife (2 cases) New Jersey Department of Environmental Protection, Office of Natural Resource Restoration	Army Corps of Engineers (2 cases) Natural Resources Conservation Service[5] (2 cases) New Jersey Department of Environmental Protection, Division of Land Use Regulation United States Fish and Wildlife Service Hackensack Riverkeeper New Jersey Pinelands Commission City of Camden

For the state of New Jersey there are twelve complete cases; in eight of these the theory predicts active cooperation which is corroborated by analysis. These eight cases of active cooperation are all of the 'implemented' and 'not yet implemented' cases. In addition there were four 'not implemented' cases, three of which were accurately predicted as opposition, while one case was predicted as cooperation but was in fact a case of opposition. This is the only case within the study where the contextual interaction theory prediction is not a match for events in reality.

'Implemented' cases in New Jersey (Meadowlands Mitigation Bank, Rahway River Floodplain Restoration, the Franklin Parker Preserve, and the PSE&G Wetland Restoration) are diverse examples of governmental agencies, non-profits, individuals, and even corporations joining forces to implement complex wetland restorations. Some cases are technically complex, while others represent complex social interaction processes as actors alleviate conflicts, problem-solve, negotiate, and cooperate to change these habitats. A full description of each New Jersey 'implemented' case can be found in Appendix G. For this qualitative treatment we

[4] In one case the contextual interaction theory predicted cooperation, but the case is better described as opposition. With this in mind, actors interviewed for this case appear in the opposition column; they are the Army Corps of Engineers and the City of Camden.
[5] One Natural Resource Conservation Service interview represents an extra interview, as a result of researcher error; see full explanation in Appendix G.

will focus on the 'not yet implemented' and 'not implemented' cases. One New Jersey 'not yet implemented' case, Teaneck Creek Wetland Restoration, is clearly on track for implementation. The three remaining 'not yet implemented' cases, however, have stalled in some way and are all awaiting funds from the Army Corps of Engineers. The Corps is currently burdened by wars in Iraq and Afghanistan, in addition to suffering a drain on resources following the Hurricane Katrina disaster. In two cases, the Pond Creek Wetland Restoration Project and the Liberty State Park, securing Corps funding is *the* limiting factor in implementation.

When Army funds are a possibility, it seems highly likely these projects will be implemented. In contrast, the actors implementing the Stone Harbor Point case may choose to drop this case in future, depending on evidence they continue to gather about how restoration may affect important bird species using the site. In this way financial support is not the sole limiting factor in the Stone Harbor Point case. Based on the data collected in this research, it appears wetland restoration projects have a long shelf life, meaning they can be set aside for any number of years while actors gather resources for implementation. It would be interesting to understand what percentage of approved projects lacking funding eventually become cases of implemented wetland restoration. It is possible that the willingness of actors to wait for a project wanes after a given number of years. It is also possible that time can bring information, influxes of research, or changes in public opinion that make projects appear less promising. The Stone Harbor Point case in particular is an example of a dynamic and changing ecosystem influencing a potential wetland restoration. During the course of the beach re-nourishment project planning and implementation, the area in question transformed from a heron rookery to a plover nesting site. Fortunately, this timely discovery led to a reassessment of needs by the agencies involved. This is not to say that most wetland cases have the potential to transform into areas with different needs over time, only that researchers should remain aware of the dynamic nature of these ecosystems.

The final four cases in New Jersey are instances of 'not implemented' cases. In the Eagle Manor Farm and Fenwick manor cases, the implementer dropped the project when it became apparent that implementation would not be forthcoming. In both cases the theory predicted opposition, but in neither case did that situation transform into instances of conflict or negotiation. Instead, the actors involved accepted the project rejections as part of the necessary checks and balances that regulatory agencies must maintain when overseeing restorations. These experienced actors recognize that by the simple law of averages not all cases can be implemented.

The third 'not implemented' case, Allied Junction Rail Project, was a controversial case in which developers held the responsibility to manage mitigation within a large development project. The Hackensack Riverkeeper argued that this was not an adequate way to address mitigation law. Concurrently, a mitigation banking company began working in the area and the Army Corps of Engineers found that mitigation goals could be addressed via mitigation banking in a way that satisfied all actors. Interestingly the implementer does not credit this change of heart with the interactions between their organization and the target, instead finding the

changes were a result of long-term restoration concerns of the Meadowlands Interagency Mitigation Advisory Committee. The concept of how different actors connect different meanings with events is explored further within the Appendix G case description. Whether the Hackensack Riverkeeper in some way forced the Army Corps of Engineers, even through increasing project awareness, to change their plans is not necessarily relevant. What is especially interesting about this case is that it represents the way that interactions combine and can lead to changes in action. There were purported "reasons" given by actors for the change in policy:

- That through campaign of environmental organizations, led by the Hackensack Riverkeeper, the Army Corps of Engineers was forced to change their inadequate plan (target's reasoning).
- That a change in strategy by the Meadowlands Interagency Mitigation Advisory Committee and the Army Corps of Engineers was a result of their own concerns about the ability of the developers to maintain their restoration over time (implementer's reasoning).

Yet there were also changes in circumstances occurring in the process such as:

- The development of a mitigation bank, offering a solution unavailable before, and
- The developers' inability to at least appear to put emphasis on the restoration component of the project. Please note, this is not to say that the developer did not intend to fulfill obligations for restoration, but instead that this intention was not sufficiently clear to the general public, and especially to watchful environmental organizations such as the Hackensack Riverkeeper.

As noted fully in the case description found in Appendix G, neither interviewee's veracity is in question in this case. It is probable that the case occurred as both describe it, meaning that all bulleted events listed above played a role in creating a 'perfect storm' that led to a change in this project. In this instance, all actors became satisfied with the results, the problem was solved, and these actors moved on to other responsibilities.

The final New Jersey 'not implemented' case, Farnham Park, is the only case within the study in which the prediction given by the contextual interaction theory does not match with observed results. In some ways this may be attributable to poor quality information. The implementer interview featured second-hand information as the city employee involved in the project was unavailable. Based on motivation, information, and power scores the theory predicts cooperation when in fact opposition took place. In this case the target, the Army Corps of Engineers, has a perfectly neutral motivation score (i.e., 0 on a scale of -1.0 to +1.0). The Army Corps of Engineers exhibited neutrality in every aspect of their description of events, finding the project positive and beneficial, but simply not fitting within the goals of the agency. Contextual interaction theory purports that when the implementer has positive motivation the target can be positive or neutral and will "go along" with the given interaction. In this case, however, the target is a regulatory agency charged with maintaining no net loss of wetlands and would be

the majority funder of the project. For this actor in this situation, a neutral stance is not enough to merit moving forward with the project. This may point to a necessity for further developments within the interview instrument to more fully capture ultimate motivation. In other words, an ability to recognize the ultimate motivation of an actor who says: "Theoretically, I support the project in every way, but our organization ultimately lacked motivation to fund the project". This topic will be explored further in the Chapter 11 section *Proposed revisions based on this study*. In general the New Jersey cases depict a diversity of organizations with varied goals involved in debating issues and making decisions throughout the process of wetland restoration implementation.

9.4.4 Oregon

The twelve Oregon cases are the result of interviewing 15 actors from 13 agencies, one local citizen, four private landowners, one representative of the grazing community, one high school teacher, and one property developer, or 23 interviewees. One actor was interviewed for three cases, yielding a total of 25 interviews. Two agencies are involved in multiple cases: the Coos Watershed Association and Ducks Unlimited. Other interviewees include representatives of The Nature Conservancy, South Slough National Estuarine Research Reserve, the Cities of Portland and Eugene, the Bureau of Land Management, Greenwood Resources, The Wetland Conservancy, Tillamook Bay National Estuary Project, the Oregon Department of Fish and Wildlife, *Grande Ronde* Model Watershed Foundation, and two Coos County Commissioners.

Table 9.11 depicts the actors interviewed by case type though naturally does not depict all of the agencies involved in each case. Again, we do not suggest that actors implementing cases have done a 'good job' or that those actors involved in not implemented cases have failed in some way. Through this table one can see that each case type involves a variety of actors. All three case types include citizens and non-profits, while implemented and not yet implemented cases also include government organizations. Additionally, a research organization and a business interest are involved in implemented cases, politicians are included in a not yet implemented case, and a private business takes part in a not implemented case. The Oregon cases illustrate that even restorations defined as 'not implemented' have potential for being implemented in the future. The Marshland Restoration case, though 'not implemented' in this form has great potential for being implemented in another form in the future. Both Greenwood Resources and Ducks Unlimited speak about the project in positive terms. Greenwood Resources may incorporate a similar project into their future plans to qualify for Forest Stewardship Council certification. In addition the Mouse Lake case, while categorized as 'not implemented' *was* in fact implemented by the landowners, who opted to proceed without the input and subsequent regulations of Ducks Unlimited. It is classified as 'not implemented' because the social interaction process involving both target and implementer was not implemented, however, one actor proceeded with the project and implemented it alone without the knowledge or input of the other actor. In contrast to the New

Jersey cases, not all of the for-profit agency representatives are involved in successful cases. Each case type includes at least one actor working for-profit (the cattle grazing community, a property developer, and Greenwood Resources, a tree farm), at least one private resident or landowner, and many actors in non-profit nature organizations. The 'implemented' and 'not yet implemented' case types also include actors representing branches of government or government agencies, such as city governments, county commissioners, and the Oregon Department of Fish and Wildlife.

Table 9.12 shows each case's interaction type and the actors involved. It should be emphasized again that this is not meant to say that cooperation has a necessarily positive connotation while obstruction has a necessarily negative one. Instead it shows the diversity of actor types among cases in Oregon. Nature non-profits are involved in all types of cases, and private landowners are nearly so, only failing to qualify as a core actor for interviewing in the case of forced cooperation. The forced cooperation case, Rose Dairy, does in fact also include private landowners, and is quintessentially about private landowning issues, however, the former private landowner was not a core actor for this analysis, and was therefore not interviewed. Clearly private land ownership is a hallmark of the Oregon cases. Government agencies or representatives are involved exclusively in active cooperation and forced cooperation cases. For-profit organizations are included in active cooperation, cooperation, and obstruction cases.

Table 9.11 Actors interviewed by case type, Oregon

	Case Type		
	Implemented	**Not yet implemented**	**Not implemented**
Actors interviewed	The Nature Conservancy A representative of the cattle grazing community South Slough National Estuarine Research Reserve Coos Watershed Association City of Portland A local resident City of Eugene Bureau of Land Management	A high school teacher A property developer Coos Watershed Association Coos County Commissioner (2) Tillamook Bay National Estuary Project Oregon Department of Fish and Wildlife *Grande Ronde* Model Watershed Foundation Private Landowner	Ducks Unlimited (3 cases) A group of ten private landowners A private landowner Greenwood Resources The Wetland Conservancy A private landowner

Table 9.12 Actors interviewed by interaction type, Oregon

	Interaction type				
	Active cooperation	**Cooperation**	**Obstruction**	**Forced Cooperation**	**Learning**
Actors interviewed	The Nature Conservancy A representative of the cattle grazing community South Slough National Estuarine Research Reserve Coos Watershed Association City of Portland A local resident City of Eugene Bureau of Land Management Tillamook Bay National Estuary Project Oregon Department of Fish and Wildlife *Grande Ronde* Model Watershed Foundation Private Landowner	Ducks Unlimited (2 cases) Greenwood Resource A group of ten private landowners	A high school teacher A property developer The Wetland Conservancy A private landowner	Coos Watershed Association Coos County Commissioner[6] (2)	Ducks Unlimited A private landowner

For the state of Oregon there are twelve complete cases; in six of these the theory predicts active cooperation which is corroborated by analysis. These six cases of active cooperation incorporate all of the 'implemented' and two of the 'not yet implemented' cases. There are two remaining 'not yet implemented cases', one predicted as obstruction and one as forced cooperation; in both cases the theoretical predictions match with reality. There are two accurately predicted 'not implemented' cases, one with the designation of obstruction and one designated learning. For the remaining two 'not implemented' cases the theory predicts cooperation. These are acceptable predictions, but in both cases cooperation fails to tell the entire story of the interactions. These interactions are described fully below.

[6] One Coos County Commissioner represents an extra interview, conducted when the individual contacted the researcher with an interest in taking part in the study; see Appendix H for full explanation.

‘Implemented’ cases in Oregon (Chocktoot Drain, Kunz Marsh, Lower Powell Butte Restoration, and West Eugene Wetlands Project) include national government agencies, local governments, non-profits, business interests, and individuals managing diverse and innovative projects. Projects included filling a wetland drain, performing cutting-edge research about habitats and ecosystems, realigning a creek, and collaborative wetland development coupled with conservation.

The Oregon ‘not yet implemented cases’ include both contentious (McKay Claggett Creek Watershed Enhancement, Rose Dairy) and cooperative (Wilson-Trask Wetland Protection and Restoration, Cedar Hill Farm Wetland) interactions. In the McKay Claggett Creek Watershed Enhancement case, a high school science teacher and her students consistently blocked development on private land adjoining the school. This was accomplished by informing the community, and notably the City Council, about the potential effects of further development on a local creek habitat. In this analysis the theory predicted obstruction, which has been borne out in reality. The landowner made approximately five proposals for developing the land over the last twenty years, all of which have been defeated. After being blocked repeatedly from developing planned projects, the target (landowner) is reluctantly accepting that his only option may be negotiating. It is clear that his ability to develop the property in the way he prefers is unlikely. At the time of interviews, the implementer and local groups were working to raise money to purchase the land from the target. The proposed compromise represents a lower profit for the landowner, but as he states, gives him the welcome opportunity to “move on”. A second case in Oregon also proved highly controversial. The Rose Dairy case began in 2000 when the Coos Watershed Association successfully bid for a local farm being sold at auction. This organization intended to use grant money to buy easements for the property, with goals of improving habitat and restoring historic wetlands. However local community members felt the purchase and the project were “an assault on agriculture” as well as an improper use of public funds. This project was so contentious that an outspoken opponent of the project contacted the researcher to describe his view of events. This is the only case within this study where any actor sought out the researcher to become included in the project. For this interaction, the contextual interaction theory predicts a case of forced cooperation, which is an apt description of observed events. After the auction, locals quickly exhausted options within the legal system to stop proposed changes. Local community members including county commissioners have fought to limit the restoration goals of the Coos Watershed Association, which has delayed the project. These citizens, however, have no legal grounds to stop this restoration from taking place, as the Watershed Association are now legal owners of this land.

The final two cases within the category ‘not yet implemented’ in Oregon are both examples of active cooperation interactions. The Wilson-Trask Wetland Protection and Restoration case, both implementer and target are motivated toward implementation and the theory predicts active cooperation. This is an adequate description of events to date. That being said, the target’s motivation is comparatively lower than the implementer, as the target displays slight apprehension about how the public may react to the project. Over the course of interviews both

actors describe constraints that could be problematic during the course of the project. The target mentions the tendency of local citizens to prefer anti-flooding goals to strictly environmental goals. The implementer describes the potential divisiveness of taking private lands and changing their ownership to public lands though it appears that neither of these issues is stalling the project in any way. Both actors report the core problem halting implementation is funding. As with several New Jersey cases (Pond Creek, Stone Harbor Point, and Liberty State Park) this project is on hold pending funding from the Army Corps of Engineers. In the Cedar Hill Farm Wetland case, the director of the *Grande Ronde* Model Watershed spoke with the landowner about using this land for a constructed wetland and conservation easement. The format of a conservation easement means the owner relinquishes future development rights while retaining ownership (Nebel and Wright, 2000). The landowner was open to this idea, and the *Grande Ronde* Model Watershed Foundation worked on a preliminary design. In this case the theory predicts active cooperation, and this is substantiated by observation. This landowner operates a large farm and receives government farm subsidies. The total amount of federal funding is limited per landowner, therefore this owner does not qualify for federal government conservation easement programs such as the Wetlands Reserve Program. Currently the *Grande Ronde* Model Watershed Foundation is working to find other sources of funding for the project at a level that satisfies both the landowner and funding agencies. The landowner seems primarily motivated to find a way to generate income while using the land in a suitable way. As with the Wilson-Trask Wetland Protection and Restoration case above, this case is stalled as it awaits funding, though in this case funding is not anticipated from the Army Corps of Engineers.

The final four cases in Oregon (Mouse Lake, Warren Slough, Marshland Restoration, and Boone Slough) are instances of 'not implemented' cases. In two cases (Warren Slough, Boone Slough) the theoretical predictions (learning and obstruction, respectively) adequately explain the events. In the Warren Slough case, a landowner considers a project with Ducks Unlimited to breach a berm to restore tidal influence to an area. Several issues eventually influenced the landowner's interest in the project. A neighbor who grazes cattle on the site was not interested in the potential changes, the existence of railway infrastructure on the site complicated the plans, and the landowner worried about losing control of water flow on his land. The theory predicts "a joint learning process will evolve that will sooner or later create another situation" and this is substantiated in observation. Eventually the landowner decided to install an aluminum tide gate and box which allows control of water flow in the area. In essence the landowner chose an alternate plan that does not allow him to register the project as a wetland restoration. In the Boone Slough case, a landowner and The Wetland Conservancy work in planning to reconnect a channel in a bottomland part of an oxbow, reintroducing native wetland restoration to approximately 100 acres of grazing land. The interaction that ensues can be described as obstruction. The landowner eventually lost motivation for the project, in part due to the permanent easement planned for the area. A permanent easement entails the landowner relinquishing future development rights while retaining

ownership, and remains legally binding even when the land is sold (Nebel and Wright, 2000). After working toward a solution, his motivation for the project waned. In the first case, the implementer chose to drop this proposed project in favor of implementing another solution, in the second case the actor eventually decided the project was not right for him. In both cases, as actors learned more about the details of a particular project they lost interest in taking part in the implementation.

The final two 'not implemented' cases (Mouse Lake, Marshland Restoration) are not fully captured by their contextual interaction theory predictions of cooperation. Both cases can be described as cooperative, but in one (Mouse Lake) the landowners proceeded to implement the project without the input or regulations of Ducks Unlimited. In a sense the target in this case failed to fully elucidate their purposes to the implementer, allowing them to believe that a cooperative project was dropped because several of the landowners had different goals for the area. These actors shared restoration goals, but the landowners wanted to conduct the work on their own without the oversight of Ducks Unlimited. It was a cooperative process until the target dropped out of interactions with little explanation. These interactions were not fully captured by the theoretical case prediction of cooperation, and understandably so, considering one actor was not fully aware of subsequent events. The prediction of cooperation is basically adequate because the target in essence cooperated until leaving the process. In other words, this actor did not obstruct the process or participate in opposition against the project. They simply exited the process in an amicable (cooperative) way and moved forward with the regulation free restoration on their own. In another case (Marshland Restoration), both target and implementer cooperated fully throughout, but the target found that the project did not currently meet its business model criteria. Greenwood Resources, the target, runs a tree farm and worked with Ducks Unlimited in planning a habitat restoration on their property. As a business, Greenwood Resources' bottom line is profit. This group is working to incorporate a restoration into its business model, but at this time cannot justify that expenditure.This project may very well reach implementation in the future, especially if Greenwood Resources can use the project to qualify for Forest Stewardship Council certification. Therefore cooperation is an adequate description, but doesn't fully explain actor interactions.

9.5 Testing theory predictability potential – the qualitative elaboration of CIT hypotheses

One goal of this research is to understand the theory's predictability potential in linking actor characteristics with implementation interactions. Said another way, how often was the theory 'right' in its hypotheses predictions? Of the 46 cases included in this assessment (excluding two cases with incomplete information), one case was clearly incorrect in its prediction. Table 9.13 shows the detailed predictions and observations for the sample. In the most basic sense, the theory

prediction matches observed results in 45 of the 46 (98%) of cases for the first phase of analysis.

Table 9.13 Number of predicted cases matching observation, by interaction type, likelihood to implement at all (n=48)

Situation: Phase 1	Number of this type case predicted	Number of this type of case observed
1. (Active) cooperation	31	30[7]
2. Learning towards 1	1	1
3. (Forced) cooperation	1	1
4. Opposition	7	8
5. Obstruction	3	3
6. None/ Learning toward 3	0	0
7. Cooperation	0	0
8. Learning toward 7	1	1
9. None	1	1
10. Obstruction	0	0
11. Opposition	0	0
12. (Forced) cooperation	0	0
13. None/ learning toward 12	0	0
14. None	1	1
Total	46	46
Incomplete information	2	2
Grand Total	48	48

It is important to note that the sample is likely skewed toward the over-inclusion of cooperation cases, as all 'implemented' cases register as active cooperation or cooperation. In addition 'not yet implemented' cases may also be unrealistically skewing toward cooperation. In several cases, interviews take place extremely early in the process, and earn the designation of cooperation. In reality this assessment may be occurring before oppositional actors become involved. Clearly there are many instances of cooperation or active cooperation, while some interaction types match with no cases within the sample. Interactions 10 through 13 may be somewhat artificially empty, as they are the mirrors of interactions 3 through 6, with actors switching roles. In other words, interactions 10 through 13 occur when the implementer is not motivated toward the project, which is unlikely to occur by the definitions of implementer and target used here. In this research, the implementer is defined as the actor leading the implementation effort. This is due to the complex nature of wetland interaction processes, where implementer and target may not be clearly defined but may in fact emerge during the process from any sector. While in more traditional policy settings evaluating implementation may involve one policy with a clearly defined actor always playing the role of implementer, this is not typical of wetland restoration projects. Instead implementer and target were clearly defined at the beginning of this project to allow treating this actor in a consistent

[7] In one case the predicted interaction (cooperation) was not substantiated in observation; instead the interaction opposition was observed.

way throughout the research. The result of this decision is perhaps an artificial absence of process interactions 10 through 13 above. Comparing predicted and observed interactions gives us a high percentage of cases where the predicted results match reality.

9.6 Conclusions

As described in chapter 8 the comparative study includes twelve cases each from two European Union and two American states (The Netherlands, Finland, New Jersey, and Oregon). Specifically, this research uses the contextual interaction theory to understand how the actor characteristics of motivation, information, and power can influence implementation processes. As opposed to the quantitative work of the next chapter, the theory was envisioned to be analyzed in a qualitative way. The primary conclusion from this qualitative treatment of the cases is that when comparing case by case the predicted and observed results, we find that the validity of the theory is highly supported.

The cases for this study can be grouped in various ways; the 48 cases include both socio-democratic welfare states and liberal Anglo-Saxon states, European and American states, and cases from high and low population density areas. The states of the Netherlands, Finland, New Jersey, and Oregon were chosen to provide diverse but comparable states that might illuminate how the independent variables influence cooperative policy implementation. It is interesting to explore whether population density or the supposed cooperative nature of welfare-oriented historically dominant political ideologies have any effect on cooperation between actors in this study. Do less densely populated areas have less demand on land than highly populated areas, and therefore less contentious implementation regarding wetland restoration? At the same time, are welfare-oriented states more likely to behave cooperatively than more liberal historically dominant political ideologies? To explore these questions, we can arrange the states included in this study along a continuum as shown in Figure 9.1, from presumably least cooperative to most cooperative.

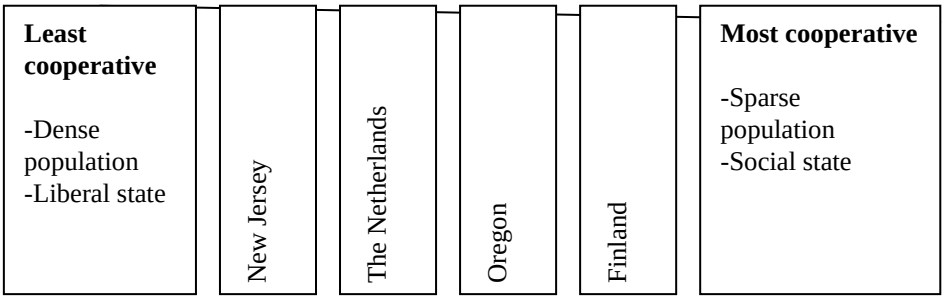


Figure 9.1 Estimation of state placement on a scale from least to most cooperative

On this continuum, New Jersey would be considered the least cooperative state, having both the characteristics of dense population and a liberal state. In the center of the scale we find both the Netherlands and Oregon, states combining one cooperative characteristic with one uncooperative characteristic. On the most cooperative end of the scale we find the state of Finland, featuring the characteristics of sparse population and a socio-democratic welfare state. Are these ideas of cooperation supported when analyzing the data from a qualitative perspective? To better understand how these ideas play out within our sample, we first tally the proportion of cooperative cases for each state as shown in Table 9.14.

Table 9.14 Observed results, comparison of cooperative cases by state

State	Number of cooperative[8] cases	Number of uncooperative[9] cases	Percent cooperative cases
New Jersey	8	4	66.7%
The Netherlands	7	5	58.3%
Oregon	8	4	66.7%
Finland	7	3	70.0%

If we compare the cooperative cases to uncooperative cases for each state we see that both Finland and Oregon maintain their positions on the cooperation continuum while New Jersey and the Netherlands switch positions, but remain on the 'less cooperative' end of the scale as shown in Figure 9.2. There may be some undercurrent of truth to this idea, which should be explored more fully. It can be said that there are many cooperative cases in each state. Cases were chosen for inclusion in this research to fulfill the categories of 'implemented', 'not yet implemented', and 'not implemented'. All 'implemented' cases have the prediction of cooperation or active cooperation in analysis, while 'not yet implemented', and 'not implemented' cases produce a variety of predictions based on actor scores. In this way, the sample may be skewed toward an over-representation of cooperation cases. It may not be true that implemented cases are cooperative endeavors throughout the course of actor interactions, but it is likely that actors describe these projects at the time of this analysis from the perspective of successfully implemented cases. This is one reason it was critical to include 'not yet implemented' cases. These interactions may prove especially fascinating as cases to revisit in the future, understanding how actor motivation, information, and power transform during social interaction processes. In viewing the percent of cooperative cases in Table 9.13, it is clear that there are a majority of cooperation cases in each state; coupled with a relatively small sample size this may not produce the truest assessment of whether these characteristics vary along the continuum as estimated in Figure 9.1.

Two states do follow the general pattern of the continuous scale considering population density and historically dominant political ideology: Finland and

[8] In this exercise we consider active cooperation and cooperation types of cooperative cases.
[9] For these purposes uncooperative types of cases include learning, obstruction, forced cooperation, opposition, and no interaction.

Oregon. At the same time, The Netherlands cases are less cooperative than comparatively anticipated while the New Jersey cases are more cooperative than comparatively anticipated. It should also be noted that all four states have relatively comparable rates of cooperation.

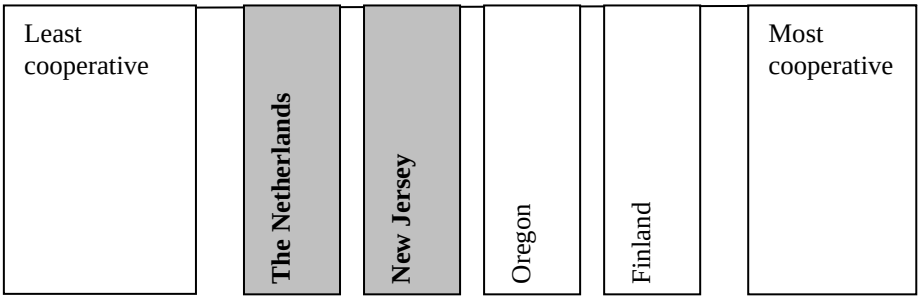


Figure 9.2 Actual state placement on a scale from least to most cooperative based on this analysis; states that have moved are shown in gray.

When assessing the 48 cases in this study from a qualitative perspective, we see a group of cases in which actors overwhelmingly cooperate instead of following other social interaction paths when implementing wetland restoration projects. It should again be emphasized that a third of the cases are 'implemented' which in this analysis are all examples of active cooperation. It is possible that actors present these cases from the perspective of successful implementation in interviews. This characteristic of the sample may skew the total sample population toward a higher percentage of cooperation cases than likely occurs in real life. On the other hand, it may also be true that a sample of only 1/3 implemented cases actually under-represents the success rate in these kinds of projects. If that were the case then more cooperative settings may occur than are represented in this sample. Recall in Table 8.4 we discuss the building of the sample used in this research. The four states each had a comparable number of total cases dropped from the sample (The Netherlands: 8, Finland: 8, New Jersey: 10, Oregon: 10). Table 8.5 tells us that during this process several cases were dropped due to having a sufficient number of implemented cases (The Netherlands: 3, Finland: 4, New Jersey: 1, Oregon: 0). Given this information one might surmise that there exist more implemented cases within the sample for the European states, however this may be due to the source of primary lists rather than any characteristic of the given state. Nothing in the search for cases in this study clarifies whether a division in thirds of implemented, not yet implemented, and not implemented cases is approximately representative of the division of these cases in reality. In addition to cooperative cases other interactions occur in the sample, sometimes resulting in divisive scenarios. From the perspective of case type, all of the 'implemented' cases are of active cooperation, while the majority of 'not yet implemented' cases are also of this type. In contrast, half of the 'not implemented' cases are observed as opposition interactions in analysis. Dividing the cases into thirds (1/3 implemented cases, 1/3 not yet implemented

cases, 1/3 not implemented cases) was part of a deliberate sampling strategy. It was not meant to represent the proportions found in reality (e.g., a proportionate stratified sample) but used as a device to insure both potentially successful and unsuccessful cases.

Trends emerge within each state, including working over long periods of time if necessary to produce *draagvlak* or support in the Netherlands, balancing 'everyman's right' with nature goals in Finland with an emphasis on inclusive participation, incorporating for-profit actors in successful implementation cases in New Jersey, and struggles over the supremacy of private landowner rights in Oregon. All states exhibit a diversity of actors working on technically difficult wetland restorations and often extraordinarily complex social interaction processes. In the next chapter we utilize quantitative analysis to assess the predictability potential of the theory. The case-by-case comparison between predicted and observed results done in this chapter, with specified combinations of values leading to predicted forms of interaction and results, is the way of testing originally envisioned when the theory was drafted. In the next chapter we attempt some alternative ways of testing the potential of the explanatory variables. Our research design allows controlling for the influence of state, population density, and historically dominant political ideology on any potential observed differences within the sample in yet another manner.

Chapter 10
Quantitative analysis of wetland restoration cases

"The statistical view of the world is a place where knowledge is neither certain nor random"
(Keller, 2006)

10.1 Introduction

In this chapter we build on the analysis in the previous chapter by assessing the large-N cases in a quantitative manner, using statistical analysis to highlight relationships between variables and trends within the sample. The contextual interaction theory predicts how varying combinations of actor characteristics influence the type of implementation interaction taking place. One goal of the large-N study is to better understand the theory's predictability potential. We explore this predictability potential by testing the relationship between predicted and observed results in two ways. First, the predictability test of Chapter 9, done in a rather qualitative way, in which the theory derives values for the dependent variable(s) that can be compared with the observed process and outcomes. This analysis showed that the theory was capable of making correct estimates of the nature and result of the process for all but one case.

In this chapter we perform the predictability test using a quantitative/formula based approach developed by Bressers (2005) to derive values for the dependent variable(s). This begs the question: why develop a formula version? The primary reason is that the flowchart models which normally summarize the hypotheses of the contextual interaction theory do not allow for continuous independent variable values, since those would quickly create an endless number of situations defined by all relevant combined values of the independent variables. The flowchart model allows for only two or three values for each independent variable, while the dependent variables, the predicted nature and results of the process, have distinct values. Using the rationale of the flowchart models, Bressers (2005) created formulas which give exactly the same outcomes as the flowchart when the distinct values are filled in, but also allows for intermediate values and outcomes. The cost of this gain is that the information on the predicted nature of the process is lost. Specifically, whether a positive outcome is achieved by active or forced cooperation, or whether a negative outcome is produced by lack of motivation, delay because of essential learning, or obstruction by powerful opponents, is less clear. Nevertheless, the potential gain of having continuous values for explanatory factors and outcomes make it worthwhile to test the utility of the contextual interaction theory formula version.

In this study we gathered information on the motivation, information, and power of the actors involved by sets of questions that are used as scoring devices. Our information is thus more precise than the distinct values of the flowchart models allowed us to use. On the other hand our information on the results, the dependent variable, is not more precise than the flowchart models. So, while we will make an attempt to review the usability of the formula version we must also consider the relative bluntness of the dependent variable in our calculations. This analysis provides a quantitative look at how actor characteristics influence implementation interactions. At the same time, this chapter affords greater understanding of the instrument used in this application of the theory, using this work as a stepping stone toward increasingly productive future work.

In the next section we first explain the formula and the way we used our data to assess the values of the factors in this formula. Then we proceed with some statistical tests using this quantitative/formula based approach. After analyzing the data via the formula based approach, we control for the influence of state, population density, and historically dominant political ideology on any potential observed differences within the sample. This is only done for the likelihood of implementation aspect. Sixteen of the 48 cases in the observation sample could also be tested against theory predictions for phase two of the analysis: adequacy of implementation. But in those cases the dependent variable had only one observed (and predicted) value, making further analysis useless.

10.2 The formula-based elaboration of CIT hypotheses

The assessment of predictability potential using the flowchart models involves the researcher using strict designations of motivation, information, and power balance. In other words, the researcher takes the scores from interview assessments, and using flowcharts for 'likelihood to implement at all' (Appendix A) and "adequacy of implementation" (Appendix B), makes a determination of the theoretical prediction. Motivation scores are only considered as being positive, neutral, or negative; the information level of the most positive partner is assessed (i.e., is there information sufficient for a motivated actor to proceed), and the balance of power between actors is considered. In a way, this takes detailed numeric information, categorizing and compartmentalizing it. A formula has been developed to incorporate intermediate scores for motivation, information, and power, allowing the researcher to more fully exploit these values to produce intermediate scores for, in this case 'likelihood to implement at all'. Unfortunately it is not possible to also produce intermediate scores for observed results in this study. It should be noted that this formula is not additive or strictly multiplicative; instead it considers the variable characteristics in a manner supported by the theory, as described more fully below. It is interesting to examine how the utilization of this formula builds our assessment of the theory's predictability potential.

The formulaic expression for the likelihood to implement at all is (Bressers, 2005):

Likelihood to implement at all = (M+) x (I+) x [1- (M-) x (P-)]

Where (M+) is degree of positive motivation of the positive actor[1]
(I+) is completeness of needed information of the positive actor(s)[2]

[1]The motivation scores used in the formula are derived from the motivation scores used throughout this research, as described in Chapter 5. The original values exist on a scale of -1.0 to 1.0; The values used in the formula for M+ are found on a scale of 0.0 to 1.0. This is because if neither actor is positive, 0.0 will be used for this value in the formula, meaning a negative value is not possible for M+ in the formula.

(M-) is degree of negative motivation of negative actor[3], and
(P-) is the balance of power as viewed from the most negative actor where
(0.0 = negative actor has no power)
(0.5 = balanced power)
(1.0 = negative actor has all power)

In essence this formulaic expression takes into account the motivation of the positive actor and that actor's information level. It multiplies this value by an expression that quantifies the motivation of the negative actor and that actor's power as deducted from the whole number 1. For each individual case in the sample this formula produces a positive number on a scale of 0.0-1.0 (shown in Appendix I).

To better understand the predictability potential of the contextual interaction theory, we compare the values from using the formula ('likelihood to implement at all', predicted results), with the observed results. As "observed results" the 14 different settings of the flowchart model cannot be used. They are not listed in an ordinal scale from more to less result. Strictly speaking, only three values for outcome are discerned there, ranging from ++, via +/- to --. We can, however, also try whether we gain or lose information by adding more categories under the ++ and -- values, indicating the degree of cooperative atmosphere in the process. This leads to the following seven point scale, arranged from most cooperative to least cooperative within the two categories with positive and negative predicted outcomes (the original situations are between brackets). While unable to provide intermediate results in terms of outcome, using this scale, the dependent variable still denotes important degrees such as the distinction between cooperation and forced cooperation, or delay because of essential learning and obstruction.

1	(Active) Cooperation [1, 7]	++
2	Cooperation (forced) [3, 12]	++
3	Opposition [4, 11]	+/-
4	Learning towards 1 /7 [2, 8]	--
5	None / Learning towards 3/12 [6, 13]	--
6	Obstruction [5, 10]	--
7	None [9, 14]	--

As mentioned above, the formula allows for a finer distinction in predicted values, illuminating how the range of predictions in this sample corresponds to our observations. Whether there is a real gain in predictability potential for this formula

[2]On a 0.0 to 1.0 scale as described in Chapter 5.
[3]Again, the original motivation scores exist on a scale of -1.0 to 1.0. The M- value is derived from this motivation score. It is the absolute value of the degree of negative motivation on a -1.0 to 0.0 scale, so -.23 becomes .23 for M- in the formula, but if the 'most negative' actor is actually positive (e.g., +.23) this value becomes 0.0, since obviously no real negative motivation is involved in the process. The [1-(M-) x (P-)] term in that case automatically becomes 1.0, implying that no harm to the outcome will be done by opposition.

compared to the flowchart model is an open question. This is a more difficult test for the theory's predictability potential. This approach asks not only, for example, if all of the predicted cooperation cases are observed as cooperation, but also whether the range of values for cooperation cases (representing the variations in interactions) connect meaningfully with case observations. Unfortunately in our study we cannot provide this level of detail for the observed results.

It is important to recognize that the formula adds to the theory the implicit assumption that there are linear relationships between the dependent and independent variables. For instance, while the original theory asks whether the implementer has "sufficient" information or is "positively" motivated, the formula assumes that every degree of lack in information or every missing percent of full motivation leads to an equal decrease in predicted outcome. It remains to be seen whether that improves the accuracy of prediction. In addition, while the flowchart model assumed the impact of power to be "balanced", positive, or negative, the formula model assumes that intermediate scores really produce more subtle differences in outcomes. Again, this may or may not prove true.

10.3 From questionnaire to values in the formula

The formula enables values of typically between 0.0 and 1.0 to be used. But how can we derive such values? To create motivation scores, responses are given positive and negative points based on whether they reflect motivation for or against the project. The resulting score is the proportion of pro-implementation responses divided by the total number of responses. In this way the scores exist on a scale from 0.0 to +1.0. Scores are then transformed into a scale of -1.0 to +1.0 as described in Chapter 5. In regard to information scores, responses are given positive or negative points as they depict the level of information held by each actor. The interview score is based on responses indicating positive levels of information as a proportion of total number of relevant questions. The information score undergoes no transformation, existing only as a number of a scale from (0.0 to +1.0). These values for motivation and information were also used to fill the formula for each case. Whether this use of our questionnaire instrument - that proved to be very satisfactory to produce rough values for the independent variables – produces the desired more precise values between 0.0 and 1.0 of the independent variables, is of course uncertain, however this is the best estimate we can make with the given material.

A complication in the formula is that it does not ask for the motivation of the implementer and the target, but for the motivation of the (most) motivated actor and the degree of negative motivation of the negative actor (if there is any). This implies that we must make careful use of the scores for motivation when filling the formula. We will test below whether the choice in the formula for the most motivated actor, rather than the designated implementing actor indeed contributes to the accuracy of the predictions.

For information the formula asks for the degree of information of the positive actor(s). This implies that when both actors are positive, but the most positive actor is not the one with the best information, the information of the other should be used in the formula. The rationale is that in a cooperative process actors will allow their information to be used by the others. We will test below whether this indeed contributes to the accuracy of the predictions.

For the power term the formula, like the theory, does not use the power of separate actors, but the balance of power. Simply subtracting the power figure of one actor from the other is not workable, since it doesn't lead to values in the 0.0 to 1.0 range needed in the formula. Instead we calculated this as the individual power score of negative actor, divided by the sum of the power scores of both actors, which leads to values in the 0.0 to 1.0 range, and indeed has a 0.5 outcome when their relative powers are equal.

10.4 Types of error

The goal of this analysis is to test the relationship between contextual interaction theory predictions following the formula version and the observed results (the predictability potential). This is simply another way of asking whether our measure of motivation, information, and power connect with observations in theoretically predicted ways.

Research hypothesis: there is a relationship between predicted and observed results.

Null hypothesis: there is no relationship between predicted and observed results.

Any research endeavor risks two primary types of error. A type I error occurs when a null hypothesis is true, and we reject it. A type II error occurs when a null hypothesis is untrue, and we fail to reject it. A conscientious researcher strives to minimize the chances of both error types by eliminating bias and increasing validity throughout the research project implementation. In addition to the care always given to reduce error, let us now examine which type of error would be more problematic in the context of this predictability testing. A type I error can be thought of as a false alarm, alerting to the possibility of a relationship that does not in fact exist; in contrast a type II error exists as a failure to detect a relationship (O'Sullivan, Rassel, and Berner, 2008).

It is important to strike a balance between the probabilities of each error type. There is one particular constraint within this project that might affect the probability of type I or type II errors. The sample size is adequate generally speaking, but in testing the affects of control variables such as historically dominant political ideology (liberal Anglo Saxon versus socio-democratic regimes), population density (high versus low), or individual state (the Netherlands, Finland, New Jersey, Oregon) swiftly divides the sample into smaller parts. As a social science research project, it is reasonable to set our alpha level at 0.05 for hypothesis testing, given the

sample size; this allows for discovering a pattern in the sample given its small size, with the caveat that the researcher remains vigilant about making a type I error when the sample size is reduced into smaller parts.

10.5 Correlations for testing the formula's predictability potential

We now test our formula-derived prediction values against the 7-point scale of interaction observations. We test the research hypothesis that there is a relationship between theory predictions and observations (that the theory has predictability potential). In fact we look for an inverse (negative) relationship, since the dependent variable has the highest number for the most unfavorable situation. Our null hypothesis is that there is no relationship between theory predictions and observations (that the theory does not have predictability potential). We again find a correlated relationship (n=46), using Spearman's Rho correlation coefficient (Rho = -.66, $p<0.000$). While the figures for the independent variables are on a quasi ratio level, the figures for the dependent variable are not, making this ordinal level coefficient most appropriate. Pearson's r product-moment coefficient would have been only slightly higher: r = -.68. When the three outcome values (++, +/-, --, transferred into 1, 2, 3) are used as the dependent variable, correlations are very similar: Rho = -.66 (r = -.71), all significant on a .000 level). We can therefore reject the null hypothesis, that there is no relationship between predicted and observed results. This more strenuous test of correlation produces a lower test statistic, and lower associated probability, but it remains well within the boundaries of our predetermined alpha level of 0.05. It is clear though that the differentiation of predicted outcomes produces lower correlations than the almost absolute matching results of the case by case comparison that used the flowchart with distinct values for the independent variables.

A scatter plot of the data, featured in Figure 10.1, provides insight into this relationship. From this scatter plot we can make several observations. Since the scale of the dependent variable starts with 1 for (active) cooperation, higher prediction values connect with lower observation values and conversely lower numeric predictions merits higher numeric observations. This leads to an inverted correlation. As is also shown in the scatter plot, there is a great deal of variation among formula predicted scores for observed cooperation/ active cooperation cases[4]. There is also a somewhat smaller range of values for cases observed as opposition[5].

The three cases of obstruction (6 on the y axis) in general seem to do a bit better than the "learning cases" (line 4 on the y axis), in which the process atmosphere is more cooperation oriented. Lacking information can obviously be as restricting as conflict. They also show variation and contain the most notable outlier. This case is

[4] number 1 on the y axis.
[5] number 3 on the y axis.

the Boone Slough case were a strong motivation and full information of the implementer, coupled with a weakly negative motivation and a strong power position, but one that does not overwhelm that of the implementer (.83 and .60, leading to a balance of power indicator of .58) produces a high predicted score for likelihood to implement. In reality the reluctant landowner, having lost his interest in the project, simply blocked the project's progress. Obviously he has more of a capability for veto-power than the balance of power score suggests. Without this one case the correlation rises to Rho = -.74 for the seven and -.73 for the three value observed outcomes (Pearson's r would even rise to r = -.82 and -.79 respectively). This example illustrates some that the formula's assumption, that continuous values also have a continuous impact on the results, might be incorrect.

On the other hand there is the case of Farnham Park, the only case where we concluded in the case by case analysis of Chapter 9 that the theory prediction did not conform to observed reality, is quite "in line" in this analysis (the fourth one in row 3). While the lack of negative motivation of the target led to a falsified prediction of cooperation and success, here the moderate positive motivation and information scores of the implementer leads to a modest 0,50 prediction that seems to fit rather well.

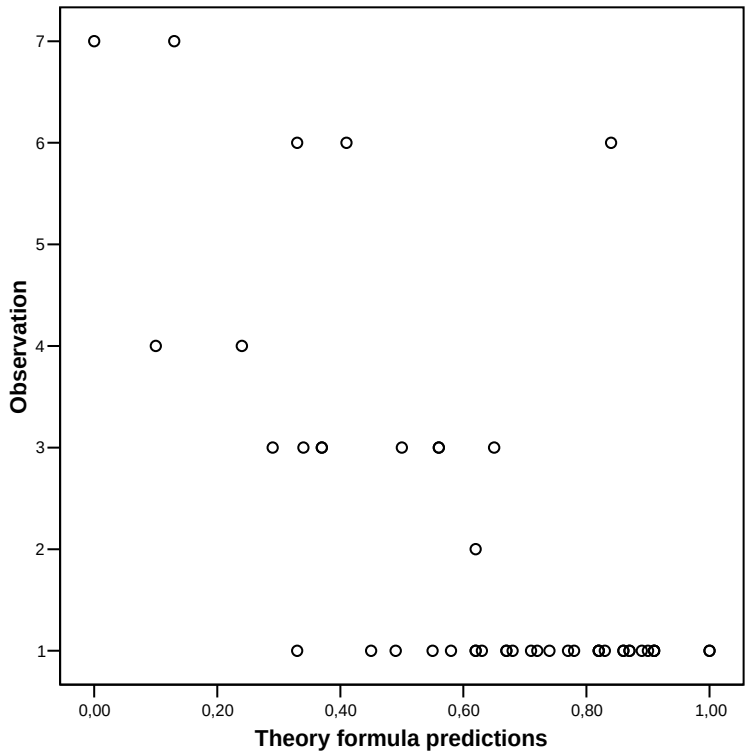


Figure 10.1 Scatter plot of the relationship between observed results (seven kinds of process) and predicted results using the formula.

When both actors are positive, in this formula version we use not the information of the most motivated actor, but of the best informed actor. There are six cases in which this makes a difference, though typically not a big one. When the own information score of the most positive actor is used instead, Rho decreases from -.66 to -.62. Using not the scores of "the most positive actor", but instead the scores of the actor we discerned as the implementing actor (and also its own information), leads to changes in 11 cases, and a Rho declining to -.56 (all significant on the .000 level). So these alternative analyses do not lead us to propose changing the formula specification.

10.6 Testing the impact of control variables on the predictability potential of the formulaic expression of contextual interaction theory

This research was designed to include several types of cases to allow controlling for elements like historically dominant political ideology, population density, and the states themselves to better understand the validity of the theory. When testing control variables, one asks if the previously determined results change greatly when taking into account a control variable. If factoring in a control variable causes a given relationship to change in a drastic way, this provides a clue that the original relationship may not be as valid as initially thought. It can also serve as a test to see whether the contextual interaction theory produces good predictions in different settings. Please note, in this research testing for the effects of control variables splits our sample size. When a sample of this size (n=46) is reduced it becomes more difficult to detect relationships. Therefore the insight provided by testing in the different subsamples may be somewhat limited. All results are first described in the following paragraphs, and then discussed at the end of this section.

10.6.1 Historically dominant political ideology

We first split the file by historically dominant political ideology, into liberal Anglo-Saxon states (New Jersey and Oregon) and socio-democratic welfare states (The Netherlands, Finland). With this assessment we hope to shed light on the relationship between predicted and observed results in these different settings. We ask how these ideologies might influence the relationship between predicted and observed results: is the theory equally predictive for both types of ideologies? In analyzing American states, we find a correlated relationship (n=24), using Spearman's Rho correlation coefficient (Rho = -.54, $p<0.003$). This relationship is exhibited in the scatter plot found in Figure 10.3, indicating this inverse relationship. This correlation is only a bit lower than the general one by the increased relative impact of the "outlier" Boone Slough. Without it the correlation is Rho -.69, $p<0.000$, n=23). For comparison we next analyze the subsample including Finnish and Dutch states; we find a correlated inverse relationship (n=22), using Spearman's Rho correlation coefficient (Rho= -.80, $p<0.000$); the scatter plot of this relationship appears in Figure 10.4. The test statistic is slightly higher for the socio-

democratic welfare states in comparison to the liberal Anglo-Saxon states. But this can be fully explained by the absence of the outlier. When this American case is included in this European sample Rho = -.67 ($p<0.000$, $n=23$).

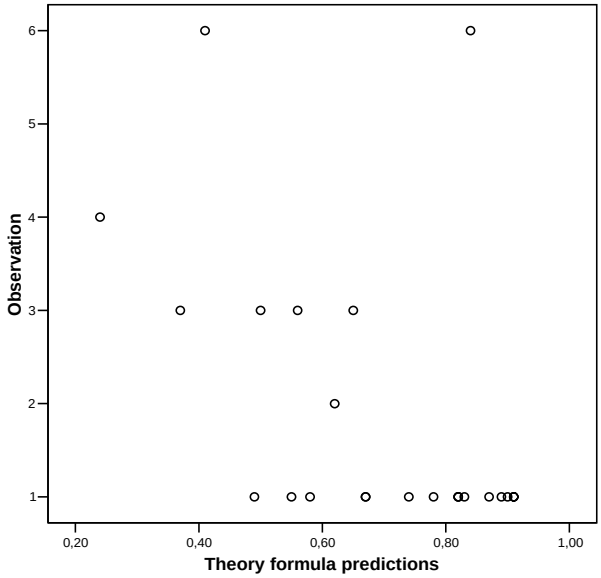


Figure 10.3 Scatter plot of observed and predicted results in liberal Anglo-Saxon states

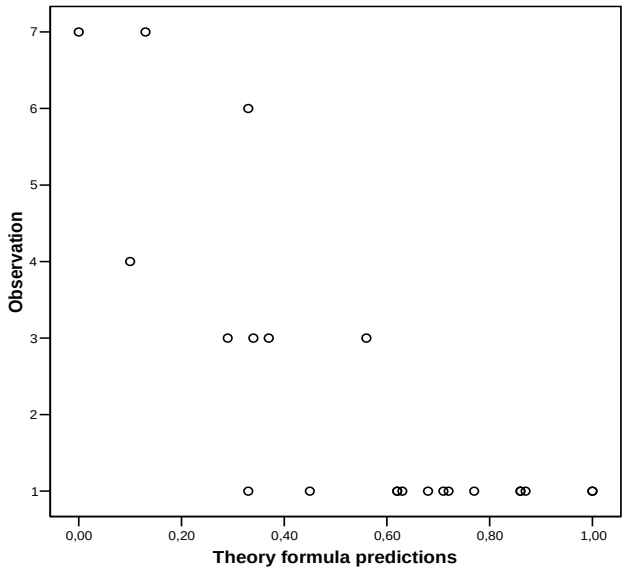


Figure 10.4 Scatter plot of observed and predicted results in socio-democratic welfare states

10.6.2 Population density

We next split the file by population density, into high population density states (New Jersey, the Netherlands) and low population density states (Oregon, Finland). Does theory predictability potential hold true in both high and low population density states? In analyzing high population density states, we find a correlation of Rho = -.71 ($p<0.000$, $n=24$). Figure 10.5 shows the relationship between variables. For comparison we assess low population density states, finding a correlation of Rho -.62 ($p<0.000$, $n=22$, without the outlier Rho -.74). As shown in Figure 10.6, this scatter plot also reveals a significant inverse relationship. Both associated probabilities fall well below our pre-set alpha level of 0.05, therefore the contextual interaction theory remains highly predictive in both low and high population density states.

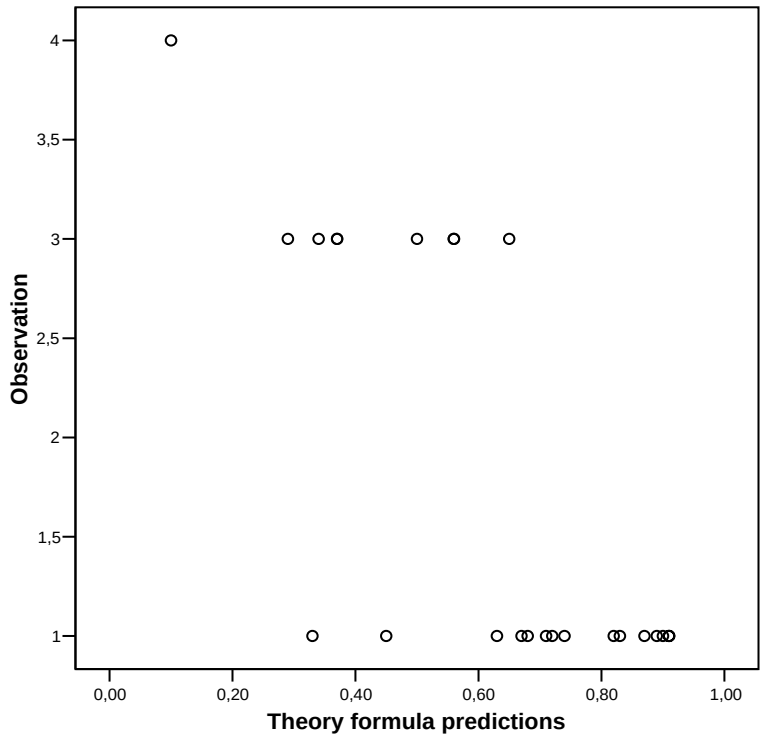


Figure 10.5 Scatter plot of observed and predicted results with high population density states.

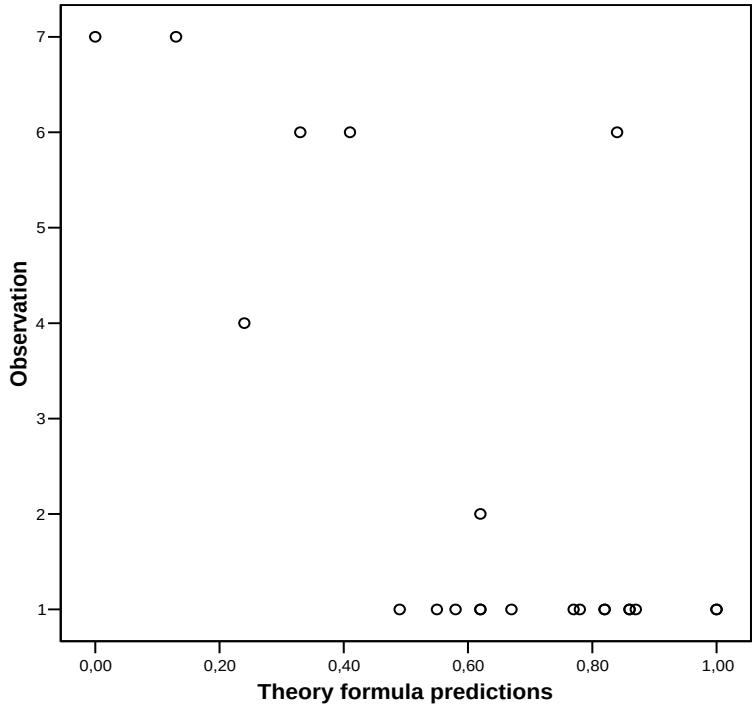


Figure 10.6 Scatter plot of observed and predicted results in low population density states.

10.6.3 By state

Our first state for analysis is the Netherlands. In the interest of diligence, it should again be noted that these tests reduce our sample from the original 46 cases included in the quantitative assessment, to only a handful of cases per state (10 to 12). This makes the statistical tests performed on each small sample problematic, but at the same time may provide insight as part of a holistic assessment of the sample. In analyzing the Netherlands, we find there is a correlation of Rho = -.70 ($p<0.005$, $n=12$). Within this state there is an indication of an inverse relationship, as shown in Figure 10.7, however, it is not revealed as significant by the Pearson correlation test. When evaluating Finnish cases alone, we find a correlation of Rho = -.82 ($p<0.002$, $n=10$). It should be emphasized that the Finnish sample includes fewer cases than the other states. Viewing the scatter plot of this relationship (Figure 10.8), we see an inverse relationship, deemed significant by the statistical test. We next analyze New Jersey, finding a correlation of Rho = -.82 ($p<0.001$, $n=12$), and shown in the scatter plot of these data in Figure 10.9. In analyzing Oregon, we find there is no correlation (Rho = -.27, $n=12$, $p<0.197$). This is mostly due to the inclusion of the outlier. Without this one case the correlation is Rho = -.62 ($p<0.021$, $n=11$), only a bit less than the other states. The scatter plot of this relationship can be found in Figure 10.10.

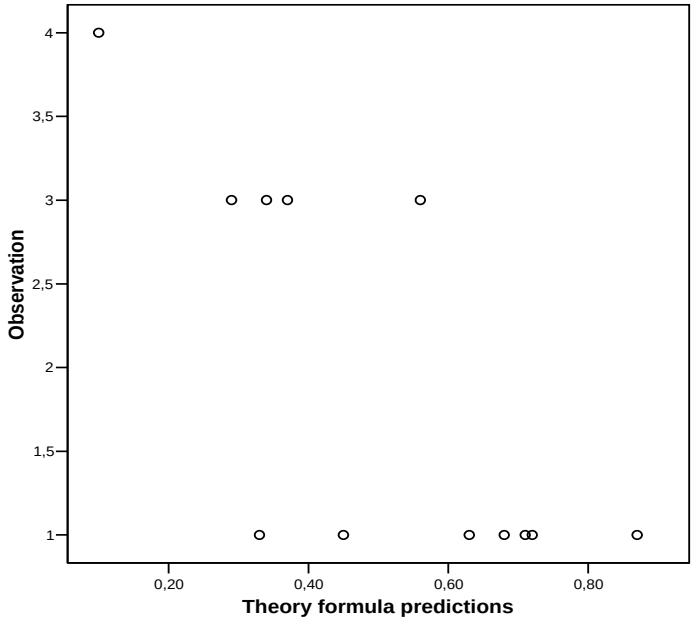


Figure 10.7 Scatter plot of observed and predicted results in the Netherlands.

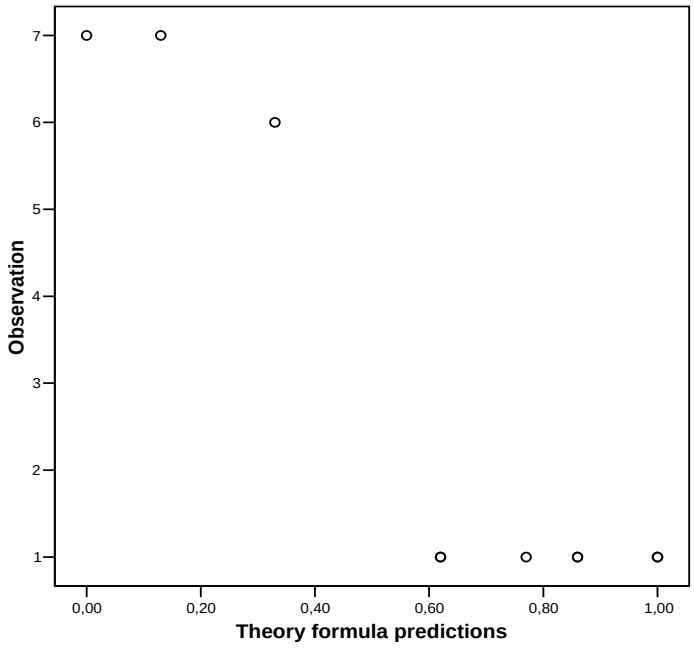


Figure 10.8 Scatter plot of observed and predicted results in Finland.

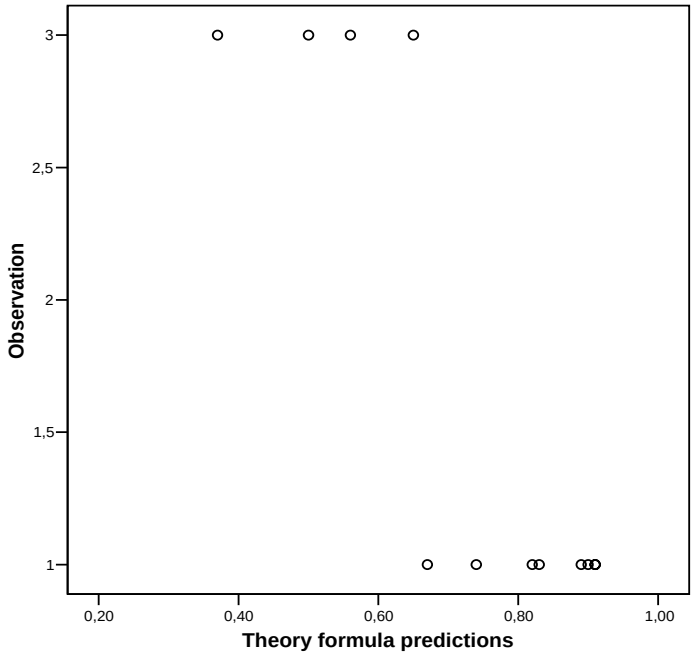


Figure 10.9 Scatter plot of observed and predicted results in New Jersey.

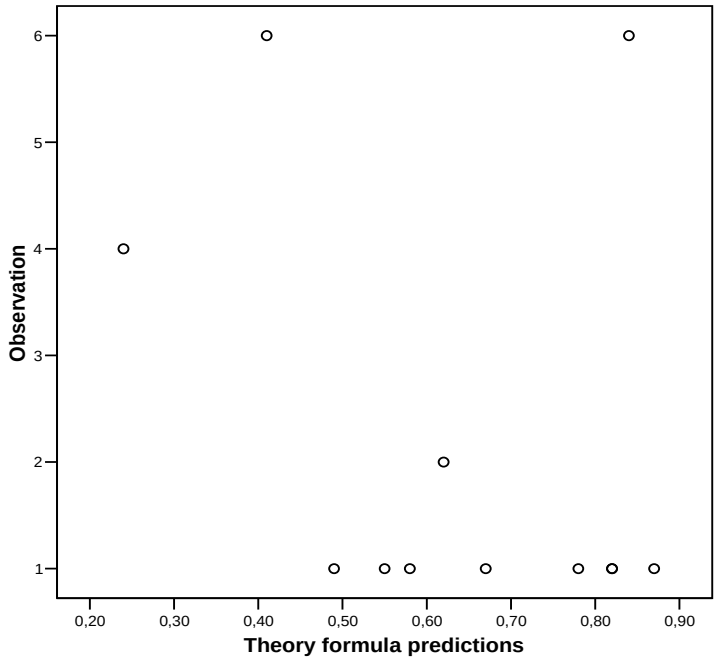


Figure 10.10 Scatter plot of observed and predicted results in Oregon.

This result builds the external validity of the theory. This is particularly true considering its development in the Netherlands, making replication of results outside of the Netherlands, or Europe for that matter, especially useful.

10.7 Overview of the results of the formula based correlation testing

Considering the volume of information presented in the previous section, it is useful to view all of these data at one time (shown in Table 10.3) before discussing the ramifications of splitting the sample in this manner. When devising this research project, it was important to include both socio-democratic welfare states and more liberal Anglo-Saxon states to insure a variation of case types. As a theory developed in the Netherlands, every test of contextual interaction theory in the context of a different country or historically dominant political ideology can be seen as a test of replication. In other words, an assessment of the theory outside of the Netherlands builds the external validity of the theory, broadening its usefulness in new applications. Therefore in addition to being applied to a new policy area (wetlands) we apply the policy in Finland, New Jersey, and Oregon. Splitting the file in different ways can shed light on the varying relationships within the sample. It will be most important to highlight situations where splitting the file drastically changes the statistical output. It cannot be overstated that the small sample size makes ‘hard and fast’ conclusions difficult. Within smaller samples, a few extreme cases can change the characteristics of the whole quite easily.

When evaluating the results of the formula application, we see a continuation of the trend (i.e., a significant inverse relationship) in several of the sub-samples. This is true of the subsamples of socio-democratic welfare states, liberal Anglo-Saxon states, high and low population density states, Finland, and New Jersey. Findings appear consistent between the US and European states, demonstrating an important robustness. In terms of Western and developed democracies, contextual interaction theory appears context general.

While the sub-sample analyses support the findings of the original analyses, the original relationship does not hold true for Oregon. The Oregon sub-sample includes a clear outlier. When omitted, the results for Oregon are almost as strong as for the other states. This shows the vulnerability of such small samples. To determine the value of the theory and formula as a predictive tool requires testing it with other samples, continuing to build the external validity by application to other empirical fields, countries, and policy situations.

Table 10.3 Summarization of correlation analyses of formula derived variables

	Subsample	Significance
Formula	None	Significant (*Rho* = -.66, *p*<0.000, n=46), without outlier *Rho* = -.74, *p*<0.000, n=45
By historically dominant political ideology	Socio-democratic welfare	Significant (*Rho* = -.80, *p*<0.000, n=22)
	Liberal Anglo-Saxon	Significant (*Rho* = -.54, *p*<0.003, n=24), without outlier *Rho* = -.69, *p*<0.000, n=23
By population density	High	Significant (*Rho* = -.71, *p*<0.000, n=24)
	Low	Significant (*Rho* = -.62, *p*<0.000, n=22), without outlier *Rho* = -.74, *p*<0.000, n=21
By state	The Netherlands	Significant (*Rho* = -.70, *p*<0.005, n=12)
	Finland	Significant (*Rho* = -.82, *p*<0.002, n=10)
	New Jersey	Significant (*Rho* = -.82, *p*<0.001, n=12)
	Oregon	Not significant (*Rho* = -.27, *p*<0.197, n=12), without outlier *Rho* = -.62, *p*<0.021, n=11

10.8 Discussion and conclusions

In chapter 9 we first tested the qualitative elaboration of CIT hypotheses; our research hypothesis was that there is a relationship between theory predictions and observations. The results indicate that the two variables are strongly correlated. Only one case deviated from the pattern and results that the theory had predicted. In this chapter, for supplementary quantitative treatment of the data, the actor characteristics of motivation, information and power were measured then input into a formula. This formula was designed to allow for intermediate values of the independent variable, thereby producing more intermediate values for the predicted results. The number produced by the formula represents a theory-based prediction about with what result actors with the given characteristics will interact during policy implementation of that case. We then compared this number to the observed policy interaction that occurred in each case. Correlation is used to highlight relationships between the given variables. Correlation asks whether changing the independent variable alters the dependent variable in a patterned manner. We found the formula, when including the whole sample, produces a significant test of correlation. In other words, the independent and dependent variables move in a synchronized way. We also found, however, that this degree of correlation was much lower than the almost perfect fit of the flow chart model used in the previous chapters.

Next we split the sample into various sub-samples based on historically dominant political ideology, population density, and state, to understand how each of these characteristics may play a role in the significant correlation of the sample as a whole. We found that within most of the sub-groups the correlation pattern holds true, while in one (Oregon) relationships are no longer significant. This can be fully explained however by one outlier case. Excluding it from the sample, the variation

between the different subsamples is actually amazingly small. There is no reason whatsoever on the basis of this research to believe that the contextual interaction theory is less valid in more pluralistic American states than in consensus-oriented European welfare states or that it is less valid in low density states. In fact even the small samples of most separate states show similar results (including Oregon when the outlier is removed).

Given the constraints of a small sample size, these results must be tested in other places, policy situations, and empirical fields to create a continuing understanding about the theory's limitations and possibilities. It should be noted that for each 'significant' statistical test, the associated probability was actually well below the pre-set alpha level of 0.05. This does not necessarily mean that the results are *more significant*, but that the probability of performing a Type I error (rejecting a true null hypothesis) is lower.

When developing this research project we chose to stretch the previous applications of the theory in a number of ways, including the changed setting of wetland restoration projects, and extensions to countries outside of the Netherlands such as Finland, and the American states of New Jersey and Oregon. In this way the large-N assessment builds a steady argument for the applicability of the contextual interaction theory as a predictive tool in a number of new situations. In the following chapter we discuss the study as a whole, including all three in depth case studies, as well as qualitative and quantitative treatment of the large-N study. In this final chapter we create a holistic assessment of the contextual interaction theory based on this research.

Chapter 11

Discussion, conclusions, and outlook

"When properly planned, executed, and managed, restoration works;
its success can be attributed to the hard work and dedication
of practitioners, scientists, and others who seek to heal
damaged natural systems and improve our communities"
(United States Environmental Protection Agency, 2008)

11.1 Introduction

This is a reflexive study, therefore it is critical to learn both from the methodology employed in this research and provide a holistic assessment of the data gathered in the course of this work. In this chapter we first discuss the study's research questions. Then we propose revisions in both methodology and theory development based on the lessons learned within this study. Next we discuss how the in depth case studies and the large-N study might shed light on both the field of wetland restoration and research in implementation. Finally, we discuss how what has been learned in the course of this study may inform future research.

11.2 Answering the research questions

The primary research question of this study is:

How do the actor characteristics of motivation, information and power influence the implementation of wetland restoration policies?

To answer this question we address a sequence of component inquiries, specifically:

- How do target and implementer motivation, information, and power influence the likelihood to implement at all (output)?
- How do target and implementer motivation, information, and power influence the adequacy of implementation (outcome)?
- To what extent can these outputs and outcomes be explained by the characteristics of the actors involved?
- Are there significant differences when applying the theory to cases in the European Union and the United States? [comparative study only]
- Are there significant differences when applying the theory to cases in high and low population density states? [comparative study only]

In this section we address each of the component questions and then discuss how they can build understanding about the primary research question. The first three component questions listed above ask about the relationship between the independent variables of motivation, information, and power, and the dependent variables of likelihood to implement at all and adequacy of implementation. In this research we use the contextual interaction theory to direct our analysis, which makes predictions about the relationship between these independent and dependent elements. There is not 'one answer' for how motivation, information, and power influence the likelihood to implement at all and the adequacy of implementation. Instead the theory describes how an assortment of combinations creates various interactions. In this way, the theory makes linkages between the independent and dependent variables, while the elements of this study ask whether the theory does this in a useful manner. Through both the in-depth cases and the large-N study we found that the contextual interaction theory is a useful tool in analyzing the ways in

which actor characteristics influence implementation. Using the theory in the in-depth cases allows making predictions about how the combinations of characteristics will generate interactions. In addition, it distills the complex world of implementation into analytically manageable and comparable cases, while providing a rich descriptive platform. The large-N study provides evidence for the high predictability potential of the theory. It shows us that the theory is a useful tool in predicting how a variety of actor characteristics will influence the likelihood to implement at all and the adequacy of implementation. The large-N study also allows comparing several cases at a time, which helps us to answer the final two component questions. Through amassing a large-N study we can assess whether this pattern of predictability holds true in both American and European Union states and in both high and low population density states. Our large-N study comprises 48 cases, which is adequate for finding patterns and assessing trends within a sample. When considering the sample sub-groups we encounter an ever decreasing sample size, which limits our understanding about these sub-groups. That being said, we found the high predictability potential of the theory held true when the sample was split into European and American sub-groups, and when the sample was split based on high or low population density. In fact, we found the predictability potential of the theory held true to the state level (the Netherlands, Finland, and New Jersey) in most cases, with the notable exception of Oregon. The Oregon sample featured the only clear outlier, and when removed even the Oregon sub-sample follows the pattern of the sample as a whole. Therefore, there are neither significant differences when applying the theory to European Union versus American states, nor when comparing high and low population density states. How might this information provide insight into our primary research question?

How do the actor characteristics of motivation, information and power influence the implementation of wetland restoration policies?

This research provides evidence that the contextual interaction theory is capable of shedding light on how the actor characteristics of motivation, information, and power influence the implementation of wetland restoration policies in a useful and predictable manner. Based on this work we find that the theory is not only an effective descriptive tool, but also allows assessing cases in a comparable way, which builds toward a greater understanding of trends in implementation. In addition the theory has an extremely practical element, namely its ability to highlight barriers to implementation, which can provide a roadmap to policy actors in understanding how to alter ongoing policy interactions. In this study we have found the theory useful in describing and analyzing wetland restoration policy implementation, but further study is needed to understand how it might apply to other policy or empirical fields. Next we highlight potential improvements in both methodology and theory conceptualization to allow enhanced future research.

11.3 Proposed revisions based on this study

The interview instrument was created to be consistently applied to many types of cases. It creates scores for actor motivation, information, and power by tallying actors' responses to questions. All questions are weighted equally, meaning that if an interviewee states throughout the interview that they support the project, this will likely yield a score depicting motivation for the project. Therefore while the researcher can recognize an actor who says "I support the project in every way, but our organization ultimately lacked motivation to fund the project" as someone ultimately not motivated toward implementation, analysis with the interview instrument cannot. On the other hand, the power of the interview instrument is that it is a reliable tool which can be applied to a large number of cases in a consistent manner. It takes very personal and elaborate social interaction processes, and evaluates them in almost a clinical manner. In other words, while the researcher should be aware and alert during its application, the interview instrument is meant to work as a tool that can illuminate interactions without using the researcher's judgment at every turn. This is a benefit as it can combat researcher bias in analysis. In this research the interview instrument has proven capable of detecting actor motivation, information, and power in the majority of cases in a way that provides insight into these interactions. One important reason to apply the contextual interaction theory to an array of cases is to test the robustness of the interview instrument. That being said, we should use the results of this study to illuminate the methodology applied to these cases. It is a goal of this study to inform research by improving future applications of the theory. This section details areas for improvement in determining actor motivation, information and power scores through a critical assessment of the interview instrument. What improvements in theory operationalization can we envision to more accurately capture actor characteristics? A few issues raised during the course of the assessment deserve re-examining to better understand how changes in the interview instrument might improve application of the contextual interaction theory. In this section we address methodological changes, suggesting adjustments to the operationalization of the three variables to more accurately capture their true values. We discuss issues including the failure to capture funding availability as capacity within the power score, capacity as a de-motivating factor, assessing self-effectiveness, illuminating links to formal and informal power channels, and the implications of using the formula version of contextual interaction theory in chapter 10. After the interview instrument assessment, we provide suggestions for theory revision to improve predictability potential. If a revision has both a methodological and theoretical element it will be discussed in both sections.

11.3.1 Methodological revisions

Capacity of core actors and capacity as a de-motivating factor

The idea of capacity will first be addressed as a methodological issue, and then also assessed from the perspective of informing theory development. In the Stone Harbor

and Liberty State Park cases (New Jersey, Appendix G) interviewees lacking funds but intending to provide them are not captured by the power score as a lack of capacity. It is critical that a core actor's capacity as it influences implementation is included in analysis. In this application, a power score is created from several questions addressing different areas of support. These questions (Appendices C and D, Questions 37a, 37b, 37c, 38 and 39a) fail to fully capture the relationship between funding and power to implement. The interviewee answers questions about their contribution to the project, including time, money, and administrative resources. They are also asked if they found a lack of resources like legal or organizational support a problem during the project. Together these responses tend to produce a checklist of resources already applied to the project. In addition, funding is placed on equal footing with several aspects of project support. Based on these cases it is clear that while time and administrative support are important, financing is crucial for wetland restoration projects. One remedy is to increase the number of questions about finances on the survey, allowing the importance of this element to increase in comparison to other resources such as time and administration, in essence weighting this factor as an element of the power score. Inclusion of questions pointedly about core actor funding should be added to the interview instrument, such as:

- Are your organization's funds for implementing this project immediately available?
- Has the financial capacity of your own organization been a limiting factor in project implementation?
- Has a delay in resources been a limiting factor in project implementation?

It is interesting that in the two cases listed above, the funding agency in question is the Army Corps of Engineers. Perhaps in cases involving this federal agency with a long history of supporting similar projects, the level of trust is such that actors describe future activities with confidence. Of course, confidence may wane as time passes, but at this point in the process actors are convinced funding will appear eventually. Both are not yet implemented cases. It is also conceivable that the promise of funding, among trusted actors, is enough to begin planning wetland restoration projects. It may also be true that due to the amount of time required for planning wetland restoration projects, actors are unwilling to rush into cancelling a project when funding is delayed.

It may also be necessary to make a connection between capacity/ability to fund a project as it supports motivation for a project. It is constructive to expand our understanding of power/capacity as it relates to motivation. In the New Jersey Farnham Park case (Appendix G) we found an instance where capacity is presented as a de-motivating factor, not only as an issue of power. In this case it became important to recognize the ultimate motivation of an actor who says: "theoretically, I support the project in every way, but our organization ultimately lacked motivation to fund the project". This may also point to the necessity for further developments within the interview instrument to more fully capture how issues such as capacity might effect motivation. Another example of the need for including capacity as it

effects power is the Marshland Restoration case (Oregon, Appendix H), where actors halt the project because it does not work well with the competing interest of profit. In future utilization of the interview instrument, it will be important to allow for more discussion of de-motivating factors, whatever their source. Potential questions to add may include:

- Has any factor in this case diminished your motivation for the project?
- Do you believe you can resolve this issue in the course of this project?

These questions will likely capture this important connection between motivation and capacity. As the instrument currently stands, such an issue may not impact an actor's motivation score. Instead, it would be useful to weight these questions, as they potentially have a greater impact on ultimate motivation. In addition to strengthening the interview instrument's ability to capture the concept of capacity, it may also be fruitful to analyze the way the instrument incorporates self-effectiveness.

Self-effectiveness assessment

In two New Jersey cases (Eagle Manor Farm and Fenwick Manor, Appendix G) the theory predicts opposition, but in each instance the implementer dropped the project when it became apparent that implementation would not be forthcoming. In the case assessment this is attributed to actors recognizing the checks and balances inherent in the given process. It could be argued that such recognition should fall under the auspices of the 'self-effectiveness' measurement within the conceptualization of actor motivation. In other words, if the actors felt the project would not be a success, this should be communicated to the researcher via the self-effectiveness question. In both of these cases, however, actors responded to the self-effectiveness question and those responses were incorporated into their motivation scores. The self-effectiveness measurement is not weighted, but instead is just one part of the motivation score composite. It is quite possible that actors judge themselves as effective, and yet can acknowledge limitations in a particular case. Or conversely, actors may judge themselves as effective even in cases where they are not. As these cases include seasoned professionals within wetlands restoration, perhaps it is not so strange that they recognize that not all implementation cases are successful. It may be an important element of the interview instrument to continue to watch, but at this time it does not necessitate a change in the instrument methodology. In addition to understanding the role self-effectiveness plays on process interactions, it may be beneficial to expand the comprehension of informal power channels within the process.

Informal power channels

In the Allied Junction case (New Jersey, Appendix G) an issue arises about understanding informal sources of power. In this case it is not eminently clear whether actors within the process make changes due to pressure from informal sources of power, or whether changes take place for other reasons. Specifically, is it the case that the Hackensack Riverkeeper used informal power channels to thwart development, or was it that the Army Corps of Engineers had other reasons to

change their plans about this contested site? In this particular case, one could argue that the application of the theory did not fully capture informal sources of power. Future application of the interview instrument would benefit from an increase in questions about specific sources of informal power. In the current interview instrument there are a few general questions relating to informal sources of power (Appendices C and D, Questions 21 and 38). These questions avoid presupposing the means that actors might use to build support or gain power. In future, however, the interview instrument may be improved by including more specific questions, such as:

- Did you use informal channels such as lobbying or outreach to build support during this project?
- If yes, did this support lead to a change in the situation for stakeholders?
- Do you believe other actors used informal channels such as lobbying or outreach to build support during the project?
- If yes, did this support lead to a change in the situation for stakeholders?

These questions will provide clarity in the future, asking pointedly and consistently about a wider range of informal channels of support that actors might have used over the course of the process. In addition to revealing the role of informal power within the process, the concept of formal power may also need broadening within the interview instrument.

Formal Power Channels

In addition to sources of informal power, in several cases of the large-N study there seemed to be a gap in recognizing one important formal source of power. Currently there are many questions in the interview instrument seeking information about which actors have formal connections to and responsibilities for a given project. These questions seek information about project initiators, decision making, responsibility for fulfilling policy requirements, monitoring, reporting results, and about financial responsibilities (Appendices C and D, Questions 1, 2, 7, 26, 34, 36, 37a, and 41). The current interview instrument lacks questions about whether a given actor serves a regulatory role in the process. In several cases this aspect of control was not included in the analysis (PSE&G Wetland Restoration, Eagle Manor Farm, Allied Junction Rail Project, and Fenwick Manor in Appendix G; and Fochteloerveen, and Water op Maat in Appendix E). It will be useful to add a few questions to the interview instrument about this role within the process. Potential questions regarding this aspect of power might include:

- Does your organization require regulatory approval before implementing this project?
- If yes, from what agency?
- Is your organization responsible for providing regulatory approval before this project can be implemented?
- If yes, for what groups or agencies?

The addition of these questions will contribute to a fuller measure of formal connections to power for a given wetland restoration project. These questions provide insight into a given implementation situation. It is not imminently clear how to include questions about capacity and power within the model. This theoretical application considers capacity as power, but when evaluating capacity it is not an issue of assessing the balance of power between the two actors, and thus the decision to implement, but more the capacity of the positive actor(s) to really realize such decision in practice. We will return to this issue later when discussion conceptual lessons learned from theory application.

Each proposed change to the interview instrument should play a role in improving the measurement of variables when applying the contextual interaction theory. If all of the above mentioned changes are added, it will lengthen the interview instrument by 13 questions. Increasing the number of interview questions by 13 should not increase the interview time exceedingly, especially considering the relevance of the information gleaned from the additional questions. These proposed interview improvements contribute to future endeavors by addressing themes such as capacity of core actors and capacity as a de-motivating factor, assessing self-effectiveness, and clarifying links to formal and informal sources of power. Within the context of lessons learned in this study, adding these questions can increase understanding about processes without greatly increasing the burden of the interviewee as a research participant. By implementing these improvements, one can enhance the application of the contextual interaction theory in a thoughtful and informed manner.

Formula analysis and the interview instrument

In chapter 10 we use a formulaic treatment of the contextual interaction theory to assess a group of 46 wetland restoration cases. Our interview instrument might have posed restrictions to the proper use of that formula, for the independent, and especially the dependent variable. This treatment implies that each incremental change in the dependent variable is important or telling. This implicit assumption—that the interaction process is influenced by each small change in a dependent variable, rather than by broad categories (e.g., positively motivated, neutral or motivated against; or one dominant actor versus both having balanced power) — is arguable. Understanding whether the formula version of the contextual interaction theory really has the potential to provide a more precise estimate for the results will certainly require more research.

11.3.2 Conceptual lessons learned from theory application

In the interest of using this research as a building block toward improving the contextual interaction theory, it is also important to address issues pertaining to theory application arising in the course of this work. Issues of note for discussion here include understanding the influence of third actor resources and core actor capacity, incorporating frames of reference in analysis, and the similar results in this study for the analysis of adequacy cases.

Third actor resources

In New Jersey's Pond Creek case (Appendix G) and Oregon's Wilson-Trask and Cedar Hill cases (Appendix H) the implementer and target shared positive power scores, yet actors found that the resources of a third actor hampered implementation of the wetland restoration. In these cases this potential lack of capacity in resources was not indicated in the power score or by the hypothesis prediction of active cooperation. The actor providing critical support was not considered in analysis due to the two-actor limitation of the contextual interaction theory. In these cases, a degree of financial support was available, but more importantly the implementation appears limited by other funds or funding sources. How might the theory compensate when a limiting lack of capacity comes not from a core actor, but from a third actor within the process? In the following section we describe how core actor capacity may affect implementation. We address the limitations and possibilities for theory conceptualizations that can account for the influence of capacity, whether from a third actor or core actor, on the process in the following section.

Capacity of core actors

In several cases, (Pond Creek, Stone Harbor, and Liberty State Park cases, Appendix G and Wilson-Trask and Cedar Hill cases, Appendix H) both the target and implementer are positively motivated toward wetland restoration. As shown in Appendix A, when the motivation of the implementer is positive and the motivation of the target is neutral or positive, the theory does not take into account power and by extension any issue of capacity. The theory assumes that if motivation of core actors is in favor of the project (or at least the target is neutral), actors will cooperate and power as capacity will not be a limiting factor. When we envision power as control, this makes logical sense. When envisioning power as resources and capacity, the examples above show that sometimes finances limit the ultimate implementation of a project even when core actors are highly motivated toward implementation. In this way, even if we increase the number of questions related to resource capacity on the interview instrument, in cases such as these, a more representative score would not change the process prediction for the likelihood to implement at all indicated by contextual interaction theory. Therefore the theory must take this into consideration within its conceptualization.

The theory sees policy implementation as a "social interaction process", a starting point which has proven to be productive and capable of explaining what happens in almost all cases. In this way, this approach is much nearer to reality than common metaphors used in implementation literature such as "obeying the higher authorities or not" or "production of goods and services". In this study the outcomes of implementation as a social interaction process are well predicted by the contextual interaction theory, however the implicit assumption that when partners agree, or a decision is forced in any other way, the necessary resources for the "production" side of implementation will follow is not always true. While contextual interaction theory explains the decision to implement, the reality occasionally gets stuck in lack of resources, especially when external resources (i.e., not under direct control of implementer or target) are needed.

This describes a situation that the theory (in the version used in this application) does not really consider. In these cases the resources for "capacity to produce" act in a manner similar to the availability of sufficient information, which is included in the present model. In fact the capacity issue has a more logical spot at that place in the model than channeling it into the area of power balance. This is also in accordance with treating the use of information in the model as a needed resource. It might be possible to consider whether core actors have sufficient capacity at the same stage as the consideration of sufficient information. Integrating these elements into the predictive hypotheses, whether in flowchart models or in formulas, is outside the scope of this dissertation. This is a task that should be addressed in further development of the theory. It can be said that in most cases the theory proved capable of capturing capacity and resources within a given situation, but this study indicates room for improvement in understanding the influence of capacity on implementation.

Frames of reference

In the Allied Junction Railway Project case we discuss how each actor connects events with meaning. In this case, the two core actors provide contrasting explanations for why events have taken place. Specifically, the target views his role in halting the project as a victory for the environment, while the implementer credits the project's end with long-term restoration concerns of the Meadowlands Interagency Mitigation Advisory Committee. This begs the question: when interviewees give contrasting explanations for events, how can a researcher be certain of what really occurred? Since this research project began, theory development has shifted to an emphasis within the information variable on reference frames and interpretations of reality rather than only 'information'. It is possible that an adequate operationalization of this conceptualization of the information variable could be capable of capturing more of this aspect of interpretation. Though the further operationalization of the information variable considering frames of reference is beyond the scope of this work, ideally researchers interested in pursuing that vein of development will use the information gathered here as a stepping stone in their expansion of the information variable.

Similarity in adequacy of implementation cases

In addition to broadening the conceptualization of information, it is useful to address why all cases seem to behave in a similar manner for the second phase of analysis within the large-N study. Admittedly the analysis of the second phase "adequacy of implementation" is not measured from the aspect of long term ecological sustainability. Though this might be the most telling measurement when discussing wetland restoration projects, making an ecological assessment went beyond the capabilities of this study. That being said, all cases analyzed for the second stage of analysis underwent physical changes to the wetland as planned during the course of the social interaction process. In each of these cases it was difficult to reassess the independent variables completely separately from the initial assessment (phase one, likelihood to implement at all). As all of these cases had already been implemented, actors describe events from the perspective of the

present. In this way, it is difficult to detach these two phases for analysis. This may partially be a symptom of the type of implementation studied in this research. If, for example, we worked with permitting the distinction of phases may be less ambiguous. In that sort of policy application, it would be easier to distinguish between the process of receiving a permit or subsidy, and then the process of complying with the strict conditions of a given program. In this assessment the second phase of analysis within the large N study is decidedly weaker; this is the reason for treating it lightly within the course of this dissertation. In future assessments, it may be much more useful to design a research project that plans multiple points for application—which will not only provide a more holistic picture of events over time, but will clearly demarcate between the actor characteristics for early stages in the project (likelihood to implement at all) and those occurring at later stages of the project (adequacy of implementation). In the following paragraph we discuss further merits of multiple applications of the contextual interaction theory in analysis.

In the McKay Claggett Creek case (Oregon, Appendix H) we experience an interesting phenomenon: at a given time late in the case theory prediction and observation is cooperation. The description of the history of the case, however, indicates other types of interactions that were not cooperative in nature. In this way it is similar to the in-depth Wierdense Veld1 case, in which initial confrontation was overcome by the Provincial level decision about the buffer, yielding cooperation among actors. In eastern interactions of the Wierdense Veld case we witness a similar reversal of actor characteristics, in which trusted information turned the formerly negative motivation of farmers into a neutral stance about changes in the area. These cases all point to the advantages of longitudinal (repeated) use of contextual interaction theory over time when using it in case assessments. Not only might this substantiate claims about how actors' characteristics have changed, but it can also shed light on how real processes work over time. When considering the information variable, changes over time may indicate actors learning in a way that influences the process. In this research, a one time assessment fulfilled the goals for determining predictability potential, providing understanding of multiple cases in the four chosen states, and illuminating interactions in in-depth cases. For future research, however, multiple applications of the theory can provide meaningful and enlightening information about how actor interactions fluctuate over time. Multiple applications of the theory, however, will incur costs, not only in time but also in a reduction of the theory's parsimony.

[1] This refers to the western sub-case

11.4 Lessons learned regarding wetland restoration and implementation

What can the analysis of the cases found within this study teach us about wetland restoration projects? In this research we found that wetland restoration as an empirical policy field involves complex scenarios where actors must not only react to alterations in social processes but also must remain wary of how the given habitat may unexpectedly react to restorative changes. In other words, wetland restorations are intricate and complicated from both social and ecological perspectives. Despite the potentially daunting nature of a given restoration task, passionate actors work through these difficult circumstances to assist in realizing national and international policy goals for wetlands in all of our study areas. We have found that wetland restoration projects can be placed 'on hold', sometimes for years while actors work to finalize details, build cooperation among project partners, or gather financing. This is an important lesson when considering the history of wetland destruction worldwide. Many wetlands have been destroyed over time, yet actors often devote years, sometimes decades, to realizing some wetland restoration projects. We have also found that actors need not be blinded to realities of changing habitats, or assume that all wetland restorations are beneficial to humans or wildlife. In several cases depicted in this study actors remained vigilant about monitoring the risks of changing ecosystems, and alert to both the positive and negative aspects of a given restoration. We have also found that despite sometimes very different views on the relationship between humans and wetlands, actors are capable of finding solutions and creating compromises when necessary.

What can this work tell us about the usefulness of the contextual interaction theory as a tool for assessing the process of implementation? The in-depth cases demonstrate this theory has the capability of illuminating social interaction processes in not only a descriptive, but also an analytically meaningful way. The theory distills a multitude of issues and actors into the analysis of the core interaction for a given implementation process, considering both the likelihood to implement at all, and the adequacy of implementation. This allows the researcher to not only clearly assess interactions, but also build an understanding of how core factors (motivation, information, and power) interplay as actors make decisions and work toward their own goals. The large-N study reveals the theory as a tool useful for comparative work, and capable of high predictability potential for the interactions of implementation. This is clearly and definitively demonstrated for the first phase of analysis, the likelihood to implement at all. Within the context of this study this is less evident for the second phase of analysis, the adequacy of implementation, though only due to limitations in data gathering for this analysis.

11.5 Avenues of future research

As this is meant to be a reflexive research endeavor, it is important to understand how this study might cleverly inform future research. Recommendations based on the results of this study include working toward a more decisive comparative large-

N study for the second stage of analysis, incorporating multiple analysis points for cases, applying recommended changes in the interview instrument and assessing those changes, as well as continuing to broaden the application of this theory to other policy areas or empirical fields. A more decisive application to the second stage of analysis is interrelated to the second recommendation of multiple points of analysis for cases. A study capable of this would be most beneficial if it could include cases in early stages of implementation. In this way, researchers could analyze actors at an initial phase, then perhaps one or two times later to build a picture of how the interactions change over time. In pursuing this goal it may be useful to choose a field different from wetland policy implementation, as these can become, as discussed earlier, drawn out and may take many years to finalize. In addition, the nature of determining adequacy (i.e., long term ecological sustainability) within this policy field is problematic, and might be simpler or more straightforward when applied to a different policy field. In addition, it will be important to test the assumptions about the recommended changes in the interview instrument to determine if these additional questions are capable of more adequately capturing the underlying concepts. Finally, it is informative to continue to broaden the application of the contextual interaction theory to other empirical fields and policy areas. This study has valuable information about wetland restorations in two developed countries, but a similar study focused on developing countries may provide tremendously different results for the theory's predictability potential. Similarly, given the results of this research it may be especially interesting to apply the theory to other multi-actor environmental policy fields, such as water policy implementation, or wildlife conservation policy implementation. That being said, the success of applicability in this study does not indicate that the theory is incapable of application to other fields. Continuing to stretch and test the theory in new ways will help analysts understand its utility and limitations.

References

Ackermann, C. & Steinmann, W. (1982). Privatized policy-making: Administrative and consociational types of implementation in regional economic policy in Switzerland. *European Journal of Political Research, 11* (2), 173-185.
Alexander, E. R. (1985). From idea to action: Notes for a contingency theory of the policy implementation process. *Administration and Society, 16* (4),403-426.
Arentsen, M. (1991). *Beleidsorganisatie en beleidsuitvoering (Policy organization and policy implementation).* Enschede, Netherlands: Twente University Press.
Arentsen, M. & Bressers, J.T.A. (1992 *). Het belang van de factor macht bij de uitvoering van overheidsbeleid* (The relevance of power in policy implementation). *Beleidswetenschap, 2*, 103-125.
Association of State Wetlands Managers (2008a). *State Wetland Programs: Alaska*. Retrieved January 29, 2008 from http://aswm.org/swp/alaska9.htm
Association of State Wetlands Managers (2008b). *State Wetland Programs: Oregon.*
Retrieved January 29, 2008 from http://aswm.org/swp/oregon9.htm
Association of State Wetlands Managers (2008c). *State Wetland Programs: New Jersey*.Retrieved January 29, 2008 from http://aswm.org/swp/newjersey9.htm
Association of State Wetland Managers (2006). *Association of State Wetland Managers Website.* Retrieved April 19, 2006 from http://www.aswm.org/swp/index.htm
Association of State Wetland Managers. (2004). *State Wetland Programs*. Retrieved February 12, 2004 from http://www.aswm.org/swp/states.htm
Axelrod, R. & Keohane, R. (1985). Achieving cooperation under anarchy: Strategies and institutions. *World Politics, 38,* 226-254.

Ball, B. P. (1976). Water pollution and compliance decision making. In C. Jones & R. Thomas (Eds.), *Public policy making in the Federal System* (pp. 169-87). Beverly Hills: Sage.
Bardach, E. (1998). *Getting agencies to work together.* Washington, DC: Brookings Institution Press.
Baum, L. (1981). Comparing the implementation of legislative and judicial policies. In D. A. Mazmanian & P. A. Sabatier (Eds.), *Effective policy implementation* (pp. 39-62). Lexington, Massachusetts: Lexington Books.
Baum, L.(1976). Implementation of judicial decisions: An organizational analysis. *American Politics Quarterly, 4* (1), 86-114.
Berg, B. L. (2001). *Qualitative research methods for the social sciences.* Boston: Allyn and Bacon.
Berke, P.R. & Conroy, M. M. (2000). Are we planning for sustainable development? *Journal of the American Planning Association, 66,* 21-37.
Berman, P. (1980). Thinking about programmed and adaptive implementation: matching strategies to situations. In H. M. Ingram & D. E. Mann (Eds.), *Why policies succeed or fail* (205-227). Beverly Hills: Sage.
Berman, P. (1978). The study of macro- and micro-implementation. *Public Policy 26* (2), 157-84.
Berman, P. and McLaughlin, M. (1976). Implementation of educational innovation. *Educational Forum* 40 (3), 347-70.

Best, E.P.H., Verhoeven, J. T. A. & Wolff, W.J. (1993). The ecology of the Netherlands wetlands: characteristics, threats, prospects and perspectives for ecological research. *Hydrobiologia, 265* (1-3), 305-320.

Bijker, W.E. (2002). The *Oosterschelde* storm surge barrier: A test case for Dutch water technology, management, and politics. *Technology and Culture, 43*, 569-584.

Bowen, E. (1982). The Pressman-Wildavsky paradox: Four addenda on why models based on probability theory can predict implementation success and suggest useful tactical advice for implementers. *Journal of Public Policy,* 2 (1), 1-21.

Bressers, J.T.A. (1983). Beleidseffectiviteit en waterkwaliteitsbeleid (Policy effectivenessand water quality policy), Enschede, the Netherlands: Twente University Press.

Bressers, J.T.A. (1993). *Beleidsnetwerpen en instrumentenkeuze* (Policy networks and the choice of policy instruments). *Beleidswetenshcap, 4*, 309-330.

Bressers, J T.A. (2004). Implementing sustainable development: how to know what works, where, when and how. In W. M. Lafferty (Ed.), *Governance for sustainable development: The challenge of adapting form to function* (pp. 284-318). Cheltenham: Edward Elgar.

Bressers, J.T.A. (2005). *A contextual interaction theory for understandingimplementation outcomes*, unpublished working document.

Bressers, J.T.A. (2007). *Contextual interaction theory and the issue of boundary definition: Governance and the motivation, cognitions and resources of actors.* Report for the European Union Integrated Systems and the Boundary Problem project. Retreived January 25, 2008 from http://www.tigress.ac/isbp/pubs.html

Bressers, J.T.A., Huitema, D., & Kuks, S. (1995). Policy networks in Dutch water policy. In Bressers, J.T.A., O'Toole, L. & Richardson, J. (Eds.), *Networks for Water Policy: A comparative perspective* (pp. 24-51). London: Frank Cass and Co.

Bressers, J.T.A & Huzen, T.P. (1984). *Een politicologische benadering van bestuursinstrumenten (A political science approach to governance instruments),* Enschede, the Netherlands: CBO.

Bressers, J.T.A. & Klok, P.J. (1987). Een voorlopige instrumententheorie van het milieubeleid (A provisional instrumentation theory of environmental policy), The Hague, the Netherlands: VROM (Netherlands Ministry of Housing, Spatial Planning, and the Environment).

Bressers, J.T.A. & Klok, P.J. (1988). Fundamentals for a theory of policy instruments. *International Journal of Social Economics, 15* (3/4), 22-41.

Bressers, J.T.A., Klok, P.J., & O'Toole, L.J. (2000). *Explaining policy action: A deductive but realistic theory.* Paper presented at the International Political Science Association world conference, Quebec.

Bressers, J.T.A., Klok, P.J., Kuks, S., & Lulofs, K. (1988). *Handleiding instrumententheorie (Manual of instrument theory).* The Hague, the Netherlands: Ministry of the Environment.

Bressers, J.T.A. & Ringeling, A.B. (1989). *Beleidsinstrumenten in drie arena's* (Policy instruments in three arenas). *Beleidswetenschap, 13* (1), 3-24.

Bressers, J.T.A. & Ringeling, A.B. (1995). Policy implementation. In Kickert, W.J.M. & van Vught, F.A. (Eds.), *Public Policy & Administration Sciences in the Netherlands* (pp. 125-146). London: Prentice Hall / Harvester Wheatsheaf.

Bressers, J.T.A., Van Emmerik, M.G.L.M., & Praas, E.(1985). *Instrumenten en evaluatiestudies in het milieubeleid (Instruments and evaluation studies in environmental policy)*. Enschede, the Netherlands: Twente University Press.

Bressers, J.T.A. & Xue, Y. (2006). Environmental negotiated agreements: The process analysis approach and NA's feasibility in China. In Welford, R. (Ed.) *Twelfth annual international sustainable development research conference proceedings* (pp. 1-43). Hong Kong: The University of Hong Kong.

Browne, A. & Wildavsky, A. (1984). Implementation as mutual adaptation. In Pressman, J.L. & Wildavsky, A. (Eds.), *Implementation* (pp. 206-231). Berkely: University of California Press.

Browing, R.P., Marshall, D.R., & Tabb D.H. (1981). Implementation and political change: Sources of local variations in federal social programs. In Mazmanian, D.A. & Sabatier, P.A. (Eds.), *Effective Policy Implementation* (pp. 127-146). Lexington, Massachusetts: Lexington Books.

Browing, R.P., Marshall, D.R., & Tabb D.H. (1984). *Protest is not enough.* Berkeley: University of California Press.

Browing, R.P. and Marshall, D.R. (1976). Implementation of model cities and revenue sharing in ten bay area cities: Design and first findings. In Jones, C. and Thomas, R (Eds.), *Public policy making in the Federal system* (pp. 191-216). Beverly Hills: Sage.

Bryner, G. (1981). Congress, courts, and agencies: Equal employment and the limits of policy implementation. *Political Science Quarterly, 96* (3), 411-30.

Bullock, C. S. III. (1980). Implementation and equal education opportunity programs: A comparative analysis. In Mazmanian, D.A. & Sabatier, P.A. (Eds.), *Effective Policy Implementation* (pp. 89-126). Lexington, Massachusetts: Lexington Books.

Bunker, D.R. (1972). Policy sciences perspectives on implementation processes. *Policy Sciences, 3* (1), 71-80.

Carney, J. A. (2002). *Black Rice: The African origins of rice cultivation in the Americas.* Cambridge: Harvard University Press

Chase, G. (1979). Implementing a human services program: How hard will it be? *Public Policy, 27* (4), 385-435

Cleaves, P. S. (1980). Implementation amidst scarcity and apathy: Political power and policy design. In Grindle, M.S. (Ed.), *Politics and policy implementation in the third world* (pp. 281-303). Princeton, New Jersey: Princeton University Press.

Common *Wadden* Sea Secretariat. (1997). Stade Declaration: Ministerial Declaration of the Eighth Trilateral Governmental Conference on the Protection of the Wadden Sea. Stade, October 22, 1997. Retrieved on February 3, 2006 from http://www.waddensea-secretariat.org/news/documents/TGC-Stade/Stade-engl.pdf

Cornu, C.E. (2005). *Restoring Kunz Marsh*. Coos Bay, Oregon: South Slough National Estuarine Research Reserve Coastal Resource Management Series.

Davies, T. & Mason, C. (1982). Gazing up at the bottoms: Problems of minimal response in the implementation of manpower policy. *European Journal of Political Research, 10* (2), 145-157.

De Bruijn, T. & Lulofs, K. (1996). *Bevordering van millieumanagement in organisaties (Stimulating environmental management in organizations).* Enschede, the Netherlands: Twente University Press.

deLeon, P. (1999). The Stages Approach to the Policy Process: What has it done? Where is it going? In Sabatier, P.A. (Ed.), *Theories of the Policy Process* (pp. 19-32). Boulder, Colorado: Westview Press.

Delta Natuur (2007). *Tiengemeten*. Retrieved on January 30, 2007 from http://www.tiengemeten.deltanatuur.nl/site/cm_bestanden/display_bestand.asp?id=10014029

Dente, B., Fareri, P., & Ligteringen, J. (1998). *The waste and the backyard. The creation of waste facilities: success stories in six European countries.* Dordrecht, the Netherlands: Kluwer.

De Marrekrite (2006). *Recreatieschap de Marrekrite* website. Retrieved on January 24, 2006 from http://www.marrekrite.nl/

Dicke, W. (2001). *Bridges & Watersheds: A narrative analysis of water management in England, Wales and the Netherlands*. Amsterdam: Askant.

Disco, C. (2002). Remaking 'Nature': The ecological turn in Dutch water management. *Science, Technology and Human Values*, 27, 206-235.

DLV (2002). *Eindrapportage 'Watermanagement Hooge Laarsleiding' een interactive toepassing van GGOR-systematiek.* Dronten, the Netherlands: *DLV Adviesgroep* publication.

Douglas, M.S. (1997). *The Everglades: River of Grass*. Sarasota, Florida: Pineapple Press, Inc.

Durant, R.F. (1984). EPA, TVA and pollution control: Implications for a theory of regulatory policy implementation. *Public Administration Review, 44* (4), 305-315.

Earth Trends (2008) *Earth trends: The environmental information portal: Country profiles*. Retrieved on February 2, 2008 from http://earthtrends.wri.org/text/coastal-marine/country-profiles.html

Easton, D. (1966). *Varieties of Political Theory.* Upper Saddle River, New Jersey: Prentice Hall.

Ebong, R.D. (2002). Appraisal of knowledge and attitude of Akwa Ibomites toward a sustainable environment in Nigeria. *Environmental Health Perspectives, 110,* 211-212.

Edwards, G.C., III (1980). *Implementing Public Policy*. Washington, DC: CQ Press.

Eertman, R.A., Kornman, B.A., Stikvoort, E. & Verbeek, H. (2002). Restoration of the Sieperda tidal marsh in the Scheldt Estuary, the Netherlands. *Restoration Ecology, 10*, 438-449.

Egonsson, D. (1999). Local Solidarity. *Ethical Theory and Moral Practice, 2*, 149-163.

Elmore, R. F. (1976). Follow through planned variation. In Williams, W. & Elmore, R.F. (Eds.), *Social Program Implementation* (pp. 101-123). New York: John Wiley.
Elmore, R. F. (1977). Lessons from follow through. *Policy Analysis, 1* (3), 549-84.
Elmore, R. F. (1978). Organizational models of social program implementation. *Public Policy, 26* (2), 185-228.
Elmore, R. F. (1979-80). Backward mapping: Implementation research and policy decisions. *Political Science Quarterly, 94* (4), 601-616.
Elmore, R. F. (1982). Differential treatment of states in Federal education policy. *Peabody Journal of Education, 60* (1), pp. 34-52.
Elmore, R. F. (1985). Forward and backward mapping: Reversible logic in the analysis of public policy. In Hanf, K. & Toonen, T.A.J. (Eds.), *Policy implementation in Federal and Unitary systems: Questions of analysis and design* (pp. 33-70). Dordrecht, the Netherlands: Martinus Nijhoff.
Environmental Laboratory. (1997). *Corps of Engineers wetlands delineation manual*. Technical Report Y-87-1. Vicksburg, Mississippi: U.S. Army Engineer Waterways Experiment Station.
Esping-Andersen, G. (1990). *The Three Worlds of Welfare Capitalism.* Cambridge, United Kingdom: Polity Press.
EU2001 (2004). *The Swedish Presidency: EU member states.* Retrieved on June 14, 2004from http://www.eu2001.se/static/eng/eu_info/medlem.asp
EU LIFE (2007a). *Tiengemeten*. Retrieved on January 30, 2007 from http://ec.europa.eu/environment/life/project/Projects/index.cfm
EU LIFE (2007b). *Protection and management of the valuable wetland Siikalahti.* Retrieved on March 3, 2007 from http://ec.europa.eu/environment/life/project/Projects/index.cfm
EU LIFE (2007c). *Restoration and maintenance of valuable aquatic bird habitats of Pirkanmaa*. Retrieved on March 7, 2007 from http://ec.europa.eu/environment/life/project/Projects/index.cfm
Europa (2003). *Environment*. Retrieved on December 2, 2003 from http://europa.eu.int/comm/environment/env-act5/chapt2-3.htm
Europa (2007). *LIFE Projects*. Retrieved on May 10, 2007 from http://ec.europa.eu/environment/life/project/Projects/index.cfm

Fenger, H.J.M. & Klok, P.J. (2000). *Policy implementation and institutional rational choice: Linking instrumentation theory and the institutional analysis and design framework.* Paper presented at International Political Science Association world conference, Quebec.
Filho, W. L. (2000). Dealing with misconceptions on the concept of sustainability. *International Journal of Sustainability in Higher Education, 1*, 9-19.
Finlayson ,C.M., Davidson, N.C., Spiers, A.G., & Stevenson, N.J. (1999). Global wetland inventory – current status and future priorities. *Marine and Freshwater Research, 50* (8), 717-727.
Finnish Ministry of the Environment (2007). *Everyman's Right*. Retrieved on March 5, 2007 from http://www.ymparisto.fi/default.asp?contentid=49256&lan=EN

Florida's Wetlands (2008). *Threats and Losses*. Retrieved on January 29, 2008 from http://wetlandextension.ifas.ufl.edu/threats.htm

Gerring, J. (2004). What is a case study and what is it good for? *American Political Science Review, 98* (2), 341-354.
Giblett, R. (1996). *Postmodern wetlands: culture, history, ecology*. Edinburgh: Edinburgh University Press.
Goggin, M.L., Bowman, A. O'M., Lester, J.P., & O'Toole, L.J. (1990). *Implementation theory and practice: Towards a third generation*. Upper Saddle River, New Jersey: Scott Foresman.
Goodin, R.E., Headey, B., Muffels, R., & Dirven, H-J. (1999). *The real worlds of welfare capitalism*. Cambridge, United Kingdom: Cambridge University Press.
Graedel, T.E. (2002). Quantitative sustainability in a college or university setting. *International Journal of Sustainability in Higher Education*, 3, 346-358.
Grande Ronde Model Watershed (2007) *Grande Ronde Model Watershed Foundation*. Retrieved on January 2, 2007 from http://www.grmw.org/index.shtml
Grindle, M.S. (1980). Policy content and context in implementation. In Grindle, M.S. (Ed.), *Politics and policy implementation in the third world* (pp. 3-34). Princeton, New Jersey: Princeton University Press.
Grindle, M.S. (1981). Anticipating failure: The implementation of rural development programs. *Public Policy, 29* (1), 51-74.
Gross, N. et al. (1971). *Implementing organizational innovations*. New York: Basic Books.
Gunn, L. (1978). Why is implementation so difficult? *Management Services in Government*, November.

Hambleton, R. (1983). Planning systems and policy implementation. *Journal of Public Policy, 3* (4), 397-418.
Heikkinen, Ilkka (2007). *Saving nature for people:, National strategy and action plan for conservation and sustainable use of biodiversity in Finland 2006-2016*. Helsinki: Ministry of the Environment (*Ympäristöministeriö*).
Hemmen, B. (2005). *National park De Alde Feanen, beheers- en inrichtingsplan in nije faze* (*Meeleesversie Januari*). Leeuwarden, the Netherlands: Deliberative Body National Park *De Alde Feanen* (*Overlegorgaan National Park De Alde Feanen*).
Hill, M. & Hupe, P. (2002). *Implementing Public Policy*. London: Sage.
Hjern, B. (1982). Implementation research— the link gone missing. *Journal of Public Policy, 2* (3), 301-308.
Hobbs, R.J. & Harris, J.A. (2001). Restoration ecology: repairing the Earth's ecosystem in the new millennium. *Restoration Ecology, 9*, 239-246.
Hogwood, B.W. & Gunn, L.A. (1984). *Policy analysis for the real world*. Oxford: Oxford University Press.
Hull, C. & Hjern, B. (1987). *Helping small firms grow: An implementation approach*. London: Croom Helm.

Ingram, H.M. & Mann, D.E. (1980). Policy failure: An issue deserving analysis. In Ingram, H.M. & Mann, D.E. (Eds.), *Why policies succeed or fail* (pp. 11-32). Beverly Hills: Sage.
It Fryske Gea (2006). *It Fryske Gea website*. Retrieved on January 22, 2006 from http://www.itfryskegea.nl/

Kaijser, A. (2002). System building from below: Institutional change in Dutch water control systems. *Technology and Culture, 43*, 521-548.
Kampa, E. (2007). *Integrated institutional water regimes*. Berlin: Logos.
Keller, D.K. (2006). *The Tao of statistics: a path to understanding (with no math).* Beverly Hills: Sage.
Kelman, S. (1984). Using implementation research to solve implementation problems: The case of energy emergency assistance. *Journal of Policy Analysis and Management, 4* (1), 75-91.
Kevern, N.R., King, D.L., and Ring, R. (1996). Lake Classification Systems, Part 1. *The Michigan Riparian*. Retrieved on April 5, 2008 from http://www.mlswa.org/lkclassif1.htm
Klok, P.J. (1989a). Covenenanten als instrument van millieubeleid (Covenants as instrument of environmental policy). Enschede, the Netherlands: Twente University Press.
Klok, P.J. (1989b). *Beleidsuitvoering en instrumententheorie* (Policy implementation and instrument theory). *Beleidwetenshcap, 3*, 264-281.
Klok, P.J. (1991). Een instrumententheorie voor milieubeleid (An instrumentation theory for environmental policy). Enschede, the Netherlands: Twente University Press.
Koninklijk Nederlands Aardrijkskundig Genootschap (2001). *Geography of the Netherlands*. Retrieved on April 6, 2003 from http://www.knag.nl/pagesuk/geography/naturalsettings.html
Kuks, S. (2002). *The Evolution of the National Water Regime in the Netherlands*. Paper prepared for the EUWARENESS project (www.euwareness.nl). Enschede, the Netherlands: University of Twente.
Kusler, J.A. & Opheim, T. (1996). *Our National Wetland Heritage: A Protection Guide.* Washington, DC: Environmental Law Institute.

Landschap Overijssel (2008). *Landschap Overijssel website*. Retrieved on February 26, 2008 from http://www.landschapoverijssel.nl/terreinen/natuurterreinen.htm
Larson, J.S. (1980). *Why government programs fail: Improving policy implementation*. New York: Praeger.
Leeuwarder Courant Advertisement (1976, March 10). Trace D Delta Dijk.
Leeuwarder Courant Advertisement (1976, March 15). Trace D Delta Dijk.
Leeuwarder Courant (1976, March 18). Deputy Eringa (CDA): not 90, but at most four million.
Leeuwarder Courant (1976, March 18). Deputy Spiekhout (PvdA): A lot of questions and doubts.
Leeuwarder Courant (1976, March 23). Mr Hilarides from VVD to *Holwerd*: we shall find possibilities in the *Hague* for Plan D: short term construction for the D-dijk on demand.

Leeuwarder Courant (1976, May 28). Old motion from 'hippe *Wadvogels*' with 194 against 90 votes: PvdA *Friesland* changes from Plan D to Plan A: Agriculture pleads again for Plan D.
Leeuwarder Courant (1979, May 5). The government considers less embanking on the North *Friesland Buitendijks*: Plan F looks like a compromise in the fight between A and D.
Leeuwarder Courant (1983, October 8). Still support for the embanking opposition: Numbers from 12 years of bird counts turn on Plan Ct.
Leeuwarder Courant (1983, December 16). Ministerial council nearly certain against embankment.
Levitt, R. (1980). *Implementing public policy*. London: Croom Helm.
Lewis, W.M. (2001). *Wetlands explained: wetland science, policy, and politics in America*. Oxford: Oxford University Press.
Ligteringen, J.J. (1999). *The Feasibility of Dutch Environmental Policy Instruments.* Enschede, the Netherlands: Twente University Press.
Luft, H. (1976). Benefit cost analysis and public policy implementation. *Public Policy, 24* (4), 437-462.
Lynn, L.E., Jr. (1996). *Public management as art, science, and profession.* Chatham, New Jersey: Chatham House.

Majone, G. & Wildavsky, A. (1978). Implementation as evolution. In Freeman, H.E. (Ed.), *Policy Studies Review Annual* (pp. 103-117), *Volume 2*, Beverly Hills: Sage.
Matland, R.E. (1995). Synthesizing the implementation literature: The ambiguity-conflict model of policy implementation. *Journal of Public Administration Research and Theory*, 5 (2), 145-174.
Mazmanian, D.A. & Sabatier, P.A. (1981). *Effective Policy Implementation*. Lexington, Massachusetts: Lexington Books.
Mazmanian, D.A. & Sabatier, P.A. (1983). *Implementation and Public Policy.* Glenview, Illinois: Scott, Foresman and Company.
Mazmanian, D.A. & Sabatier, P.A. (1989). *Implementation and Public Policy.* Washington, DC: University Press of America.
McLaughlin, M.W. (1987). Learning from experience: Lessons from policy implementation. *Educational Evaluation and Policy Analysis, 9* (2), 171-178.
McLaughlin, M.W. (1976). Implementation as mutual adaptation: change in classroom organization. *Teachers College Record, 77* (3), 339-351.
Mead, L.M. (1977). *Institutional analysis: An approach to implementation problems in medicaid*. Washington, D.C.: Urban Institute.
Mechling, J. (1978). Analysis and implementation: sanitation policies in New York City. *Public Policy, 26* (2), 263-284.
Minang, P.A. (2007). *Implementing global environmental policy at local level*. Enschede: Twente University Press.
Ministerie van Landbouw, Natuur en Voedselkwaliteit. (2003a). *Programme international nature management 1996-2000*. Retrieved on December 1, 2003 from http://www.minlnv.nl/international/policy/green/internat/notipgi.htm

Ministerie van Landbouw, Natuur en Voedselkwaliteit. (2003b). *The Structure Plan for the Rural Areas in the Netherlands: they're worth it!* Retrieved on December 2, 2003 from www.minlnv.nl/international/policy/green/recreation/kernipr1.htm#toc2

Ministerie van Landbouw, Natuur en Voedselkwaliteit (2008). *Estimating the value of nature and landscape: What is the economic value of nature and landscape.* Holsteijn, A. (Ed.) The Hague, the Netherlands: Werk In Uitvoering.

Ministerie van Landbouw, Natuur en Voedselkwaliteit (2006a). *National Parks in the Netherlands*. Retrieved on January 24, 2006 from http://www.nationaalpark.nl/

Ministerie van Landbouw, Natuur en Voedselkwaliteit (2006b). *Het ministerie van Landbouw, Natuur en Voedselkwaliteit (the Dutch Ministry of Agriculture, Nature and Food Quality) website*. Retrieved on January 22, 2006 from http://www9.minlnv.nl/servlet/page?_pageid=163&_dad=portal30&_schema=PORTAL30

Montjoy, R.S. & O'Toole, L.J. (1979). Toward a theory of the policy implementation: an organizational perspective. *Public Administration Review, 39* (5), 465-476.

Moore, M.H. (1978a). A 'feasibility estimate' of a policy decision to expand methadone maintenance. *Public Policy, 26* (2), 285-304.

Moore, M.H. (1978b). Reorganization plan no. 2 reviewed: problems in implementing a strategy to reduce the supply of drugs to illicit markets in the United States. *Public Policy, 26* (2), 229-262.

Mueller, K.J. (1984). Local implementation of National policy. *Policy Studies Review, 4* (1), 86-98.

Murphy, J.T. (1971). Title I of ESEA: The politics of implementing Federal education reform. *Harvard Educational Review, 41* (1), 35-63.

Murphy, J.T. (1973). The education bureaucracies implement novel policy: The politics of Title I ESEA, 1965-1972. In Sindler, A.P. (Ed.), *Policy and Politics in America* (pp. 160-198). Boston: Little, Brown.

Murphy, J.T. (1974). *State education agencies and discretionary funds*. Lexington, Massachusetts: D.C. Heath.

Murphy, J.T. (1976). Title V of ESEA: The impact of discretionary funds on state education bureaucracies. In Williams, W. & Elmore, R.F. (Eds.), *Social program implementation* (pp. 77-100). New York: John Wiley.

Nakamura, R.T. & Smallwood, F. (1980). *The politics of policy implementation*. New York: St. Martin's Press.

Nixon, J. (1980). The importance of communication in the implementation of government policy at the local level. *Policy and Politics, 8* (2), 127-146.

National Association of Home Builders (2003a). *Building a balance: wetlands regulation environmental education fact sheet*. Retrieved on November 11, 2003 from www.nahb.org.

National Association of Home Builders (2003b). *Wetlands.* Retrieved on November 11, 2003 from www.nahb.org.

National Research Council (2001). *Compensating for Wetland Losses under the Clean Water Act.* Washington, D.C.: National Academy Press.

Nebel, B.J. & Wright, R.T. (2000). *Environmental Science: The way the world works*. 7th edition. New Jersey: Prentice Hall.
NDC (1983, July 7). Mayor Bouwers 'We've never seen fish swimming between the cows': In the chamber there is a majority for C.
NvN (1984, January 11) Friesland angry, no new dike.
New Jersey Conservation Foundation (2005). *Project Area: Heart of the Pine Barrens*. Retrieved on October 30, 2006 from http://www.njconservation.org/html/gfa-pinebarrens.htm
Nicholls, R.J. (2004). Coastal flooding and wetland loss in the 21st century: changes under the SRES climate and socio-economic scenarios. *Global Environmental Change, 14* (1), 69-86.
Nivet, C. and Frazier, S. (2004). *Review of European Wetland Inventory Information, Wetlands International*. Retrieved on January 29, 2008 from http://www.wetlands.org/RSIS/WKBASE/pewi/intro.htm

OECD (1996). *Guidelines for aid agencies for improved conservation and sustainable use of tropical and sub-tropical wetlands*. Paris: OECD.
Obropta, C.C. and Kallin, P.L. (2003). Case Study: The Restoration of an urban flood Plain. In Bizier, P. & DeBarry, P. (Eds.) *ASCE/EWRI world water and environmental resources congress proceedings* Philadelphia, Pennsylvania.
Obropta, C.C. and Kallin, P.L. (2007). The restoration of an urban floodplain in Rahway, New Jersey. *Ecological Restoration, 25* (3), 175-182.
Orr, D. (2002). *The nature of design: ecology, culture, and human intention*. New York: Oxford University Press.
Oskamp, S. (2002). Environmentally responsible behavior: Teaching and promoting it effectively. *Analysis of Social Issues and Public Policy, 2,* 173-182.
O'Sullivan, E., Rassel, G.R., & Berner, M. (2008). *Research Methods for Public Administrators, 5th Edition*. New York: Longman
O'Toole, L.J. (1983). Interorganizational co-operation and the implementation of labour market training policies: Sweden and the Federal Republic of Germany. *Organizational Studies, 4* (2), 129-150.
O'Toole, L.J. (1986). Policy recommendations for multi-actor implementation: An assessment of the field. *Journal of Public Policy, 6* (2), 181-210.
O'Toole, L.J. (1993). Interorganizational Policy Studies: Lessons Drawn From Implementation Research. *Journal of Public Administration Research and Theory, 3* (2), 232-251.
O'Toole, L.J. (2000). Research on policy implementation: Assessment and prospects. *Journal of Public Administration Research and Theory, 10* (2), 263-288.
O'Toole, L.J. (2002). *Implementation theory and the challenge of sustainable development: The transformative role of learning on both theory and practice.* University of Twente: The Netherlands.
O'Toole, L.J. & Montjoy, R.S. (1984). Interorganizational policy implementation: A theoretical perspective. *Public Administration Review, 44* (6), 491-503.

Palumbo, D.J. & Calista, D.J. (1990). *Opening up the black box: Implementation and the policy process*. New York: Greenwood Press.

Pan European Wetland Inventory Review (2002). Retrieved on February 2, 2008 from http://www.wetlands.org/RSIS/WKBASE/pewi/countries.htm

Pesso, T. (1978). Local welfare offices: Managing the intake process. *Public Policy, 26* (2), 305-330.

Petrie, M., Rochon, J.-P., Tori, G., Pederson, R., & Moorman, T. (2001). *The SWANCC Decision: Implications for Wetlands and Waterfowl*. Memphis, Tennessee: Ducks Unlimited.

Porter, D.O. (1976). Federalism, revenue sharing and local government. In Jones, C. & Thomas, R. (Eds.), *Public policy-making in the Federal system* (pp. 81-101). Beverly Hills: Sage.

Portland Bureau of Environmental Services (2001) *Johnson Creek Restoration Plan.* Retrieved on January 3, 2007 from http://www.portlandonline.com/bes/index.cfm?c=ebeii

Pressman, J. L. & Wildavsky, A.B. (1973). *Implementation: How Great Expectations Are Dashed in Oakland; Or, Why It's Amazing that Federal Programs Work at All, This Being a Saga of the Economic Development Administration as Told by Two Sympathetic Observers Who Seek to Build Morals on a Foundation of Ruined Hopes.* Berkeley: University of California Press.

Pressman, J. L. & Wildavsky, A.B. (1984). *Implementation, third edition*. Berkeley: University of California Press.

Projectteam Adviesgroep Waddenzeebeleid (2004). *Ruimte voor de Wadden Bijlagenrapport.* Retrieved on January 13, 2006 from http://www.imsa.nl/uploads/Bijlagen_Meijer.pdf

Provan, K.G. and Milward, H.B. (1995). A preliminary theory of interorganizational network effectiveness: A comparative study of four community mental health systems. *Administrative Science Quarterly, 40* (1), 1-33.

Raelin, J.A. (1980). A mandated basis of interorganizational relations: The legal-political network. *Human Relations, 33* (1), 57-68.

Raelin, J.A. (1982). A policy output model of interorganizational relations. *Organization Studies, 3* (3), 243-267.

Ramsar (2006). *Ramsar sites information service website*. Retrieved on November 14, 2006 from http://www.wetlands.org/RSDB/Default.htm.

Ramsar (2008a). *The Ramsar convention on wetlands: wetlands in the EEA's third assessment of Europe's environment*. Retrieved on January 29, 2008 from http://www.ramsar.org/wn/w.n.eea_3d_assessment.htm

Ramsar (2008b). *Ramsar sites information service*. Retrieved on January 29, 2008 from http://www.wetlands.org/rsis/

Ramsar (2008c). *Finland Ramsar national report*. Retrieved on February 2, 2008 from http://www.ramsar.org/cop7/cop7_nr_finland.htm

Ramsar (2008d). *The annotated Ramsar list: Finland*. Retrieved on January 29, 2008 from http://www.ramsar.org/profile/profiles_finland.htm

Rawson, G.E. (1981). Organizational goals and their impact on the policy implementation process. In Palumbo, D.J. & Harder, M.A. (Eds.), *Implementing public policy* (pp. 29-41). Lexington, Massachusetts: D.C. Heath.

Rein, M. & Rabinovitz, F. (1978). Implementation: A theoretical perspective. In Burnham, W.D. & Weinberg, M.W. (Eds.), *American politics and public policy* (pp. 307-335). Cambridge: M.I.T. Press.

Reitsma, Durk (1974, May 15). De 4000 hektares bij Ferwerderadeel. *Leeuwarder Courant*.

Resource Renewal Institute. (2003). *The Netherlands environmental policy profile: Special areas of concern.* Retrieved on November 14, 2003 from http://greenplans.rri.org/resources/greenplanningarchives/netherlands/netherlands_1995epp_cncern.html#groundwater

Reuss, M. (2002). Learning from the Dutch: Technology, management and water resources devlopment. *Technology and Culture, 43*, 465-472.

Rodgers, H.R., Jr. & Bullock, C.S., III (1976). *Coercion to compliance*. Lexington, Massachusetts: Lexington Books.

Rosenbaum, N. (1980). Statutory structure and policy implementation: The case of wetlands regulation. In Mazmanian, D.A. & Sabatier, P.A. (Eds.), *Effective policy implementation* (pp. 63-85). Lexington, Massachusetts: Lexington Books.

Ross, L. (1984). The implementation of environmental policy in China: A comparative perspective. *Administration and Society, 15* (4), 489-516.

Sabatier, P. (1986). Top-down and bottom-up approaches to implementation research: A critical analysis and suggested synthesis. *Journal of Public Policy, 6* (1), 21-48.

Sabatier, P. (1991). Toward better theories of the policy process. *PS: Political Science and Politics, 24* (2), 147-156.

Sabatier, P. (1999). The need for better theories. In Sabatier, P.A. (Ed.), *Theories of the Policy Process* (pp. 3-17). Boulder, Colorado: Westview Press.

Sabatier, P. & Klosterman, J. (1981). A comparative analysis of policy implementation under different statutory regimes: The San Francisco Bay conservation and development commission, 1965-1972. In Mazmanian, D.A. & Sabatier, P. (Eds.), *Effective policy implementation* (pp. 169-206). Lexington, Massachusetts: Lexington Books.

Sabatier, P. & Mazmanian, D.A. (1979). The conditions of effective implementation: A guide to accomplishing policy objectives. *Policy Analysis, 5* (4), 481-504.

Sabatier, P. & Mazmanian, D.A. (1981). The implementation of public policy: A framework for analysis. In Mazmanian, D.A. & Sabatier, P. (Eds.), *Effective policy implementation* (pp. 3-35). Lexington, Massachusetts: Lexington Books.

Sabatier, P. & Mazmanian, D.A. (1983). Policy implementation. In Nagel, S. (Ed.) *The Encyclopedia of policy studies* (pp. 143-169). New York: Marcel Dekker.

Sapolsky, H. (1972). *The polaris missile system: Bureaucratic and programmatic success in government.* Cambridge: Harvard University Press.

Seatren, H. (2005). Facts and myths about research on public policy implementation: out-of-fashion, allegedly dead, but still very much alive and relevant. *The Policy Studies Journal, 33* (4), 559-582.

Scharpf, F. (1997). *Games real actors play: Actor-centered institutionalism in policy research.* Boulder, Colorado: Westview Press.

Scheirer, M.A. (1981). *Program implementation: the organizational context.* Beverly Hills: Sage.
Scodari, Paul F. (1997). *Measuring the benefits of Federal wetland programs.* Washington, D.C.: Environmental Law Institute.
Schofield, J. (2001). Time for a revival? Public policy implementation: a review of the literature and an agenda for future research. *International Journal of Management Reviews, 3* (3), 245-263.
Schuyt, K. & Brander, L. (2004). *The Economic Values of the World's Wetlands*. Zeist, the Netherlands: World Wildlife Fund.
Segovia, V. M. & Galang, A. P. (2002). Sustainable development in higher education in the Philippines: The case of Miriam College. *International Journal of Sustainability in Higher Education, 3*, 288-296.
Sharp, L. (2002). Green campuses: the road from little victories to systematic transformation. *International Journal of Sustainability in Higher Education, 3*, 128-145.
Stevenson, N. and Frazier, S. (1999). *Review of wetland inventory information in Western Europe*. Wageningen, the Netherlands: Wetlands International—Africa, Europe, Middle East.
Stoker, R.P. (1991). *Reluctant partners: implementing Federal policy*. Pittsburgh: University of Pittsburgh Press.

Thomas, R.D. (1979). Implementing Federal programs at the local level. *Political Science Quarterly, 94* (3), 419-435.
Thompson, F.J. (1982). Bureaucratic discretion and the National health service corps. *Political Science Quarterly, 97* (3), 427-445.
Tiner, R. (1998). *In search of swampland: a wetland sourcebook and field guide.* New Brunswick: Rutgers University Press.

United Nations Environment Program (2008). *Division of early warning and Assessment: global resource information database*. Retrieved on February 1, 2008 from http://www.grid.unep.ch/product/publication/freshwater_europe/ecosys.php
United States Department of Commerce (2004). *United States Census 2000*. Retrieved on February 12, 2004 from http://www.census.gov/
United States Environmental Protection Agency (2007a). *River Corridor and Wetland Restoration Project Directory*. Retrieved May 10, 2007 from http://yosemite.epa.gov/water/restorat.nsf/rpd-2a.htm?OpenPage
United States Environmental Protection Agency (2007b). *5 Star Grant Program Directory*. Retrieved May 10, 2007 from http://www.epa.gov/owow/wetlands/restore/5star/
United States Environmental Protection Agency (2008). *Wetlands, oceans, and watersheds website*. Retrieved on January 29, 2008 from http://www.epa.gov/owow/wetlands/

Van Horn, C.E. (1978). Implementing CETA: The Federal role. *Policy Analysis, 4* (2), 159-183.

Van Horn, C.E. (1979a). Evaluating the new Federalism: National goals and local implementors. *Public Administration Review, 39* (1), 17-22.
Van Horn, C.E. (1979b). *Policy implementation in the Federal system: National goals and local implementors.* Lexington, Massachusetts: Lexington Books, D.C. Heath.
Van Horn, C.E. & Van Meter, D.S. (1976). The implementation of intergovernmental policy. In Jones, C. & Thomas, R. (Eds.), *Public policy-making in the Federal system* (pp. 39-62). Beverly Hills: Sage.
Van Meter D.S. & Van Horn, C.E. (1975). The policy implementation process: A conceptual framework. *Administration and Society, 6* (4), 445-488.
Van Weenen, H. (2000). Towards a vision of a sustainable university. *International Journal of Sustainability in Higher Education, 1,* 20-33.
Vedung, E. (1997). *Public policy and program evaluation.* London: Transaction Publishers.
Vileisis, A. (1997). *Discovering the unknown landscape: A history of America's wetlands*. Washington, DC: Island Press.
Volkskrant (1983, December 24). Land development in the *Wadden* Sea may go through.
Vuorisalo, T. & Laihonen, P. (2000). Biodiversity conservation in the north: history of habitat and species protection in Finland. *Annales Zoologici Fennici*, 281-297

Waddenvereniging (2006). *Waddenvereniging website*. Retrieved on January 22, 2006 from http://www.waddenvereniging.nl/
Waterland (2008). *Rebuiding New Orleans*. Retrieved on January 29, 2008 from http://www.waterland.net/index.cfm/site/Water%20in%20the%20Netherlands/pageid/50FA304C-91B8-5502-D672B196C68AB90A/index.cfm
Weatherly, R. & Lipsky, M. (1977). Street-level bureaucrats and institutional innovation: Implementing special education reform. *Harvard Educational Review, 47* (2), 171-197.
Weiler, P., et al. (1982). The implementation of model standards in local health departments. *American Journal of Public Health, 72* (II), 1230-1237.
The Wetlands Conservancy (2006). The wetlands conservancy website. Retrieved on November 20, 2006 from http://www.wetlandsconservancy.org/
Wheeler, K. (2000). Introduction. In Wheeler, K. and Bijur, A.P. (Eds.), *Education for a Sustainable Future: A Paradigm of Hope for the 21st Century.* York: Kluwer.
Williams, W. (1980). *The implementation perspective*. Berkeley: University of California Press.
Williams, W. (1982). The study of implementation: An overview. In Williams, et al. (Eds.), *Studying implementation: Methodological and administrative issues* (pp. 1-17). Chatham, New Jersey: Chatham House Publishers.
Wittrock, B. (1985). Beyond organizational design: Contextuality and the political theoryof public policy. In Hanf, K. & Toonen, T.A.J. (Eds.), Policy Implementation inFederal and Unitary Systems: Questions of Analysis and Design (pp. 17-28). Dordrecht, the Netherlands: Martinus Nijhoff Publishers
Wolff, W.J. (1993). Netherlands- Wetlands. *Hydrobiologia, 265*, 1-14

Wolters, M., Garbutt, A., & Bakker, J.P. (2005). Salt-marsh restoration: evaluating the success of de-embankments in north-west Europe. *Biological Conservation*, *123* (2), 249–268.

Yin, R. K. (2003). *Case Study Research: designs and methods.* London: Sage.

Summary in Dutch

Inleiding

Door het meer effectief en efficiënt maken van implementatie van milieubeleid stimuleren we beleidsmakers, wetenschappers, stakeholders en alle niveaus van de overheid die proberen de teruggang van het milieu te bedwingen. Instituten en organisaties wereldwijd hebben zich implementatie van milieubeleid of duurzaam beleid tot doel gesteld. Dit onderzoek draagt bij aan dit doel door inzicht te geven in het implementatieproces. Dit is bereikt door analyse van verschillende casussen van wetland restauratie implementatie in vier staten die gebieden met hoge en lagen bevolkingsdichtheid vertegenwoordigen in zowel Europa als de Verenigde Staten.

Wetlands

Wetlands zijn de empirische focus van dit onderzoek vanwege hun belang als ecosysteem en waarde voor mensen. Wetlands zijn:

> "the temperate zone equivalent of rain forests, serving vital life-sustaining functions in water-quality renovation, aquatic ecosystem productivity, and biodiversity, as well as providing important socioeconomic benefits such as flood-damage protection, shoreline stabilization, and commercial and recreational fisheries" (Tiner, 1998, preface)

het is niet verrassend dat beleid en beschermingsprogramma's, conservatie, herstel en aanleg van wetlands internationaal en op alle overheidsniveaus gevonden worden. Door het verfijnen van de implementatie van beleidsprogramma's kunnen we een meer effectieve en efficiënte probleemoplossing ten aanzien van wetlands mogelijk maken.

Een andere reden voor de keus voor dit project is gebaseerd op de keus voor de manier van implementatie die wordt onderzocht. Wetland bescherming en renovatie hebben geen betrekking op de toepassing van een enkel instrument, maar een scala aan instrumenten dat relevant is voor dit project. Dit type implementatie wordt in de implementatie literatuur vaak genegeerd. Het testen van de theorie in dit empirische gebied voegt een interessant element toe aan implementatie onderzoek.

Zowel in Europa als de US hebben wetlands door de geschiedenis heen om verschillende redenen verschillende functies gehad. Toen gebieden dichter bevolkt raakten en mensen overgingen op landbouw op één plek, werden wetlands opgevuld of veranderd zodat ze hiervoor beter bruikbaar waren. Meer recent, kwamen beleidsmakers, overheden organisaties en bewoners tot inzicht dat de wetlands op de wereld tot op zekere hoogte gerestaureerd moeten worden om de belangrijke functies van deze ecosystemen te beschermen. In dit onderzoek focussen we op het interessante complexe empirische veld van restauratie beleid. Wetland restauratie beleid is een duidelijk te onderscheiden onderdeel van beleid betreffende wetland issues. Wetland beleid omvat ook het beleid gericht op conservatie, bescherming en aanleg.

Empirische en theoretische studiedoelen

Dit onderzoek heeft zowel empirische als theoretische doelen. Het empirische deel is geëvalueerd om inzicht te geven in wetland restauratie processen. In het bijzonder probeert dit deel van het onderzoek een vergelijking te maken tussen succesvolle en falende wetland restauratie projecten. Het is belangrijk te evalueren hoe de rol van de actoren in een wetland restauratie project het proces beïnvloeden. Het is ook van belang vast te stellen hoe verschillende typen implementatie projecten succesvoller gemaakt kunnen worden. Het theoretische doel van dit onderzoek richt zicht op het krijgen van inzicht in de toepasbaarheid en kracht van een sober verklarend model. Deze gedachtegang volgend kozen we een nieuw veld om deze theorie te onderzoeken, zijn ontwikkeling te identificeren via een empirisch veld afwijkend van het veld waarin de theorie werd ontwikkeld. De contextual interaction theorie is niet ontwikkeld voor onderzoek op het gebied van wetland restauratie of zelfs watermanagement. Het heeft zijn wortels in klassieke implementatie zoals vergunningen en subsidies, en vroege toepassingen betroffen verschillende beleidsinstrumenten inclusief convenanten. Dit onderzoek maakt een transitie door de theorie toe te passen op Multi-actor projecten; een afgewogen wetenschappelijke keus de toepasbaarheid en uitkomsten te meten in een nieuwe arena. Deze toepassing heeft het in zich de theorie breder te maken, zijn geldigheid en geschiktheid te testen in een andere context.

Opbouw van het onderzoek

Het model gebruikt in dit onderzoek is ontworpen om zowel diepte als breedte te zoeken binnen de tijd die beschikbaar is voor het doen van promotie onderzoek. Deze studie laat drie in-depth cases zien waarin gezocht wordt naar de manier om vragen betreffende impact van actor karakteristieken op beleids implementatie te beantwoorden. Alle drie de cases bevinden zich binnen de grenzen van Nederland. Ze geven holistische beschrijvingen van wetland restauratie projecten, ingaand op de interactie tussen actoren die betrokken zijn bij deze sociale interactie processen. Dit aspect van de studie geeft diepte aan het onderzoekmodel. Bouwend op het inzicht verzameld in de case studies leek een tweede grote-N fase binnen het onderzoek haalbaar. Voor dat onderdeel van het project werden alleen data verzameld door middel van telefonische interviews van twee sleutelinformanten per case. Op deze manier Deze manier is voldoende, na vergelijking met de case studies, om voldoende relevante interacties te vinden. De grote-N fase van het project is een internationale vergelijkende studie, met twee cases in twee Europese landen (Nederland en Finland(en twee Amerikaanse staten (New Jersey en Oregon). Dit onderdeel van het project geeft breedte aan het onderzoeksmodel, en geeft onderzoeker de mogelijkheid om elementen te kiezen en patronen te evalueren bij de vergelijking van een aantal cases. Gecombineerd geeft deze structuur de onderzoeker de mogelijkheid om zorgvuldig te focussen en inzicht te krijgen te krijgen in het hart van de interacties in de in-depth cases, maar ook met meer

afstand een aantal cases ter vergelijking te analyseren, informatie te verzamelen over trends en patronen via de grote-N studie.

Onderzoeksvragen

In dit onderzoek wordt de contextual interaction theorie (Bressers, 2004) gebruikt om cases te analyseren. De theorie benadrukt drie actor karakteristieken (motivatie, informatie en machtsbalans) om beter hun effect op de mogelijkheid om überhaupt te implementeren (beleids output) te begrijpen, en indien toepasbaar op de adequaatheid van de implementatie (beleids outcome).

De hoofdvraag in het onderzoek is:

Hoe beïnvloeden de actor karakteristieken motivatie, informatie en macht de implementatie van wetland restauratie beleid?

De strategie om deze vraag te beantwoorden bestaat uit het opdelen van de vraag in sub-vragen:

1. Hoe beïnvloeden doel en implementer motivatie, informatie en macht de mogelijkheid om überhaupt te implementeren (output)?
2 Hoe beïnvloeden doel en implementer motivatie, informatie en macht de adequaatheid van de implementatie (outcome)?
3 Tot op welke hoogte kunnen deze outputs en outcomes worden verklaard door de karakteristieken van de betrokken actoren?
4 Zijn er opvallende verschillen wanneer de theorie wordt toegepast in cases in de Europese Unie en de verenigde Staten (alleen vergelijkende studie)?
5 Zijn er opvallende verschillen als de theorie wordt toegepast in cases in dicht- en niet dicht bevolkte gebieden (alleen vergelijkende studie)?

Resultaten: Beantwoording van de onderzoeksvragen

Dit is een “refelxive study”, die zowel wil leren van de gebruikte methodologie als een holistisch assessment wil geven van de data verzameld gedurende het onderzoek. We gaan eerst in op de sub-vragen om dan na te gaan hoe zij bijdragen aan het vinden van een antwoord op de hoofdvraag. De eerste drie sub-vragen vragen naar de relatie tussen de onafhankelijke variabelen motivatie, informatie en macht en de afhankelijke variabelen waarschijnlijkheid om überhaupt te implementeren en de adequaatheid van de implementatie. In dit onderzoek gebruiken we de contextual interactie theorie voor onze analyse, die voorspellingen doet over de relatie tussen deze onafhankelijke en afhankelijke elementen. Op de vraag hoe motivatie, informatie en macht de waarschijnlijkheid voor implementatie überhaupt en de adequaatheid van implementatie beïnvloeden bestaat niet één antwoord. In plaats daarvan beschrijft de theorie hoe verschillende combinaties

verschillende interacties creëren. Op deze manier worden verbanden gemaakt tussen afhankelijke en onafhankelijke variabelen, terwijl de onderdelen van deze studie vragen of de theorie dit op een bruikbare manier doet. Door zowel de in-depth cases als de grote-N studie ontdekten we dat de contextual interaction theorie een bruikbaar instrument is voor het analyseren van de manier waarop actor karakteristieken implementatie beïnvloeden. Gebruik van de theorie in de in-depth cases maakt het doen van voorspellingen over hoe combinaties van karakteristieken interacties doen ontstaan mogelijk. Ook maakt de theorie het mogelijk om de complexe wereld van implementatie te zien als analytisch beheersbare en vergelijkbare cases, met een rijk descriptive platvorm. De grote-N studie geeft bewijs voor het hoge voorspelbaarheids potentieel van de theorie. Deze laat ons zien dat de theorie een bruikbaar instrument is voor het voorspellen van hoe een combinatie van actor karakteristieken de waarschijnlijkheid om überhaupt te implementeren en de adequaatheid van de implementatie beïnvloedt. De groet N-studie geeft ook de mogelijkheid verschillende cases te vergelijken op een bepaald moment, wat ons helpt bij het beantwoorden van de twee laatste sub-vragen. Door de grote N-studie kunnen we vaststellen of het patroon van voorspelbaarheid waar is in zowel de Amerikaanse als Europese staten en in zowel dicht bevolkte als niet dicht bevolkte staten. de grote N-studie bestaat uit 48 cases, een aantal dat voldoende is voor het vinden van patronen en trends in de steekproef. Als we de sub-groepen in de steekproef bekijken, zien we een afnemend aantal, wat het begrip omtrent de groep limiteert. Dat gezegd hebbende, vonden we dat het hoge voorspelbaarheids potentieel van de theorie overeind bleef wanneer we een verdeling maakten in Europese en Amerikaanse sub-groepen, en ook als we de steekproef verdeelden op grond van hoge en lage bevolkingsdichtheid. Ook op het staatsniveau (Nederland, Finland, New Jersey) bleef het voorspelbaarheids potentieel overeind, in de meeste cases, met als uitzondering Oregon. De Oregon steekproef liet `de enige echte afwijking zien, maar op zichzelf bekeken volgt de Oregon sub-groep weer het patroon van de steekproef als geheel. Daarom, kunnen we concluderen dat er geen opvallende verschillen zijn wanneer de theorie wordt toegepast in de Europese gemeenschap versus de Amerikaanse staten, noch wanneer de dicht bevolkte en minder dichtbevolkte saten worden vergeleken. Hoe geeft deze informatie inzicht in de hoofdvraag?

Het onderzoek bewijst dat de contextual interaction theorie in staat is inzicht te geven in hoe de actor karakteristieken motivatie, informatie en macht de implementatie van wetland restauratie beleid beïnvloeden op een bruikbare en voorspelbare manier. Gebaseerd op de uitkomsten van dit onderzoek vinden we dat de theorie niet alleen een effectief descriptief instrument is, maar het ook mogelijk maakt cases te beschrijven op een vergelijkbare manier, wat bijdraagt aan een beter begrip van trends in implementatie. Ook heeft de theorie een praktisch element, namelijk de mogelijkheid om blokkades voor implementatie zichtbaar te maken, wat beleidsactoren kan doen inzien hoe de beleidsinteracties aangepast moeten worden. In dit onderzoek was de theorie bruikbaar voor beschrijving en analyse van wetland

restauratie beleids implementatie, maar verder onderzoek is nodig om te begrijpen hoe de theorie kan worden toegepast op ander beleid of in andere empirische velden.

Voorgestelde aanpassingen op grond van deze studie

Het interview instrument is gecreëerd om consequent te worden toegepast op verschillende typen cases. Het geeft scores voor actor motivatie, informatie en macht door antwoorden van actoren op de vragen. De kracht van het interview instrument ligt in het feit dat het een betrouwbaar instrument is dat kan worden toegepast in een groot aantal cases op een betrouwbare manier. Het kan gebruikt worden bij hele persoonlijke en bij uitgebreide sociale interactie processen, en evalueert ze op een bijna klinische manier. In dit onderzoek bleek het interview instrument in staat actor motivatie informatie en macht in het grootste deel van de cases te achterhalen, op een manier die inzicht geeft in deze interacties. Door het toepassen van dit onderzoek ontdekten we verschillende gebieden waarop verbetering binnen het interview instrument kan plaatsvinden. In het laatste hoofdstuk van het onderzoek beschrijven we in detail de voorgestelde aanpassingen voor de operationalisatie van de drie variabelen, zodat hun echte waarden acurater kunnen worden gevat. We bespreken verbeteringen inclusief het vastleggen van actor capaciteit, capaciteit als een demotivatie factor, self-effectiveness, en het laten zien van links met formele en informele machts stromen. In het belang van het gebruik van dit onderzoek als bouwsteen voor de verbetering van de contextuele interactie theorie, bespreken we in het laatste hoofdstuk ook onderwerpen die betrekking hebben op toepassing van de theorie die opkwamen tijdens dit onderzoek. Punten voor discussie zijn onder andere het begrijpen van de invloed van de derde actor resources en de core-actor capaciteit, het opnemen van referentie kaders in de analyse, en de overeenkomstige uitkomsten in dit onderzoek voor de analyse van adequaatheids cases.

Lessons learned

In dit onderzoek vonden we dat wetland restauratie als een empirisch beleids veld complexe scenario’s heeft waarin actoren niet alleen moeten reageren op veranderingen in sociale processen maar ook moeten volgen hoe de bestaande habitat onverwacht kan reageren op restauratieve veranderingen. In andere woorden, wetland restauraties liggen gevoelig en zijn gecompliceerd zowel vanuit sociaal als ecologisch perspectief. Ondanks de potentieel ontmoedigende aard van een restauratie taak, worstelen gepassioneerde actoren zich door deze moeilijke omstandigheden om mee te werken aan de realisatie van nationale en internationale beleidsdoelen voor wetlands in al onze studie gebieden. We hebben geleerd dat wetland restauratie projecten op pauze gezet kunnen worden, soms voor jaren, terwijl actoren werken om details af te maken, samenwerking tussen project partners organiseren en financiering voor het project zoeken. Dit is een belangrijke les als je

naar de geschiedenis van wetlands destructie kijkt, wereldwijd. Door de jaren heen zijn veel wetlands verdwenen, nu spenderen actoren vaak jaren om wetland restauratie projecten te realiseren. We ontdekten ook dat actoren niet blind moeten zijn voor realistische veranderingen van een habitat, of aan moeten nemen dat alle restauraties in het voordeel zijn van mens en natuur. In verschillende van de cases die worden beschreven in deze studie blijven actoren waakzaam ten aanzien van monitoring de risico's van veranderende ecosystemen, en reageren op zowel positieve als negatieve aspecten van een restauratie. We vonden ook dat ondanks de soms verschillende opvattingen over de relatie tussen mens en wetland, actoren in staat zijn oplossingen te vinden en compromissen te sluiten.

De in-depth cases laten zien dat deze theorie de mogelijkheid in zich heeft om sociale interactie processen zichtbaar te maken niet alleen in een descriptieve, maar ook een analytische belangrijke manier. De theorie distilleert een veelheid van onderwerpen en actoren in de analyse van de core interactie voor een gegeven implementatie proces, overwegend zowel de veronderstelling om überhaupt te implementeren en de adequaatheid van de implementatie. Dit geeft de onderzoeker de mogelijkheid om niet alleen duidelijk de interacties vast te stellen, maar ook begrip te ontwikkelen omtrent hoe de core-factoren samenwerken als actoren beslissingen nemen en naar hun eigen doelen toewerken. De groet N-studie laat zien dat de theorie een instrument is dat bruikbaar is voor vergelijkende studies, en een hoog voorspelbaarheids potentieel heeft ten aanzien van interacties bij implementatie. Dit is vooral duidelijk te zien in de eerste fase van de analyse, de verwachting om überhaupt te implementeren. Binnen deze studie is het minder duidelijk voor de tweede fase van de analyse, de adequaatheid van de implementatie, vooral veroorzaakt door begrenzing van de data verzameling in deze fase.

Suggesties voor toekomstig onderzoek

Op basis van de resultaten van deze studie kan onder meer aangeraden worden een meer besluitvormende vergelijkende grote-N studie te doen voor de tweede fase van de analyse, zouden meer analyse punten ingebouwd moeten worden voor de cases, de aanbevolen veranderingen in het interview instrument moeten worden doorgevoerd en uitgevoerd, en doorgaan met het toepassen van deze theorie in andere beleidsterreinen of empirische velden. Een meer beslissende toepassing op de tweede fase van de analyse houdt verband met de tweede aanbeveling voor meer analyse punten voor de cases. Een studie die dit mogelijk maakt zou veel voordeel hebben als het cases kon onderzoeken die in een zeer vroeg stadium van implementatie zijn. Op deze manier kunnen onderzoekers actoren analyseren in de initiële fase, daarna misschien nog een of twee keer om een beeld te krijgen van de veranderingen in interacties gedurende het proces. Om dit doel te bereiken is het zinvol om een ander veld te kiezen dan wetland beleids implementatie, omdat deze stop gezet kunnen worden en het soms jaren duurt voor ze worden hervat. Ook is

het moeilijk om de aard van de adequaatheid (lange termijn ecologische duurzaamheid) te bepalen in dit beleidsveld, en zal misschien makkelijker zijn in een ander beleidsveld. Wel zal het belangrijk zijn om de aannames over de aanbevolen veranderingen in het interview instrument te testen, om vast te kunnen stellen of deze extra vragen het onderliggende concept meer adequaat naar voren kunnen halen. Als laatste, het is leerzaam om door te gaan met het toepassen van de contextual interaction theorie in andere empirische velden. Deze studie heeft waardevolle informatie over wetland restauratie in twee ontwikkelde landen, maar eenzelfde onderzoek uitgevoerd in ontwikkelingslanden kan heel andere resultaten opleveren voor het voorspelbaarheidpotentieel van de theorie. Ook, gegeven de resultaten van dit onderzoek, kan het interessant zijn om de theorie toe te passen op andere multi-actor milieubeleidsvelden, zoals waterbeleidsimplementatie of natuurbeschermingsbeleidsimplementatie. Dit gezegd hebbende, het succes van de toepasbaarheid in deze studie wil niet zeggen dat de theorie niet in andere gebieden kan worden toegepast. Voortdurende uitbreiding en testen van de theorie op nieuwe manieren zal analytici zijn bruikbaarheid en beperkingen doen begrijpen.

About the author

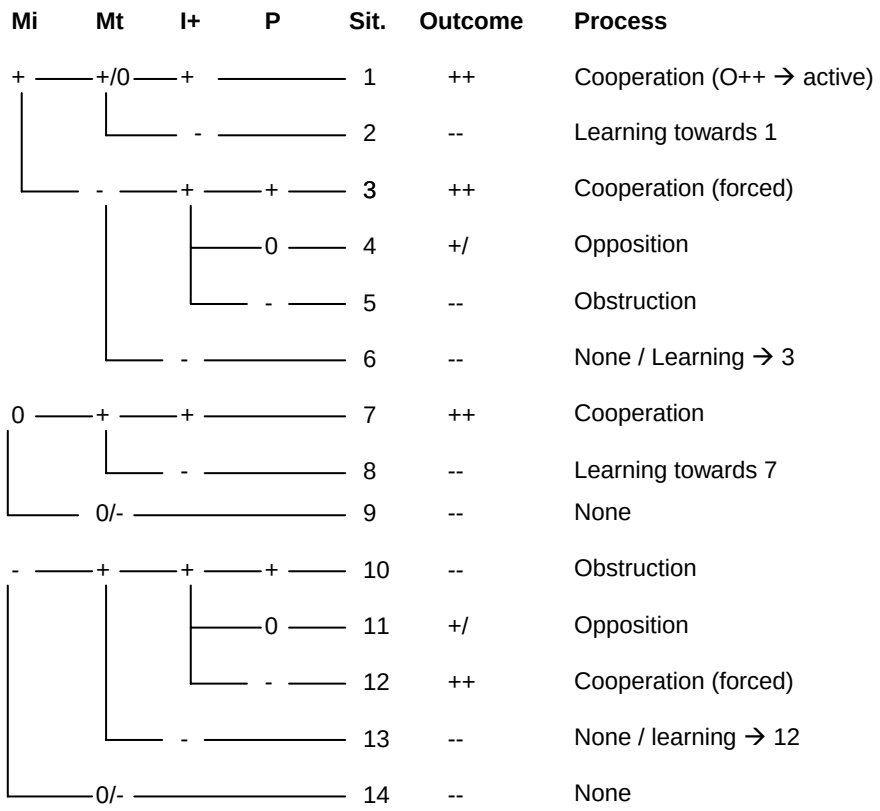
Katharine Owens was born in Valdosta, Georgia, just outside of the approximately 1700 km^2 Okefenokee Swamp, a National Wildlife Refuge. For her undergraduate education she studied at the College of Charleston in Charleston, South Carolina, obtaining degrees in Studio Art, Biology, and Anthropology. Later she completed a Master's degree in Environmental Studies at the College of Charleston. Her Master thesis assessed the impacts of college campus sustainability initiatives on environmental attitudes, behaviors, and knowledge of faculty and students.

She joined the *Centrum voor Schone Technologie en Milieubeleid* (Center for Clean Technology and Environmental Policy) at the University of Twente in the Netherlands as a junior researcher in 2003. At CSTM Katharine's work focused on analyzing the implementation of wetland restoration policies and programs in an international comparative context.

Katharine will begin an Assistant Professor position in the Department of Politics and Government at the University of Hartford in Hartford, Connecticut in the fall of 2008. There she will continue to focus on policy research including implementation analysis and stakeholder decision-making. She will also concentrate on environmental topics such as wetlands policy, water governance, and sustainability in the built environment.

Appendices

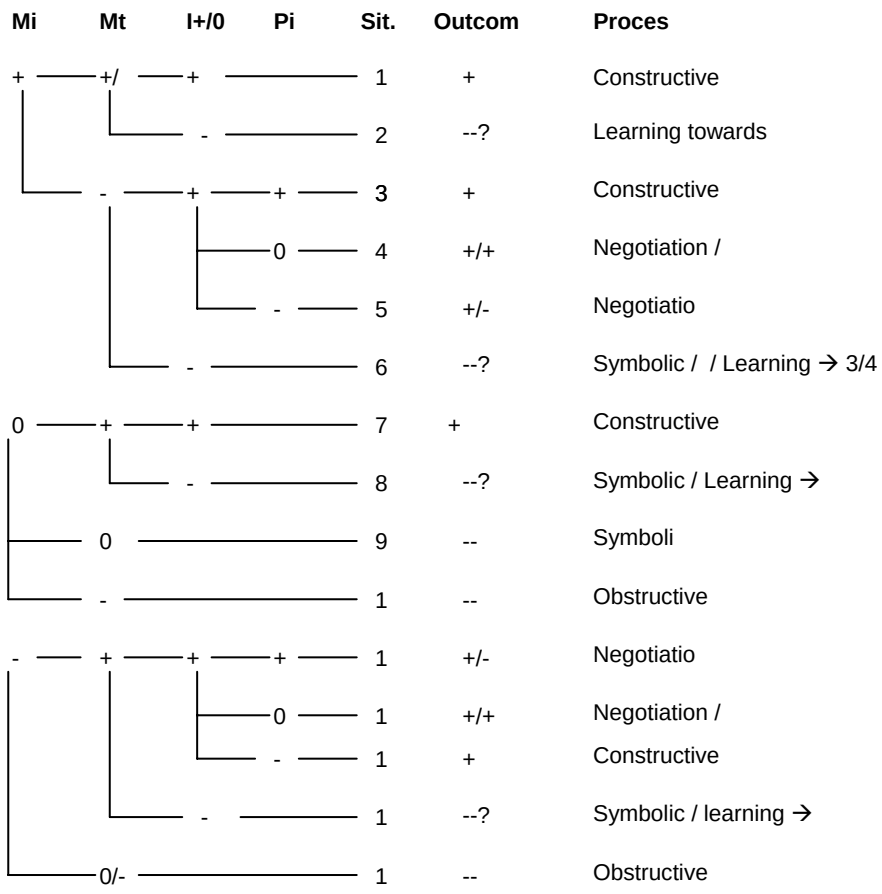
Appendix A: "Likelihood to implement at all" flowchart[1]



Mi =Motivation implementers
Mt = Motivation Target group
I+ = Information for application of positive partner(s) (highest level)
Pi = Balance of power viewed from position implementor

[1] Taken directly from Bressers, 2004: 296.

Appendix B: "Adequacy of implementation" flow chart[2]



Mi = Motivation implementers
Mt = Motivation target group
I+ = Information for adequate application of positive or neutral partner(s)
Pi = Balance of power viewed from position implementer

[2] Taken directly from Bressers, 2004: 299.
[3] M++ will result in an active cooperation process.
[4] This will be forced cooperation.
[5] This will be forced cooperation.
[6] M -- will result in an active (obstructive) cooperation process.

Appendix C: Interview instrument

1. How was this decision initiated?
2. If not addressed above, who initiated the process?
3. Who are the primary users of the area?
4. Can you name other actors or stakeholders involved?
5. Has your organization worked with some of these groups or stakeholders in other projects in the past?
6. Do you anticipate working with any of these groups in the future on other projects?
7. How involved in this decision were these actors?
8. Would you describe any of these stakeholders as being targeted by this project (positively or negatively)? (For example, if the project is implemented, who has the most to gain and who has the most to lose?)
9. What were the goals of this project?
10. a. Does your organization have goals for wetlands in the area?

10.b *If yes, what are these goals?*

11. Does your job usually include decisions about wetlands projects?
12. Does this project contribute directly or indirectly to your organizations goals?
13. a. What is your personal position regarding the project goals?

13.b. Do you find wetland restoration an important part of wetland policy in general?

13.c. Do you feel it is your civic duty to participate in this restoration project?

14. Did other actors in the region get involved with this project?
15. a. Did politicians support this project?

15.b. If yes, were they local, regional, provincial or national?

16. a. Do you find wetland restoration presents a risk to your community?

16.b. If yes, where do you find this risk comes from?

17. a. Do you find wetland restoration benefits your community?

17.b. If yes, where do you think this benefit comes from?

18. a. Do you find rising sea levels present a risk to your local community?

18.b. Do you find rising sea levels present a risk to your country?

19. Was this restoration project important to your community?
20. Was the community at large involved in this decision?
21. If yes, was community involvement part of the formally required process, or was it informal?
22. If the community became involved, how do you feel about community involvement?
23. How important is it to you that community members are satisfied with the results?

*** Exception: Questions 24-28 if the actor is not a policy worker, these questions do not apply***

24. What is the policy or program supporting this wetland project?
25. Are the requirements of this policy clear to you?

26. Is your organization responsible for seeing that policy requirements are fulfilled?
27. Does implementing this policy bring benefits to your organization?
28. How would you describe the information your organization receives about this policy program?
29. How was this project funded?
30. a. During the decision making process did you find yourself dependent on others for information?
30.b. What are your impressions of this information in terms of quantity?
30.c. What are your impressions of this information in terms of quality?
31. a. Did your organization assist others with advice or information during the process?
31.b If so, how?
32. During the project, did you find a lack of information existed between yourself and other actors?
33. Are there things you are uncertain about which hamper your activities regarding this project.
34. Who is in charge of monitoring the effects of this decision?
35. If applicable, how would you describe the monitoring program?
36. What agency is responsible for reporting results of this project?
37. a. Did this project involve a financial commitment by your organization?
37.b. An administration commitment?
37.c. A time commitment?
38. Did your organization support the project in other ways?
39. a. Were there resources you needed but did not have access to during the project?
39.b. For example Legal assistance
39.c. For example Organizational support
40. During this process, if something is important to your group and others disagree, what do you think are your chances of attaining goals important to you?
41. How were decisions made about this project? (For example by an environmental organization, via a committee of stakeholders?)
42. Who do you think is viewed by the public as the group primarily responsible for this project?
43. How would you describe the overall process? (in a few words or a sentence)
44. Can you provide me with contact information for other key actors? (if applicable)
45. Can you recommend another wetland restoration project in your state/ country that would fit into the constraints of my research?

Appendix D: Interview questions and their scoring

1. How was this decision initiated?

This question is designed to provide basic background information about the project, and the interviewee may also indicate the initiator (see question 2).

2. If not addressed above, who initiated the process?

This response indicates power, as the initiator may have some formal control within the process. If the actor is named by either interviewee as the initiator, they receive one power point. A point may be gained but not lost for this question. More specifically, an actor does not lose a point if they did not initiate the process.

3. Who are the primary users of the area?

This response indicates power, as area users may experience some informal control. If the actor is named by either interviewee as a user of the area, they receive one power point. As with question two, a point may be gained but not lost for this question. More specifically, an actor does not lose a point if they are not a user of the area.

4. Can you name other actors or stakeholders involved?

This response deals with information; if he or she can name other stakeholders the interviewee gains one point for having knowledge of actors and their qualifications.

This answer also indicates power, as stakeholders have informal control within the process. If this actor is indicated as a stakeholder by any interviewee he/she gains one point.

5.Has your organization worked with some of these groups or stakeholders in other projects in the past?

This response reveals a source of power, specifically informal control. For this question I choose to conceptualize cooperation as an indicator of a lack of control. In contrast, a lack of cooperation with other groups or stakeholders indicates a source of control. This question touches on past cooperative behavior.
An answer of yes yields the interviewee the loss of one power point.
An answer of no earns the interviewee one power point.

6. Do you anticipate working with any of these groups in the future on other projects?

This response reveals a source of power, specifically informal control. For this question I choose to conceptualize cooperation as an indicator of a lack of control. In contrast, a lack of cooperation with other groups or stakeholders indicates a source of control. This question touches on the likelihood of future cooperative behavior. It is not necessary that the interviewee actually works in the future with the other stakeholders on a project, only that the interviewee sees this as a possibility. If the interviewee anticipates working with the other actor(s) in the

future, they have an interest in promoting cooperative behavior. In consequence, if both see future cooperation as a possibility the result is comparatively neutral.
An answer of yes yields the interviewee the loss of one power point.
An answer of no earns the interviewee one power point.

7. How involved in this decision were these actors?

This answer indicates power relating to formal control. The answer to this question may give concrete information about who makes decisions within the process, or how actors share decision-making responsibilities. It may provide information as to whether one or a few actors lead the process, whether decisions are made by formal voting, informal consensus or some other method.

8. Would you describe any of these stakeholders as being targeted by this project (positively or negatively)? (For example, if the project is implemented, who has the most to gain and who has the most to lose?)

For this response, the interviewee ideally indicates the target, and how the interviewee feels about that actor and their goals. Specifically, own motivation of the interviewee for the project implementation as it relates to their attitude toward the target group.
If interviewee displays a positive attitude toward the target group, and the target is against implementation, minus one motivation point.
If interviewee displays a negative attitude toward the target group, and the target is against implementation, plus one motivation point.
If interviewee displays a positive attitude toward the target group, and the target is for implementation, plus one motivation point.
If interviewee displays a negative attitude toward the target group, and the target is for implementation, minus one motivation point.

For this response, the interviewee may also indicate whether their own motivation is compatible with the implementer's goals, though this topic is not addressed directly until question 9.
If the interviewee reveals their motivation is compatible with implementation, he/she gains one motivation point.
If the interviewee reveals their motivation is not compatible with implementation, he/she loses one motivation point.

9. What were the goals of this project?

This response may provide further evidence to support the response for question 8, as interviewees often reveal their own motivation for or against the implementer's goals while describing project goals. If interviewees have already revealed their own motivation compatibility with implementation in question 8, no points are gained or lost for this response.
If this information was not revealed in question 8, and interviewees are now for the first time revealing this information:

If interviewees reveal their motivation is compatible with implementation, they gain one motivation point.
If interviewees reveal their motivation is not compatible with implementation, they lose one motivation point.

This answer can also provide background information about the details of the project.

10a. Does your organization have goals for wetlands in the area?
This response indicates work-related motivation, whether the interviewee experiences motivation for or against implementation based on the goals of the organization they work for or represent within the process
If this individual's organization has goals compatible with implementation, he or she gains one motivation point.
If this individual's organization does not have goals compatible with implementation, he or she loses one motivation point.

10b. If yes, what are these goals?
This question provides evidence to support the respondent's answer of 10a. It seeks to learn the specifics regarding whether the interviewee experiences motivation for or against the implementation based on the goals of the organization they work for or represent within the process.
If this individual's organization has goals compatible with implementation, he or she gains one motivation point.
If this individual's organization does not have goals compatible with implementation, he or she loses one motivation point.

11. Does your job usually include decisions about wetlands projects?
This question indicates any work-related motivation the respondent may or may not have toward wetlands restoration projects.
The respondent gains a point if they indicate their job enables wetland restoration projects.
The respondent loses a motivation point if they indicate that halting or limiting wetland restoration projects is a part of their job.

12. Does this project contribute directly or indirectly to your organizations goals?
This response indicates work-related motivation for the project.
If implementation contributes to the goals of the individual's organization a positive motivation point is gained.
If implementation does not contribute to the goals of the individual's organization a motivation point is lost.

13a. What is your personal position regarding the project goals?

This answer indicates own motivation, specifically as it relates to the respondent's attitude to the implementation objective.

If the respondent is positive about the implementation project, he/she gains a motivation point.

If the respondent is not positive about the implementation project, he/she loses a motivation point.

13b. Do you find wetland restoration an important part of wetland policy in general?

This answer indicates own motivation, specifically as it relates to the respondent's attitude to the implementation objective.

If the respondent is supportive of wetland restoration in general (even if not in this specific case), she/he gains a motivation point.

If the respondent is not supportive of wetland restoration in general she/he loses a motivation point.

13c. Do you feel it is your civic duty to participate in this restoration project?

This answer indicates own motivation, particularly normative motivation for the implementation.

If respondents feel that participation in the restoration is their civic duty, they gain a motivation point.

If an individual feels it is their civic duty to halt the project, they lose a motivation point.

If respondents do not feel that participation in the restoration (whether they have pro- or anti-restoration sentiments) is their civic duty, no points are gained or lost.

14. Did other actors in the region get involved with this project?

This response may indicate a source of own motivation; specifically it seeks to understand if there is any social pressure to comply with the implementation.

A response of yes yields a positive motivation point if it indicates social pressure from actors pushing for implementation.

A response of yes yields the loss of a motivation point if it indicates social pressure from actors who are against implementation.

A response of no indicates a lack of social pressure and receives no points.

15a. Did politicians support this project?

This response may indicate a source of own motivation; specifically it seeks to understand if there is any political pressure to comply with the implementation.

A response of yes yields a positive motivation point if it indicates political pressure from politicians pushing for implementation.

A response of yes yields the loss of a motivation point if it indicates political pressure from politicians who are against implementation.

A response of no indicates a lack of political pressure and receives no points.

15b. If yes, were they local, regional, provincial or national?

This response provides details to enhance understanding of political pressure for or against implementation, as well as providing evidence to support a response of yes to question 15a. It does not offer points for or against the motivation score.

16a. Do you find wetland restoration presents a risk to your community?
This question seeks to more fully understand the own motivation of the actor, specifically his or her attitude toward the implementation objective. In general, does the interviewee find wetland restoration is a risk to the community, regardless of their perception of this specific project?
An answer of yes yields the loss of one motivation point.
The answer no results in gaining one motivation point.

16b. If yes, where do you find this risk comes from?
This question seeks to provide clarification for the answer to 16a, however it does not offer points for or against the motivation score.

17a. Do you find wetland restoration benefits your community?
This question seeks to more fully understand own motivation of the actor, specifically his or her attitude toward the implementation objective. In general, does the interviewee find wetland restoration benefits the community, regardless of their perception of this specific project?
An answer of yes results in a gain of one motivation point.
The answer no results in losing one motivation point.

17.b. If yes, where do you think this benefit comes from?
This question seeks to provide clarification for the answer to 17a, however it does not offer points for or against the motivation score.

18a. Do you find rising sea levels present a risk to your local community?
This question seeks to more fully understand own motivation of the actor, specifically his or her attitude toward the implementation objective. In general, does the interviewee find rising sea levels a local threat?
An answer of yes results in a gain of one motivation point, however no points are lost for a response of no.

18b. Do you find rising sea levels present a risk to your country?
As with question 18.a. this question seeks to more fully understand own motivation of the actor, specifically his or her attitude toward the implementation objective. In general, does the interviewee find rising sea levels a national threat?
An answer of yes results in a gain of one motivation point, however no points are lost for a response of no.

19. Was this restoration project important to your community?

This response may indicate a source of own motivation; specifically it seeks to understand if there is any normative pressure to comply with the implementation. It may indicate whether the project has some value within the community.
A response of yes yields a positive motivation point if the community is pushing for implementation.
A response of yes yields the loss of a motivation point if the community is against implementation.

This question may also elicit information about potential economic motivation within the community for the project, which influences the interviewee's own motivation.
A response indicating that the project has economic value within the community yields a positive motivation point.
A motivation point is not lost if the interviewee fails to indicate that the project has economic value within the community.

20. Was the community at large involved in this decision?

This response may indicate a source of own motivation; specifically it seeks to understand if there is any social pressure to comply with the implementation.
A response of yes yields a positive motivation point if the community is pushing for implementation.
A response of yes yields the loss of a motivation point if the community is against implementation.
A response of no may indicate no social pressure in relation to the project.

21. If yes, was community involvement part of the formally required process, or was it informal?

In a general way this response gives details about how community members might have been included in the process, and if included whether this was via formal or informal channels. This provides evidence to support the response to question 20; however no points are gained or lost for this aspect.

This answer may also reveal a source of own motivation, for example if an actor has used formal or informal routes to express motivation for or against the restoration.
If such a source of motivation is revealed and is pro-restoration, a motivation point is gained.
If such a source of motivation is revealed and is anti-restoration, a motivation point is lost.

This response may also give details about whether inclusion in the process indicates a source of power. For example, has any group used informal channels such as the media or a coalition of partners to build power for their cause?
If such a source of power is revealed a power point is gained.

22. If the community became involved, how do you feel about community involvement?

This response may indicate a source of own motivation; specifically it seeks to understand if there is any social pressure to comply with the implementation.
A response in favor of community involvement yields a positive motivation point if the community is pushing for implementation.
A response in favor of community involvement yields the loss of a motivation point if the community is against implementation.
A response against community involvement yields the loss of a motivation point if the community is pushing for implementation.
A response against community involvement yields a gain of a motivation point if the community is against implementation.
A response indicating that there is no social pressure to follow the community's wishes yields no gain or loss in points.

23. How important is it to you that community members are satisfied with the results?

This response may indicate a source of own motivation; specifically it seeks to understand if there is any social pressure to comply with the implementation.
A response indicating the necessity of community satisfaction yields a positive motivation point if the community is pushing for implementation.
A response indicating the necessity of community satisfaction yields the loss of a motivation point if the community is against implementation.
A response indicating that it is not a necessity to explicitly satisfy the community as a whole yields no gain or loss in points.

*** Exception: Questions 24-28 if the actor is not a policy worker, these questions do not apply***

24. What is the policy or program supporting this wetland project?

This question reveals information level, specifically the actor's policy awareness.
If the actor is aware of the policy being applied in this case, he/she gains an information point.
If the actor is unaware of the policy being applied in this case, he/she loses an information point.

25. Are the requirements of this policy clear to you?

This question reveals information level, specifically the actor's knowledge of policy requirements.
If the actor knows the requirements of the policy being applied in this case, he/she gains an information point.
If the actor is unaware of the requirements of the policy being applied in this case, he/she loses an information point.

26. Is your organization responsible for seeing that policy requirements are fulfilled?

This question reveals information level, specifically the actor's knowledge of policy requirements.
If the actor knows the requirements of the policy being applied in this case, he/she gains an information point.
If the actor is unaware of the requirements of the policy being applied in this case, he/she loses an information point.

This response reveals a source of power, specifically formal responsibility for the implementation.
If the respondent shares in responsibility for the implementation, he or she gains a power point.
If the respondent does not share in responsibility for the implementation, he or she loses a power point.

27. Does implementing this policy bring benefits to your organization?

This question reveals information level, specifically the actor's knowledge of policy benefits.
If actors are aware of policy benefits, they gain an information point.
As this question does not necessarily take into account whether there are in fact benefits, when actors are unaware of policy benefits, they do not lose any points.

This question also reveals a source of work-related motivation
The respondent gains a motivation point if implementation brings benefits to their organization.
The respondent loses a motivation point if implementation does not bring benefits to their organization.

28. How would you describe the information your organization receives about this policy program?

This question reveals information level, specifically the level of accessibility in information received by this actor.
If the response reveals there were no problems in accessibility, an information point is gained.
If the response reveals there were problems in accessibility, an information point is lost.

This response also reveals issues of documentation in information received by this actor.
If the response reveals there were no problems in documentation, an information point is gained.
If the response reveals there were problems in documentation, an information point is lost.

29. How was this project funded?

This question reveals information in terms of knowledge of actors and their qualifications; specifically if the respondent is aware of funding was organization for the project, even in general terms.
If the respondent is aware of funding organization for the project, even in general terms, he or she gains an information point.
The respondent loses no points for being unaware of funding arrangements.

This question may also indicate work-related motivation.
If the respondent's organization is fully or partially funding the project, they gain a motivation point.
The respondent loses no points regarding motivation if their organization is not funding the project.

30a. During the decision making process did you find yourself dependent on others for information?

This question reveals information level, specifically the dependency of accessibility in information received by this actor.
If the response reveals there were no problems in accessibility, an information point is gained.
If the response reveals there were problems in accessibility, an information point is lost.

This response also indicates dependency regarding documentation in information received by this actor.
If the response reveals there were no problems in documentation, an information point is gained.
If the response reveals there were problems in documentation, an information point is lost.

30b. What are your impressions of this information in terms of quantity?

In addition to providing evidence to support the response to question 30.a. this response gives details about the quantity of information received by this actor.
If the response reveals there were no problems with information quantity, an information point is gained.
If the response reveals there were problems with information quantity, an information point is lost.

30c. What are your impressions of this information in terms of quality?

In addition to providing evidence to support the response to question 30.a. this response gives details about the quality of information received by this actor.
If the response reveals there were no problems with information quality, an information point is gained.
If the response reveals there were problems with information quality, an information point is lost.

31a. Did your organization assist others with advice or information during the process?

This response reveals information level, specifically the level of accessibility in information provided by this actor.
If the response reveals this actor made materials accessible during the process, an information point is gained.
If the response reveals this actor failed to make materials accessible during the process, an information point is lost.

This response also reveals the level of documentation in information provided by this actor.
If the response reveals this actor provided documents during the process, an information point is gained.
If the response reveals this actor failed to provide documents during the process, an information point is lost.

31b If so, how?

The answer to this question is intended to provide evidence to support question 31.a.

32. During the project, did you find a lack of information existed between yourself and other actors?

This question seeks to understand if lack of information became a problem during the project, first in reference to accessibility.
If the response is yes, the interviewee loses an information point.
If the response is no, the interviewee gains an information point.

This question also seeks to understand if lack of information became a problem in reference to documentation.
If the response is yes, the interviewee loses an information point.
If the response is no, the interviewee gains an information point.

33. Are there things you are uncertain about which hamper your activities regarding this project.

This response deals with information, and should indicate any uncertainties that hold back the activities of the project. This may reveal whether process complexities became an issue.
If the response is yes, the interviewee loses an information point.
If the response is no, the interviewee gains an information point.

This answer may also reveal a source of own motivation, specifically self-effectiveness.
If the interviewee describes uncertainties that indicate a lack of confidence about implementation success, a motivation point is lost.

34. Who is in charge of monitoring the effects of this decision?
In assessing power, this response reveals whether the interviewee shares in responsibility for the project as a monitor of any changes made in implementation.
If the respondent's organization is responsible for monitoring, a power point is gained.
If the respondent's organization is not responsible for monitoring, a power point is lost.

35. If applicable, how would you describe the monitoring program?
This question seeks details about the monitoring program, providing evidence to support the answer to question 34 and enriching understanding about this project.

36. What agency is responsible for reporting results of this project?
In assessing power, this response reveals whether the interviewee shares in responsibility for the project as a reporter of the results of the project.
If the respondent's organization is responsible for reporting results, a power point is gained.
If the respondent's organization is not responsible for reporting results a power point is lost.

****Questions 37.a.-37.c. were included with the intention of assessing capacities to exert power within the process. When analyzing interviews it became clear that these questions did not reveal capacity as it relates to power in a meaningful way, but instead provide information about resources dedicated to the project. These responses were not thrown out of the study, but were rarely used in the analysis to assess actor power.****

37a. Did this project involve a financial commitment by your organization?
This question seeks to understand what resources if any have been committed to the project by this actor. The response may reveal whether capacity in resources ever supported or hampered implementation.

This response may also reveal a source of power relating to formal responsibility due to financial contribution by the actor or his/her organization.
If the interviewee's organization contributed financially to the project he/she gains a power point.
If the interviewee's organization did not contribute financially to the project he/she loses a power point.

37b. An administration commitment?
This question seeks to understand what resources if any have been committed to the project by this actor. The response may reveal whether capacity in resources ever supported or hampered implementation.

37c. A time commitment?
This question seeks to understand what resources if any have been committed to the project by this actor. The response may reveal whether capacity in resources ever supported or hampered implementation.

38. Did your organization support the project in other ways?
This question seeks to understand any addition resources that may have been committed to the project by this actor. The response may reveal whether capacity in resources ever supported or hampered implementation.

Also a source on information about informal channels of power if relevant. If such a source of power is revealed a power point is gained.

39a. Were there resources you needed but did not have access to during the project?
This question seeks to understand whether a lack of resources was perceived as a problem by this actor within the process.
If the response is yes, a power point is lost.
A response of no yields neither a gain nor loss in points.

39b. For example Legal assistance
This question is used as a probe to ensure that the interviewee understands what type of responses I am seeking, and may encourage memory of an applicable resource that was lacking during the process. It also provides details about process interactions.

39c. For example Organizational support
This question is used as a probe to ensure that the interviewee understands what type of responses I am seeking, and may encourage memory of an applicable resource that was lacking during the process. It also provides details about process interactions.

40. During this process, if something is important to your group and others disagree, what do you think are your chances of attaining goals important to you?
This response reveals own motivation as it relates to actor self-effectiveness.
If the respondent is positive about their chances of attaining important goals, they receive a positive motivation point.
If the respondent is negative about their chances of attaining important goals, they lose a motivation point.

This question also seeks information about an aspect of power. Does this actor feel their organization can effectively convince other actors to agree to goals that they find important?
If the respondent is positive about their chances of changing the perspective of others to meet their own goals, they receive a power point.

If the respondent is negative about their chances of changing the perspective of others to meet their own goals, they lose a power point.

41. How were decisions made about this project? (For example by an environmental organization, via a committee of stakeholders?)

This response provides details about how decisions were made, enhancing general information about the process.

This answer may also reveal sources of formal control over the decision-making process.

42. Who do you think is viewed by the public as the group primarily responsible for this project?

This question seeks information about who is perceived by the public as the actor responsible for the project. This provides general details about the case.

43. How would you describe the overall process? (in a few words or a sentence)

This question seeks details about the interviewee's experiences during the project. It may reveal new information about motivation, information or power.

44. Can you provide me with contact information for other key actors? (if applicable)

This question seeks the contact of other actors who may play an important role in the project.

45. Can you recommend another wetland restoration project in your state/ country that would fit into the constraints of my research?

This question seeks to build the pool of cases in the sample.

Appendix E: Case Summaries the Netherlands

Korenburgerveen: Implemented (1)

Policies and/or Programs

European Union Natura 2000 Network, via the Habitat Directive *(Habitatrichtlijn)*; The Netherlands Nature Policy Plan, National Ecological Network (*Natuurbeleidsplan, Ecologische Hoofdstructuur*).

Scores

Likelihood to implement at all

Actors	**Motivation**	**Information**	**Power**
Implementer: *Vereniging Natuurmonumenten*	15/18	11/16	6/8
(Association of Nature Monuments)	(+.67)	(.69)	(.75)
Target: *Stichting Marke Vragender Veen*	6/13	7/11	5/9
(Foundation of the *Marke Vragender* Peat)	(-.08)	(.64)	(.56)

Adequacy of implementation

Actors	**Motivation**	**Information**	**Power**
Implementer: Vereniging Natuurmonumenten	15/18	13/16	6/8
	(+.67)	(.81)	(.75)
Target: Stichting Marke Vragender Veen	7/13	9/11	5/9
	(+.08)	(.82)	(.56)

Case History

Historically in this area each local farmer owned a small piece of land featuring high and low peat, which they used to harvest peat as fuel. In the 1950s farmers no longer needed peat for fuel, and dug channels to decrease water levels in this area. In 1999, as a part of a *landinrichting* process, some lands were traded between farmers and the national nature preservation and conservation group *Vereniging Natuur-monumenten*. *Landinrichting* programs, managed by the provincial government, are large-scale projects that seek to solve a number of planning and development issues in an area by enabling land swaps and sales to promote the best overall scenario for agriculture, development and nature. The geographical landscape of the *Korenburgerveen* is described as a small bowl. This land trading scheme joined almost the entire bowl into a nature conservation area. The bowl area not owned by *Vereniging Natuurmonumenten* is approximately 70 hectares (173 acres) owned or managed by *Stichting Marke Vragender Veen*, a non profit association of farmers created to manage the interests of this land holding. According to the target, at the time of the *landinrichting* locals actively sought to maintain ownership of these 70 hectares in order to continue to "have a say" about what happens to this area. After obtaining traded lands, *Vereniging Natuurmonumenten* took measures to address water issues within the protected area. Specifically local water levels were too low to support the low and high peat habitats. To combat this problem, *Vereniging Natuurmonumenten* sought to build up local water flows to counteract a decrease in regional flows. This project received funding from the national government

(*Overlevingsplan Bos and Natuur*), European Union LIFE funds, and *Vereniging Natuurmonumenten*. The policy first applied to the area was the national Nature Policy Plan; because of the landscape's value it became a part of the European Union's Habitat Directive. In 2005 *Vereniging Natuurmonumenten* installed a series of dams and dijks in the 450 hectare (1110 acre) area to enable water retention.

Case Summary

Roles of actors, according to interviewees

	Implementer says	**Target says**
Who is the initiator?	*Vereniging Natuurmonumenten*	*Vereniging Natuurmonumenten* and the government
Who are the users of the area?	Farmers, this area was closed completely to visitors in the past, now there are some recreational excursions available for locals and tourists	*Stichting Marke Vragender Veen*, a farmers group that owns approximately 25 hectares (61.8 acres) and manages another 45 hectares (111.2 acres) for other owners
Who are the stakeholders?	Local residents who help with bio-inventories	*Vereniging Natuurmonumenten*, Winterswijk municipality, Lichtenvoorde municipality, locals, *landinrichting*, *Stichting Marke Vragender Veen*, the national government
Who reports the results of this project?	*Vereniging Natuurmonumenten*	*Vereniging Natuurmonumenten*
Who monitors the site after implementation?	*Vereniging Natuurmonumenten*	An external consultancy group
Who does the public think is primarily responsible?	*Vereniging Natuurmonumenten*	*Vereniging Natuurmonumenten* and the national government
Who sees that the policy requirements are fulfilled?	Currently *Vereniging Natuurmonumenten* informs local municipalities and the provincial government about the area	Does not know

Vereniging Natuurmonumenten is the implementer, initiating and leading efforts to bring increased water levels to the area. *Stichting Marke Vragender Veen* is the target of this policy; they maintain rights over privately owned land which is affected by the policies applied to the *Korenburgerveen*. The implementer is motivated toward project restoration; protecting habitat is the primary goal of this organization. The target has a neutral motivation in both phase one and two, though the actual score changes during the process. As farmers they seek to protect the

value of their farmland in its proximity to an area with a high nature status. The target states that farmers worry the government will restrict changes to land near this type of designated area. However as members of the *Stichting Marke Vragender Veen* they lead tours into the area and benefit from the tourism and recreation values of the area. In essence the target motivation hovers around the neutral point throughout the process. Both target and implementer display high information levels regarding the project. Implementer and target are knowledgeable of actors and their qualifications as well as the policy. The implementer understands policy requirements and what is necessary to comply. Neither actor reports a great deal of information sharing. The implementer states that they obtained most information first hand, while the target states they had little information to provide to other actors. However, the target found that the implementer was open to remarks they made about the plans. The target has a moderate power score while the implementer has a high power score. *Vereniging Natuurmonumenten* is in many ways formally responsible for the area, they act as the monitor, are responsible for seeing that the policy requirements are fulfilled, and report results of the project. *Stichting Marke Vragender Veen* holds formal control as the owners and/or managers of part of the area. They also hold informal elements of power as they represent a strong local group: farmers. The target states that they have "a certain influence" and have "the local community behind [them]". The balance of power from the perspective of the implementer is +0.19. In this analysis the implementer holds the balance of power.

Hypotheses using Contextual interaction theory given the actor scores

Likelihood to implement at all: if application of the instrument would contribute positively to the objectives of one actor, while the other actor is also positive or neutral, and the information of the positive actor(s) is sufficient to apply the instrument, then the interaction process will have the character of cooperation. When both actors are positive there will even be active cooperation.

Does this case agree? Yes, this case would best be described as a cooperative endeavor between target and implementer. The target is currently neutral about the project. It seems illogical that farmers might agree to a plan bringing more water to their land. In this case, it is significant that the area under question was never used as arable farmland. In addition, members of the *Stichting Marke Vragender Veen* benefit from the recreational values of the area via their tour business. The target organization is willing to go along with the plan as promoters of tourism. While they describe fears of how this designation will affect their private land as farmers, this has not yet motivated them to stop the work of *Vereniging Natuurmonumenten*.

Adequacy of Implementation: if adequate application of the instrument would contribute positively to the objectives of one actor and also positively or neutral to the other actor, and these actors have sufficient information, then constructive cooperation will evolve.

Does this case agree? Yes, the actors cooperate during project implementation. As a group representing farmers, the target found that the planned changes would increase water levels on farmland on the southern side of the *Korenburgerveen*. These farms were bought by the national government to be taken out of use as farmland. After this issue was resolved, the target had no problems with the project. This helps explain the slight increase in target motivation over the course of the project. The target describes the balance of nature and agriculture as important. The implementer's motivation remains consistent between project phases. Both target and implementer experience an increase in information levels during the process. Both groups had questions about the technical aspects of the project that were satisfied during implementation. The target mentions having respect for the technical and scientific expertise of *Vereniging Natuurmonumenten.* The implementer describes actively altering plans during implementation to increase project effectiveness. As with many projects, the actors describe it as a learning process. Power scores remain consistent between the phases of the project.

Tiengemeten: Implemented (2)

Policies and/or Programs

Initially The Netherlands Nature Policy Plan, National Ecological Network (*Natuurbeleidsplan, Ecologische Hoofdstructuur*); now the entire Haringvliet is a part of the European Union Natura 2000 Network, via the Bird and Habitat Directives *(Vogelrichtlijn, Habitatrichtlijn)*

Scores

Likelihood to implement at all

Actors	**Motivation**	**Information**	**Power**
Implementer: *Rijksinstituut voor Integraal Zoetwaterbeheer en Afvalwaterbehandeling, Vereniging Natuurmonumenten, Dienst Landelijk Gebied*	14/15 (+.87)	9/15 (.60)	7/9 (.78)
Target: local citizens, as represented by the Municipality of *Korendijk*	11/15 (+.47)	14/14 (1.00)	2/8 (.25)

Adequacy of implementation

Actors	**Motivation**	**Information**	**Power**
Implementer: *Rijksinstituut voor Integraal Zoetwaterbeheer en Afvalwaterbehandeling, Vereniging Natuurmonumenten, Dienst Landelijk Gebied*	16/16 (+1.00)	12/15 (.80)	7/9 (.78)
Target: local citizens, as represented by the Municipality of *Korendijk*	15/15 (+1.00)	14/14 (1.00)	2/8 (.25)

Case History

Tiengemeten is an island just south of Rotterdam in the *Haringvliet* estuary. Dammed in 1970, the *Haringvliet* has since suffered ecological degradation, as the intertidal area comprised of mud flats and salt marshes dwindled (EU LIFEa, 2007). The island began in the 17th century as a sandbar; from 1750-1860 the Dutch built dijks, creating polders and increasing the island's size from 5 hectares (12.5 acres) to 700 hectares (1730 acres) of agricultural land and 300 hectares of land (741 acres) outside the dijk system (Delta Natuur, 2007). The island was owned by a Dutch family, who rented the land to its farming inhabitants until selling the land to a development company in 1968. The development company later sold the island to an insurance company. Many plans were developed and then rejected over the years, including making the island into a residential development, a cargo airport, a nuclear power plant, a vacation bungalow park, or a site for depositing contaminated sludge (Delta Natuur, 2007). Discussions about turning the island into a dredge site in the early 1990s led actors within government and nature to argue the area should be a natural habitat with high ecological aspirations.

The Dutch government began in 1990 to restore *Haringvliet* estuary tidal functions via the Netherlands Nature Policy Plan, which eventually included a restoration of the island of *Tiengemeten*. In the early 1990s the Netherlands Nature Policy Plan was new and somewhat controversial. The *Rijkswaterstaat* (The National Water Authority) first explored options for combining farming with natural habitat restoration on the island. One option was to change from arable farming to dairy farming, which allows wet fields for bird foraging at certain times of the year. In 1994 the *Rijkswaterstaat* interviewed all farmers on the island about this option. The farmers chose a strategy to reject this plan; according to the implementer interview, they believed that by allowing small changes they would begin on a path that could only lead to total restoration. Due to this inability to create a solution including farming, the implementers bought the island for restoration. Having never owned the land, the farmers were left with few options for opposition. The local municipality of *Korendijk* worked with the project partners to make the transition more beneficial to the farmers. The Municipality represented the farmers to the project partners, ensuring that the time of the move would not be forced, that all farmers agree voluntarily to the changes, that farmers would not be forced to leave at one time, and that any natural restoration would not negatively affect the farmers still working on the island (for example through seed dispersal across plots).

The LIFE project is only one part of a greater project which seeks to restore 700 hectares of agricultural land on the island. Plans include creating estuarine and tidal landscapes by remodeling and lowering surface levels of polders, as well as piercing dijks to reintroduce tidal influence (EU LIFEa, 2007). The project plan was developed by the *Rijksinstituut voor Integraal Zoetwaterbeheer en Afvalwaterbehandeling* (State Institute for Integrated Freshwater Management and Wastewater Treatment) which is the research and advisory body of the *Rijkswaterstaat*. Several actors are involved in further development and implementation of the plan via *DeltaNatuur* (Delta Nature) a partnership of the *Rijkswaterstaat*, the Province of South Holland, the municipality of *Korendijk*,

Vereniging Natuurmonumenten (Association of Nature Monuments) and *Dienst Landelijk Gebied* (Service for Rural Territory). The roles vary among these partners, for example *Dienst Landelijk Gebied* is project leader during the implementation phase, while *Vereniging Natuurmonumenten* will be the owner and manager of the island at the end of the project. The partners believe the island will become a nature recreation destination, both for locals on day trips from the densely populated city of Rotterdam, and other Dutch or international visitors for extended holidays. This project is in the process of being implemented, with changes beginning in 2005 and scheduled to continue through mid-2007.

Case Summary

Roles of actors, according to interviewees

	Implementer says	**Target says**
Who is the initiator?	*Vereniging Natuurmonumenten*	*DeltaNatuur*
Who are the users of the area?	Farmers, some hunters	Famers, some holiday homes
Who are the stakeholders?	Residents, farmers, *Vereniging Natuurmonumenten*, Province of South Holland, ferry operator, Municipality of Korendijk, National government, *Rijksinstituut voor Integraal Zoetwaterbeheer en Afvalwaterbehandeling, Dienst Landelijk Gebied,* and *Rijkswaterstaat* New stakeholders include investors in farms and houses (e.g. a Bed and Breakfast, holiday homes, and a group recovery home)	*Vereniging Natuurmonumenten*, Municipality of Korendijk, and *DeltaNatuur* New stakeholders include a patient recovery home, a camping business, and the Rien Poortvliet Museum
Who reports the results of this project?	*Vereniging Natuurmonumenten*	*Vereniging Natuurmonumenten*
Who monitors the site after implementation?	*Vereniging Natuurmonumenten* is the site manager, and monitors in cooperation with scientists from the Universities of Antwerp and Utrecht	*Vereniging Natuurmonumenten*
Who does the public think is primarily responsible?	At this stage, the national government, but also *DeltaNatuur, Vereniging Natuurmonumenten* and *Dienst Landelijk Gebied*	*Vereniging Natuurmonumenten*
Who sees that the policy requirements are fulfilled?	*Vereniging Natuurmonumenten* is responsible for some of this, but not all policies within the Haringvliet	*Vereniging Natuurmonumenten* and perhaps *DeltaNatuur*

The partners *Rijksinstituut voor Integraal Zoetwaterbeheer en Afvalwater-behandeling*, *Vereniging Natuurmonumenten* and *Dienst Landelijk Gebied* are implementers for this analysis as they work together to ensure implementation, and lead the project at various stages. An interview with one actor represents the implementer view. This actor had a unique vantage point throughout the project, as he was project leader at *Rijksinstituut voor Integraal Zoetwaterbeheer en Afvalwaterbehandeling* during development of the plan and currently works for *Vereniging Natuurmonumenten* where he plays a role in plan implementation. Though the explicit permission of local citizens was not necessary to make project decisions, their cooperation was essential to realizing implementation in a timely fashion. While perhaps they could not stop the project, they had an ability to delay the project (and sometimes did). The project plans affect the livelihood of the farmers subsequently displaced, while other members of the community are positively affected by the tourism infrastructure developed during the project. The views of locals are represented in this analysis by a representative of the Municipality of *Korendijk*. This municipality represents citizens both on the island and in a village on the mainland. Both the implementer and target are motivated toward project implementation, though the target less so in the first phase. The implementers are strongly motivated to diversify nature in the *Haringvliet*. Though initially the target shows concern about the loss of agriculture in the municipality, they quickly appreciate the benefits increased tourism will bring to the local economy. The target interviewee finds that in 1994 the municipality did not support the changes, because of the quality of agriculture found on the island, but by 1995 they saw nature as a viable option. The target interviewee describes the project as a win-win situation, stating that while agriculture is very important to the community, when one "looks at *Tiengemeten* on a map, it is understandable that the function will change". This change in attitude is reflected in their higher second phase motivation score. The target envisions their role in the process as ensuring the farmers receive a fair package of benefits, monetarily or via a land swap. In addition, they insisted throughout the process that the project partners allow farmers to leave voluntarily at the time they (the farmers) found most suitable. Both implementer and target display high information levels throughout the process. In fact the target reports fewer problems with information than the implementer. Both actors have knowledge of actors and their qualifications, are aware of the policies to be applied and their requirements. The target reports no problems in sharing information with project partners throughout the process. The implementer describes difficulties obtaining information from the European Union's complex web-based platform, and also experienced uncertainties throughout the project due to funding intricacies and incorrect cost estimates. The implementer has a high power score while the target holds a low power score. The implementing team has formal control as the owner of the land, is the monitor of the project, the reporter of the results, and the group responsible for seeing policy requirements are fulfilled. The target plays none of these roles in the process. Although a stakeholder and member of the steering committee, this actor never uses informal or formal power channels to change the project plans. Instead they funnel their support into ensuring the farmers are given

the freedom and time to leave when they are ready. The balance of power from the perspective of the implementer is + 0.53; the implementer holds the balance of power in this analysis.

Hypotheses using Contextual interaction theory given the actor scores

Likelihood to implement at all: if application of the instrument would contribute positively to the objectives of one actor, while the other actor is also positive or neutral, and the information of the positive actor(s) is sufficient to apply the instrument, then the interaction process will have the character of cooperation. When both actors are positive there will even be active cooperation.

Does this case agree? Yes, this is an apt description of this interaction. It may seem illogical that the goals of farmers were not more strongly represented by the municipality, but there are several unique factors in this case that influence the decision. First, neither the last farmers of *Tiengemeten* nor their farming ancestors owned the land. This removes a basic formal control that could help them determine future use of the land. In addition, the target interviewee remarks that farming is still prominent on the mainland, and in the last 20-30 years the yield per hectare for potatoes has increased, from 35 or 40 tons per hectare to 50 tons per hectare. This means the farmland still in existence is more productive, and that the municipality as a whole has not lost a great deal of production through the loss of arable land on this island. Finally, the municipality also sees tourism as increasingly important for the local economy, especially considering their proximity to the densely populated city of Rotterdam. The island offers a unique natural landscape with cultural history and recreation opportunities, and the municipality looks forward to a growing tourism industry in the area.

Adequacy of Implementation: if adequate application of the instrument would contribute positively to the objectives of one actor and also positively or neutral to the other actor, and these actors have sufficient information, then constructive cooperation will evolve. In case both actors are positive this will even be active (constructive) cooperation.

Does this case agree? Yes, this case agrees with the theory's description. Both actors increase their level of motivation over the course of the project. Though the implementers agreed to let the farmers take their time in leaving, in practice one farmer remained far longer than the others. This farmer received more time and more money in his relocation package. The implementers had no legal instrument or backing to hasten his departure. In this way they were forced to wait until he was ready, which meant some delays in implementation. There was also a great deal of community concern about how the project would affect the man who runs the ferry between the island and the mainland. Over time it became clear that not only would his job remain secure, but that he would enjoy an increase in business while transporting workers and equipment for the restoration. When these problems were

resolved in the process, the motivation of the implementers increased. The target's motivation also increases during the course of the project, as their concerns about the farmers are supplanted by goals for tourism for the municipality. The implementer experiences an increase in information during the process, while the target's information level remains consistent. The implementer describes uncertainties with funding and cost estimates during the project. The restoration project is not simply an ecological restoration; implementers must fund sustainable development projects and restoration and maintenance of some island buildings. Each of these needs fall under the auspices of different funding sources. To solve this problem the project was divided into subprojects. For example, in support of natural habitats the project receives funds from EU LIFE and ISLA ("A meaningful role for ISLAnds and peripheral communities in the spatial development of North Western Europe" via the European Community Initiative INTERREG III B). In support of sustainable development, the project is funded by the Province of South Holland, *Ministerie van Landbouw, Natuur en Voedselkwaliteit* (Ministry of Agriculture, Nature and Food Quality), *Rijkswaterstaat, Vereniging Natuurmonumenten*, EU LIFE and *DeltaNatuur*. Cultural landscape and infrastructure projects receive funding from the *Structuurfonds Gebiedsgericht Beleid* (Organization Funds for Region-Oriented Policy), the Province of South Holland, *Ministerie van Landbouw, Natuur en Voedselkwaliteit* (Ministry of Agriculture, Nature and Food Quality), *Rijkswaterstaat*, and *Vereniging Natuurmonumenten*. The implementers continue to work to clear up funding uncertainties for this project. Increase of information is also due to incorrect cost estimates during the planning stage of the project, but this issue has been resolved during the process of implementation. Actor power scores remain consistent between project phases.

Fochteloerveen: Implemented (3)

Policies and/or Programs

The Netherlands Nature Policy Plan, National Ecological Network (*Natuurbeleids-plan, Ecologische Hoofdstructuur*), Hydrological Raised Bog Restoration Plan (*Hydrologische Inrichtingsplan voor Hoogveenregeneratie)*

Scores

Likelihood to implement at all Actors	**Motivation**	**Information**	**Power**
Implementer: *Vereniging Natuurmonumenten*	16/19	17/17	8/10
(Association of Nature Monuments)	(+.68)	(1.00)	(.80)
Target: *Waterschap Amstel, Gooi en Vecht*	15/18	13/15	4/8
(Waterboard *Amstel, Gooi* and *Vecht)*	(+.67)	(.87)	(.50)

Adequacy of implementation

Actors	**Motivation**	**Information**	**Power**
Implementer: *Vereniging Natuurmonumenten*	17/19	17/17	8/10
	(+.79)	(1.00)	(.80)
Target: *Waterschap Amstel, Gooi en Vecht*	17/18	13/15	4/8
	(+.89)	(.87)	(.50)

Case History

The *Fochteloerveen* bog was partially cut away for fuel in the past and later drained for agricultural land, though despite these changes some core areas of bog remained. This project sought to re-humidify this raised bog, encouraging it to grow over time. Such areas are very difficult to create, taking over 10,000 years to develop. In addition, existing dry areas promote a cycle of drying in bog areas. In this way it was critical to save the remaining bog of approximately 3000 hectares (7410 acres) therefore restoring its powers to grow. Restoration plans include holding rainwater in bog areas to stimulate peat moss growth. Actors expanded restoration measures from the 1980s that help hold rainfall in the area and created a 400 hectare buffer zone. Funding for the project comes from several sources including the European Union LIFE funds (50%), the *Overlevingsplan Bos and Natuur* (Survival Plan for Forests and Nature, 45%), and *Vereniging Natuurmonumenten* (5%).

Case Summary

Vereniging Natuurmonumenten works to enable this bog restoration, takes the lead in project planning and is the implementer in this analysis. To change the water level *Vereniging Natuurmonumenten* must work with the *Waterschap Amstel, Gooi en Vecht* who makes a final decision based not only on nature, but also agriculture and residential protection issues. *Waterschap Amstel, Gooi en Vecht* plays the role of target in this analysis. Both implementer and target are motivated toward the project implementation. As a nature organization *Vereniging Natuurmonumenten* wants to encourage this important landscape in the Netherlands. In addition, when *Vereniging Natuurmonumenten* is successful at maintaining targeted species (birds, plants or animals) they receive state funds. The targets have a range of operating goals, and must balance the goals of nature with those of farmers and local residents. This project was not highly contentious. As described by the implementer interviewee this project was “relatively easy” and included no “major obstacles”. The site is an isolated area, flanked on one side by state forests (held by *Staatsbosbeheer*) and on the other by approximately five farms. The *Fochteloerveen* is in the neighborhood of a penal institution, another factor that encourages a lack of development in the area. According to the target interviewee, in this case only three farmers were not satisfied with the restoration plan. In response the Waterboard included drainage measures in the plan to satisfy farmers. As the target describes it, they work with people to try to satisfy as many as is reasonably possible. The implementer and target have high levels of information regarding the project. Both are knowledgeable of actors and their qualifications, and aware of the policy and its requirements. Neither actor reports problems with information sharing or lack of information during the project. The implementer has a high power score while the

target has a moderate power score. The implementer initiates the project, is responsible for seeing policy requirements are fulfilled, and is a partial owner of the site. They also monitor the site, report results, and financially support the project. The target has responsibilities associated with their role of regional water management, and is the final word in decisions about water levels; they choose to accept or reject the implementer's permits. However, they are not responsible for the specifics of this project in the same way as *Vereniging Natuurmonumenten*. The balance of power from the perspective of the implementer is +0.30. *Vereniging Natuurmonumenten* holds the balance of power in this analysis. That being said, as both actors share positive motivation for the project their relative areas of power were never forced into comparison during this process.

Roles of actors, according to interviewees

	Implementer says	**Target says**
Who is the initiator?	*Vereniging Natuurmonumenten* in response to government policy plans development for different habitat types (here, bogs)	*Vereniging Natuurmonumenten*
Who are the users of the area?	Some peat cutting, agriculture, plants and animals	Farmers, residents and nature
Who are the stakeholders?	*Waterschap Amstel, Gooi en Vecht, Wetterskip Fryslan,* villages of Fochteloo and Oostelingwerf	*Vereniging Natuurmonumenten*, residents, waterboard *Amstel, Gooi en Vecht*, farmers, provincial government, local municipalities
Who reports the results of this project?	*Vereniging Natuurmonumenten* reports to the national government and to EU LIFE	*Vereniging Natuurmonumenten* for the Fochteloerveen, waterboard *Amstel, Gooi en Vecht*, for the external effects
Who monitors the site after implementation?	*Vereniging Natuurmonumenten*	*Vereniging Natuurmonumenten* internally, waterboard *Amstel, Gooi en Vecht* externally
Who does the public think is primarily responsible?	*Vereniging Natuurmonumenten*	*Vereniging Natuurmonumenten* and waterboard *Amstel, Gooi en Vecht*
Who sees that the policy requirements are fulfilled?	*Vereniging Natuurmonumenten*	*Vereniging Natuurmonumenten* and the provincial government

Hypotheses using Contextual interaction theory given the actor scores

Likelihood to implement at all: if application of the instrument would contribute positively to the objectives of one actor, while the other actor is also positive or neutral, and the information of the positive actor(s) is sufficient to apply the

instrument, then the interaction process will have the character of cooperation. When both actors are positive there will even be active cooperation.

Does this case agree? Yes, active cooperation describes these interactions. The actors work together to solve problems and make the project successful. The implementer states that there were no obstacles and great cooperation between actors. The target finds that if there had been a problem the actors would have "gotten creative" to solve it.

Adequacy of Implementation: if adequate application of the instrument would contribute positively to the objectives of one actor and also positively or neutral to the other actor, and these actors have sufficient information, then constructive cooperation will evolve. In case both actors are positive this will even be active (constructive) cooperation.

Does this case agree? Yes, active constructive cooperation is an adequate description of this case. Both target and implementer experience a slight increase in motivation levels during the course of the project. This reflects some initial fear from farmers about this project causing negative effects on their land. The implementer found that when they showed these farmers that the buffer zone would shield them from problems, their worries decreased. The target finds that some farmers feel a "psychological threat" about rising water levels despite reassurance that groundwater levels remain consistent. In this case they worked with the farmers who were dissatisfied about the plan to create measures that were satisfactory to everyone. Any social pressures from the farming community that may have influenced actor motivation disappeared during the course of the project. Actor information and power levels remains consistent between the first and second phases of analysis. This analysis indicates a case where power score does not reflect an actor's role as permit-granter/regulator. This illuminates an area for improvement in the way formal power is measured for this analysis, addressed further in the Chapter 11 section *Proposed revisions based on this study*.

Bargerveen: Implemented (4)

Policies and/or Programs

European Union Natura 2000 Network, via the Bird Directive (*Vogelrichtlijn)* and Habitat Directive *(Habitatrichtlijn)*; The Netherlands Nature Policy Plan, National Ecological Network (*Natuurbeleidsplan, Ecologische Hoofdstructuur*)

Scores

Likelihood to implement at all **Actors**	**Motivation**	**Information**	**Power**
Implementer: *Dienst Landelijk Gebied* (Service for Rural Territory)	15/18 (+.67)	10/15 (.67)	2/8 (.25)
Target: *Staatsbosbeheer* (Dutch State Forestry Service)	20/22 (+.82)	15/17 (.88)	7/10 (.70)

Adequacy of implementation **Actors**	**Motivation**	**Information**	**Power**
Implementer: *Dienst Landelijk Gebied*	16/18 (+.78)	15/15 (1.00)	2/8 (.25)
Target: *Staatsbosbeheer*	20/22 (+.82)	16/17 (.94)	7/10 (.70)

Case History

Investigations by the *Staatsbosbeheer* from the early 1990s indicated ground water was too low and that managers lacked control of surface water levels in the *Bargerveen*, a nature complex of 2089 hectares (5162 acres). *Staatsbosbeheer* then built approximately 40 kilometers of small peat dams to attempt to control the area. In 1998 the region received severe rainfall, inundating these peat dams and threatening the village of *Zwartemeer*. At this time *Bargerveen* became part of a land management program called a *landinrichting* (rural organization). When a province proposes a *landinrichting* they must seek Ministry of Agriculture, Nature and Food Quality approval, then a *Deel Gebieds Commissie* (Area Portioning Commission) is installed as a temporary form of government to direct the activities of the *landinrichting*. *Dienst Landelijk Gebied* was hired as project leader by the *Deel Gebieds Commissie*. *Landinrichting* programs, managed by the provincial government, are large-scale projects that seek to solve a number of planning and development issues in an area by enabling land swaps and sales to promote the best overall scenario for agriculture, development and nature. The project involved creating a new dijk as well as water retention areas within the *Bargerveen*, stabilizing area water levels and encouraging peat and moorland growth. The plans gained municipal level support because of the recent flooding and because they would bring clean water to the area in an inexpensive way. EU LIFE funded 60% of the project, while *Staatsbosbeheer* contributed 20%, the *Waterschap Velt en Vecht* (Waterboard *Velt* and *Vecht*) contributed 10% and the *Deel Gebied Commissie* contributed 10%. The project was implemented in phases from 2003 to 2006.

Case Summary

Dienst Landelijk Gebied is charged with managing land to the satisfaction of the project partners, and plays the role of implementer in this case. *Staatsbosbeheer* owns this land, but they must rely on the *Dienst Landelijk Gebied* to lead the process in a way that will help restore the complex's active raised bogs and wet heathlands. *Staatsbosbeheer* is the target for analysis. Both implementer and target

are motivated toward project implementation. The implementer describes it as a win-win situation while the target similarly states “no one had something to lose”. The target is motivated to protect and restore the nature on its land while the implementer is motivated to conduct the process in a way benefiting the participants. Both the implementer and target display high information levels. They are both knowledgeable of actors and their qualifications, aware of the multiple levels of policy applied to this site, and report no problems with information sharing among actors. This case is defined by a strong commitment to communication: the actors met almost monthly, for a total of twenty meetings over two years. Subsequently, information levels of both actors increased over the course of the project. The implementer has a low power score while the target has a high power score. The target is the project initiator, a stakeholder, a financial contributor, and holds formal responsibility for the project as the monitor and result reporter. In contrast the *Dienst Landelijk Gebied* is a stakeholder, and may be perceived as partially responsible by the public, but does not have ongoing formal responsibilities associated with the project and is not a financial contributor. The balance of power from the perspective of the implementer is -0.45. According to this analysis, the target holds the balance of power.

Roles of actors, according to interviewees

	Implementer says	**Target says**
Who is the initiator?	*Staatsbosbeheer*	*Staatsbosbeheer*
Who are the users of the area?	*Staatsbosbeheer* owns the land, used by peat diggers and local residents.	Primarily nature, secondarily by the *Waterschap Velt en Vecht* because they use held water for greenhouse irrigation, finally tourists and recreational users
Who are the stakeholders?	Province Drenthe, *Staatsbosbeheer, Dienst Landelijk Gebied*, municipalities, *Deel Gebieds Commissie*, the *landinrichting, Waterschap Hunze en As, Waterschap Velt en Vecht,* since merged into *Waterschap Velt en Vecht*	*Staatsbosbeheer, Dienst Landelijk Gebied*, municipalities, *Deel Gebieds Commissie*, *Waterschap Velt en Vecht, Herinrichting Emmen Zuid* (the official name of the *landinrichting)*
Who reports the results of this project?	*Staatsbosbeheer*	*Staatsbosbeheer* gives results to the provincial government
Who monitors the site after implementation?	*Staatsbosbeheer*	*Staatsbosbeheer*, *Waterschap Velt en Vecht*
Who does the public think is primarily responsible?	*Staatsbosbeheer*	For most of the public it is *Staatsbosbeheer*, to the farmers it is *Dienst Landelijk Gebied*
Who sees that the policy requirements are fulfilled?	“It is not us”	*Staatsbosbeheer*, Province Drenthe

Hypotheses using Contextual interaction theory given the actor scores

Likelihood to implement at all: if application of the instrument would contribute positively to the objectives of one actor, while the other actor is also positive or neutral, and the information of the positive actor(s) is sufficient to apply the instrument, then the interaction process will have the character of cooperation. When both actors are positive there will even be active cooperation.

Does this case agree? Yes, these actors cooperate actively to make a plan for the restoration of the *Bargerveen*, within the greater plans of the *landinrichting*. *Staatsbosbeheer* has formal authority for this area but trusts that the *landinrichting*. administration by *Dienst Landelijk Gebied* will benefit their goals in the long term. It is important to note that they remain active participants in the process. When asked about decision making, the target states that there were rarely problems, and "not a lot of difference of opinion". The implementer describes decision making as occurring via a committee of stakeholders, and finds that they usually had "something in common". Once actors became involved with the *landinrichting* process, they worked to make it successful.

Adequacy of Implementation: if adequate application of the instrument would contribute positively to the objectives of one actor and also positively or neutral to the other actor, and these actors have sufficient information, then constructive cooperation will evolve. In case both actors are positive this will even be active (constructive) cooperation.

Does this case agree? Yes, throughout the implementation process the actors cooperate in a constructive manner to ensure implementation. The implementer's motivation score increases slightly, while the target's motivation remains consistent between the phases of analysis. Actors worked together to solve problems during the process, including an unforeseen difficulty with increasing levels of aluminum in the area. One natural process associated with peat and the acidic water found around peat, is that when digging in a peat area one can produce aluminum silica. Though this is a natural by-product, it remains a polluting substance. Actors became aware of increasing aluminum levels approximately four months into implementation, through notification by a local factory which tests water quality. To solve the problem, implementation was put on hold and eventually reinstated in the winter months when the risk of producing aluminum decreased. This unforeseen risk was a costly misstep for the project partners, but was eventually handled in a satisfactory way. Both target and implementer experience an increase in information levels during the process. This can be attributed to increasing actor knowledge and information levels as they dealt with the aluminum problem. The implementer and target scores for power remain consistent during the process.

Water op Maat: Not yet implemented (1)

Policies and/or Programs

The Netherlands Nature Policy Plan, National Ecological Network (*Natuurbeleidsplan, Ecologische Hoofdstructuur*)

Scores

Likelihood to implement at all Actors	Motivation	Information	Power
Implementer: *Waterschap Reest en Wieden* (Waterboard *Reest* and *Wieden*)	12/17 (+.41)	13/15 (.87)	5/8 (.63)
Target: *Staatsbosbeheer* (the Dutch State Forestry Service)	6/14 (-.14)	14/17 (.82)	5/9 (.56)

Case History

This area is approximately 90% nature, with regions owned by both *Vereniging Natuurmonumenten* and *Staatsbosbeheer*. In general, agreements about water levels in this type of area are assessed every ten years, but in this case no discussions had taken place since the 1940s. In such situations, the *Waterschap Reest en Wieden* hosts workshops with experts to understand the optimum situation for nature and has meetings with local community organizations to incorporate their vision for the area. Actors discuss their wishes but the *Waterschap Reest en Wieden* makes the final decision after comparing all area interests. The *Waterschap Reest en Wieden's* board of governors then makes a plan, to which people and organizations can react. The *Waterschap Reest en Wieden* takes these reactions into account, and the plan must then meet approval of the Provincial government. Reactions from the public can again be made on that decision. This case was in this stage at the time of interviews. While the *Waterschap Reest en Wieden* felt the plan was positive, one nature organization (*Staatsbosbeheer*) had some misgivings about the project's affects on nature. Northwest *Overijssel* serves as a large water retention area. Currently in winter the site has -83.0 cm of water; in summer water level begins at +73.0 cm and then evaporates to -83.0 cm. The opinion of the *Waterschap Reest en Wieden* is that it will be better for nature to make water levels a little lower in the summer (decreasing from 73.0 to 68.0 cm) and slightly higher in winter (from -83.0 cm to -80.0 cm). In addition, this area must maintain water storage capabilities for safety purposes. It is important to note that *Staatsbosbeheer* focuses on species while the *Waterschap Reest en Wieden* focuses on the entire water system. For compliance with European Union regulations, *Staatsbosbeheer* must show that target species remain at certain levels. The other landowner and nature organization, *Vereniging Natuurmonumenten*, agrees to the *Waterschap Reest en Wieden's* plan. At the time of interviews, *Staatsbosbeheer* was not satisfied about what changes might result from the implementation of this plan. The project has not been implemented.

Case Summary

Roles of actors, according to interviewees

	Implementer says	Target says
Who is the initiator?	*Waterschap Reest en Wieden*	*Waterschap Reest en Wieden*
Who are the users of the area?	Nature, recreation, reed cutters	*Staatsbosbeheer, Waterschap Reest en Wieden, Vereniging Natuurmonumenten,* farmers, the Provincial government
Who are the stakeholders?	*Staatsbosbeheer, Waterschap Reest en Wieden, Vereniging Natuurmonumenten,* a lot of interests	Reed cutters, recreation sector
Who reports the results of this project?	Not applicable, not implemented	Not applicable, not implemented
Who monitors the site after implementation?	Not applicable, not implemented	For our area (the Weerribben) it is us; *Vereniging Natuurmonumenten* monitors their area (Wieden); and *Waterschap Reest en Wieden* monitors water quality
Who does the public think is primarily responsible?	Not applicable, not implemented	*Waterschap Reest en Wieden* administration
Who sees that the policy requirements are fulfilled?	*Waterschap Reest en Wieden* reports to the Province, who reports to the national government, who reports to the European Commission	In our area, it is us—but for the total area it is *Waterschap Reest en Wieden, Vereniging Natuurmonumenten,* etc.

Waterschap Reest en Wieden works to design and promote this plan among local actors, and is the implementer in this analysis. *Staatsbosbeheer* is not only a major landowner in this area, but also an actor whose opinions are valued by the *Waterschap Reest en Wieden*. While the *Waterschap Reest en Wieden* makes final decisions about water management, these decisions are not made without input and advice from *Staatsbosbeheer*, the target in this analysis. The implementer is motivated toward project implementation, finding this project will provide water storage and should improve water quality. The target's motivation score falls within the neutral range. This actor does not fully agree with the decisions of the *Waterschap Reest en Wieden* and the Province, having concerns about how changes may effect their compliance with European level laws. Both actors display high information levels. They are knowledgeable of actors and their qualifications, and informed about relevant policies. Neither actor reports problems with a lack of information or with information sharing during the process. The implementer states that there is not enough information in general about this type of wetland system.

The target mentions that a lack of clarity about the goals of other groups encouraged communication among groups. Implementer and target have moderate and comparable power scores. Both actors would be responsible for reporting the results of this project to different authorities. The *Waterschap Reest en Wieden* is a financial contributor to the project while *Staatsbosbeheer* will monitor any changes on their land. The target specifically mentions a lack of capacity in this case, citing that more specialists are needed to advise all actors about the consequences of changes. This action has been taken by the project partners, and specialists are currently working to provide more data about potential changes. The balance of power from the perspective of the implementer is +0.07, meaning neither actor holds the balance of power in this case.

Hypotheses using Contextual interaction theory given the actor scores

Likelihood to implement at all: if application of the instrument would contribute positively to the objectives of one actor, while the other actor is also positive or neutral, and the information of the positive actor(s) is sufficient to apply the instrument, then the interaction process will have the character of cooperation.

Does this case agree? Yes, this is an apt description of this case. Actors are currently working to gather more information to better understand how potential changes might affect the area. The implementer states that they were unable to convince the target that the changes would benefit their interests, and therefore decided with *Staatsbosbeheer* to freeze the project until more information could be obtained. The target interviewee remarks "communication is very important… we need [information] to make a good decision. We communicate and work through different opinions". Clearly each actor values the other's goals and opinions.

Not yet implemented According to this analysis there are no current barriers to implementation. In practice the implementer is already working toward changing *Staatsbosbeheer's* motivation by providing more information that they hope will clarify any impact these changes might have on the area. *Waterschap Reest en Wieden* hopes that by reassuring *Staatsbosbeheer* they can get their full support. The implementer in this case shows a great deal of respect for the target's goals and concerns. This may be influenced by the reality that they will have to continue to work together to manage water throughout the region. Trust and mutual understanding are important elements enabling future cooperative projects. This analysis indicates a case where the power score does not reflect an actor's role as permit-granter/regulator. This illuminates an area for improvement in the way formal power is measured, addressed further in the Chapter 11 section *Proposed revisions based on this study*.

Meijegraslanden: Not yet implemented (2)

Policies and/or Programs

The Netherlands Nature Policy Plan, National Ecological Network *(Natuurbeleidsplan, Ecologische Hoofdstructuur)*

Scores

Likelihood to implement at all

Actors	Motivation	Information	Power
Implementer: *Vereniging Natuurmonumenten* (Association of Nature Monuments)	15/17 (+.76)	15/16 (.94)	7/9 (.78)
Target: *Dienst Landelijk Gebied* (Service for Rural Territory)	14/17 (+.65)	12/15 (.80)	4/9 (.44)

Case History

One goal of the National Ecological Network (*Ecologische Hoofdstructuur*) is connecting nature areas, with an emphasis in the Netherlands on water areas. This project seeks to link conservation areas. It began as a small *Vereniging Natuurmonumenten* project but was later transformed into a larger project through cooperation with *Dienst Landelijk Gebied*. The project plan is to restore farmland into a wetland of approximately 200 hectares (500 acres) bordering the *Nieuwkoopse Plassen*, a nature area owned by *Natuurmonumenten*. *Nieuwkoopse Plassen* is a former peat extraction area consisting of long strips of water overgrown with drifting reed beds. The area is acidic, influenced by rainwater, and has water quality issues. Remaining long strips of peat can be damaged due to water quality, or destroyed by strong currents. When damaged, the area is less fit for marsh birds. This project seeks to change farmland into a marshy bird area. The great bittern (*Botaurus stellaris*) in particular prefers standing versus floating reed beds. The farmers are not obliged to sell their land for this project; therefore the actors must wait for their cooperation. According to one interviewee, some farmers are interested in moving because farmland in this area is not considered top quality. However, actors are uncertain about when farmers might stop, which slows the entire process. Funding for the project will be provided primarily by the Province of South Holland and secondarily by the Province of Utrecht. The project is not yet implemented.

Case Summary

Vereniging Natuurmonumenten initiated the project, will own any purchased land and will mange the site; this actor plays the role of project implementer. *Dienst Landelijk Gebied* is the final decision-maker and will do the work of restoration. This actor serves the role of project target. The implementer is highly motivated toward the project. In particular they find this area will provide much needed habitat for marsh birds such as the great bittern. The target, *Dienst Landelijk Gebied*, is also motivated toward the project; they see it as an opportunity to strengthen existing

nature areas and connect conservation corridors through the National Ecological Network (*Ecologische Hoofdstructuur*). Both actors have high project information levels. They are knowledgeable of actors and their qualifications, and informed about relevant policies. Neither actor reports problems with a lack of information or with information sharing during the process. The implementer remarks "communication lines are very good with *Dienst Landelijk Gebied*". Both actors state that there are uncertainties in knowing whether or when farmers will decide to leave. The implementer has a high power score while the target has a moderate power score. The implementer is the landowner, initiator, will be responsible for seeing that policy requirements are fulfilled, and will monitor results of the project.
The implementer interviewee also states that they have a good chance of attaining goals that they deem important, because they will have the responsibility of site management. In contrast the target will not monitor the site, report results, or be responsible for seeing that the policy requirements are fulfilled. The balance of power from the perspective of the implementer is +0.34. The implementer holds the balance of power in this analysis.

Roles of actors, according to interviewees

	Implementer says	**Target says**
Who is the initiator?	*Vereniging Natuurmonumenten, Dienst Landelijk Gebied* joined soon after	National government through the *Ecologische Hoofdstructuur* system
Who are the users of the area?	Farmers, and *Vereniging Natuurmonumenten* who owns and rents land to farmers	Farmers and *Vereniging Natuurmonumenten*
Who are the stakeholders?	*Vereniging Natuurmonumenten, Dienst Landelijk Gebied*, Province of Zuid Holland, Province of Utrecht, farmers, municipality of Nieuwekoop, residents, recreation users	Farmers, *Vereniging Natuurmonumenten,* national government, *Dienst Landelijk Gebied*, Zuid Holland Landschap, recreation sector, municipal government
Who reports the results of this project?	Not applicable, not implemented	Nobody
Who monitors the site after implementation?	*Vereniging Natuurmonumenten* for target species	*Vereniging Natuurmonumenten*
Who does the public think is primarily responsible?	Not applicable, not implemented	Not applicable, not implemented
Who sees that the policy requirements are fulfilled?	Eventual responsibility with Province of Zuid Holland for *Ecologische Hoofdstructuur*; maintenance from *Vereniging Natuurmonumenten*	Nature organizations

Hypotheses using Contextual interaction theory given the actor scores

Likelihood to implement at all: if application of the instrument would contribute positively to the objectives of one actor, while the other actor is also positive or neutral, and the information of the positive actor(s) is sufficient to apply the instrument, then the interaction process will have the character of cooperation. When both actors are positive there will even be active cooperation.

Does this case agree? Yes, it is accurate to say that the actors work in a cooperative manner to achieve mutual goals. In this case interviews took place at the very beginning of the process. While both actors seem confident about their ability to carry out this project, they both acknowledge that any changes first require that farmers sell their land. The target emphasizes that they must work slowly to help make this project successful. Both implementer and target respect that farmer cooperation is necessary to enable implementation

Not yet implemented As the target states, the project is slow because there is "not enough political pressure". This interviewee explains that any anxious farmers in the area "cannot be rushed" and must be "handled carefully", a process which "takes time". It is important to note that this project is in the very beginning stages; a project group has not yet been formed to direct the process. In this way a later analysis of the case may reveal a more accurate glimpse of how actors interact. The theory indicates no barriers to implementation according to this analysis. Whether the project continues in a cooperative manner clearly depends on how process actors manage project meetings, as well as the amount of care they take in working with the farmers.

Drents Friese Wold: Not yet implemented (3)

Policies and/or Programs

The Netherlands Nature Policy Plan, National Ecological Network (*Natuurbeleidsplan, Ecologische Hoofdstructuur*)

Scores

Likelihood to implement at all

Actors	**Motivation**	**Information**	**Power**
Implementer: National Park *Overlegorgaan* (National Park Deliberative Body)	12/14 (+.71)	12/17 (.71)	4/5 (.80)
Target: *Staatsbosbeheer* (Dutch State Forestry Service)	15/16 (+.88)	13/16 (.81)	3/5 (.60)

Case History

Plans began in 1996 to create the 4000 hectare (9880 acre) Drents-Friese Wold National Park. At the time, actors considered several projects within the auspices of

the national park plan. One idea was to restore a 250 hectare (618 acre) agricultural area within the park boundaries into a wetland. This agricultural area is described as a long stretch nearly dividing the park. At the time there was not money to buy out the farmers or to move them to other farms, so other projects were chosen for immediate implementation. In 2006 this project was again initiated by the *overlegorgaan*. To achieve implementation the *overlegorgaan* must find other partners with funds to purchase the farmland; implementation is also dependent on the farmers' willingness to sell their property. If the project continues as planned over the next 3-5 years the *Waterschap Reest en Wieden* will help change the water level for the area while *Staatsbosbeheer*, the largest landowner within the park, will use their technical expertise to manage the restoration. In the Netherlands a national park is a cooperative endeavor not enforced by law. Formally this area, while within park boundaries, is not part of the park. These actors would like to change it into a nature area to allow enforceable nature quality on the site. The project plan potentially includes two aspects: changing drinking water extraction rates and changing agriculture to nature. Extraction affects the park by reducing water flows by 7 million cubic meters per year. The water company Vitens rents extraction rights from *Staatsbosbeheer*. Their current lease will run out in a few years, presenting a bargaining chip in negotiations to change extraction patterns. Like extraction, drainage plays a role in influencing nature in the national park. As with the *Wierdense Veld* in-depth case (Chapter 6), lower water levels required by farmland affects adjacent nature areas. The other potential option is to buy out farmers, then raise water levels throughout the park. At the time of interviews, actors are looking at options including both drinking water extraction and wetland restoration to fulfill their goals. This case is not yet implemented.

Case Summary

The national park *overlegorgaan* works to enable this project, playing the role of implementer. *Staatsbosbeheer's* funding and expertise are necessary to implement this project; this actor plays the role of target. Both the implementer and target have motivation toward project implementation. The *overlegorgaan* seeks to create a sustainable and comprehensive national park landscape. *Staatsbosbeheer* finds that changing the status of this land will allow enforceable nature quality on the site, improving their adjacent holdings. Both target and implementer have high information levels in this analysis. The implementer is knowledgeable of actors and their qualifications, has policy awareness and understands policy requirements. This actor states that getting the proper information sometimes requires networking, but describes no problems with communication channels. The implementer remarks that there are uncertainties about funding the project. The target is similarly aware of actors and their qualifications, the policy and its requirements. The target interviewee describes no problems with communication during the project. Both target and implementer have high power scores, though in this analysis the implementer's are somewhat higher. It should be noted that since this project is in the beginning stages it is unclear who will have some of the formal responsibilities

for the project. The balance of power from the perspective of the implementer is BP:+0.20. In the analysis at this stage, the implementer holds the balance of power

Hypotheses using Contextual interaction theory given the actor scores

Likelihood to implement at all: if application of the instrument would contribute positively to the objectives of one actor, while the other actor is also positive or neutral, and the information of the positive actor(s) is sufficient to apply the instrument, then the interaction process will have the character of cooperation. When both actors are positive there will even be active cooperation.

Does this case agree? Yes, these actors work in an actively cooperative manner. The target and implementer have similar goals and desires for the future of the area. There is some concern whether the *status quo* is negatively affecting the national park as a whole. Having a nature park split by farmland may negatively influence the quality of the site. By changing this site from agricultural to natural usage each actor can enhance and fortify its holdings and stakes. To enable restoration these actors first need to gather funding to allow buying the farmland. Further action requires the willingness of the farmers to move, and/or the willingness of Vitens to make a comprehensive solution. These actors must strategically work with other stakeholders to find a solution for the park. While cooperation has been the tone to date, this process is still in its infancy and will require more work before an implementation is realized.

Roles of actors, according to interviewees

	Implementer says	**Target says**
Who is the initiator?	National Park *Overlegorgaan*	The *overlegorgaan*
Who are the users of the area?	Farmers	Agriculture
Who are the stakeholders?	Province of Drenthe, Province of Friesland, Vitens (a drinking water company), *Waterschap Reest en Wieden*, National Park *Overlegorgaan, Staatsbosbeheer*	Province of Drenthe, Province of Friesland, farmers, Municipality of Oostellinswerf in Friesland, Municipality of Westerveld in Drenthe, *Waterschap Reest en Wieden*, *Staatsbosbeheer*
Who reports the results of this project?	Not applicable, not implemented	Province of Drenthe, Province of Friesland
Who monitors the site after implementation?	Not applicable, not implemented	Not applicable, not implemented
Who does the public think is primarily responsible?	Not applicable, not implemented	Not applicable, not implemented
Who sees that the policy requirements are fulfilled?	Now the Provinces, at later stages *Staatsbosbeheer, Waterschap Reest en Wieden*, and local authorities	Formally it is the Provinces

Not yet implemented This project is just beginning, and the specifics of how the restoration will occur are unclear. As with the *Wierdense Veld* in-depth case, project

managers may choose to change extraction or reduce drainage from nearby farms. In this case actors seek to buy the farms to raise water levels on that land. A combination of strategies is also possible. This analysis takes place early in the process; the actors themselves estimate 3-5 years of work to implement changes. In the current state there are no barriers to implementation highlighted by this analysis. The actors are similarly motivated, well informed, and comparably powerful.

Ameland Dune Fringe Project: Not Yet Implemented (4)

Policies and/or Programs

The Netherlands Nature Policy Plan, National Ecological Network (*Natuurbeleidsplan, Ecologische Hoofdstructuur*); non-specified Provincial-level nature plans.

Scores

Likelihood to implement at all Actors	**Motivation**	**Information**	**Power**
Implementer: Province of Friesland, *Ministerie van Landbouw, Natuur en Voedselkwaliteit* (Ministry of Agriculture, Nature and Food Quality)	8/17 (-.06)	11/12 (.92)	4/7 (.57)
Target: *Ameland* nature interests	11/16 (+.38)	4/15 (.27)	3/5 (.60)

Case History

In the late 1980s and early 1990s the *Ministerie van Landbouw, Natuur en Voedselkwaliteit* created a *Herinrichting Commissie* (Re-ordering Commission) to manage a *landinrichting* (rural organization) on the island of *Ameland*. *Landinrichting* programs, managed by the provincial government, are large-scale projects that seek to solve a number of planning and development issues in an area by enabling land swaps and sales to promote the best overall scenario for agriculture, development and nature. In such a process land can shift between uses such as agriculture, development, and nature. Purportedly this *landinrichting* sought to shift land from agricultural use to create approximately 400 hectares (988 acres) of nature on the island and to develop a hotel and golf course complex. The golf course and hotel project was implemented immediately while the nature development project has not yet taken place despite the passage of seventeen years since the project began. The nature project goals include restoring the inner border of the dune area and building a buffer between a recreation area and the nature reserve *Duinen Ameland* (Ameland Dunes). The buffer zone will prevent people from crossing the nature reserve by taking a short cut between the recreation area and the beach front. When the project was conceived, the nature reserve *Duinen Ameland* was important as a breeding and foraging area for the hen harrier (*Circus cyaneus*) and the short eared owl (*Asio flammeus*). The reserve was considered by some the most important area within the Netherlands for the short eared owl. Now

there remain only four breeding pairs of hen harrier and short eared owls are extinct within the reserve. Clearly not everyone involved in this plan has an interest in the nature aspect of the *landinrichting*. As stated above, the source of land for both projects (tourism development and nature) was primarily agriculture. Farmers on the island supported the goals of the development project but not the nature project. As the *Herinrichting Commissie* includes representatives of farming interests, these individuals used the process to enable tourism development but did not allow completion of the nature development aspect of the project. Since the project began one piece of land within the target area for nature was sold privately to the *Herinrichting Commissie* Chairman, who then proved unwilling to sell this land for nature development. In this way not only farmers in general, but also leadership within the *Herinrichting Commissie* were in favor of actively supplanting the nature goals of the *landinrichting*. This project has not yet been implemented.

Case Summary

The *Ministerie van Landbouw, Natuur en Voedselkwaliteit* and the Province of Friesland are implementers in this analysis, as their organizations direct the *landinrichting* at different times in the process. Since the project began, the *landinrichting* process has changed from being administered by the *Ministerie van Landbouw, Natuur en Voedselkwaliteit* to being administered by the provincial government. The implementer interviewee worked for the *Ministerie van Landbouw, Natuur en Voedselkwaliteit* when the project began and now works for the Province of Friesland. The *Natuur Werkgroep Ameland* (Working Group for Ameland Nature) within the *landinrichting* process works to designate nature goals in the process, and is the target in this analysis. The target aspect is based on an interview with an individual who was a member of the *Natuur Werkgroep Ameland* and is employed by the *Ameland Natuur Centrum* (Ameland Nature Center). The implementer displays a neutral motivation score in analysis. This reflects that in many instances the implementer interviewee spoke in terms of how the farmers perceived the issues, and about the interests of the farmers. For example he states that as island dwellers, any loss of farmland for nature is seen as a social and economic risk for the farmers. He finds that the "farmers felt their interests were more important than [the] project realization". While formally charged to implement the *landinrichting*, this interviewee also understands and articulates the interest of the farmers within the process. The target displays motivation toward the implementation project. While this actor also acknowledges the social pressure from locals who did not support the project, his role in the process is promoting nature protection and conservation on the island. He finds protection of bird species as well as development of nature tourism a long term benefit for island dwellers. The implementer has a high while the target has a low information score. Both actors are knowledgeable of actors and their qualifications. The implementer describes few problems with information sharing, accessibility and documentation during the project. The implementer states only that the "timing was off" and reports some uncertainties knowing the interests of farmers. In contrast, the target describes a lack of information, stating "at first it seemed okay, but after some years, when the golf

course was finished, nothing was heard of again". The target interviewee finds communication between actors was limited, and accessibility was "very bad". This actor continues to have questions about how money was spent on the project, particularly funding sources and the whereabouts of money intended for the nature aspect of the project. Both actors have moderate and comparable power scores. The balance of power from the perspective of the implementer is -0.03; neither definitely holds the balance of power in this process.

Roles of actors, according to interviewees

	Implementer says	**Target says**
Who is the initiator?	Initiated as part of the *landinrichting* process	*Ministerie van Landbouw, Natuur en Voedselkwaliteit*, municipality of Ameland, and a private hotel developer
Who are the users of the area?	Farmers	Agricultural owners, the municipality owns a small piece of the area, later contributed to the golf course area
Who are the stakeholders?	Municipality of Ameland, a local council member, *Ameland Natuur Centrum* (Ameland Nature Center), Province of Friesland, *Ministerie van Landbouw, Natuur en Voedselkwaliteit*, local farmers	Municipality of Ameland, tourist board, *Staatsbosbeheer* (Dutch State Forestry Service), Province of Friesland, *Ministerie van Landbouw, Natuur en Voedselkwaliteit*, local farmers
Who reports the results of this project?	Not applicable, not implemented	"I think the organization who made the plans and financed it [the *Ministerie van Landbouw, Natuur en Voedselkwaliteit*] should be curious about what happened to their money… and if they are not satisfied they should take back their money"
Who monitors the site after implementation?	Not applicable, not implemented	Maybe the Province of Friesland
Who does the public think is primarily responsible?	Not applicable, not implemented	Province of Friesland and municipality of Ameland
Who sees that the policy requirements are fulfilled?	Province of Friesland	Not our organization

Hypotheses using Contextual interaction theory given the actor scores

Likelihood to implement at all: if application of the instrument would contribute positively to the objectives of one actor (motivation), while the other actor is also

positive or neutral, but the information of the positive actor(s) is insufficient to apply the instrument, than a joint learning process will evolve that will sooner or later create another situation.

Does this case agree? Yes, it is true that the positive actor does not currently have the information to apply the instrument, as he describes being shut out of communication and information channels within the process. According to the interviewees, local farmers hold immense power in determining how this project proceeds. In his interview, the implementer describes attempts to restart the project since the original *landinrichting*. On one occasion, the deputy of the Province of Friesland attempted to restart the process but did not succeed. Within the last year representatives from both the municipal and provincial levels of government attempted to revive the process, and also failed. The implementer also remarks that even one farmer refusing to sell land within the target area jeopardizes the entire project. According to the target interviewee "the people of Ameland are against [the project] and the power of the Province and Ministry are not enough". Due to the complications found in this project, the Province representative reports that plans for nature and recreation are now more closely linked from inception, then presented and financed as one plan. Clearly this project has served as a learning experience for implementers in future projects, but stakeholders are also concerned about whether the nature aspect of this project will ever come to fruition.

Not yet implemented The theory predicts this case will not produce an interaction as the variables currently stand. What are the barriers to implementation outlined by the theory application? One option is that the target gains enough information to enable project implementation. According to the theory, the positively motivated partner must have sufficient information to apply the instrument, yielding cooperation. While this is a possibility, the target describes interactions in which he is shut out of communication channels within the process. It seems unlikely that the target group could use an increase of information to promote acceptance of the project. Another option is to change the implementer motivation from neutral to positive. The implementer is privy to project information channels and could use this position to enable implementation. The implementer displays a neutral score because in this analysis they describe the interests of the farming community of *Ameland*. While they may not fully support these interests, on some level they accept the farmers' position. The implementers represent governmental and political organizations. Clearly the *Ameland* constituency deserves the representation of farming interests by their elected officials. However, as the implementers of national and international environmental policy the implementer also represents a player within the process who could enable project implementation. The Province of Friesland, and the *Ministerie van Landbouw, Natuur en Voedselkwaliteit* have dual and sometimes conflicting goals to balance— as representatives of citizens and as implementers of policy; as promoters of both economic prosperity and environmental protection. The implementer interviewee is hopeful that the project will proceed eventually. He reports that officials are still working to restart the

project. As with many cases within the Netherlands, over time even the most passionate opposition may have a change of situation (e.g. retirement, lack of successor on a farm) that can lead to realizing nature goals. Perhaps over time these actors will unite in motivation for the project.

Randmeer: Not Implemented (1)

Policies and/or Programs

Regional Plan affecting the Blue Zone (*Streekplan uitwerking De Blauwe Zone)*, The Netherlands Nature Policy Plan, National Ecological Network (*Natuurbeleidsplan, Ecologische Hoofdstructuur*).

Scores

Likelihood to implement at all

Actors	Motivation	Information	Power
Implementer: *Algemene Nederlandse Wielrijders Bond* (Dutch Automobile Association)	16/17 (+.88)	7/12 (.58)	2/5 (.40)
Target: *Waterschap Reest en Wieden* (Waterboard Reest and Wieden)	3/15 (-.60)	13/16 (.81)	3/6 (.50)

Case History

This project was led by the *Algemene Nederlandse Wielrijders Bond* and supported by *the Ministerie van Volkshuisvesting Ruimtelijk Ordening en Millieu* (Netherlands Ministry of Public Housing, Spatial Planning and the Environment) and *Vereniging Natuurmonumenten* (Association of Nature Monuments). The project goal was to convert an area between two polders into a large lake. The project was promoted as an opportunity to reduce infiltration, and to provide room for water. *Waterschap Reest en Wieden*, while not opposed to recreation in principle, felt this project was more an effort to create recreation opportunities than an attempt to improve the environment. As the *Waterschap* interviewee states, “I love sailing, but for three billion Euros we could better invest in the nature we have”. The *Waterschap Reest en Wieden* felt the hydrological evidence in support of the project was inconclusive, and that more was required to make changes in this area. This is particularly true because of this site’s proximity to the nature area *Weerribben*, a national park and a Ramsar-designated wetland of international importance. In 2002, the Dutch parliament decided not to invest in this project, and it has not been implemented.

Case Summary

Algemene Nederlandse Wielrijders Bond is the implementer as they work aggressively to enable this restoration project. As water managers for the area, any change in the water system on this scale requires input of the *Waterschap Reest en Wieden* who are the project target. While the implementer is strongly motivated toward the project, the target is highly motivated against the project. The

implementers claim that their first priority is water, while they are only secondarily interested in the functions of tourism gained by the project. However, the organization is not a nature organization but an automobile club with strong ties to tourism. The implementer interviewee also states that "if it is good to put a lake in, we would like to be involved with planning [what it looks like]". Whether the source of motivation is for nature or tourism, the implementer is in favor of the project. The target states that while not against recreation, uncertainties about how changes will effect the larger hydrologic system fuels their motivation against the project. The implementer has a moderate information score while the target has a high information score. The target is knowledgeable of actors and their qualifications, aware of applicable policies, and finds an adequate flow of information among the stakeholders. The implementer is also knowledgeable of actors and their qualifications, and is basically aware of the policy—though this actor is in practice not a policy worker. The implementer states that they doubted the technical information provided by the target, believing that politics were involved in the presentation of that material. In this way they describe a lack of trust in the information used in the process. Both target and implementer have moderate power scores, with the implementer's score just slightly lower than that of the target. The balance of power from the perspective of the implementer is -0.10; in this analysis neither actor holds the balance of power.

Roles of actors, according to interviewees

	Implementer says	**Target says**
Who is the initiator?	*Raad voor het landelijk gebied* (Council for rural areas)	*Algemene Nederlandse Wielrijders Bond*
Who are the users of the area?	Agriculture	Agriculture (cattle)
Who are the stakeholders?	*Raad voor het landelijk gebied , Algemene Nederlandse Wielrijders Bond, Waterschap Reest en Wieden, Waterschap Zuiderzeeland, Waterschap Groot Salland,* agriculture, Municipality of Noordoostpolder, Municipality of Steenwijkerland, Province of Flevoland, Province of Overijssel and Province of Friesland	*Wetterskip Fryslân* (Friesland Water Authority), *Waterschap Zuiderzeeland, Waterschap Groot Salland, Waterschap Reest en Wieden,* recreation interests, reed cutters, agriculture, *Staatsbosbeheer* (Dutch State Forestry Service), local inhabitants, etc.
Who reports the results of this project?	Not applicable, not implemented	Not applicable, not implemented
Who monitors the site after implementation?	Not applicable, not implemented	Not applicable, not implemented
Who does the public think is primarily responsible?	Provincial governments	Not applicable, not implemented
Who sees that the policy requirements are fulfilled?	Not applicable, not implemented	These policies help to fulfill the plans of provincial and national government

Hypotheses using Contextual interaction theory given the actor scores

Likelihood to implement at all: if application of the instrument would contribute positively to the objectives of one actor, while the other actor is negative, and the information of the positive actor is sufficient, then the character of the interaction process will be dependent on the balance of power between the actors. A relatively equal balance of power will lead to opposition. Opposition can take the forms of negotiation and conflict.

Does this case agree? Yes, these actors were in opposition about the project implementation, taking the form of conflict. In 2002 parliament decided whether to fund the project based on a report prepared by the project partners (including both the implementer and target). As the implementer describes it their "greatest supporter" within parliament lost his coalition power over an unrelated issue dealing with the war in Kosovo. Without the help of this supporter the project budget did not pass in parliament. Despite the 2002 parliamentary decision, the *Waterschap Reest en Wieden* interviewee states that this "ghost project" reappears on the scene approximately every seven years. He remarks that he would not be surprised to see it examined for implementation again in future. That being said, at this time and in this process the project failed to gain implementation. Barriers to implementation include the target's lack of motivation, which if neutral or positive could lead to learning towards cooperation or cooperation, respectively. This would require the *Waterschap Reest en Wieden* finding the project offers safe hydrologic changes that are beneficial to nature. There is a clear lack of trust between the target and implementer in this case, making it hard to imagine a scenario in which they value and respect the technical information offered by the other party. Implementation might also be achieved via a definitive shift of the power balance in favor of the implementer, yielding forced cooperation. This could be realized via a resurgence of support for the project at the parliamentary level. However, given the strong opinions of the target it seems unlikely that any implementation would be considered without opposition.

Tjongerkanaal: Not Implemented (2)

Policies and/or Programs

The Netherlands Nature Policy Plan, National Ecological Network (*Natuurbeleids-plan, Ecologische Hoofdstructuur*).

Scores

Likelihood to implement at all

Actors	**Motivation**	**Information**	**Power**
Implementer: *Wetterskip Fryslân* (Friesland Water Authority)	14/16 (+.75)	15/17 (.88)	4/7 (.57) 7.1
Target: *Land- en Tuinbouw Organisatie (*Agriculture and Horticulture Organization) a farmer's union	4/12 (-.33)	13/16 (.81)	3/6 (.50)

Case History

This project was under consideration as part of a larger rural planning initiative within southeast Friesland sponsored by the *Ministerie van Volkshuisvesting Ruimtelijk Ordening en Millieu* (Netherlands Ministry of Public Housing, Spatial Planning and the Environment). This initiative included *Wetterskip Fryslân*, the municipalities of *Herenveen* and *Ooststellingwerf*, the Province of Friesland and the national government, working together to improve agriculture, nature, environmental quality and economy for the region. Within the initiative, actors agreed some agricultural areas would change to nature, with the caveat that the maximum amount of farmland lost could not exceed 2000 hectares (4940 acres). The initiative would include several projects. The goals of this project were to connect nature areas and bring natural patterns back to the *Tjongerkanaal*, a canalized river currently featuring wooden sides. The specific plan included changing the slope of and widening the canal. The *Land- en Tuinbouw Organisatie* advocates the rights of the local farming community within processes of this type. If such a project proceeds, they work to see that farmers are adequately compensated. The *Land- en Tuinbouw Organisatie* joined a working group with other actors to discuss the possibilities for this project. This particular project was conceived later within the greater initiative, by which time the completion of this project would push the total number of converted hectares above 2000. For this basic reason, the farming community rejected this project and after 2.5 years of discussions the actors decided not to proceed. In this case the project to restore natural processes to the *Tjongerkanaal* was not implemented.

Case Summary

Wetterskip Fryslân, the municipalities of *Herenveen* and *Ooststellingwerf*, and the Province of Friesland are the implementers in this case. With the *Ministerie van Volkshuisvesting Ruimtelijk Ordening en Millieu* they work to enable this rural planning initiative, including the restoration project implementation. To understand implementer opinions one representative of *Wetterskip Fryslân* was interviewed. According to this actor, the national government was financially involved, while the other actors worked more actively in decision-making. The implementation plan requires the approval of the farming community. Farmers are the project targets, represented by a farmer's union (the *Land- en Tuinbouw Organisatie*) within the working group. The implementer is motivated toward implementation, seeing this project as a way to bring natural processes back to the area. The target is motivated against implementation, finding the project is a "win" for nature and a "loss" for farmers. Both implementer and target display high information scores for this case. Both have knowledge of actors and their qualifications, are aware of the policy, and of policy requirements. Both interviewees state that actors shared information during the process, and suffered no problems from a lack of information or uncertainties. The implementer and target have comparable and moderate power scores. While the implementer is a financial contributor and a stakeholder in the project, even sharing some of the responsibility for seeing that the policy requirements are fulfilled, it is not clear how other formal controls for the area (e.g.

monitoring, reporting results) would be distributed. When describing interactions the implementer states that “there was no way to change them” and that because of the hectare limitation “there was no room for cooperation”. The target does not have any of the formal controls on the land that stem from responsibility, monitoring or result reporting, however they do have the backing of the original agreement limiting the total number of hectares for transformation from agriculture to farming. The balance of power from the perspective of the implementer is +0.07. According to this analysis, the power is balanced between the two actors.

Hypotheses using Contextual interaction theory given the actor scores

Likelihood to implement at all: if application of the instrument would contribute positively to the objectives of one actor, while the other actor is negative, and the information of the positive actor is sufficient, then the character of the interaction process will be dependent on the balance of power between the actors. A relatively equal balance of power will lead to opposition. Opposition can take the forms of negotiation and conflict.

Does this case agree? Yes, opposition describes the interactions of these actors within this process. However the case could not currently be described as in negotiation or conflict. The implementer dropped the project because they did not have the authority to override the 2000 hectare limit. That being said, it is certainly possible that this area comes into discussions for another project some time in the future. The target interviewee remarked that while area residents say “keep it as it is” and do not like change in general, opinions can always change in the future as farmers retire or the children of farming families choose different career paths. The *Land- en Tuinbouw Organisatie* representative finds that nature projects can be good opportunities for farmers who receive a cash settlement upon retirement, though he emphasizes this is true “only at the right price”. The *Land- en Tuinbouw Organisatie* finds it important to make the best of national nature policy to benefit farmers. In this way, nature policy programs can be a boon specifically for farmers who no longer wish to farm. Barriers to implementation include the target’s lack of motivation, which if neutral or positive could lead to learning towards cooperation or cooperation, respectively. It is possible that after several years local farmers could experience a change in motivation, spurred by a buy out “at the right price” or a package ensuring relocation to a comparable farm. Implementation might also be achieved via a definitive shift of the power balance in favor of the implementer, yielding forced cooperation. This could occur under the auspices of a different spatial planning initiative—though it is important to note that such a project would also include compensation packages for the farmers. In this way, positive treatment of displaced farmers is integral to either route that authorities might take, especially considering the goals of the *Land- en Tuinbouw Organisatie*. Future interactions could follow either road, or the project could remain shelved indefinitely.

Roles of actors, according to interviewees

	Implementer says	Target says
Who is the initiator?	*Wetterskip Fryslân*, the municipalities of Herenveen and Ooststellingwerf, the Province of Friesland, and the national government	Provincial government
Who are the users of the area?	Agriculture and nature	Dairy farmers
Who are the stakeholders?	*Wetterskip Fryslân*, the municipalities of Herenveen and Ooststellingwerf, the Province of Friesland, and the national government, local farmers, *Staatsbosbeheer* (Dutch State Forestry Service), *It Fryske Gea* (The Frisian Landscape), *Vereniging Natuurmonumenten* (Association of Nature Monuments)	the Province of Friesland, *Wetterskip Fryslân*, municipal governments, nature organizations, farmers, and *Land- en Tuinbouw Organisatie*
Who reports the results of this project?	Not applicable, not implemented	Not applicable, not implemented
Who monitors the site after implementation?	Not applicable, not implemented	Not applicable, not implemented
Who does the public think is primarily responsible?	Not applicable, not implemented	Not applicable, not implemented
Who sees that the policy requirements are fulfilled?	*Wetterskip Fryslân* for a portion of the requirements; though this is not their primary responsibility	Does not know

Ottershagen: Not Implemented (3)

Policies and/or Programs

European Union Water Framework Directive (*Europese Kaderrichtlijn Water).*

Scores

Likelihood to implement at all

Actors	**Motivation**	**Information**	**Power**
Implementer: *Waterschap Regge en Dinkel*	10/13 (+.54)	11/14 (.79)	4/6 (.67)
Target: local citizens, represented by a *Dinkelland* Municipal Council member	2/14 (-.71)	16/16 (1.00)	4/7 (.57)

Case History

This project is part of an effort to realize European Union law within the Netherlands. The European Union Water Framework Directive promises integrated river basin management for Europe. In this case, this means creating an area totaling 250 hectares (618 acres) for water retention by 2015 to ensure safety from flooding in urban areas. The conservation organization *Vereniging Natuurmonumenten* currently owns 60 hectares within the 250 hectares, which will be dedicated for this use. The project must be voluntary among actors, in that stakeholders together institute an integrated plan through an inclusive process. In general terms, the process should follow this pattern. First, a *schepshuit* or 'creative boat' is formed, meaning that actors join together in a meeting and only leave when everyone agrees to a plan. Next, the *Waterschap Regge en Dinkel* presents the results of this meeting to the relevant local municipalities. After receiving permission from the municipalities to go forward with the plan, the *Waterschap Regge en Dinkel* works to build support among farmers and with the *Land- en Tuinbouw Organisatie (*Agriculture and Horticulture Organization), a farmer's union. Farmland must be inundated to fulfill the project as currently envisioned by the *Waterschap Regge en Dinkel*. Usual methods of building support are to offer alternatives to farmers, such as buying farms or trading land for farms in other areas. However in this case, many locals have no interest in being bought out or transferred to other farming areas. Local farmers and citizens have informed the *Waterschap Regge en Dinkel* that they are currently uninterested in this plan. The project has not been implemented.

Case Summary

The *Waterschap Regge en Dinkel* works to implement the European Union Water Framework Directive, and is therefore considered the implementer for analysis. As described above, implementation of this project requires the approval of local residents to proceed. Local residents are the target for analysis; in this case local resident views are represented by a municipal council member. Analysis is based on an interview with a local council member who represents citizens and farmers in the process. While the implementer is motivated toward the project, the target is strongly motivated against the project. The implementer has goals for protecting water quality and quantity, which this project could fulfill. The targets make a living from this land, and do not want to move. The target interviewee states that the Municipality is already beautiful, and adding 250 hectares of wetlands will not improve upon this beauty. He also finds that these changes will not improve the social or economic climate of the area. The implementer himself states that locals particularly identify with the region (*Twente*) and do not want to leave. Both the target and implementer have high information scores. Both display knowledge of actors and their qualifications, and are aware of the policy and its requirements. Both interviewees report information sharing among actors, though the implementer is unsure whether residents want to work together with them on this project. The implementer describes uncertainty about who might want to migrate, and what individuals think about the project. There are no information problems concerning technical aspects of the project at this stage. Both the implementer and target have

moderate power scores. The implementer holds some formal authority for the project and its results, while the targets hold all rights related to private land ownership. The balance of power from the perspective of the implementer is +0.10; neither actor holds the balance of power in this analysis

Roles of actors, according to interviewees

	Implementer says	**Target says**
Who is the initiator?	*Waterschap Regge en Dinkel*	*Waterschap Regge en Dinkel*
Who are the users of the area?	Farmers, *Vereniging Natuurmonumenten*	Agriculture
Who are the stakeholders?	Province Overijssel, *Waterschap Regge en Dinkel*, farmers, *Vereniging Natuurmonumenten*, private landowners, recreation representatives, Municipality of Dinkelland	Province Overijssel, *Waterschap Regge en Dinkel*, agriculture, *Vereniging Natuurmonumenten*, *Land- en Tuinbouw Organisatie (*Agriculture and Horticulture Organization), Municipality of Dinkelland
Who reports the results of this project?	If implemented, *Waterschap Regge en Dinkel*	Not applicable, not implemented
Who monitors the site after implementation?	Not applicable, not implemented	Not applicable, not implemented
Who does the public think is primarily responsible?	Not applicable, not implemented	Not applicable, not implemented
Who sees that the policy requirements are fulfilled?	If implemented, *Waterschap Regge en Dinkel*	Does not know

Hypotheses using Contextual interaction theory given the actor scores

Likelihood to implement at all: if application of the instrument would contribute positively to the objectives of one actor, while the other actor is negative, and the information of the positive actor is sufficient, then the character of the interaction process will be dependent on the balance of power between the actors. A relatively equal balance of power will lead to opposition. Opposition can take the forms of negotiation and conflict.

Does this case agree? Opposition adequately describes the interactions in this case. This case was classified as “not implemented” because local farmers and citizens have informed the project managers that they have no interest in this project. However, unlike many of the “not implemented” cases included in the study, the implementer treats the project as an ongoing process. The implementer presents the future for this project in a hopeful and positive way, stating that success will take time. The implementer states that no one involved desires a 10 year battle with stakeholders. They instead work in a stepwise manner, and when resistance is too great they will stop the project, then try again some time in the future. He is attuned to the difficulties of balancing the requirements of European law and local citizens,

stating that “everyone must be a winner” in this continuously adaptive process. The target states that perhaps a different plan could be more successful. For example, instead of sequestering one large swath of land, he finds that broadening the entire water system could allow for water retention without threatening these farmers. He finds that the Netherlands was once all agriculture, now the pendulum has swung in the other direction and it is being over-dedicated to nature. Like the implementer, he states the importance of balance. He also remarks that while 250 hectares is nothing on a national or European scale, to this community it is a great deal of land. When describing the situation, the implementer states that there is “a lot of resistance” and that it is the responsibility of the *Waterschap Regge en Dinkel* to convince the targets that “this will benefit them”. The target finds “there must be a compromise”, and envisions this will include widening all waterways. The theory highlights barriers to implementation in this case. The first barrier is the lack of motivation for the project displayed by the target. If the implementers are able to convince the targets of this plan, or at least attain neutrality about the project they have a likelihood of building a cooperative process. Another possibility is that the implementer gains formal power to control the situation, leading to a situation of forced cooperation. While a possibility, the concept of forcing stakeholders to accept a plan they do not want runs counter to the adaptive and inclusive process that the implementer describes. It seems highly unlikely that future interactions would take a tone of forced cooperation. The target representative states that the compromise he envisions is to widen all waterways in the basin, instead of creating one large nature area for water retention. This analysis only shows the barriers to implementation of the current plan. This potential compromise described by the target, though not explicitly included in this analysis, could also prove a possibility for the future of this area.

Horstermeer: Not Implemented (4)

Policies and/or Programs:

The Netherlands Nature Policy Plan, National Ecological Network (*Natuurbeleidsplan, Ecologische Hoofdstructuur*)

Scores

Likelihood to implement at all

Actors	Motivation	Information	Power
Implementer: *Waterschap Waternet*	12/15	11/14	4/7
(Waterboard Waternet)	(+.60)	(.79)	(.57)
Target: Municipality of *Wijdemeren*	3/11	5/9	3/6
	(-.46)	(.56)	(.50)

Case History

The elements of this case eventually became two distinct projects. The first began as a *landinrichting* in the mid-1990s. *Landinrichting* programs, managed by the provincial government, are large-scale projects that seek to solve a number of planning and development issues in an area by enabling land swaps and sales to promote the best overall scenario for agriculture, development and nature. The area under question consists of a deep polder in the midst of shallow lakes. Historically the polder proved difficult to maintain due to seepage, as the shallow lakes lost water to the deep polder. In other words, the polder created a sink, pulling water from the lakes. An idea developed to change the polder back to a lake to stop water loss, improving water quality. This site would join a mosaic of nature areas, as it is situated near *Vereniging Natuurmonumenten* bird habitat areas. This case did not include the typical conflict between agriculture and nature; instead local residents found the project unacceptable for implementation. The implementer states that while 80-90% of residents agreed with the plan, even with 10-20% in dissent the project could not proceed. Having failed in this project, around 2004 implementers decided to change to another plan which would create a much smaller but more acceptable restoration for the area, which became a second project. For this analysis I focus on the first project as a case of failed implementation.

Case Summary

The project implementer is *Waterschap Waternet*, which works to realize this nature restoration project. Implementation requires the voluntary support of local citizens, who are the policy target. Target point of view for analysis is based on an interview with a representative of the local municipality. While the implementer is motivated toward project implementation, the target is motivated against the project. The implementer envisions this project as an opportunity to improve water quality in the region. The target is suspicious of the implementer's arguments. The target interviewee also states that while more recent arrivals do not have the same emotional tie, the project was especially unattractive to people born in this community. The implementer has a high level of information in this analysis, while the target's information level is moderate. The implementer is knowledgeable of actors and their qualifications, aware of the policy for implementation, its benefits, and requirements. The implementer reports that while they felt they "did enough" at the time to inform other actors, the other groups involved found that they did not. The target is also knowledgeable of actors and their qualifications, but knows little about policy specifics, and describes local citizens as "suspicious" about the *Waterschap Waternet's* technical information. Both target and implementer have moderate and comparable power scores. The balance of power from the perspective of the implementer is +0.07. Neither actor holds the balance of power in this analysis.

Hypotheses using Contextual interaction theory given the actor scores

Likelihood to implement at all: if application of the instrument would contribute positively to the objectives of one actor, while the other actor is negative, and the

information of the positive actor is sufficient, then the character of the interaction process will be dependent on the balance of power between the actors. A relatively equal balance of power will lead to opposition. Opposition can take the forms of negotiation and conflict.

Does this case agree? Yes, opposition is an apt description of this case. According to the target, problems arose when the implementer failed to gain local support for the project. The target remarks that this type of project usually includes working groups and committees featuring local citizens and local politicians. The target interviewee states that not including politicians in the process was a key mistake made by the implementer, and a great impediment to creating *draagvlak*, or support, for the project. The target also states that the implementer "was not listening", "tried to force the project", and "wanted to hurry, not talking to politicians". Upon realizing the lack of support the implementers dropped the project, stating they "did not want a 20-30 year court battle". Instead, they worked to create an acceptable alternative plan using the first process as a learning experience. For the second project, the implementers worked to get the local community members and politicians as involved as possible, and organized them within the process "to [provide] an important voice". The theory does highlight barriers to implementation, but in this case they are irrelevant, as actors have permanently halted this process in favor of slowly and gradually building support for a less contentious project. In this case neither actor spoke of the possibility of reviving this project in the future.

Roles of actors, according to interviewees

	Implementer says	**Target says**
Who is the initiator?	*Waterschap Waternet*	*Ministerie van Verkeer en Waterstaat* (Ministry of Transport, Public Works and Water Management)
Who are the users of the area?	Residents, one farmer, a few small businesses	Citizens, residents, a few farmers, several businesses
Who are the stakeholders?	Province of Noord Holland, *Waterschap Waternet,* Wijdemeren municipal council, *Vereniging Natuurmonumenten*, residents foundation, Wijdemeren municipal government, and the national government from a distance	*Vereniging Natuurmonumenten,* Province of Noord Holland, *Waterschap Waternet,* Municipality of Wijdemeren, citizens, farmers, one small environmental organization
Who reports the results of this project?	Not applicable, not implemented	Not applicable, not implemented
Who monitors the site after implementation?	Not applicable, not implemented	Not applicable, not implemented
Who does the public think is primarily responsible?	Not applicable, not implemented	Not applicable, not implemented
Who sees that the policy requirements are fulfilled?	*Waterschap Waternet* for water conditions, *Vereniging Natuurmonumenten* for management issues, Province of Noord Holland for financial issues	Not applicable, not a policy worker

Appendix F: Case Summaries Finland

Siikalahti: Implemented (1)

Policies and/or Programs:

European Union Natura 2000 Network, via the Bird and Habitat Directives.

Scores

Likelihood to implement at all

Actors	Motivation	Information	Power
Implementer: *Metsähallitus* (Finnish State Forestry Board)	18/21 (+.71)	14/16 (.88)	6/7 (.86)
Target: *Parikkalan Kunta* (Municipality of *Parikkala*)	17/20 (+.70)	10/12 (.83)	3/8 (.38)

Adequacy of implementation

Actors	Motivation	Information	Power
Implementer: *Metsähallitus*	20/21 (+.90)	14/16 (.88)	6/7 (.86)
Target: *Parikkalan Kunta*	19/20 (+.90)	10/12 (.83)	3/8 (.38)

Case History

Siikalahti is considered one of the best Finnish waterfowl areas as well as an internationally important wetland area due to its diversity of species and value to migratory birds (EU LIFEb, 2007). At the time of the LIFE application *Siikalahti*'s open water areas were threatened with unmanageable overgrowth (EU LIFEb, 2007). In 1995 *Metsähallitus* became owner of the restoration area and began building a project by searching for funding and partnerships. This restoration sought to decrease overgrowth by creating new basins, getting rid of vegetation, and establishing higher water levels in summer (EU LIFEb, 2007). This project was funded by EULIFE, an Economic Development Center, the Municipality of *Parikkalan,* and the Finnish Roads Organization. In the past, *Metsähallitus* experienced situations of conflict when interacting with local residents. To combat this problem *Metsähallitus* approached this project in an open and inclusive manner. This comprehensive approach proved successful; implementation occurred between 2001 and 2003.

Case Summary

In this case *Metsähallitus* plays the role of implementer. This group seeks funding, initiates the project, and works to enable its success. Due to past conflicts, *Metsähallitus* now works in a way that requires the tacit approval of local community members, who play the role of target in this case. In this analysis the target is represented by an interview with an employee of the local municipality. Both implementer and target are positively motivated toward the restoration project. *Metsähallitus* wants to encourage a healthy habitat for important bird species while

the Municipality of *Parikkalan* agrees to the project as a participating member of the process. The target interviewee acknowledges the valuable tourism aspects of the area, describing this area as "a pearl". The implementer and target display high information scores in analysis. Both are knowledgeable of actors and their qualifications, and aware of the policy and its requirements. Neither actor reports problems with information sharing or lack of information during the project. The implementer describes some uncertainties relating to technical aspects of the restoration. The implementer has a high power score while the target has a moderate power score. The implementer maintains a great deal of the formal responsibilities for the project as both landowner and EU LIFE funds recipient. The implementer is responsible for seeing that the policy requirements are fulfilled and monitors the landscape. The target does not have these formal connections and responsibilities for the project, neither monitoring nor being responsible for fulfilling policy requirements. The balance of power from the perspective of the implementer is +.48; the implementer holds the balance of power in this analysis.

Roles of actors, according to interviewees

	Implementer says	**Target says**
Who is the initiator?	*Metsähallitus*	Not a local decision, from the national level
Who are the users of the area?	Recreational users, bird watchers	Tourists, researchers
Who are the stakeholders?	*Metsähallitus, Kaakkois-Suomen ympäristökeskus* (Southeast Finland Regional Environmental Center), *Parikkalan Kunta*, Finnish Roads Organization	*Metsähallitus*, landowners, municipalities
Who reports the results of this project?	Have not done yet	*Metsähallitus* to *Kaakkois-Suomen ympäristökeskus*
Who monitors the site after implementation?	*Metsähallitus*	*Kaakkois-Suomen ympäristökeskus* administers the policy; *Metsähallitus* commissions actions to be taken
Who does the public think is primarily responsible?	*Metsähallitus*	*Metsähallitus*
Who sees that the policy requirements are fulfilled?	*Metsähallitus*	Did not answer

Hypotheses using Contextual interaction theory given the actor scores

Likelihood to implement at all: if application of the instrument would contribute positively to the objectives of one actor, while the other actor is also positive or

neutral, and the information of the positive actor(s) is sufficient to apply the instrument, then the interaction process will have the character of cooperation. When both actors are positive there will even be active cooperation.

Does this case agree? Yes, these actors work in an actively cooperative manner to implement the project. Past conflicts relate to an incident in the 1980s when *Metsähallitus* took away some local citizen access rights. As the target describes it, activities such as berry picking and hunting are a part of everyday life, and in Finland these are respected and acknowledged as "everyman's right" (Finnish Ministry of the Environment, 2007). According to the target interviewee, some locals felt *Metsähallitus* failed to respect everyman's right with this past decision. The *Metsähallitus* interviewee remarks that this project was successful primarily because of a change in local attitudes from that of earlier interactions. According to the implementer, their organization made mistakes in the past and caused "unnecessary conflicts". She remarks that building nature projects on conflict causes difficulties for future work. In addition she finds community support integral to a project's success, stating that *Metsähallitus* needs support even after a project is implemented when maintaining the project. The target interviewee states that *Metsähallitus* "made a good start" with the LIFE project, making the project inclusive even to those "really against the project". This interviewee found that *Metsähallitus* was not afraid of problems or "the hard questions" which is "necessary for a good project". *Metsähallitus* enabled an inclusive process from the project's inception causing any former worries or distrust from locals to quickly disappear.

Adequacy of Implementation: if adequate application of the instrument would contribute positively to the objectives of one actor and also positively or neutral to the other actor, and these actors have sufficient information, then constructive cooperation will evolve. In case both actors are positive this will even be active (constructive) cooperation.

Does this case agree? Yes, actors continue to work together throughout the project implementation to ensure its success. Both actors experience a slight increase in motivation scores between the project phases, due to a growth of trust as actors work together. The target remarks that *Metsähallitus'* participatory and cooperative attitude was a "good change from the past". The target states that project meetings included full and active discussions in which *Metsähallitus* "really listened". Information and power scores remain consistent throughout these phases of analysis.

Hainikaruapa peatland: Implemented (2)

Policies and/or Programs

European Union Natura 2000 Network, via the Bird and Habitat Directives

Scores

Likelihood to implement at all

Actors	**Motivation**	**Information**	**Power**
Implementer: Metsähallitus (State Forestry Board)	11/14 (+.57)	15/17 (.88)	5/9 (.56)
Target: Lapin ympäristökeskus (Lapland Regional Environmental Center) negotiators of land purchase	13/14 (+.86)	8/8 (1.00)	5/7 (.71)

Adequacy of implementation

Actors	**Motivation**	**Information**	**Power**
Implementer: Metsähallitus	12/14 (+.71)	16/17 (.94)	5/9 (.56)
Target: Lapin ympäristökeskus, negotiators of land purchase	13/14 (+.86)	8/8 (1.00)	5/7 (.71)

Case History

As a part of a mire protection program in Finland, a small group of experts joined to discuss peat areas drained for forestry in Southern Lapland. To buy land for restoration the actors needed to inform locals of their plans. *Metsähallitus* created a wetland restoration plan then sought the approval of *Lapin ympäristökeskus* as they give permits for such projects. This project is part of a larger EU LIFE grant called "Protection of Aapa Mires in Lapland and Ostrobothnia". The entire project includes 29 aapa mire subsites totaling 53,700 hectares (1.32 million acres). This analysis centers on one sub-site, the *Hainikaruapa* peatland. The goals of this project were to buy the land for restoration and then bring water back to the area. Re-hydration would be accomplished by damming the channels dug to drain the wetland in the past.

Case Summary

Metsähallitus leads the restoration project, works to enable restoration, and is the implementer in this analysis. A group within *Lapin ympäristökeskus* negotiates the land purchase. Metsähallitus' ownership of the land is a prerequisite to making changes in the area; therefore the land purchase negotiators who enable this acquisition play the role of target in analysis. Target score is based on an interview with one member of the land negotiation team. Both the implementer and target are positively motivated toward restoration. The implementer wants to improve the habitat in this area for wildlife and nature. For the target, negotiating the land purchase is a task they are assigned as employees of Lapin ympäristökeskus. Lapin ympäristökeskus as an overarching organization has an interest in implementing the project as recipients of the EU LIFE funds. The target, while mindful of the feelings

of landowners, uses negotiation as a strategy to attain compliance within the project. Both implementer and target display high information scores. It should be noted that the target is not a policy worker, and was not asked all policy questions. Both actors have knowledge of actors and their qualifications, and are aware of the policy. Neither actor reports a lack of information or problems with sharing information during the process. The implementer has a moderate power score while the target has a higher power score. The implementer will monitor the site after implementation and reports the results of the project. The target's overarching organization also has formal channels of power related to reporting project results and as the EU LIFE funds recipient. The balance of power from the perspective of the implementer is -.15; the target holds the balance of power in this analysis.

Roles of actors, according to interviewees

	Implementer says	**Target says**
Who is the initiator?	A small group of experts including *Metsähallitus* created a mire protection program for South Lapland	*Lapin ympäristökeskus*
Who are the users of the area?	Private owners	Local people, hunters, reindeer herders, landowners
Who are the stakeholders?	*Metsähallitus*, *Lapin ympäristökeskus*, and private landowners	*Metsähallitus*, *Lapin ympäristökeskus,* landowners
Who reports the results of this project?	*Metsähallitus*, *Lapin ympäristökeskus*	*Lapin ympäristökeskus*
Who monitors the site after implementation?	*Metsähallitus*, *Lapin ympäristökeskus*	*Metsähallitus*
Who does the public think is primarily responsible?	*Lapin ympäristökeskus* is the main actor, but *Metsähallitus* manages these areas	*Lapin ympäristökeskus*
Who sees that the policy requirements are fulfilled?	*Lapin ympäristökeskus*	Did not answer

Hypotheses using Contextual interaction theory given the actor scores

Likelihood to implement at all: if application of the instrument would contribute positively to the objectives of one actor, while the other actor is also positive or neutral, and the information of the positive actor(s) is sufficient to apply the instrument, then the interaction process will have the character of cooperation. When both actors are positive there will even be active cooperation.

Does this case agree? Yes, these actors work together in an actively cooperative way to enable the restoration. The implementer states that in general locals "think it is crazy to restore peat areas". With this in mind, *Metsähallitus* worked with private

landowners and hunting groups to create the restoration plan. The target explains that while in theory any landowner can refuse to sell their land, in practice the government may use expropriation to fulfill the goals of the conservation area. In this case they did not expropriate any land; the land negotiation process, however, took approximately three years. As the target describes this interaction, for some land owners negotiating was a process of a few weeks, while for others a process of three full years. The target found a few of the landowners very emotional during negotiations. The implementer states that peat areas drained for forestry in this region are not considered especially valuable as forest land. Perhaps this perception helped the negotiation process over time.

Adequacy of Implementation: if adequate application of the instrument would contribute positively to the objectives of one actor and also positively or neutral to the other actor, and these actors have sufficient information, then constructive cooperation will evolve. In case both actors are positive this will even be active (constructive) cooperation.

Does this case agree? Yes, after the land is purchased, actors continued to work together to restore the wetlands. The implementer's motivation and information level increase over the course of the project. Some social motivation of local citizens against the project disappeared after the land purchase negotiations were completed. In addition, private landowners were more cooperative about sharing information after the completion of the land negotiation. Plans to halt peat degradation required bringing more water into the area, but process actors took care in the placement of dams to cause minimum impact to neighboring landowners. *Metsähallitus* created a plan to saturate restoration areas without damaging private land. When private land was inundated, *Metsähallitus* paid reparations to the owners. The target's motivation, information, and power scores remain consistent between the phases of analysis.

Koitajoki: Implemented (3)

Policies and/or Programs

European Union Natura 2000 Network, via the Bird and Habitat Directives

Scores

Likelihood to implement at all Actors	**Motivation**	**Information**	**Power**
Implementer: *Pohjois-Karjalan ympäristökeskus* (North Karelia Regional Environmental Center)	8/12 (+.33)	16/17 (.94)	6/9 (.67)
Target: *Metsähallitus* (State Forestry Board) Natural Heritage Services	12/12 (+1.00)	8/8 (1.00)	4/7 (.57)

Adequacy of implementation

Actors	**Motivation**	**Information**	**Power**
Implementer: *Pohjois-Karjalan ympäristökeskus*	8/12 (+.33)	17/17 (1.00)	6/9 (.67)
Target: *Metsähallitus* Natural Heritage Services	12/12 (+1.00)	8/8 (1.00)	4/7 (.57)

Case History

This project is part of a large EU LIFE project comprised of nine Natura 2000 sites totaling approximately 13,000 hectares (32,100 acres) of both mires and forests. The LIFE project includes restoring 300 hectares (740 acres) of boreal forest and 300 hectares of mires. The *Juurikkasuo* mire is a state owned area of 72 hectares (178 acres) and one of the project sub-sites. *Juurikkasuo* mire is the restoration project described in this analysis. The goal of the *Juurikkasuo* mire restoration is to cease draining the site, encouraging the growth of mire vegetation. Restoration measures include filling ditches created in the past to drain the mire as well as removing trees that grew on site as a result of draining the mire. Overall project goals also include improving facilities for outdoor activities and environmental tourism in the sites. Fifty percent of the project was funded by EU LIFE while the other 50% was co-funded by *Pohjois-Karjalan ympäristökeskus* and *Metsähallitus*. This is an example of a successfully implemented project; restoration of the site began in January of 2004.

Case Summary

Pohjois-Karjalan ympäristökeskus works to enable project implementation by initiating the project as well as applying for and receiving LIFE funding. *Pohjois-Karjalan ympäristökeskus* plays the role of implementer in this analysis. While regional environmental centers manage privately owned conservation areas, *Metsähallitus* manages state-owned areas. Therefore *Metsähallitus* quickly becomes involved in the project. *Metsähallitus* cooperation was necessary within the state-owned areas designated for this project, including the *Juurikkasuo* mire. *Metsähallitus* plays the role of target for analysis. The implementer and target are both positively motivated toward the project, the target has an extremely high score while the implementer has a moderate score; both encourage and support habitat restoration for conservation purposes. Though *Metsähallitus'* overarching organization includes other divisions such as Forestry, in this project the Natural Heritage Services group took the lead. Both actors have high information scores in this analysis. Implementer and target are knowledgeable of actors and their qualifications, and aware of the policy used. Actors describe no problems with sharing information during the process. The implementer remarks there were some uncertainties when dealing with potential profits from timber sales, described more fully below. The implementer and target have moderate, comparable power scores. The implementer is the project initiator, is responsible for seeing that the policy requirements are fulfilled, and reports the results of the project. The target collects data, monitors the site, and assists the implementer in reporting results. The balance

of power from the perspective of the implementer is +.10. Neither actor holds the balance of power in this analysis.

Roles of actors, according to interviewees

	Implementer says	**Target says**
Who is the initiator?	*Pohjois-Karjalan ympäristökeskus*	*Pohjois-Karjalan ympäristökeskus* and *Metsähallitus* Natural Heritage Services
Who are the users of the area?	Locals for hunting, berry picking and nature recreation	People who like outdoor activities, University of Joensuu student researchers, and entrepreneurs with outdoor recreation services
Who are the stakeholders?	*Metsähallitus* and the users	*Metsähallitus* Natural Heritage Services and *Metsähallitus* Forestry Division
Who reports the results of this project?	*Pohjois-Karjalan ympäristökeskus* to the European Union and the National Government	Primarily *Pohjois-Karjalan ympäristökeskus* but also *Metsähallitus*
Who monitors the site after implementation?	*Pohjois-Karjalan ympäristökeskus* and *Metsähallitus*	*Metsähallitus*
Who does the public think is primarily responsible?	*Pohjois-Karjalan ympäristökeskus* and *Metsähallitus*	*Pohjois-Karjalan ympäristökeskus* and *Metsähallitus* Natural Heritage Services
Who sees that the policy requirements are fulfilled?	*Pohjois-Karjalan ympäristökeskus*	*Metsähallitus* does the practical work while the Ministry of Environment makes the final decisions

Hypotheses using Contextual interaction theory given the actor scores

Likelihood to implement at all: if application of the instrument would contribute positively to the objectives of one actor, while the other actor is also positive or neutral, and the information of the positive actor(s) is sufficient to apply the instrument, then the interaction process will have the character of cooperation. When both actors are positive there will even be active cooperation.

Does this case agree? Yes, actors worked in a cooperative way to design and plan the project. The implementer finds that most locals liked the project, but describes the timber division of *Metsähallitus* as somewhat less enthusiastic about restoration in general. This representative states that restoration projects are perceived as a threat to timber workers. In contrast the target does not mention any problems within their organization regarding the project goals. This project may be unique in that it required the work of timber jacks to remove trees from the drained mires. In

this way it provided immediate work for those in the timber industry, including *Metsähallitus'* Forestry Division.

Adequacy of Implementation: if adequate application of the instrument would contribute positively to the objectives of one actor and also positively or neutral to the other actor, and these actors have sufficient information, then constructive cooperation will evolve. In case both actors are positive this will even be active (constructive) cooperation.

Does this case agree? Yes, actors cooperated to implement the project. Interestingly this project suffered complications during the tree removal phase. It is a strict condition of LIFE projects that they may not produce a profit for any actors involved. In this case, removal of the trees first presented a problem in that selling these trees could yield net profits. Making a profit from the project would jeopardize EU funding. While this complicated the implementation, actors were able to manage the problem effectively. Over time the actors discovered that tree removal also dramatically increased project cost estimates; using funds from the sale of trees enabled further tree removal, yielding no net profit from the project. This learning aspect of the project explains the implementer's increase of information levels between project phases. Other actor characteristics remained consistent between the first and second phases of analysis.

Lake Vaahersalonlampi: Implemented (4)

Policies and/or Programs

National waterfowl habitats conservation program, European Union Natura 2000 Network, via the Bird and Habitat Directives.

Scores

Likelihood to implement at all

Actors	**Motivation**	**Information**	**Power**
Implementer: *Etelä-Savon ympäristökeskus*	9/10	6/6	6/9
(South Savo Regional Environmental Center)	(+.80)	(1.00)	(.67)
Target: *Oriolus* Bird Watching Organization	13/14	13/13	3/8
	(+.86)	(1.00)	(.38)

Adequacy of implementation

Actors	**Motivation**	**Information**	**Power**
Implementer: Etelä-Savon ympäristökeskus	9/10	6/6	6/9
	(+.80)	(1.00)	(.67)
Target: Oriolus	13/14	13/13	3/8
	(+.86)	(1.00)	(.38)

Case History

Lake *Vaahersalonlampi* is a part of the national bird wetlands conservation program, is a Finnish Nature Conservation Area, is a Ramsar wetland of international importance, and is a part of the Natura 2000 network. This wetland experiences eutrophication[3] due to effluent discharge which is exacerbated by a nearby peat mining operation (Ramsar, 2008d); as the regional environmental center is responsible for the health of the system, they initiated a restoration to combat overgrowth. Project goals included bringing the water to its original condition by reducing the lake reed growth and increasing areas of open water to promote biodiversity and nature tourism. The environmental center contacted the birding organization *Oriolus* to gather data about the breeding birds in the area, and to assess migrating birds. This project enhanced water quality of the lake, improving fishing, bird nesting habitat, and the possibilities for bird watchers. This case represents a successfully implemented wetland restoration project.

Case Summary

Some portions of the area are still owned by local people, so the environmental center must have owners approve their restoration plans—their approval, however, never became an issue in the context of this restoration. Landowners were invited to informational project meetings and could submit comments on the plans. In fact the South Savo regional environmental center was the primary project participant: they made all decisions, and were the source of funding or recipients of the majority of funds for the project. *Oriolus* was the only other project participant, serving as bird and waterfowl experts in the process, and reporting data from years of bird inventories of the area to the South Savo regional environmental center. *Etelä-Savon ympäristökeskus* is the implementer in this analysis, they initiate and direct the project in all stages. *Oriolus* plays the role of target, in this case they enable the project by providing data to the implementer about changes in bird species over time. Both actors are strongly motivated toward implementing the project. The South Savo regional environmental center feels responsible for maintaining the site's quality as a nationally and internationally important bird wetland. *Oriolus* voluntarily, through its member network, maintains records about birds in the region. Their stated goals are to participate in decision-making concerning the protection of birds, and to help bring to light new potentially important bird areas. For both actors, protecting this bird area's quality is a priority. Both implementer and target display high levels of information in the process. The implementer is aware of policy actors and their qualifications, and does not describe difficulties in obtaining information during the process. The target is equally knowledgeable of actors and their qualifications, and also describes no difficulties in obtaining information in the process. The implementer achieves a high power score while the target has a low power score. The implementer is clearly in charge of this project; they make all decisions, report project results, will monitor the site after

[3] Eutrophication is stimulated growth in water bodies caused by runoff from intense nutrients in pollution (Nebel and Wright, 2000).

implementation, and see that the policy requirements are fulfilled. The target fulfills none of these rolls within the process, but is a stakeholder. The balance of power from the perspective of the implementer is +.29; the implementer holds the balance of power in this analysis.

Roles of actors, according to interviewees

	Implementer says	**Target says**
Who is the initiator?	*Etelä-Savon ympäristökeskus*	*Etelä-Savon ympäristökeskus*
Who are the users of the area?	Birds and fishermen	Local recreational fishermen, regional birdwatchers
Who are the stakeholders?	Birdwatchers, and farmers whose cattle graze along the lake's shallow shores	Local landowners
Who reports the results of this project?	*Etelä-Savon ympäristökeskus*	*Etelä-Savon ympäristökeskus*
Who monitors the site after implementation?	*Etelä-Savon ympäristökeskus*	Did not answer
Who does the public think is primarily responsible?	*Etelä-Savon ympäristökeskus*	*Etelä-Savon ympäristökeskus* and perhaps local authorities
Who sees that the policy requirements are fulfilled?	*Etelä-Savon ympäristökeskus*	*Etelä-Savon ympäristökeskus*

Hypotheses using Contextual interaction theory given the actor scores

Likelihood to implement at all: if application of the instrument would contribute positively to the objectives of one actor, while the other actor is also positive or neutral, and the information of the positive actor(s) is sufficient to apply the instrument, then the interaction process will have the character of cooperation. When both actors are positive there will even be active cooperation

Does this case agree? Yes, actors cooperate in this process, but in many ways it could be described as a one-actor dominated process. *Etelä-Savon ympäristökeskus* (South Savo Regional Environmental Center) remarks that "there were no other groups involved in this project" and "no other agency got involved with this work". They acknowledge, however, that the regional bird watching society *Oriolus* "took part in local meetings dealing with the restoration plan". *Oriolus* describes their role as supporting already protected wetland areas by collecting data on breeding birds, especially rare breeding birds. In this case, no actor opts to disrupt this process, or influence the situation in a way that promotes an interaction other than cooperation.

Adequacy of Implementation: if adequate application of the instrument would contribute positively to the objectives of one actor and also positively or neutral to the other actor, and these actors have sufficient information, then constructive cooperation will evolve. In case both actors are positive this will even be active (constructive) cooperation.

Does this case agree? Yes, after implementation begins actors continue working in an active and constructive cooperative manner. The target states: "I think the project has been carefully and professionally planned and carried out", adding "there [were] no disagreements, the cooperation went well".

Yyteri Penninsula: Not yet implemented (1)

Policies and/or Programs

European Union Natura 2000 Network, via the Bird and Habitat Directives

Scores

Likelihood to implement at all			
Actors	**Motivation**	**Information**	**Power**
Implementer: City of *Pori*	+ 12/15 (+.60)	+11/14 (+.79)	+3/5 (.60)
Target: member of the local hunting association	Reportedly negative	Unknown	Unknown

Case History

The City of *Pori* wanted to restore coastal meadows on the *Yyteri Penninsula* and applied to EU LIFE for funding for this project. Project goals include opening coastal meadows, clearing reed beds, shrubs and trees, and then keeping these areas open through cattle grazing. This project seeks to return this area to its natural state, improving bird habitat particularly for wading bird nesting. The implementation has not yet occurred as this is a large privately owned area. Only a few areas within the site have been purchased; implementation may take place through buying the remainder of the private land for the state. Buying out private landowners may prove problematic, however, as some locals are not in favor of protecting these areas; they enjoy hunting, fishing, and small boat recreation in the area and fear restrictions on these activities within a Natura 2000 site. The implementers are working now to implement restoration in the areas owned by the state; however, the entire project is not yet being implemented.

Case Summary

The City of *Pori* leads this project and plays the part of implementer for this analysis. It should be noted that the interviewee representing the City of *Pori* now works for the *Lounais-Suomen ympäristökeskus* (Southwest Finland Regional Environmental Center); these two groups work together to implement the project. As with the Central Finland Restoration Project described below, this analysis lacks the interview of a second core actor. The potential interviewee, a representative of the local hunting association, proved uninterested in participating in this research despite several attempts to contact him. This may have been due to unwillingness to submit to a lengthy English language interview, or perhaps a general lack of time.

The contact seemed somewhat interested in the project, but proved unable to make time for an interview. This contact was perceived to be the best potential representative of the local hunting organization as far as language was concerned—the implementer acknowledged it was unlikely that many of the other members spoke English well enough to participate in this research. When this representative proved unable to take part, and was unable to suggest another member, the researcher had no alternative options for obtaining the perspective of the hunting association. Despite the lack of a second interview, analysis of the collected data will take place. The implementer has a positive motivation score. This organization is motivated toward the project, wanting to see the area improved as bird habitat and joining the national network created by Natura 2000. The target's motivation is reportedly negative. The implementer states that local landowners do not want the status of the area to change. The implementer has a high information score. This actor reports a familiarity with other actors and their qualifications, is aware of the policy and its requirements, and understands how to comply with this policy. This actor reports few problems with information in the context of the process, only that occasionally documentation was not available. The implementer has a moderate power score, existing as a stakeholder, project initiator and financial contributor, however the City of *Pori* does not hold any of the formal responsibilities for the project. The information and power scores of the target are impossible to estimate without an interview for analysis.

Roles of actors, according to interviewees

	Implementer says	**Target says**
Who is the initiator?	City of *Pori*	No target interview available
Who are the users of the area?	Most of the land is not in use	No target interview available
Who are the stakeholders?	City of *Pori*, private landowners, local department of boat licensing, bird watchers, fishermen, hunters, *Lounais-Suomen ympäristökeskus* (Southwest Finland Regional Environmental Center), *Metsähallitus*	No target interview available
Who reports the results of this project?	Not implemented; don't know yet	No target interview available
Who monitors the site after implementation?	Not sure at this stage; maybe *Lounais-Suomen ympäristökeskus*	No target interview available
Who does the public think is primarily responsible?	*Lounais-Suomen ympäristökeskus*	No target interview available
Who sees that the policy requirements are fulfilled?	*Lounais-Suomen ympäristökeskus*	No target interview available

Hypotheses using Contextual interaction theory given the actor scores

Likelihood to implement at all: if application of the instrument would contribute positively to the objectives of one actor, while the other actor is negative, and the information of the positive actor is sufficient, then the character of the interaction process will be dependent on the balance of power between the actors. Dominance of the positive actor will lead to (forced) cooperation. Dominance of the negative actor will lead to obstruction. A relatively equal balance of power will lead to opposition. Opposition can take the forms of negotiation and conflict.

Does this case agree? Without the power score of the target, it is impossible to establish the power balance between actors.

Not yet implemented Barriers to implementation are hard to determine without two full interviews for analysis. It is estimated that the target holds a lack of motivation for the project. If this is the case, the first barrier to implementation to overcome would be this lack of motivation. The implementer finds that private landowners do not want the land's status to change while the government does not offer much money when attempting to buy these areas. As the implementer states about this project "few in our organization have media skills… [we] could get approval if the locals understood what we are doing, without information they do not approve. Our duty is to give information, but how? This is not our specialty". As a part of the Natura 2000 network, these actors have until 2010 to finish implementation. Perhaps in that time the implementer can work to build support for the project among local hunters and landowners.

Alhonlahti: Not yet implemented (2)

Policies and/or Programs

European Union Natura 2000 Network, via the Bird and Habitat Directives.

Scores

Likelihood to implement at all

Actors	**Motivation**	**Information**	**Power**
Implementer: *Pirkanmaan ympäristökeskus*	14/14	17/17	8/9
(*Pirkanmaa* Regional Environmental Center)	(+1.00)	(1.00)	(.89)
Target: *Satakunta* game management district	13/18	11/14	3/9
	(+.44)	(.79)	(.33)

Case History

As with many of the Finnish cases, this project is a sub-site within a larger EU LIFE project. This project seeks to improve aquatic bird habitat by managing overgrowth and decreasing predator numbers in four sites totaling 390 hectares (964 acres). Together, the sites are important for "resting, feeding, and breeding" of Bird Directive Annex I listed species such as horned grebe (*Podiceps auritis*), whooper

swan (*Cygnus cygnus*), crane (*Grus grus*), and wood sandpiper (*Tringa glareola*) (EU LIFEc, 2007). Project actions include restoring "open water… by dredging shallows, cutting bushes, and building breeding islets in the overgrown areas" (EU LIFEc, 2007). Measures also include controlling predator species through hunting. The *Alhonlahti* sub-site target areas are privately owned. The restoration plan includes the development of a working group including representatives from birding interests, tourism, the municipality, and hunting groups who create a restoration plan. After getting cooperation of these parties, *Pirkanmaan ympäristökeskus* works toward gaining the approval of landowners for the project. At the time of interviews (summer and fall 2006) this project was not yet implemented.

Case Summary

Roles of actors, according to interviewees

	Implementer says	**Target says**
Who is the initiator?	*Pirkanmaan ympäristökeskus*	*Pirkanmaan ympäristökeskus*
Who are the users of the area?	Hunters, village organizations, fisherman and landowners	Landowners, hunters and ornithologists
Who are the stakeholders?	*Metsähallitus*, *Satakunta* game management district, and *Pohjois-Häme* game management district	Fishing and recreational users
Who reports the results of this project?	*Pirkanmaan ympäristökeskus* to the European Union	*Pirkanmaan ympäristökeskus*
Who monitors the site after implementation?	*Pirkanmaan ympäristökeskus* and a European Union team visits one time per year	The European Union
Who does the public think is primarily responsible?	*Pirkanmaan ympäristökeskus*	*Pirkanmaan ympäristökeskus*
Who sees that the policy requirements are fulfilled?	*Pirkanmaan ympäristökeskus*	Did not answer

Pirkanmaan ympäristökeskus initiates and leads the restoration project, playing the role of implementer in this analysis. To move forward with the project *Pirkanmaan ympäristökeskus* must obtain the approval and cooperation of local hunting interests. Representing these interests, the *Satakunta* game management district plays the role of target for analysis. Both actors are motivated toward the project implementation. As project leader, *Pirkanmaan ympäristökeskus* wants to improve habitat in Natura 2000 sites to encourage and protect important bird species. *Satakunta* game management district's interest in the project may be less obvious. In this project they are incorporated into the management plan to hunt small predators such as mink and

raccoon that predate bird species (described in-depth below). While the target interviewee understands the benefits of aquatic bird habitat and "thinks it's a good project", he also describes working within the process to maintain hunting rights within the project goals. Both target and implementer have high levels of information in this analysis. Both actors are knowledgeable of actors and their qualifications, describe sharing information readily, and have no problems with obtaining needed information. The implementer states that information from the target is not only accessible but also trustworthy. The implementer has a high power score while the target has a moderate power score. *Pirkanmaan ympäristökeskus* will report results of the project, monitor the site, and be responsible for seeing that the policy requirements are fulfilled. *Satakunta* game management district holds none of these positions of formal responsibility for the restoration, but has some informal power as a member of the planning group whose cooperation is necessary to implement. The balance of power from the perspective of the implementer is +.56; the implementer holds the balance of power in this analysis.

Hypotheses using Contextual interaction theory given the actor scores

Likelihood to implement at all: if application of the instrument would contribute positively to the objectives of one actor, while the other actor is also positive or neutral, and the information of the positive actor(s) is sufficient to apply the instrument, then the interaction process will have the character of cooperation. When both actors are positive there will even be active cooperation.

Does this case agree? Yes, through this process the actors work in an active and cooperative manner. The implementer remarks that hunting interests were an important part of the planning process because their goals can be very different from those of nature conservation. In general, such groups prefer to hunt birds rather than to protect them. In this case hunting groups were incorporated into management plans by using their expertise to hunt small predators that negatively effect bird populations. Though it may seem illogical, it is not unique that bird conservationists and bird hunters work together to protect habitat and species; one example is the Ducks Unlimited organization in the United States, who advocate both wetland protection and hunting rights.

Not yet implemented The restoration plan includes the development of a working group including stakeholder representatives who create a restoration plan. After getting cooperation of these parties, *Pirkanmaan ympäristökeskus* conducts meetings with landowners to get their approval and comments on restoration plans. Next *Pirkanmaan ympäristökeskus* must obtain landowner commitments to the actions decided in the working group and planning meetings. *Pirkanmaan ympäristökeskus* must obtain agreement of each individual landowner for any restoration measures that will include their land. At the time of interviews the implementer was working through this process. The implementer interviewee states that landowners have ultimate power in this process. However, *Pirkanmaan ympäristökeskus* worked hard to include relevant stakeholders in a participatory and

inclusive planning process. This strategy proved successful in their interactions with groups such as hunters who would not generally support restoration projects. Their described intention throughout the interview is to continue in this same style when working with landowners. They seek to include landowners in the restoration design, though at this point in the process it is unclear whether this will enable full project implementation. For these actors and interactions the theory highlights no barriers to implementation.

Sääperinjärvi: Not yet implemented (3)

Policies and/or Programs

European Union Natura 2000 Network, via the Bird and Habitat Directives

Scores

Likelihood to implement at all

Actors	Motivation	Information	Power
Implementer: *Pohjois-Karjalan ympäristökeskus* (North Karelia Regional Environmental Center)	12/14 (+.71)	15/17 (.88)	6/9 (.67)
Target: a member of the steering group and birdwatcher	10/14 (+.43)	4/5 (.80)	2/8 (.25)

Case History

This project was initiated in December of 2004 by *Pohjois-Karjalan ympäristökeskus*. In the past *Uudenkylä* Pond was drained to create land for cultivation, but is now under discussion as a restoration project. The lake is an important bird-watching area. The concept behind restoration is to clear areas of undergrowth for breeding birds including the yellow-breasted bunting (*Emberiza aureola*) and black-headed gull (*Larus ridibundus*). There are two restoration possibilities for the area: dredging open water areas or raising water levels. However, increasing the water level may threaten cultivated land nearby. A sixteen member steering group assists in planning the restoration. They give input to *Pohjois-Karjalan ympäristökeskus* who makes the final decisions about the restoration plan.

Case Summary

Pohjois-Karjalan ympäristökeskus leads the restoration planning process and works to enable stakeholder approval; they play the role of implementer in this case. Restoration changes, particularly those involving increased water levels, may affect local community members. The *Pohjois-Karjalan ympäristökeskus* interviewee clearly states: “we can’t do anything without the stakeholders’ permission”. To move forward with restoration requires the consensus of the regional environmental center and the steering group about the details of a plan. This analysis is based on an interview with one member of the steering group, who is also an avid bird watcher.

Both implementer and target are positively motivated about the project. The implementer has clear goals relating to improving habitat for wildlife and supporting conservation. The target supports conservation goals, especially in regard to breeding bird habitat. The target interviewee finds the project may already be "twenty years too late" but hopes its implementation will renew the area. The target and implementer have high information level scores, showing they are knowledgeable of actors and their qualifications. The implementer is aware of the policy and its requirements, and reports information sharing during the process. The target has few information responses about the policy details as he is not a policy worker. The implementer has a high power score while the target has a moderate power score. The implementer is the project initiator, will be responsible for seeing that policy requirements are fulfilled, will monitor the site, and will report the results of the project. In contrast the target holds none of these formal responsibilities for the project, but does have a say in project plans. The balance of power from the perspective of the implementer is +.42; the implementer holds the balance of power in this assessment.

Roles of actors, according to interviewees

	Implementer says	**Target says**
Who is the initiator?	*Pohjois-Karjalan ympäristökeskus*	Just a local idea, this project has been attempted about three times in the last thirty years
Who are the users of the area?	Local inhabitants	Fishermen
Who are the stakeholders?	Fishers, hunters, local inhabitants, bird watchers, ornithologists, and owners of territorial waters	Entomologists, duck hunters, snowmobile riders, fishers, birdwatchers, and farmers
Who reports the results of this project?	*Pohjois-Karjalan ympäristökeskus*	*Pohjois-Karjalan ympäristökeskus*
Who monitors the site after implementation?	*Pohjois-Karjalan ympäristökeskus*	*Pohjois-Karjalan ympäristökeskus*
Who does the public think is primarily responsible?	Not applicable, not implemented	Not applicable, not implemented
Who sees that the policy requirements are fulfilled?	*Pohjois-Karjalan ympäristökeskus*	Not applicable, not implemented

Hypotheses using Contextual interaction theory given the actor scores

Likelihood to implement at all: if application of the instrument would contribute positively to the objectives of one actor, while the other actor is also positive or neutral, and the information of the positive actor(s) is sufficient to apply the instrument, then the interaction process will have the character of cooperation. When both actors are positive there will even be active cooperation.

Does this case agree? Yes, the implementer has worked in a cooperative manner with the steering group as well as this particular landowner. It should be noted that

this case assessment occurs at the beginning stages of the project implementation. In this case *Pohjois-Karjalan ympäristökeskus* is in an interesting position regarding its role and its power. This organization must put European Union directives into practice, but must also respect and work with the local landowners to minimize their risk. *Pohjois-Karjalan ympäristökeskus* needs permission of all landowners who may be affected by the project as they are not all represented on the steering committee. The implementer mentions that this is achieved by going door-to-door to ask each landowner's permission. She states that they are still working to get permission because they are still in the planning stage of the project. If rising water levels cause problems *Pohjois-Karjalan ympäristökeskus* will pay reparations to any affected farmers. While the implementer interviewee finds wetland restoration in general is not a risk, Finnish law states that risk must be measured in respect to each landowner. *Pohjois-Karjalan ympäristökeskus* must make sure changes are not a risk to local landowners and if there is a risk, must pay them. In this way it is an intelligent strategy to include those potentially affected landowners in the process and work hard to get their permission for the project.

Not yet implemented According to this analysis the theory indicates no barriers to implementation. As the implementation proceeds, landowners who may not approve of the project could play the role of target in analysis. While this interviewee represents an individual motivated toward the project, it is quite possible that not all local landowners share a love of bird-watching. According to the *Pohjois-Karjalan ympäristökeskus* interviewee, now it is more accepted that land conservation is as valid a land use as agriculture. However, whether this proves to be a motivating factor for other local landowners remains to be proven. While this target interviewee is motivated, and the implementer has an inclusive and participatory process in place to galvanize implementation, only time will reveal whether this strategy enables effective restoration in this case.

Iso-huppio: Not yet implemented (4)

Policies and/or Programs

Soidensuojelun perusohjelma (Finnish Mire Conservation Programme); METSO-programme (The Forest Diversity Programme for Southern Finland)

Scores

Likelihood to implement at all Actors	Motivation	Information	Power
Implementer: Metsähallitus (State Forestry Board)	14/15 (+.87)	14/16 (.88)	7/9 (.78)
Target: Etelä-Savon metsäkeskus (South Savo Forestry Center)	12/15 (+.60)	15/17 (.88)	2/6 (.33)

Case History

This project involves implementing the national Mire Conservation Programme. The goal of the project is restoring peat land within a state-owned conservation area. The peat land was partially drained in the past through the development of ditches. Changes were made in the landscape in an effort to improve forestry. As the restoration takes place on state-owned land, the greater community is not involved in decision-making for the specifics of this project. Community members were informed about activities planned near their privately-held forest land to ensure they agreed with changes that might affect private holdings. The 1970s Finnish Mire conservation programme (*Soidensuojelun perusohjelma*) was the original basis for this conservation project. A more recently applied policy for restoration is the METSO-programme (The Forest Diversity Programme for Southern Finland), which gives objectives for restoration of forests and peatlands on conservation areas.

Case Summary

Roles of actors, according to interviewees

	Implementer says	Target says
Who is the initiator?	*Metsähallitus*	*Metsähallitus*
Who are the users of the area?	Local people and berry pickers	Anyone—the area is for nature protection
Who are the stakeholders?	Private forest owners, environmental authorities and organizations	Did not answer
Who reports the results of this project?	*Metsähallitus*	Mostly *Metsähallitus* but *Etelä-Savon metsäkeskus* reports some from our point of view
Who monitors the site after implementation?	*Metsähallitus*	*Metsähallitus*
Who does the public think is primarily responsible?	*Metsähallitus*	*Metsähallitus*
Who sees that the policy requirements are fulfilled?	*Metsähallitus*	*Metsähallitus*

Metsähallitus owns the land and initiates the project; they work to enable this restoration playing the role of implementer in this analysis. *Etelä-Savon metsäkeskus* provides technical expertise for developing forestry management plans. In this case they assist *Metsähallitus* in decision-making and planning restoration in a way that produces the best results for all stakeholders. *Etelä-Savon metsäkeskus* plays the role of target in this analysis. Both target and implementer have positive motivation for the project. The implementer works to improve the environmental habitat on its holdings. *Etelä-Savon metsäkeskus* has the task of helping create a

comprehensive plan for this restoration project, bringing all stakeholders needs into consideration. The implementer and target display high levels of information in this analysis. The implementer is knowledgeable of actors and their qualifications, and aware of the policy and its requirements. The implementer reports no problems with information sharing among actors. The implementer interviewee mentions some uncertainty about compensating landowners in case of damaging their holdings. The target is aware of policy requirements and benefits. This actor also reports no problems with information sharing during the process. The target interviewee states that there was "good cooperation" among actors and "information was received openly". While the implementer has a high power score, the target's power score is mmoderate. The implementer is the project initiator, will be responsible for seeing that policy requirements are fulfilled, will monitor the site, and will report the results of the project. In contrast the target does not share most of these channels of formal responsibility. The target reports results of the project as they relate to their organization's goals. The balance of power from the perspective of the implementer is +.45; the implementer holds the balance of power in this analysis.

Hypotheses using Contextual interaction theory given the actor scores

Likelihood to implement at all: if application of the instrument would contribute positively to the objectives of one actor, while the other actor is also positive or neutral, and the information of the positive actor(s) is sufficient to apply the instrument, then the interaction process will have the character of cooperation. When both actors are positive there will even be active cooperation.

Does this case agree? Yes, the project has proceeded in a cooperative manner to date. The analysis indicates no barriers to implementation in this case, and interviews support this conclusion. In interviews the implementer and target mention changing the project plan to gain acceptance among local landowners. When describing interactions with other actors, the implementer emphasizes the importance of informing others about the goals, background, and effects of a project. She states that proper information yields acceptance in most cases. The implementer remarks that there were uncertainties about how changes may effect nearby landowners. The interviewee states "we chose to implement the restoration plan only partially to avoid these situations". Unlike some other 'not yet implemented' Finnish cases (e.g., *Sääperinjärvi* and *Alhonlahti*), in this instance *Metsähallitus* chooses a strategy of avoidance instead of compensation to deal with damage to private land.

Not yet implemented This case seems very likely to be implemented in the future. Interview data supports the theory's indication of a lack of barriers to implementation. Both actors seem aware of how changes in the environment could affect adjacent landowners, and react with a strategy that eliminates risk to these landowners.

Central Finland Restoration Project: Not Implemented (1)

Policies and/or Programs

A regional-level objective including general goals for improving the state of biodiversity in the region

Scores

Likelihood to implement at all

Actors	Motivation	Information	Power
Implementer: *Keski-Suomen ympäristökeskus* (Central Finland Regional Environmental Center)	13/14 (+.86)	14/15 (.93)	1/6 (.17)
Target: local landowners	Reportedly negative	Unknown	Unknown

Case History

This project is not based on a policy *per se*, but on general goals for improving the state of biodiversity in the area. While this may seem an invalid application of the theory, in many cases wetland projects are founded not on strict policies but on imprecise goals (e.g., the United States lacks a national policy for wetland restoration, relying on the goal of 'no net loss') to encourage implementation projects. The general goals of the project were to increase biodiversity values for the region as the wetland lies near a Natura 2000 site, and improve tourism opportunities. The wetland under question had been drained in the past to create arable land. This type of manipulation was only moderately successful, as the area had relatively high water levels in spring and low levels in the autumn. While the area had limited use for fishing in spring and waterfowl hunting in autumn, it was primarily not used by locals. The project plan included bringing water to the area to improve the habitat for fish and waterfowl. The *Keski-Suomen ympäristökeskus* interviewee states that they assumed the project would be positive for local water-right owners and realtors. They also hoped that a gain in recreation benefits would help local land owners feel positively about the project. *Keski-Suomen ympäristökeskus* created the project plan without input from local landowners who subsequently would not approve the restoration plan.

Case Summary

It should be apparent immediately that this analysis includes only the implementer's aspect. Unfortunately in this case there were no local landowners who could communicate about the project in English. The implementer worked to find a representative of the local municipality who might be able to describe the aspect of landowners, but this was not possible. Despite this lack of data, it is interesting to see what we can understand about this case given the implementer's side of the story. In fact, some information about the target's motivation, information and power are made evident by the implementer's responses to questions. *Keski-Suomen ympäristökeskus* plays the role of implementer in this analysis, as they work to

enable the restoration project. Such a project must be approved by local landowners, who represent the target in this analysis. The implementer is positively motivated about the project. *Keski-Suomen ympäristökeskus* works to improve habitat for wildlife in the region. According to the implementer interview, the target is motivated against the project. The implementer interviewee specifically states that local landowners "did not want to understand the benefits" of improving this wetland. The implementer has a high information score, indicating that they are knowledgeable of actors and their qualifications and aware of the objective to be used to implement the project. This actor reports no problems with sharing information or a lack of information during the process. The implementer interview reveals few details about the target's information level; this characteristic is unknown based on the implementer interview. The implementer has an extremely low power score in this analysis. *Keski-Suomen ympäristökeskus* reports having few of the formal responsibilities that will be associated with the project; many of these are indeterminable due to this project being dropped in the early stages. Based on the implementer's responses about the project it is not clear what the power score of the target might be. It is clear that these landowners must approve projects that could affect their land. As the implementer states, "the rights of landowners are very strong in Finland… they are regarded as the Kings of their own land". The implementer also describes that they must obtain written agreements from all landowners to get project approval, and that even if one landowner disagrees the project will not move forward. This indicates real formal power as held by the landowners. It cannot be determined based on this paltry evidence precisely who holds the balance of power between actors.

Roles of actors, according to interviewees

	Implementer says	**Target says**
Who is the initiator?	Local landowners	No target interview available
Who are the users of the area?	Fishers and hunters	No target interview available
Who are the stakeholders?	Landowners and water right owners	No target interview available
Who reports the results of this project?	Not applicable, not implemented	No target interview available
Who monitors the site after implementation?	Not applicable, not implemented	No target interview available
Who does the public think is primarily responsible?	Not applicable, not implemented	No target interview available
Who sees that the policy requirements are fulfilled?	Did not answer	No target interview available

Hypotheses using Contextual interaction theory given the actor scores

Likelihood to implement at all: if application of the instrument would contribute positively to the objectives of one actor, while the other actor is negative, and the

information of the positive actor is sufficient, then the character of the interaction process will be dependent on the balance of power between the actors. Dominance of the positive actor will lead to (forced) cooperation. Dominance of the negative actor will lead to obstruction. A relatively equal balance of power will lead to opposition. Opposition can take the forms of negotiation and conflict.

Does this case agree? This case could very easily be described as a situation of opposition that resulted in the implementer dropping the project. Whether this is obstruction relating to the power dominance of the target is not clear. The implementer interviewee candidly states that when this conflict arose they could have made a decision to apply for permitting through the official process. However, she remarks that to do so would have been both long and difficult; therefore *Keski-Suomen ympäristökeskus* opted to drop the project. In terms of the theory, this indicates a conflict in motivations between the two main actors, and that *Keski-Suomen ympäristökeskus* had a lack of confidence about their chances to enable a successful implementation. *Keski-Suomen ympäristökeskus* does not clearly attribute the end of the project to any use of power by local landowners. The implementer remarks that this type of project is different than those dealing with nationally or internationally designated conservation areas. She states "when a local project is voluntary it depends on the approval of local landowners". The implementer interviewee says that this project was a learning experience, and that since this time *Keski-Suomen ympäristökeskus* has made improvements in their procedure such as the inclusion of local landowners in the process. It is interesting the level of information that can be gleaned from hearing only one side of the story. It is certainly relevant that this project was officially dropped before the interview took place. In this way the implementer interviewee could be forthright without the perception of jeopardizing an ongoing process. In addition this project is acknowledged as a failure, which gives the actor more incentive to explain *why* the project failed. In this instance, such explanations indicated some target characteristics.

According to the theory there are a few barriers to implementation. One option is changing the target's negative motivation for the project, yielding cooperation. Another option would be to increase the implementer's power, yielding forced cooperation. Neither option is likely in this case; landowners are unlikely to undergo a transformation of motivation. In practice the implementer is not even seeking to change target motivation. It is highly improbable that actors will experience a major shift in the power balance. As described by the implementer the landowners have absolute power to control what happens to their land. In another Finnish case (*Hainikaruapa* peatland) one actor spoke of the government's ability to expropriate land. However that was in relation to specific European Union conservation areas and is not applicable in this situation. Barriers to implementation are irrelevant now as the implementer acknowledges this as a failed project, indicating no desire to make it work in the future. While this is not an ideal method for applying the contextual interaction theory, in this case it yielded a satisfactory result given the insurmountable constraints of language.

Site within Paljakka Nature Reserve: Not Implemented (2)

Policies and/or Programs

Luonnonsuojelualueverkosto (Finnish National Network of Nature Reserves)

Scores

Likelihood to implement at all

Actors	Motivation	Information	Power
Implementer: *Kainuun ympäristökeskus*	6/13	12/16	7/9
(Kainuu Regional Environmental Centre)	(-.08)	(.75)	(.78)
Target: Metsähallitus (State Forestry Board)	8/14	15/15	4/7
Nature Conservation Branch	(+.14)	(1.00)	(.57)

Case History

The restoration area discussed in this case involved an approximately 40 hectare (98.8 acre) mire situated inside a nature reserve that was drained for forestry in the past. The project plan included increasing water levels within the mire by filling ditches and building dams, re-hydrating this dry bog. After an initial assessment actors approved the project plan and opted to make more investigations to thoroughly understand project affects. After discovering technical problems on site, the implementer decided to drop the project. The steep slope of the mire created hydrological complications and the lack of a road meant machinery brought into the mire for restoration would cause more harm than good. Having conducted a more thorough survey and analysis actors decided to drop the project. This restoration represents a not implemented case.

Case Summary

At the time of this project, in the mid-1990s, Natura 2000 was not yet implemented in Finland. Instead this was initiated as part of the Ministry of Environment's national network of nature reserves or *luonnonsuojelualueverkosto*. *Kainuun ympäristökeskus* is given tasks to implement by the Finnish Ministry of the Environment, playing the role of implementer in this analysis. *Metsähallitus* is responsible for state-owned land within Finland; therefore any changes made must meet with their approval. *Metsähallitus* plays the role of target in this analysis. Both implementer and target have neutral motivation scores. As this project is over ten years old, both actors describe the restoration in terms of its ultimate failure. The idea of this project was initially interesting to both implementer and target, but as information became available both actors agreed this restoration did not represent benefits for nature. Implementer and target have highly information levels in this analysis. Both actors are knowledgeable of actors and their qualifications, and aware of the policy and its requirements. Neither actor describes problems with sharing information during the process. The implementer has high power score while the target has a moderate power score. The implementer would be responsible for seeing that the policy requirements were fulfilled, and would be responsible for

reporting the results if the project were implemented. The implementer is an initiator, a stakeholder, a user of the area and also contributes financially to the project. The target is also an initiator and would be responsible for seeing that the policy requirements are fulfilled if implemented, but plays a smaller role in formal responsibility for the project. The balance of power from the perspective of the implementer is +.21; the implementer holds the balance of power in this analysis.

Roles of actors, according to interviewees

	Implementer says	**Target says**
Who is the initiator?	*Kainuun ympäristökeskus* and *Metsähallitus*	*Metsähallitus* and *Kainuun ympäristökeskus*
Who are the users of the area?	Primarily research, but also a path through reserve with some walking allowed	Nature research, not open to the public
Who are the stakeholders?	*Metsähallitus* and *Kainuun ympäristökeskus*	None because of the character of the site
Who reports the results of this project?	*Kainuun ympäristökeskus* to the Ministry of Environment	Not applicable, not implemented
Who monitors the site after implementation?	Not applicable, not implemented	Not applicable, not implemented
Who does the public think is primarily responsible?	Not applicable, not implemented	Not applicable, not implemented
Who sees that the policy requirements are fulfilled?	The Ministry of Environment gives us the task, we do the practical work and report results to the Ministry	*Metsähallitus*

Hypotheses using Contextual interaction theory given the actor scores

Likelihood to implement at all: for any interaction to evolve, it is necessary that application of the instrument would contribute positively to the motivation of at least one actor.

Does this case agree? Yes, the project fails to evolve and does not move forward. Information scores were high; both actors learned more about possibilities as the project progressed, leading eventually to information that the project was not beneficial. The implementer interviewee explains that the databases (e.g., Geographic Information Systems) were not well developed when this project was initially planned, stating that if they had the present level of knowledge at the time then they "would not have started planning this project at all". Instead they used the best information at the time to make a plan, but soon found that there were insurmountable obstacles making implementation impossibility.

Funding was another difficulty within this project, but is not described as the limiting factor. The implementer states that they do not always receive funds from the Ministry of the Environment to implement tasks. *Kainuun ympäristökeskus*

worked to get external project funding but was unable. The implementer remarks that they are not eligible for EU LIFE funding in this case as it conditionally requires national partners to contribute 50% of the money and *Kainuun ympäristökeskus* has a small budget. Despite financial problems both actors describe technical difficulties as the primary reason for stopping the project. The theory highlights a few barriers to implementation, namely the neutral motivation of both actors. While these options are theoretically possible they are unlikely in practice. Over time both actors agreed that the environmental costs of the project outweighed the benefits.

Viikki-Vanhankaupunginlahti: Not Implemented (3)

Policies and/or Programs

Finnish nature conservation policy, European Union Natura 2000 Network, via the Bird and Habitat Directives

Scores

Likelihood to implement at all

Actors	Motivation	Information	Power
Implementer: *Uudenmaan ympäristökeskus* (*Uusimaa* Regional Environmental Center)	5/16 (-.38)	14/14 (1.00)	6/8 (.75)
Target: City of Helsinki Environmental Administration	4/13 (-38)	15/16 (.94)	6/8 (.75)

Case History

Viikki-Vanhankaupunginlahti is an important Finnish wetland; it is used by many bird species, and also has high recreation value as it is located in the capital of *Helsinki*. In addition to its status as a Natura 2000 site it also is a Ramsar designated wetland of international importance. For many years the *Viikki-Vanhankaupunginlahti* working group has been preparing projects and implementation plans including the financing of these plans. This working group is comprised of representatives from all relevant local, regional, and national authorities. The chairman of the working group is from the Environmental Center of the City of *Helsinki*. The working group prepares documents for decision makers. The goal of this project (just one of several restoration projects planned for this area) was to restore the wetland for the benefit of bird species by creating more open water spaces. This particular sub-project involved invasive measures such as digging earth and pumping water. As a Natura 2000 site, the actors had to be particularly cautious of how plans to benefit birds might affect other conservation values. After some deliberation, project actors decided that the project should not move forward.

Case Summary

The *Uusimaa* Regional Environmental Center is the regional authority for nature and wetland conservation, and as such led this effort. They are considered project implementer in this analysis. The City of Helsinki is co-owner of the area, and is partially responsible for the nature supported by the site. They play the role of target in this analysis. Both implementer and target have identical negative motivation scores. At the time of interviews, neither actor was motivated toward implementing the project. By analysis, the actors had explored the possibilities of this project and decided that it should not proceed as originally conceived. Both actors report high levels of information in the process. Implementer and target are knowledgeable of actors and their qualifications, aware of relevant policies and their benefits, and report no problems with sharing information or access to information. Implementer and target also have identical power scores: both hold responsibility as stakeholders who would support monitoring of the site, both are financial contributors, and both would have been responsible for reporting the results of the project. The balance of power from the perspective of the implementer is 0.0; power is equal between actors, neither actor holds the balance of power in this analysis.

Roles of actors, according to interviewees

	Implementer says	**Target says**
Who is the initiator?	*Viikki-Vanhankaupunginlahti* working group	City of *Helsinki* and *Uudenmaan ympäristökeskus*
Who are the users of the area?	Local inhabitants	The citizens of *Helsinki*, schools, daycares, tourists from Finland and abroad
Who are the stakeholders?	All domestic and foreign visitors	The University of Helsinki, citizens organizations
Who reports the results of this project?	*Viikki-Vanhankaupunginlahti* working group	City of *Helsinki*
Who monitors the site after implementation?	*Viikki-Vanhankaupunginlahti* working group	The Finnish Environmental Institute (SYKE) paid for by the City of *Helsinki* and *Uudenmaan ympäristökeskus*
Who does the public think is primarily responsible?	*Viikki-Vanhankaupunginlahti* working group	City of *Helsinki* and *Uudenmaan ympäristökeskus*
Who sees that the policy requirements are fulfilled?	*Uudenmaan ympäristökeskus*	City of *Helsinki*

Hypotheses using Contextual interaction theory given the actor scores

Likelihood to implement at all: for any interaction to evolve, it is necessary that application of the instrument would contribute positively to the motivation of at least one actor.

Does this case agree? Yes, no project has evolved in this case. As the implementer states: "it is clear that everything that is prepared is not implemented, ever… and for good reason. In this case another nature element would have been at risk in spite of the fact that birds would have benefitted from the project". Similarly, the target finds that they might have continued by working with lawyers to determine how to proceed, but due to the uncertain nature of these changes in the natural environment, it could turn into a big problem. The theory can highlight barriers to implementation; in this case, the first major barrier is that both core actors hold no motivation for the project. To enable restoration, both actors would need to experience a change in motivation. This seems unlikely, however, as both actors appear to respect that this project has been halted in favor of the legitimate conservation of the site as a whole.

Hyöteikönsuo aapa mire: Not Implemented (4)

Policies and/or Programs

European Union Natura 2000 Network, via the Bird and Habitat Directives

Scores

Likelihood to implement at all

Actors	Motivation	Information	Power
Implementer: *Metsähallitus* (State Forestry Board)	15/18 (+.67)	14/15 (.93)	6/9 (.67)
Target: *Hyöteikkö* communal forest owners	1/12 (-.83)	1/8 (.13)	6/7 (.86)

Case History

The restoration site constitutes 200 hectares (494 acres) of an 883 hectare (2180 acre) aapa mire complex. This 200 hectare area was drained for agriculture in the early 1900s and is partially owned as a communal forest. *Metsähallitus* joined forces with *Metsäntutkimuslaitos* (the Finnish Forestry Research Institute) to restore natural functions of these 200 hectares through preventing mire runoff and restoring hydrology. Historically human labor was used to ditch the mires and destroying this work is upsetting to local residents. Much like the Dutch in-depth case of the North Friesland *Buitendijks*, restoration is not popular with the descendents of people who toiled to drain these areas. Members of the *Hyöteikkö* communal forest were unwilling to sell their land to *Metsähallitus*, who chose to reduce their project by continuing with a smaller area (170 hectares, 420 acres) that did not include this

private land. While some of the project was implemented, this analysis focuses on the communal forest land which did not undergo restoration. This project is an example of a case that was not implemented.

Case Summary

Metsähallitus works to enable restoration of this land to improve wetland functions, playing the role of implementer in this analysis. To implement the project as they first envision it requires the sale of the *Hyöteikkö* communal forest land. *Hyöteikkö* communal forest owners make all decisions about their land, playing the role of target in this analysis. Communal forest aspect is represented by an interview with two members of the forest ownership group[4]. The implementer is strongly motivated toward the project while the target is highly motivated against the project. *Metsähallitus* wants to include this land in the larger project to improve habitat for wildlife. *Hyöteikkö* communal forest owners have no incentive to sell their land to help *Metsähallitus* reach nature goals. They offer to rent the land to *Metsähallitus*, but by law *Metsähallitus* cannot hire land from individuals or organizations. As the implementer describes it, "the general public thinks it is a waste of money and that the mires will eventually restore themselves". The target interviewee simply states they were not interested in selling. While the implementer has a high level of information about the project the target displays a low level of information. Both are knowledgeable of actors and their qualifications. However the target is not generally a policy worker and describes not being included in information sharing during the process. They describe their role as external to decision-making about the project *except* in matters concerning their land. In contrast the implementer interviewee is aware of the policy and its requirements, and describes no problems with information sharing during the process. The implementer has a moderate power score in this analysis while the target has a high power score. *Metsähallitus* initiates the project, would be responsible for seeing that policy requirements are fulfilled, would monitor the site and report results if implementation took place. While the target group does not have formal responsibility connected with the project, they are the landowners, users of the area, and have the ultimate say about what happens with this land. The balance of power from the perspective of the implementer is -.19; the target group holds the balance of power in this analysis.

Hypotheses using Contextual interaction theory given the actor scores

Likelihood to implement at all: if application of the instrument would contribute positively to the objectives of one actor, while the other actor is negative, and the information of the positive actor is sufficient, then the character of the interaction process will be dependent on the balance of power between the actors. Dominance of the negative actor will lead to obstruction.

[4] Uniquely, this interview involved speaking with one member on the telephone who simultaneously discussed the questions with another owner in Finnish during the telephone call.

Does this case agree? Yes, the *Hyöteikkö* communal forest members effectively halt the project on their land holdings. While the implementer moves forward with a limited project, this restoration as initially envisioned is not implemented. The theory highlights several barriers to implementation such as the target's lack of motivation and the implementer's lack of power. While theoretically the target could undergo a shift in motivation yielding cooperation or the implementer might experience an increase in power yielding forced cooperation, as with the *Paljakka* Nature Reserve case listed earlier in this appendix, this is highly unlikely. The implementer has moved ahead with a smaller scale project which they find also benefits habitat and wildlife. In this way the implementer is not really seeking to change the motivation of the target. Concurrently the power balance between these actors is unlikely to experience any shifts. During the course of the project the target explored other options (such as renting this land to *Metsähallitus*) but remains uninterested in selling this land.

Roles of actors, according to interviewees

	Implementer says	**Target says**
Who is the initiator?	*Metsähallitus* and *Metsäntutkimuslaitos* (the Finnish Forestry Research Institute)	*Metsähallitus*
Who are the users of the area?	Area made up of mires and forests	Drained for agriculture; by berry pickers, and hunting in the communal forest
Who are the stakeholders?	*Metsähallitus*, *Metsäntutkimuslaitos*, *Hyöteikkö* communal forest, and local hunters	*Metsähallitus*, *Hyöteikkö* communal forest, and area hunting groups
Who reports the results of this project?	*Metsähallitus* and partners	*Metsähallitus*
Who monitors the site after implementation?	*Metsähallitus* and *Metsäntutkimuslaitos*	*Metsähallitus*
Who does the public think is primarily responsible?	*Metsähallitus*	*Metsähallitus*
Who sees that the policy requirements are fulfilled?	*Metsähallitus*, *Uudenmaan ympäristökeskus* (Uusimaa Regional Environmental Center)	Did not answer

Appendix G Case Summaries New Jersey

Meadowlands Mitigation Bank Implemented (1)

Policies and/or Programs

Clean Water Act section 404 (dredge materials in navigable waters), no net loss goal

Scores

Likelihood to implement at all

Actors	**Motivation**	**Information**	**Power**
Implementer: Landowner as represented by the Louis Berger Group	16/17 (+.88)	11/13 (.85)	8/10 (.80)
Target: Army Corps of Engineers	19/20 (+.90)	16/16 (1.00)	7/8 (.88)

Adequacy of implementation

Actors	**Motivation**	**Information**	**Power**
Implementer: Landowner as represented by the Louis Berger Group	16/17 (+.88)	11/15 (.73)	8/10 (.80)
Target: Army Corps of Engineers	19/20 (+.90)	14/16 (.88)	7/8 (.88)

Case History

In the late 1980s a private landowner worked with the Louis Berger Group environmental consultancy to conduct a wetland restoration with the intention of qualifying for the Meadowlands Mitigation Bank. A mitigation bank is a functioning wetland (natural, created, or restored) closed to future development. Developers or other groups who cannot avoid destroying wetlands purchase credits to mitigate wetland loss. This allows flexibility to enable projects that damage or destroy wetlands to abide by no net loss goals. The Louis Berger Group, representing the landowner, requested an application for registering 206 acres (83.4 hectares) of restored wetland with this state mitigation bank. The proposed wetland restoration included changing the area from a *Phragmites spp.*[5] dominated site to a high and low marsh. Tiner (2002: 251-252) defines high marsh as a "zone of tidal marsh that is irregularly flooded (less than once a day)" while low marsh is a "zone of tidal marsh that is regularly flooded (once or twice a day)". The landowner provided all project funds with the hope of selling mitigation bank credits to recoup the initial investment. Implementation began in 1998 and ended in 2001.

[5] According to the United States National Research Council's Committee on Mitigating Wetland Losses, wetlands "fail to support plant biodiversity… when one or a few species dominate the site" (National Research Council, 2001: 30). They name several such species, including two giant reed grass species (*Phragmites australis and Phragmites communis*) as "notorious for overtaking nutrient-rich wetlands" (National Research Council, 2001: 30).

Case Summary

Roles of actors, according to interviewees

	Implementer says	Target says
Who is the initiator?	Landowner	Landowner
Who are the users of the area?	Landowner	Landowner
Who are the stakeholders?	The "regulatory team", The Louis Berger Group, and the landowner	New Jersey Department of Environmental Protection, state and federal review agencies, Hackensack River Keeper, Littoral Society
Who reports the results of this project?	2001-2006: The Louis Berger Group (representing the landowner) with Army Corps of Engineers oversight. Since 2006: Army Corps of Engineers with New Jersey Meadowlands Commission oversight	2001-2006: The Louis Berger Group (representing the landowner) with Army Corps of Engineers oversight Since 2006: Army Corps of Engineers with New Jersey Meadowlands Commission oversight
Who monitors the site after implementation?	2001-2006: The Louis Berger Group (representing the landowner) with Army Corps of Engineers. Since 2006: Army Corps of Engineers	2001-2006: The Louis Berger Group (representing the landowner) with Army Corps of Engineers. Since 2006: Army Corps of Engineers
Who does the public think is primarily responsible?	Question not asked*	Landowner
Who sees that the policy requirements are fulfilled?	Question not asked*	Army Corps of Engineers for policy within their jurisdiction

* This interview was the first to be conducted for this portion of the project, preceding minor interview instrument changes

The landowner is the implementer, voluntarily initiating and leading this restoration project. The Army Corps of Engineers is the target as inclusion in the bank requires their approval. Both implementer and target display motivation toward this wetland restoration project, having highly positive scores. The project's financial potential motivates the implementer, while the target finds motivation through its duty to oversee successful mitigation bank projects as a part of national no net loss goals. Both parties have high information levels, though there is a drop in information between the stages of analysis. In both stages all parties display awareness about the policy, including policy requirements and benefits of policy compliance. The balance of power from the implementer's perspective is -0.08; the target and implementer have relatively comparable scores for power. The parts of the process over which they have control vary: The Army Corps of Engineers has the power of a regulatory agency with the ability to approve or reject projects seeking to qualify for the mitigation bank while the landowner is the sole decision maker regarding elements of the project, though advised by legal, scientific and technical experts within the Louis Berger Group. As both actors display motivation toward the goal of

restoration, their respective realms of power never develop into a confrontation. The Hackensack Riverkeeper reportedly disapproved of the project, believing this was the development of little more than a “Franken-marsh”. Yet because this project took place on privately owned land it requires no community support, therefore the Hackensack Riverkeeper lacks channels of formal or informal power to impact plans.

Hypotheses using Contextual interaction theory given the actor scores

Likelihood to implement at all: if application of the instrument would contribute positively to the objectives of one actor, while the other actor is also positive or neutral, and the information of the positive actor(s) is sufficient to apply the instrument, then the interaction process will have the character of cooperation. When both actors are positive there will even be active cooperation.

Does this case agree? Yes, in this case participants work together in an actively cooperative manner. In addition to strong motivation, both actors have high levels of information and power, though as described above their power stems from different sources. In the first stage of analysis both actors report no problems with a lack of information among actors or problems resulting from uncertainties about the project. All of these variables contribute to a smooth process as actors make the final decision to proceed with the restoration project.

Adequacy of Implementation: if adequate application of the instrument would contribute positively to the objectives of one actor and also positively or neutrally to the other actor, and these actors have sufficient information, then constructive cooperation will evolve. In case both actors are positive this will even be active (constructive) cooperation.

Does this case agree? Yes, active constructive cooperation is the tone of this project to date. For the second stage of analysis there is neither change in motivation nor in power balance. There is a drop in information level of both the implementer and target. Both actors report difficulties during implementation, including a lack of information and problems with uncertainties. This is the first project of this type managed by the Louis Berger Group then approved by the Army Corps of Engineers. Some absences in information are a result of the newness of the project for these actors. The target describes it as a pioneering project and a learning experience. The implementer remarks that later projects will proceed more quickly as a result of knowledge acquired during this project. Interviewees attribute some delays to the Meadowlands Interagency Mitigation Advisory Commission. Before the project could be approved this group needed to create guidelines for this type of project. The implementer reports this issue doubled project implementation time from six months to one year. This time delay in turn meant normal employee turnover (within the 5-6 participating regulatory agencies) resulted in information gaps as new agency representatives joined the process. In addition to delays,

uncertainties existed in technical marsh restoration details. Goals included producing both low and high marsh areas. The target states that the initial gradation of the site was not high enough, and therefore actors were unsure about how sedimentation would build. Actors resolved these absences in information and technical uncertainties over time. The target reports working together with the implementer to solve problems as they arose. None of the problems jeopardize the ultimate implementation of the project, which successfully gained acceptance into the Mitigation Bank.

Rahway River Floodplain Restoration Implemented (2)

Policies and/or Programs

Federal Emergency Management Act, New Jersey Department of Environmental Protection Green Acres Program, Clean Water Act, section 319H (non-point source management program), National Oceanic and Atmospheric Administration Community-Based Habitat Restoration Program

Scores

Likelihood to implement at all

Actors	Motivation	Information	Power
Implementers: TRC-Omni environmental consultancy, City of Rahway, New York-New Jersey Baykeeper	17/18 (+.89)	9/12 (.75)	5/8 (.63)
Target: Union County Parks Department	17/18 (+.89)	11/11 (1.00)	5/7 (.71)

Adequacy of implementation

Actors	Motivation	Information	Power
Implementers: TRC-Omni environmental consultancy, City of Rahway, New York-New Jersey Baykeeper	18/19 (+.90)	12/12 (1.00)	5/8 (.63)
Target: Union County Parks	17/18 (+.89)	11/11 (1.00)	5/7 (.71)

Case History

The City of Rahway obtained funding to buy and destroy houses built within the Rahway river floodplain, a site suffering from continuous flooding problems (Obrupta and Kallin, 2003). TRC-Omni environmental consultancy, the City of Rahway, and the New York-New Jersey Baykeeper created a plan to restore this 4.50 acre (1.82 hectare) area into a riparian wetland floodplain. Goals included making the area amenable to flooding, improving water quality and providing a space for locals to enjoy nature within this dense urban area. Due to the unique nature of the project, permitting resembled that required for waterfront development (e.g. New Jersey Waterfront Development Permit, New Jersey Individual Wetlands Permit, New Jersey Water Quality Certificate, Army Corps of Engineers Tidal

Wetlands Permit, and a Union County Soil Erosion and Sediment Control Permit) (Obrupta and Kallin 2003). This project received funding from many sources including the Federal Emergency Management Act, New Jersey Department of Environmental Protection Green Acres Program, New Jersey Department of Environmental Protection 319H Grant Funds, National Oceanic and Atmospheric Administration (community based habitat restoration), Fish America Foundation, Union County Freeholders, City of Rahway, New Jersey Wetlands Mitigation Council, and Merck Corporation. This case represents a successfully implemented wetland restoration.

Case Summary

Roles of actors, according to interviewees

	Implementer says	Target says
Who is the initiator?	City of Rahway and Union County employees	City of Rahway
Who are the users of the area?	People walking during lunch hour, birdwatchers, fishermen, dog walkers	People walking during lunch hour, birdwatchers, families
Who are the stakeholders?	New Jersey Department of Environmental Protection, Union County Parks Department, New York-New Jersey Baykeeper, Rahway River Association, Russian Orthodox Church, the local school system, Merck Corporation	New York-New Jersey Baykeeper, Rahway River Association, Sheriff's Labor Assistance Program, Wetlands Mitigation Council, Green Acres Program, the City of Rahway, Union County, the Board of Education, Union County Master Gardeners, local youth groups, Russian Orthodox Church, Merck Corporation, and many individuals
Who reports the results of this project?	Union County	Union County
Who monitors the site after implementation?	Union County, New York-New Jersey Baykeeper, Rahway River Association, Rutgers University	TRC-Omni consultant team for the first five years, then maybe college students in a voluntary way through the county
Who does the public think is primarily responsible?	Union County, but many contributors	Probably the County, but many people involved
Who sees that the policy requirements are fulfilled?	The county is responsible for compliance with original permit conditions	Different groups responsible for different things

The founding partners of this project are TRC-Omni environmental consultancy, the City of Rahway, and the New York-New Jersey Baykeeper. These actors act as project implementers. Implementer motivation, information, and power scores are based on an interview with an individual representing only one of these organizations: TRC Omni environmental consultancy. After the project got off the ground, the implementers approached Union County Parks Department authorities

about their participation in the project. Both the County Parks Department and the City owned land within the proposed site however the city was unable to act as a grant administrator in this case. Therefore the city-owned lands were transferred to the county; the Union County Parks Department fulfills the role of target in this analysis. The target and implementer share strong motivation to transform this flood-prone area into a community asset, not only aesthetically but also in terms of wetland functions such as storm water treatment. Implementer and target display high information scores, including knowledge of actors and their qualifications and a lack of problems with accessibility to information. The implementers display an increase in information level between the first and second analysis phases. The implementer interviewee mentions that actors work to overcome uncertainties over the course of the project, noting that their flexible project design made it easy to deal with such issues. The balance of power from the implementer's perspective is –0.08; the actors have comparable power scores. The implementer led the project during implementation, and since implementation the target has taken on most of the formal responsibilities for the project including monitoring and reporting results.

Hypotheses using Contextual interaction theory given the actor scores

Likelihood to implement at all: if application of the instrument would contribute positively to the objectives of one actor, while the other actor is also positive or neutral, and the information of the positive actor(s) is sufficient to apply the instrument, then the interaction process will have the character of cooperation. When both actors are positive there will even be active cooperation.

Does this case agree? Absolutely; this is a clear case of active cooperation toward project implementation. One might wonder about the reactions of residents who lost homes to create the floodplain. These individuals are not included in the decision-making process, but this housing was not owner-occupied and owners support the project. This project was considered a win-win situation for all stakeholders, clearly gaining sufficient support to implement the project.

Adequacy of Implementation: if adequate application of the instrument would contribute positively to the objectives of one actor and also positively or neutrally to the other actor, and these actors have sufficient information, then constructive cooperation will evolve. In case both actors are positive this will even be active (constructive) cooperation.

Does this case agree? Yes. In this case diverse parties actively and constructively cooperate, combining their expertise to create an extremely successful wetland restoration project. The project was slated to begin on September 11, 2001. Rahway is 15 miles from the World Trade Center, and as with most communities the events of 9/11 made a great and lasting impact on local citizens. This project was able to channel a great deal of post 9/11 community support and community activism into community action. A community planting day was held on the first anniversary of

September 11 in 2002. The project attracted more than 750 children who planted over 15,000 trees and shrubs. It was a hugely successful project incorporating a wide range of community members, as evidenced by the list of stakeholders found in the table above.

The Franklin Parker Preserve Implemented (3)

Policies and/or Programs

Wetlands Reserve Program

Scores

Likelihood to implement at all

Actors	**Motivation**	**Information**	**Power**
Implementers: Natural Resources Conservation Service	19/19 (+1.00)	14/17 (.82)	6/8 (.75)
Target: New Jersey Conservation Foundation	13/17 (+.53)	10/12 (.83)	4/9 (.44)

Adequacy of implementation

Actors	**Motivation**	**Information**	**Power**
Implementers: Natural Resources Conservation Service	19/19 (+1.00)	17/17 (1.00)	6/8 (.75)
Target: New Jersey Conservation Foundation	15/17 (+.77)	11/12 (.92)	4/9 (.44)

Case History

In 2004 the New Jersey Conservation Foundation purchased a 9400 acre (3800 hectare) property from a retiring cranberry farmer who wanted the area withdrawn from agricultural use. The Foundation felt proper stewardship of the area involved wetland restoration of 1100 acres (445 hectares) of agricultural land. Cranberry bogs include manipulated, static water systems that are not ideal for waterfowl. Restoration would include restoring natural hydrology to the area by filling manmade ditches and creating a natural mosaic of micro-topography by “roughing up the soil”. As this is a large area, the Foundation chose to first implement a pilot project of 35.0 acres (14.2 hectares). The pilot restoration is the subject of this analysis. Natural Resources Conservation Service obtained a large Wetlands Reserve Program easement which they then granted to the New Jersey Conservation Foundation to allow wetland restoration financing and to recoup the Foundation’s land purchase investment. The State of New Jersey became partial owners with a 40% interest in the property while the New Jersey Conservation Foundation holds the majority interest (60%).

Case Summary

The Natural Resources Conservation Service is the implementer in this project because they are implementing the policy enabling restoration: the wetlands reserve

program. The Natural Resources Conservation Service must work with the landowner (the New Jersey Conservation Foundation) to realize the implementation, making New Jersey Conservation Foundation the policy target. Both actors display positive motivation toward wetland restoration. The Natural Resources Conservation Service describes the project as "amazing" and the New Jersey Conservation Foundation calls it "unbelievably fantastic". The purchase of this area represents the largest private land acquisition for conservation in the state (New Jersey Conservation Foundation, 2005). The New Jersey Conservation Foundation achieves a lower positive score due to initial undercurrents of social motivation against the project (described below). The two organizations share goals of wetland restoration and nature conservation within the state; both interviewees have a positive attitude toward the program objectives and have confidence in their respective abilities in achieving these objectives. Target and implementer share high levels of information as well. There is a rise in information levels between analyses, which supports the description of this pilot project as a learning experience. Both actors report some uncertainties resulting from the application of New Jersey Pinelands Commission regulations, which became clear during the process. The New Jersey Conservation Foundation has a moderate power score while the Natural Resources Conservation Service has a high power score. The balance of power from the implementer's perspective is +0.31. According to this analysis the Natural Resources Conservation Service holds the balance of power in this process. Power scores remain consistent between the first and second stages of analysis.

Roles of actors, according to interviewees

	Implementer says	**Target says**
Who is the initiator?	New Jersey Conservation Foundation	New Jersey Conservation Foundation
Who are the users of the area?	Cranberry bogs and blueberry fields	Cranberry bogs and blueberry fields
Who are the stakeholders?	New Jersey Conservation Foundation, Natural Resources Conservation Service, United States Fish and Wildlife Service, New Jersey Pinelands Commission botanist, White Cedar specialists, United States Geological Survey, New Jersey Pinelands Commission	New Jersey Conservation Foundation, Natural Resources Conservation Service, New Jersey Pinelands Commission, state of New Jersey, local town
Who reports the results of this project?	Natural Resources Conservation Service	Natural Resources Conservation Service and the Wetlands Reserve Program
Who monitors the site after implementation?	Natural Resources Conservation Service	The state and the New Jersey Conservation Foundation
Who does the public think is primarily responsible?	New Jersey Conservation Foundation	New Jersey Conservation Foundation
Who sees that the policy requirements are fulfilled?	Natural Resources Conservation Service	Did not answer

Hypotheses using Contextual interaction theory given the actor scores

Likelihood to implement at all: if application of the instrument would contribute positively to the objectives of one actor, while the other actor is also positive or neutral, and the information of the positive actor(s) is sufficient to apply the instrument, then the interaction process will have the character of cooperation. When both actors are positive there will even be active cooperation.

Does this case agree? Yes, the tone of this interaction is active cooperation toward wetland restoration. That being said, the New Jersey Conservation Foundation displays a slightly lower motivation score, due to social motivation against the project. Local residents initially feared changes would yield more restrictive hunting for the area. Concurrently, two large-scale cranberry growers in the state had concerns about how restoration might affect the water that flowed from the restored area downstream to their own holdings. After addressing these concerns, the target's motivation score increased, as shown in the second phase of analysis. Maintenance of local hunting rights includes the ability to hunt white-tail deer, though not waterfowl. The target states that in meetings hunters presented some "tough questions" about the future of the area to the project partners. However, after communicating their plans to the hunting community and providing satisfying responses to their questions, he found the hunters then completely support the project. Cranberry growers downstream from the area depend on water flow which they manipulate to flood their own cranberry bogs. An influx of water causes the cranberries to float, enabling harvesting from the water surface. In the past these downstream growers waited for the (now retired) property owner to finish this process before receiving the water flow. This implementation project actually gives them more control over when they flood their own cranberry bogs. When they became aware of this aspect of the project their fears about negative impacts from the project diminished. Social pressure against the project was no longer a factor by the second phase of analysis.

Adequacy of Implementation: if adequate application of the instrument would contribute positively to the objectives of one actor and also positively or neutrally to the other actor, and these actors have sufficient information, then constructive cooperation will evolve. In case both actors are positive this will even be active (constructive) cooperation.

Does this case agree? Yes, during project application the tone is active constructive cooperation; actors work together to accomplish restoration goals. The information levels of both actors increase between analysis phases. At the beginning of the project uncertainties exist for both regarding the New Jersey Pinelands Commission's approval of the project. The target describes the pinelands area as highly regulated, revealing that this leads to concern by the New Jersey Pinelands Commission about contradictions in regulations or unintended consequences of their actions. The target states the Commission avoids situations in which by

implementing an apparently beneficial project they legally "open the door" for potentially damaging projects. To remedy this, the Commission defines permission for this project as narrowly as possible. One may wonder why the power score of the New Jersey Conservation Foundation is moderate compared to the high power score of the Natural Resources Conservation Service, especially considering that the New Jersey Conservation Foundation reports holding 60% of the controlling interest. However, this is the controlling interest of the land, and not the process as a whole. The New Jersey Conservation Foundation states that they and the Natural Resources Conservation Service are on "equal footing" with this project, and both actors state that decisions making is by consensus of the two organizations. However, the Natural Resources Conservation Service gains the balance of power points in this analysis for their formal project responsibilities, as they report project results and see that policy requirements are fulfilled.

PSE&G Wetland Restoration Implemented (4)

Policies and/or Programs

Clean Water Act section 316B (cooling water intake structures)

Scores

Likelihood to implement at all

Actors	**Motivation**	**Information**	**Power**
Implementers: Public Service Enterprise Group (PSE&G)	16/19 (+.68)	15/17 (.88)	6/8 (.75)
Target: New Jersey Department of Environmental Protection	14/18 (+.56)	11/16 (.69)	4/9 (.44)

Adequacy of implementation

Actors	**Motivation**	**Information**	**Power**
Implementers: Public Service Enterprise Group (PSE&G)	17/19 (+.79)	16/17 (.94)	6/8 (.75)
Target: New Jersey Department of Environmental Protection	14/18 (+.56)	11/16 (.69)	4/9 (.44)

Case History

This project stems from nuclear power plant cooling tower permitting. A PSE&G plant in Salem, New Jersey lies on the Delaware river, and holds two 1100 Megawatt units which send three billion gallons of warm water into the river each day. It is important to note that this is not chemically polluted water, only warm water which may effect local fish populations. According to section 316b of the Clean Water Act nuclear power plants must use the best technology available to minimize any adverse effects. In 1990 the New Jersey Department of Environmental Protection drafted a permit available for public comment, requiring the plant to shut down and immediately retrofit operations to minimize effects. The United States Environmental Protection Agency encouraged the state to work with PSE&G to

consider mitigation to compensate losses from the plant. According to PSE&G interviewees, the company had three options:

- Litigation to prove power plant operations have no adverse effects. PSE&G has data showing there are no adverse effects from this warm water. Specifically it finds the warmer water does not hurt reproducing adults and that it can affect many eggs and larvae before this impacts fish population numbers. During the interview, the implementer expresses confidence in their potential to successfully win this court case. The target agrees, stating "the law is vague and we were not certain we would win".
- Retrofitting the plant with two large cooling towers at a cost of approximately 1-2 billion dollars. The high cost includes the loss of income incurred while the existing plant ceased production during retrofitting.
- Addressing the environmental issue directly. The implementer interviewees emphasize this was not the cheapest option, costing 100 million dollars. The plan involves mitigating purported environmental damage by installing five fish ladders and restoring then managing 10,000 acres (4050 hectares) of wetlands.

The wetlands include salt hay farms, formerly embanked areas to be opened to tidal influence. Restoration and management also incorporate re-vegetation of *Spartina alterniflora* and eradication of non native *Phragmites spp*[6]. Over time the plan gained approval. This large scale project includes a total of 200 permits, at a number of levels (local, state and federal). The permitting process usually lasts 30 days, but in this case took a total of nine months. The permit requiring restoration as mitigation was issued in 1994 and renewed in 2001. PSE&G actively manages the site; as of 1998, three of the four sites successfully met eradication and re-vegetation criteria, though one site has not yet achieved success.

The Delaware Riverkeeper and the State of Delaware led opposition to the project. Joining these groups in opposition were anti-nuclear groups and environmental groups (Unplugged Salem, American Littoral Society, Clean Ocean Action, Sierra Club, and the New Jersey Environmental Federation). Other environmental groups supported PSE&G in their project goals, including the Nature Conservancy, the National Audubon Society, and the New Jersey Conservation Foundation. Eventually, PSE&G negotiated a financial settlement with the Delaware Riverkeeper while the State of Delaware agreed to have five sites within its borders restored by PSE&G.

[6] According to the United States National Research Council's Committee on Mitigating Wetland Losses, wetlands "fail to support plant biodiversity… when one or a few species dominate the site" (National Research Council, 2001: 30). They name several such species, including two giant reed grass species (*Phragmites australis and Phragmites communis*) as "notorious for overtaking nutrient-rich wetlands" (National Research Council, 2001: 30).

Case Summary

Roles of actors, according to interviewees

	Implementer says	Target says
Who is the initiator?	"Regulation driven"	New Jersey Department of Environmental Protection
Who are the users of the area?	Agriculture	Birders, some locals
Who are the stakeholders?	New Jersey Department of Environmental Protection, United States Environmental Protection Agency region Two, New Jersey Department of Environmental Control, The Nature Conservancy, National Audubon Society, The New Jersey Conservation Foundation, The Delaware Riverkeeper, Unplugged Salem, American Littoral Society, Clean Ocean Action, Sierra Club, New Jersey Environmental Federation	State of New Jersey, area residents, local mayors, municipalities, state level environmental groups
Who reports the results of this project?	PSE&G reports to New Jersey Department of Environmental Protection	Results are reported to New Jersey Department of Environmental Protection
Who monitors the site after implementation?	PSE&G monitors the wetlands, states of Delaware and New York monitor the rivers	PSE&G
Who does the public think is primarily responsible?	PSE&G	New Jersey Department of Environmental Protection
Who sees that the policy requirements are fulfilled?	PSE&G	New Jersey Department of Environmental Protection

PSE&G[7] is the implementer as they initiate this solution in response to New Jersey Department of Environmental Protection regulations. This action requires New Jersey Department of Environmental Protection approval, making this actor the target. Both target and implementer display positive motivation toward implementation. PSE&G feel that improving an estuary (even when their data show they are causing no harm) supports their role in the community as an environmental leader. PSE&G uses the project to address the regulation, preferring to channel money directly into the environment rather than into a legal battle. The New Jersey Department of Environmental Protection benefits in having the power plant conform to regulations. The target describes this as a voluntary project with heavy guidance from the Department of Environmental Protection, and finds the results are "better than what the law requires". Both actors display high information scores, including knowledge of actors and their qualifications, and high levels of information sharing

[7] The PSE&G interview was unique, in that it involved interviewing two members of the company simultaneously via conference call.

among direct process actors. The implementer has a high power score while the target achieves a moderate power score. The balance of power from the implementer's perspective is +0.31; the implementer holds the balance of power in this analysis. The implementer holds most of the formal responsibility for the project, as they monitor the site, report results, and are responsible for seeing policy requirements are fulfilled. The New Jersey Department of Environmental Protection has power as a regulatory agency in this case. Once the New Jersey Department of Environmental Protection decides the project is a proper response to regulatory measures, they support the project throughout the process.

Hypotheses using Contextual interaction theory given the actor scores

Likelihood to implement at all: if application of the instrument would contribute positively to the objectives of one actor, while the other actor is also positive or neutral, and the information of the positive actor(s) is sufficient to apply the instrument, then the interaction process will have the character of cooperation. When both actors are positive there will even be active cooperation.

Does this case agree? Yes, the implementer and target actively cooperate throughout the process to ensure project implementation. Opposition from the Delaware Riverkeeper contributes to social motivation against the project for both target and implementer in phase one of analysis. Both actors report that other members of the public were in strong support the project, countering a lack of support from the Delaware Riverkeeper and its cohorts. It is telling that even high profile state and national environmental groups (The Audubon Society, The Nature Conservancy) supported the project from its inception. The target reports problems with a lack of clarity in the regulation, stating that the requirements are not clear. The target finds it can be difficult to defend a vague regulation, especially when the United States Environmental Protection Agency leaves regulation application to the states with what they describe as "little guidance".

Adequacy of Implementation: if adequate application of the instrument would contribute positively to the objectives of one actor and also positively or neutrally to the other actor, and these actors have sufficient information, then constructive cooperation will evolve. In case both actors are positive this will even be active (constructive) cooperation.

Does this case agree? Yes, implementer and target continue in a tone of active constructive cooperation. Implementer motivation and information scores increase during the course of the project. In phase two, social motivation against the implementer continues; in this case environmental groups oppose pesticides (specifically the surfactant within pesticides) used to remove *Phragmites*. The implementer uses public meetings to inform detractors and receive comments about their pesticide use. In response the implementer eventually changes pesticide type to one more acceptable to the public. The target states this project will always be

controversial, and while it reflects nicely on the state, the innovative nature of the project makes it a risk for both parties. The New Jersey Department of Environmental Protection's reputation could incur damage if this restoration project fails, while failure would force PSE&G to again address the regulation at great expense. According to the current monitoring regime, three of the four sites have met success criteria and PSE&G is confident that the fourth site will comply by 2007. Why does the New Jersey Department of Environmental Protection have a low score for power when as regulator they have a clear formal control regarding whether the project is approved? This indicates an addition that should be made to the interview instrument, which will be addressed in Chapter 11 section *Proposed revision based on this study*.

Teaneck Creek Wetland Restoration Not yet implemented (1)

Policies and/or Programs:

New Jersey Wetlands Mitigation Council Permit, Brownfield Restoration, United States Environmental Protection Agency River Corridor and Wetland Restoration

Scores

Likelihood to implement at all Actors	**Motivation**	**Information**	**Power**
Implementer: Teaneck Creek Conservancy	21/22 (+.91)	13/14 (.93)	5/7 (.71)
Target: Local resident	14/15 (+.87)	2/2 (1.00)	1/3 (.33)

Case History

A wealthy industrialist created The Puffin Foundation non profit which primarily offers grants for non-mainstream work in the arts. Around 2001, the founder, who owns a nearby building, took an interest in this 46.0 acre site (18.6 hectares), developing the idea to reclaim it as a public space and park. The project seeks to provide land in a crowded urban area for public uses including passive recreation, education, culture, and natural resource restoration. The restoration entails cleaning brownfield sites[8], and removing non native species[9] (e.g. *Rosa multiflora*, *Phragmites australis*, *Polygonum cuspidatum*, and *Lythrum salicaria*) in riparian

[8] Nebel and Wright (2000: 630) define brownfields as "abandoned, idled or underused industrial and commercial facilities where real or perceived chemical contamination inhibits further development".

[9] According to the United States National Research Council's Committee on Mitigating Wetland Losses, wetlands "fail to support plant biodiversity… when one or a few species dominate the site" (National Research Council, 2001: 30). They name several such species, including giant reed grass (*Phragmites australis*) and purple loosestrife (*Lythrum salicaria)* as "notorious for overtaking nutrient-rich wetlands" (National Research Council, 2001: 30).

zones along the creek. In essence this restoration changes the area from what both interviewees call “a dump” and into a community park. These goals brought about the formation of the Teaneck Creek Conservancy to manage all park projects. The Conservancy receives funding not only from the Puffin Foundation, but also State programs (The New Jersey Wetlands Mitigation Council, the New Jersey Water Resource Research Institute) and National programs (National Fish and Wildlife Foundation, National Oceanic and Atmospheric Administration). By early 2006 the Conservancy raised a total of 1.7 million dollars in outside grants to fund these projects. At the time of interviews (February/March 2006) the Conservancy was in the sixth quarter of twelve scheduled quarters, or in other words at approximately the half-way point of implementation.

Case Summary

In this case, the Teaneck Creek Conservancy is implementer, as they lead implementation of wetland restoration projects on this site. Local citizens, as stakeholders, were included in this project since its inception. Community participation is a strong theme in this process, making community support and approval necessary for project implementation. Restoration measures directly affect local citizens and property owners by allowing room for water therefore decreasing flooding in a highly (95%) developed watershed, decreasing water pollution, increasing wildlife, as well as providing recreational trails, education and art programs. The target aspect is represented by interviewing one local citizen who lives adjacent to the park. Both implementer and target display strongly positive motivation scores. The concept of giving back to the community and providing environmental, education and cultural benefits for locals motivates the Conservancy’s work. The interviewees share motivation toward compatible goals for this wetland restoration. The implementer has a high information score, including knowledge of actors and their qualifications, and a lack of problems with information accessibility, quantity, or quality. The implementer brings together a diverse group of qualified experts to facilitate all aspects of the project. The target could only answer a few information-related questions, as this individual is not a policy worker. The local interviewed as target was initially displeased with the restoration plans. As a victim of Lyme disease, he feared that the wildlife habitat might increase locals’ exposure to the disease. After voicing his concerns at public meetings, then learning more about the project plans he became an avid supporter of the project. While his information score is quite high, it incorporates only two interview responses. In his role as a local citizen, this target is a project stakeholder. However, he is not legally responsible for the project, and after reassurance about his Lyme disease concerns, he did not work through informal channels to gain power to work against the project. The target has a low power score while the implementer has a high power score. The balance of power from the perspective of the implementer is +0.38; the implementer holds the balance of power for this project, as this is the organization responsible for fulfilling policy requirements as well as reporting results to authorities. Decisions are made within the Conservancy by board consensus.

Roles of actors, according to interviewees

	Implementer says	Target says
Who is the initiator?	The Puffin Foundation/ Rosenstein Family	Teaneck Creek Conservancy
Who are the users of the area?	No users, vacant land	No users, a blighted area
Who are the stakeholders?	TRC Omni Environmental Consultancy, New York-New Jersey Baykeeper, Rutgers University, Bergen County, Local school children, The Puffin Foundation/ Rosenstein Family, New Jersey Wetlands Mitigation Council, United States Fish and Wildlife Service, New Jersey Department of Environmental Protection, State Green Acres Program	Bergen County Parks and Division of Cultural Affairs, "Greenfield Agencies", State environmental organizations
Who reports the results of this project?	Teaneck Creek Conservancy	Not applicable, not a policy worker
Who monitors the site after implementation?	Not applicable, not implemented	Not applicable, not implemented
Who does the public think is primarily responsible?	The Puffin Foundation	Public does not have an image of the project yet, will after implementation
Who sees that the policy requirements are fulfilled?	Teaneck Creek Conservancy	Not applicable, not a policy worker

Hypotheses using contextual interaction theory

Likelihood to implement at all: if application of the instrument would contribute positively to the objectives of one actor, while the other actor is also positive or neutral, and the information of the positive actor(s) is sufficient to apply the instrument, then the interaction process will have the character of cooperation. When both actors are positive there will even be active cooperation.

Does this case agree? Yes, this is an example of active cooperation of many stakeholders in a multi-faceted project. The Teaneck Creek project includes four broad goals of recreation, restoration, culture and education, and Conservancy leaders gather the experts necessary to achieve these goals. This is a highly managed project, meaning many of these resources are external to the Conservancy, which assembles funding and expertise, promotes the project, and provides volunteers. The target, though initially against the project, now considers the park a "community legacy". This is a community-based project, and Conservancy leaders actively bring citizens into the process to ensure locals are satisfied with the results.

Not yet implemented This analysis begs the question: why is the project not yet implemented? Analysis is made during the implementation process. While this means that the implementation is incomplete, it does not necessarily follow that the project is stalled in some way. According to the implementer, this project is carefully planned into twelve quarters, and this analysis took place around the

implementation mid-point. This analysis does not highlight any particular barriers to project implementation. Interviews substantiate this: actors report no potential problems on the horizon that may interfere with project implementation. This is an ongoing project and the Conservancy will be collecting funding throughout 2007 to complete implementation. It seems very likely this project will proceed through the implementation stage as planned.

Pond Creek Wetland Restoration Project Not yet implemented (2)

Policies and/or Programs:

Federal Partners for Fish and Wildlife Program, Federal Water Resources Development Act section 206 (aquatic ecosystem restoration)

Scores

Likelihood to implement at all Actors	Motivation	Information	Power
Implementer: United States Fish and Wildlife Service	21/22 (+.91)	15/15 (1.00)	4/7 (.57)
Target: New Jersey Department of Environmental Protection Division of Fish and Wildlife[10]	20/22 (+.82)	16/17 (.94)	5/8 (.63)

Case History

Pond Creek is an area of approximately 300 acres (121 hectares) embanked for mosquito control in 1904. This strategy proved ineffective, in fact only changing the type of mosquito from those breeding in saltwater to those breeding in freshwater. Embankment also facilitated the growth of *Phragmites spp.*[11] in the area, a monoculture of poor habitat value. The State of New Jersey owns the majority of the area which it lists as a wildlife management area. Over the last forty years concerns resurfaced about mosquito populations in Pond Creek, perhaps related to area residential development since the 1920s. In the late 1990s, the Cape May Mosquito Commission proposed tidal inundation for the area, envisioning the project as an improvement of the habitat as well as a way to cut costs, as spraying the area with pesticides to combat mosquitoes is expensive and harmful to the environment. The plan proposes inundating an area of 174 acres (70.4 hectares), bringing tidal influence to 400 acres (162 hectares). This project also involves building structures to protect upland forests from salt water influence. The primary funding agency is

[10] This group is also referred to as the New Jersey Division of Fish, Game and Wildlife.

[11] According to the United States National Research Council's Committee on Mitigating Wetland Losses, wetlands "fail to support plant biodiversity… when one or a few species dominate the site" (National Research Council, 2001: 30). They name several such species, including two giant reed grass species (*Phragmites australis and Phragmites communis*) as "notorious for overtaking nutrient-rich wetlands" (National Research Council, 2001: 30).

the Army Corps of Engineers, but money and services are also supplied by the Cape May Mosquito Commission, the United States Fish and Wildlife Service, and the New Jersey Department of Environmental Protection Division of Fish and Wildlife. According to both actors interviewed, funding is the only element holding back the implementation of this project. In particular, Army Corps of Engineers funding is limited in the wake of Hurricane Katrina.

Case Summary

Roles of actors, according to interviewees

	Implementer says	Target says
Who is the initiator?	Cape May Mosquito Control	Cape May Mosquito Control
Who are the users of the area?	Tourists, locals	Birdwatchers, limited hunting
Who are the stakeholders?	Army Corps of Engineers, Cape May Mosquito Commission, United States Fish and Wildlife Service, New Jersey Department of Environmental Protection, Division of Fish and Wildlife	Army Corps of Engineers, Cape May Mosquito Commission, United States Fish and Wildlife Service, New Jersey Department of Environmental Protection, Division of Fish and Wildlife, New Jersey Audubon Society and The Nature Conservancy
Who reports the results of this project?	Not applicable, not implemented	Not applicable, not implemented
Who monitors the site after implementation?	Not applicable, not implemented	Not applicable, not implemented
Who does the public think is primarily responsible?	Army Corps of Engineers	Army Corps of Engineers
Who sees that the policy requirements are fulfilled?	All partners responsible for fulfilling requirements within their own programs	New Jersey Department of Environmental Protection, Division of Fish and Wildlife

United States Fish and Wildlife Service is implementer of the policy and program used in this project. To enable implementation they require cooperation at the state level. The New Jersey Department of Environmental Protection, Division of Fish and Wildlife represent the primary landowner and the state-level partner. Both target and implementer display high motivation scores regarding wetland restoration. Each plays a major role in the process including committing funds to the project. These actors share high levels of information about the project; both display awareness of the policy and its requirements and report a great deal of information sharing among stakeholders. Both the implementer and target maintain moderate power scores. The balance of power from the perspective of the implementer is -0.06; target and implementer have comparable power scores. In particular, the target displays confidence about attaining its own goals through the process, and the implementer describes the process as a ‘give and take’ among all actors, emphasizing the level of trust among these agencies. This supports the fact that decision-making is by consensus among four groups: Army Corps of Engineers, Cape May Mosquito

Commission, the United States Fish and Wildlife Service, and the New Jersey Department of Environmental Protection Division of Fish and Wildlife. Other actors (nature organizations, birding organizations, local residents and local politicians) give input and comments on plans throughout the process, but do not directly take part in decision making.

Hypotheses using contextual interaction theory

Likelihood to implement at all: if application of the instrument would contribute positively to the objectives of one actor, while the other actor is also positive or neutral, and the information of the positive actor(s) is sufficient to apply the instrument, then the interaction process will have the character of cooperation. When both actors are positive there will even be active cooperation.

Does this case agree? Yes active cooperation takes place in this case however implementation has not yet occurred. Both actors are highly motivated, have high levels of information and comparable power levels. Initially there were some concerns in the community about the project. Interviewees report that some individuals and local politicians voiced concern early in the planning process about how tidal inundation might effect salinization of local well water. The project leaders called on the expertise of the United States Geological Survey to analyze potential salt water intrusion. The Survey found this would not be a problem, sharing this information in meetings with the public. Public meetings adequately answered concerns about well salinization, at least in the sense that politicians and locals mounted no opposition to the project. While project leaders encouraged locals and other members of the public to learn about the project and give comments, the decision makers are the Army Corps of Engineers, Cape May Mosquito Commission, the United States Fish and Wildlife Service, and the New Jersey Department of Environment Division of Fish and Wildlife. One can also recognize the actions of reassuring the public as a strategic move by these agencies to circumvent opposition, producing a more efficient process. The theory does not highlight any barriers to implementation in this analysis.

Not yet implemented Interviewees agree about implementation of this project and show strong cooperation in past decision making, but this case not yet implemented. One delay in implementation is revealed in actor interviews. According to interviewees, this is due to a lack of funding, and not opposition by any party. The primary funding partner, the Army Corps of Engineers (funding 65% of the project), is currently unable to infuse the project with money. The analysis does not reveal capacity-limiting resources necessary for implementing this project, most likely because the Army Corps of Engineers is not a part of analysis. One of the constraints of this study is the limitation of interviewing only two actors per case. It could be helpful to consider providing a mechanism for including the resources, in this case, of a third actor when these resources have a direct impact on the implementation of a project. Solutions to this dilemma are presented in Chapter 11, under the section *Proposed revisions based on this study*. Although the “cause”

behind a lack of implementation is not shown in the *scores* of these two actors, it reveals itself during the interview process: currently funding causes a delay in implementation. The Army Corps' cash flow problem relates directly to the Hurricane Katrina disaster, one major recipient of spending throughout 2006. This unforeseen event causes delay for many Army Corps projects. Lack of Corps funds also relates to the United States Military's ongoing wars in Afghanistan and Iraq. Based on interview responses it seems likely that this project can and will be implemented as soon as funding materializes. As is the case with most projects planned but not yet implemented, the project can wait indefinitely at the current stage until finances develop.

Stone Harbor Point Not yet implemented (3)

Policies and/or Programs

According to the implementer, this project does not include implementation of a wetland restoration policy but is instead initiated as part of the Corp's general mission of ecosystem restoration.

Scores

Likelihood to implement at all

Actors	**Motivation**	**Information**	**Power**
Implementer: Army Corps of Engineers	17/20 (+.70)	15/17 (.88)	4/7 (.57)
Target: New Jersey Department of Environmental Protection Division of Fish and Wildlife	16/18 (+.78)	6/12 (.50)	2/6 (.33)

Case History

This project began as part of a beach re-nourishment plan. At the time the area under question was a heron rookery; stakeholders planned to add an island ecosystem restoration element to the beach fill project. During project planning the herons abandoned the rookery and plovers took over the site. Stakeholders concluded the restoration plan should change to place the plover nesting habitat requirements at the forefront of the ecosystem restoration project. Around 2000-2001 the Corps took dredge material from a nearby site to add to this area, but found the dredge material was not of the proper consistency for the target species. They also had questions about potential dredge material contamination. As one of the plover species (the piping plover, *Charadrius melodus*) is a federally listed bird the Corps halted island ecosystem restoration. The Corps implemented the beach re-nourishment plan; the island restoration project has languished since that time.

Case Summary

The Army Corps of Engineers plays the role of implementer in this project, as the goals are initiated under the Corp's general mission. The New Jersey Department of

Environmental Protection Division of Fish and Wildlife is the local participant necessary to achieve the Corps project and serves as target. In addition they manage the state non-game wildlife this project is designed to protect. Both actors display positive motivation scores. The Corps finds that busy and heavily developed beaches thwart plover populations and take this project on within their broader mission for ecosystem restoration, while the Division of Fish and Wildlife are ultimately responsible at the state level for this bird population. The Corps has high information levels in regard to this project, while the Division of Fish and Wildlife displays moderate information levels. The implementer has information about the policy, its requirements and benefits, while the target reports a lack of information about the policy and problems with uncertainties. The implementer has a moderate power score while the target has a low power score. The balance of power from the perspective of the implementer is +0.24. Both actors are stakeholders, but the Corps sees the policy requirements are fulfilled. The implementer states that all actors make decisions about the project, while the target reports that the Corps makes decisions. The Corps holds the balance of power according to this analysis.

Roles of actors, according to interviewees

	Implementer says	**Target says**
Who is the initiator?	Army Corps of Engineers	Army Corps of Engineers
Who are the users of the area?	Locals, birdwatchers	Nature watchers, fishers, a limited number of recreational beach users
Who are the stakeholders?	Army Corps of Engineers, New Jersey Department of Environmental Protection, Division of Fish and Wildlife, United States Fish and Wildlife Service	New Jersey Department of Environmental Protection, Division of Fish and Wildlife, United States Fish and Wildlife Service, National Marine Fisheries Service
Who reports the results of this project?	Not applicable, not implemented	Not applicable, not implemented
Who monitors the site after implementation?	Not applicable, not implemented	Not applicable, not implemented
Who does the public think is primarily responsible?	Army Corps of Engineers	Army Corps of Engineers
Who sees that the policy requirements are fulfilled?	Army Corps of Engineers	Did not answer

Hypotheses using contextual interaction theory

Likelihood to implement at all: if application of the instrument would contribute positively to the objectives of one actor, while the other actor is also positive or neutral, and the information of the positive actor(s) is sufficient to apply the instrument, then the interaction process will have the character of cooperation. When both actors are positive there will even be active cooperation.

Does this case agree? There is active cooperation, but the project has not yet been implemented. Though both actors are motivated toward implementation the target

has a moderate information score. The target has this score for two reasons. First, the interviewee knows very little about the policy the Corps is using for implementation of the project. The target states that policy knowledge is not necessary to participate in the project as the Corps is the implementer and the project leader. Second, the target reports a lack of information regarding if and when the project will be implemented as well as uncertainties in respect to technical issues and funding. The lack of information and level of uncertainty do not prevent the target from participating in and supporting the project. The motivation of the implementer is such that the Corps can proceed despite the target's moderate information score. The theory application does not reveal a barrier to implementation.

Not yet implemented Why has this project not yet been implemented? Both interviewees find funding is the primary cause for a lack of implementation to date. As the target describes it, this type of project is not often funded alone, but must be a part of a larger project. Though primarily funding hampers this project, there are also ongoing technical complexities. According to the target since the original plan was developed, sand has continued to accrete on the site. The target states that there are uncertainties about how sand will redistribute in this high-energy beach inlet system. The implementer finds that this is a trial and error process, and that to address technical issues they should pinpoint problems the birds might be having on site then focus on these issues. In this way a second barrier to implementation might be technical uncertainties. Both target and implementer appear committed to enhancing this habitat in a way best suited for the target species. Unlike some of the other 'not yet implemented' cases (e.g. Pond Creek) it does not appear that this case is waiting *only* for funding to proceed, though that is one important element delaying the project. The time added to the project as a result of funding issues has shown researchers that plans may need further development to respond to this dynamic ecosystem. It is quite possible that this case may not result in a restoration. It is also possible that with funding and clarification about restoration plans and results, this project will proceed in the future.

The barrier of imperfect technical information is reflected in the moderate information score of the New Jersey Department of Environmental Protection Division of Fish and Wildlife. If funding is also a problem, why is lack of funding as it relates to resources (and therefore power) not revealed in the power score? These scores do not reflect that financial support is a hindrance in this project, indicating changes may be necessary in how this characteristic is calculated. Based on this case and others (e.g. Liberty State Park) it is clear that financing is crucial for wetland restoration project implementation. In the Chapter 11 section titled *Proposed revisions based on this study*, suggestions are made for improving the interview instrument to capture capacity as it relates to power.

Liberty State Park Not yet implemented (4)

Policies and/or Programs

No net loss goal, natural resource injury restoration

Scores

Likelihood to implement at all

Actors	Motivation	Information	Power
Implementer: Army Corps of Engineers	17/18 (+.89)	11/12 (.92)	4/7 (.57)
Target: New Jersey Department of Environmental Protection, Office of Natural Resource Restoration	19/20 (+.90)	11/12 (.92)	3/6 (.50)

Case History:

Visitors to the Statue of Liberty take a ferry from Liberty State Park to reach the monument. In the late 1990s Congress authorized the Corps to conduct an environmental study and report on the Hudson River. The Corps produced a feasibility study featuring 16 restoration project opportunities. Of the sixteen, this restoration project received Congressional authorization because it had local sponsors (including New Jersey Department of Environmental Protection, Office of Natural Resource Restoration, and New York New Jersey Port Authority). The Army Corps of Engineers and New York New Jersey Port Authority each funded 50% of a feasibility study specific to the project. The area historically served as an industrial railroad yard; project goals are to provide ecological uplift by restoring viable tidal wetlands and upland freshwater wetlands. These improvements should increase fishery nursery habitat, wader foraging, and water filtration for the estuary. Other benefits include making the site more aesthetically pleasing and adding some educational and interpretive components. This project is currently stalled in the design phase. The design, to be funded by the Army Corps of Engineers (67%) and New Jersey Department of Environmental Protection, Office of Natural Resource Restoration (33%) cannot proceed without congressional authorization and funding for the Corps portion of the project.

Case Summary

The Corps directs this project under general no net loss goals, while the New Jersey Department of Environmental Protection, Office of Natural Resource Restoration funds this type of project via natural resource injury settlements. The Army Corps of Engineers serves as project implementer, as they initiate and lead restoration implementation. The New Jersey Department of Environmental Protection, Office of Natural Resource Restoration assesses natural resource injury then decides the amount of wetland restoration, creation or enhancement necessary to offset damage. They serve as the local sponsor and are the target. Both implementer and target display positive motivation toward project implementation. The implementer states that Corps work increasingly involves wetland restoration and that Hudson River wetland restorations are high on the list of priorities. The target utilizes this type of

project to fulfill a mandate to balance environmental damage with restoration within the state. Implementer and target similarly share high levels of information regarding the project. Both display knowledge of actors and qualifications, though as there is not a policy associated with the project (only goals of no net loss) neither actor can respond to questions about policy benefits and requirements. There are not problems relating to a lack of information necessary for implementation. Target and implementer have comparable moderate power scores, balance of power from the implementer's perspective is +0.07. Both interviewees report that they make project design decisions by consensus, with input from relevant citizen groups and the New York-New Jersey Baykeeper. Neither actor holds the balance of power in this analysis.

Roles of actors, according to interviewees

	Implementer says	**Target says**
Who is the initiator?	Army Corps of Engineers	Army Corps of Engineers
Who are the users of the area?	Visitors and tourists in New York City, recreation use (walking and jogging)	Visitors from all over the world, tourism, recreation (fishing)
Who are the stakeholders?	New Jersey Department of Environmental Protection, Division of Parks and Forestry, Liberty State Park citizens commission, New York-New Jersey Baykeeper	Many local organizations, Army Corps of Engineers, New York-New Jersey Baykeeper, National Oceanic and Atmospheric Administration, State of New Jersey, United States Fish and Wildlife Service, several citizens groups, Senator Robert Menendez
Who reports the results of this project?	Not applicable, not implemented	Not applicable, not implemented
Who monitors the site after implementation?	Not applicable, not implemented	Not applicable, not implemented
Who does the public think is primarily responsible?	New Jersey Parks Department (primarily), the Army Corps of Engineers (secondarily)	The State of New Jersey or the Army Corps of Engineers
Who sees that the policy requirements are fulfilled?	Not applicable, not implemented	Not applicable, not implemented

Hypotheses using contextual interaction theory

Likelihood to implement at all: if application of the instrument would contribute positively to the objectives of one actor, while the other actor is also positive or neutral, and the information of the positive actor(s) is sufficient to apply the instrument, then the interaction process will have the character of cooperation. When both actors are positive there will even be active cooperation.

Does this case agree? Yes, target and implementer actively cooperate toward project implementation, but at the same time the project is not yet implemented. The theory application reveals no barriers to implementation. As with the Pond Creek

case, there exists a lack of funding for the project; like the Stone Harbor Point case there are also some technical uncertainties inherent to this type of wetland restoration. The target mentions there are two schools of thought when dealing with restoring contaminated sites. Some believe because natural resource scientists cannot always predict what will happen to contaminants in these types of sites, that these areas should not be restored into “attractive nuisances”. Others find that despite technical uncertainties, doing something is better than doing nothing. According to implementer and target interviews, both actors are satisfied that a restoration is an appropriate step to take in this case. Technical issues do not create a barrier to implementation in this project, and this is reflected in the scores.

Not yet implemented According to actor interviews, the barrier to implementation for this case is funding from the Army Corps of Engineers. The New Jersey Department of Environmental Protection, Office of Natural Resource Restoration has money from natural resource injury settlements, but cannot fund this type of project alone. The implementer remarks that due to wars in Afghanistan and Iraq, as well as the hurricane Katrina disaster, the project cannot be immediately funded by the Corps. He states that the Corps is currently directing wetland funding toward finishing project phases already in progress. For the time, they will not initiate new phases on any wetland projects. As with the Stone Harbor Point case the power score does not reflect a lack of finances available for this project. Why does this analysis fail to show a lack of capacity by either actor? This nuance is accountable to the fact that both actors fully *intend* to fund the project, and answer interview questions indicating this intention. The target has the money, but cannot proceed without the implementer. The implementer wants to provide funding, but cannot proceed until they are given money by the United States congress. Therefore Corps financing is the barrier to implementation in this case. As with the Stone Harbor Point case, this reveals an area for improving the power measurement. A solution is to add a survey question that clearly links capacity with the implementation status, an idea addressed fully in Chapter 11, in the section *Proposed revisions based on this study*. As with other projects of this type, the Liberty State Park project can wait indefinitely until funding appears. Considering the time and resources already dedicated to the project by both parties, it is likely that this implementation will occur, at the same time it is impossible to know when this might take place.

Eagle Manor Farm Not Implemented (1)

Policies and/or Programs

Wetlands Reserve Program, Partners for Fish and Wildlife Program, The New Jersey Wetlands Act of 1970, New Jersey Freshwater Wetlands Protection Act

Scores

Likelihood to implement at all Actors	Motivation	Information	Power
Implementer: United States Fish and Wildlife Service	15/15 (+1.00)	11/15 (.73)	4/7 (.57)
Target: New Jersey Department of Environmental Protection, Division of Land Use Regulation	5/13 (-.23)	12/13 (.92)	3/6 (.50)
Third Actor: Natural Resources Conservation Service	11/14 (+.57)	13/16 (.81)	3/7 (.43)

Case History

A private landowner contacted Ducks Unlimited to discuss restoring an 80.0 acre (32.4 hectare) site. Ducks Unlimited then contacted the Natural Resources Conservation Service and United States Fish and Wildlife Service to incorporate their financial and technical support into the project. The wetland under question was drained via a ditch in the past; remaining wetlands changed over time and decreased in quality due to an increase in the non native species *Phragmites*[12]. Ducks Unlimited created a plan to change management from spraying and burning *Phragmites* to using water level to control the invasive species. The project plans also called for installation of an earthen berm. Implementers believed changes would control *Phragmites* and increase wetland diversity. Project funding would have been provided by the Natural Resources Conservation Service and the United States Fish and Wildlife Service. The Natural Resources Conservation Service evaluated the project via their Wetlands Reserve Program and the United States Fish and Wildlife Service incorporated this plan into its Partners for Fish and Wildlife Program. Permitting for the restoration would have been available via the New Jersey Wetlands Act of 1970 and the New Jersey Freshwater Wetlands Protection Act. After approximately one and a half years of communicating about the project, the New Jersey Department of Environmental Protection, Division of Land Use Regulation decided not to permit these changes.

Case Summary

It should be immediately clear that this case analysis presents the responses of three respondents as opposed to the two actors interviewed for all other cases. Cases for analysis were found via a snowball sample, meaning the researcher uses contacts and interviewees to assist in locating additional cases. A dearth of available cases necessitates this method. To understand this case, interviews were conducted with I representatives of the United States Fish and Wildlife Service and the New Jersey Department of Environmental Protection, Division of Land Use Regulation early in

[12] According to the United States National Research Council's Committee on Mitigating Wetland Losses, wetlands "fail to support plant biodiversity… when one or a few species dominate the site" (National Research Council, 2001: 30). They name several such species, including two giant reed grass species (*Phragmites australis and Phragmites communis*) as "notorious for overtaking nutrient-rich wetlands" (National Research Council, 2001: 30).

Roles of actors, according to interviewees

	Implementer says	Target says	Third Actor says
Who is the initiator?	Landowner	Natural Resources Conservation Service, United States Fish and Wildlife Service	Landowner
Who are the users of the area?	Waterfowl hunting	Waterfowl hunting	Waterfowl hunting
Who are the stakeholders?	Natural Resources Conservation Service, United States Fish and Wildlife Service, Ducks Unlimited, Landowner	Did not answer	New Jersey Department of Environmental Protection, United States Fish and Wildlife Service, Ducks Unlimited
Who reports the results of this project?	Not applicable, not implemented	Not applicable, not implemented	Not applicable, not implemented
Who monitors the site after implementation?	Not applicable, not implemented	Not applicable, not implemented	Not applicable, not implemented
Who does the public think is primarily responsible?	Not applicable, not implemented	United States Fish and Wildlife Service	Not applicable, not implemented
Who sees that the policy requirements are fulfilled?	Not applicable, not implemented	New Jersey Department of Environmental Protection sees that requirements of their policies are fulfilled	Natural Resources Conservation Service for Wetlands Reserve Program

the process, as these actors represent the implementer and target, respectively. While snowball sampling for more cases contact was made with the representative from the Natural Resources Conservation Service. The names attributed to various projects are not always definitive (especially for cases that fail to gain momentum). Believing this was a new case I interviewed this representative from the Natural Resources Conservation Service. By the end of the interview I realized my mistake; this additional interview is a result of researcher error. Despite this, the information may be interesting in this analysis and should not be casually excluded. The target and implementer interviews are analyzed, while the third actor's comments and scores are included for comparison. The United States Fish and Wildlife Service is the implementer as they work to promote and enable the wetland restoration implementation. As regulator, the New Jersey Department of Environmental Protection, Division of Land Use Regulation is necessary to realize the project and plays the role of target. The project implementer is motivated toward the wetland restoration, while the target is weakly motivated against the project. From the target's point of view, the project goals are subjective. The berm installation changes the site from an estuarine habitat to a fresh water wetland. The critical question became whether controlling *Phragmites* is important enough to accept the loss of estuarine habitat. Both actors have high information scores, and report

sharing technical information. The implementer mentions some data (e.g. historical photo data) were not available during the process, though finds this was not due to a lack of information sharing among partners but because the data did not exist. The target and implementer have moderate power scores, with a difference of +0.07 points from the implementer's perspective. These scores indicate a balance of power between actors in analysis. In practice the New Jersey Department of Environmental Protection has the final word regarding permitting, and effectively use this source of power to halt the project.

Hypotheses using Contextual interaction theory given the actor scores

Likelihood to implement at all: if application of the instrument would contribute positively to the objectives of one actor, while the other actor is negative, and the information of the positive actor is sufficient, then the character of the interaction process will be dependent on the balance of power between the actors. A relatively equal balance of power will lead to opposition. Opposition can take the forms of negotiation and conflict.

Does this case agree? Yes, the target and implementer oppose each other regarding this wetland restoration plan. At the same time, this case has not transformed into a situation of conflict or negotiation; instead it was dropped by the implementer when opposition arose. The implementer states that the process "worked well", and respects the checks and balances inherent in this regulatory program. As he describes it, these checks are not only "for Wal-Mart" but for everyone. The implementer states that though their organization acted in good faith throughout the process, in this case the project did not move forward. The third actor also acknowledges the controversy over the relative benefits of the berm; this actor reports that despite its artificial nature they found the berm acceptable because it was the most economical way to achieve goals.

It is interesting to imagine how this analysis might have been different if interviews included only the Natural Resources Conservation Service and the New Jersey Department of Environmental Protection. In that application the Natural Resources Conservation Service plays the role of implementer. In this analysis the implementer is positively motivated toward implementation while the target remains weakly motivated against project implementation. In this scenario, the target and implementer again hold a relatively equal balance of power, resulting in the same hypothesis for interaction.

The policy target and the actors representing the implementation side have conflicting goals for the area which are not resolved through the implementation process. The third actor reports lapses in communication during the process, stating that they were uncertain about the type of information the New Jersey Department of Environmental Protection sought. The New Jersey Department of Environmental Protection states that based on the information provided, the loss of wetlands necessary for the project were not enough to justify the purported benefits. According to the theory, barriers to implementation are the target's negative motivation or the balance of power between actors. Changing the target's

motivation would yield cooperation while the implementer gaining the balance of power would yield forced cooperation. However, these possibilities are unlikely. As regulators the target will not lose power in the interaction, making forced cooperation extremely unlikely. In addition, the New Jersey Department of Environmental Protection does not feel the project merits destruction of some wetlands in favor of improving others, making a change in their motivation toward the project improbable. As with the PSE&G Wetland Restoration, the regulator has a low score for power when their role provides a clear formal control regarding whether the project is approved. This illuminates an area for improvement in the way power is measured for this analysis, addressed further in the Chapter 11 section *Proposed revisions based on this study*.

Allied Junction Rail Project Not Implemented (2)

Policies and/or Programs:

The Clean Water Act

Scores

Likelihood to implement at all Actors	**Motivation**	**Information**	**Power**
Implementer: Army Corps of Engineers	11/13 (+.69)	12/16 (.75)	3/6 (.50)
Target: Hackensack Riverkeeper	3/17 (-.65)	2/2 (1.00)	2/5 (.40)

Case History

In 1992 three permits were applied for and issued by the Army Corps of Engineers to allow wetland fill and mitigation as a part of a railway development project. The Clean Water Act encourages developers to minimize fill as well as mandating that any necessary fill is offset through mitigation. The permits were obtained by the Allied Junction Corporation, the New Jersey Transit Corporation, and the New Jersey Turnpike Authority, who sought to develop a complex including a group of office buildings, a rail transfer station, and a turnpike interchange, respectively. According to the original permits, Allied Junction Corporation and the New Jersey Transit Corporation proposed to enhance wetlands at the development site, as well as provide offsite mitigation. The New Jersey Turnpike Authority proposed to enhance a 48.0 acre (19.4 hectare) wetland near the development site. Wetland mitigation projects in the Hackensack Meadowlands District are reviewed by the Meadowlands Interagency Mitigation Advisory Committee, made up of representatives of the Army Corps of Engineers, the New Jersey Meadowlands Commission, the New Jersey Department of Environmental Protection, and the United States Environmental Protection Agency. The Meadowlands Interagency Mitigation Advisory Committee then advises regulatory agencies such as the Army Corps of Engineers and the New Jersey Department of Environmental Protection. In

essence the permits allow wetland destruction in one location on the condition of wetland restoration in another. Environmental and community groups led by the Hackensack Riverkeeper did not trust the development corporations to adequately mitigate filled wetlands as dictated by these permits. Representatives from these groups visited the site and found development occurring but not enhancement and restoration. These groups expressed their dissatisfaction to the Army Corps of Engineers, who with the Meadowlands Interagency Mitigation Advisory Committee changed the conditions of the permit. Instead of allowing the developers to manage the restoration elements of the project, these agencies demanded the developers purchase credits from Marsh Resources Incorporated, a wetland mitigation banking company. In this way, the originally permitted wetland restoration project (to be managed by the developers) was not implemented.

Case Summary

Roles of actors, according to interviewees

	Implementer says	**Target says**
Who is the initiator?	Allied Junction Corporation, the New Jersey Transit Corporation, and the New Jersey Turnpike Authority	Allied Junction Corporation
Who are the users of the area?	Train tracks, turnpike area	Rail station
Who are the stakeholders?	Environmental groups, federal regulatory agencies, New Jersey Meadowlands Commission, the New Jersey Department of Environmental Protection	New York-New Jersey Baykeeper, American Littoral Society, Hackensack Riverkeeper, Rutgers University staff, United States Fish and Wildlife Service
Who reports the results of this project?	Not applicable, not implemented	Not applicable, not implemented
Who monitors the site after implementation?	Not applicable, not implemented	Not applicable, not implemented
Who does the public think is primarily responsible?	Not applicable, not implemented	Not applicable, not implemented
Who sees that the policy requirements are fulfilled?	Army Corps of Engineers	Army Corps of Engineers

The Army Corps of Engineers is the implementer in this case, as their permits call for the wetland enhancement and restoration necessary for the project to proceed. The Hackensack Riverkeeper becomes the policy target in this case. While this group is not in general necessary to realize area wetland restorations, here they used informal power to enter the policy process, with the project blocked as the net result. In other words, their support would have enabled this implementation while their disagreement played a role in stopping the project. The implementer displays high motivation toward the project implementation, while the target shows strong motivation against the project. The implementer is charged to balance development interests with wetland conservation in the state of New Jersey. In reality, the fear of *improper* implementation drives the Hackensack Riverkeeper to fight against the

project. Both actors display high information scores, though the target answers only a few questions about information. In this case the target does not provide information directly to the process because this non-profit nature group is not included in permitting decisions made by the Meadowlands Interagency Mitigation Advisory Committee. Channels of communication between these two actors develop later, during public hearings that are a formal requirement of the process. Both the Army Corps of Engineers and the Hackensack Riverkeeper display moderate power scores. The balance of power between actors is +0.10 from the perspective of the implementer. In this analysis power is balanced between the implementer and target.

Hypotheses using Contextual interaction theory given the actor scores

Likelihood to implement at all: if application of the instrument would contribute positively to the objectives of one actor, while the other actor is negative, and the information of the positive actor is sufficient, then the character of the interaction process will be dependent on the balance of power between the actors. A relatively equal balance of power will lead to opposition. Opposition can take the forms of negotiation and conflict.

Does this case agree? Initially the implementer moves ahead with the project and the project permits are approved, in other words, it seemed to initially be a case of cooperation. However, the target did not accept the initial Army Corps of Engineers decision. The Hackensack Riverkeeper has no formal power through a voice on the Meadowlands Interagency Mitigation Advisory Committee, but over time they and their supporters influence the process. Over time permitting agencies agreed that the responsibility for mitigation should be taken out of the hands of developers. Therefore ultimately the project is a case of halted implementation due to opposition, resulting in a changed project that satisfies both actors. The implementer representative stated that changes were made due to Meadowlands Interagency Mitigation Advisory Committee concerns about whether planned restorations could be adequately sustained. This interviewee did not credit the changes as a result of action by the Hackensack Riverkeeper, though he did mention that the permits were controversial and opposed by environmental groups. The implementer also stated that the Marsh Resources Incorporated mitigation bank was not in place when the original permits were issued and that this was not an option until later. In this way, the original permits remained controversial and over time another solution that was also acceptable to project opponents presented itself. The barrier to implementation, opposition to the project by the Hackensack Riverkeeper and other environmental groups, effectively shut down this project.

It is interesting when comparing the target and implementer interviews how each actor connects events with meaning. For example, the target views his organization's role in halting this project as a victory for the environment. In contrast, while the implementer acknowledges the project was controversial, he credits the project's end with long-term restoration concerns of the Meadowlands Interagency Mitigation Advisory Committee. When interviewees give contrasting explanations for events, how can a researcher be certain of who is "right". These

data are filtered through the experiences of the interviewees, and it would be impossible to understand completely how the interviewees themselves leave an imprint on their description of events. Is it the case that the Hackensack Riverkeeper used informal power channels to thwart development, or is it the case that the Army Corps of Engineers had completely different reasons to change their plans about a contested site? In this case it is easy to imagine a scenario in which both explanations are correct—that the Hackensack Riverkeeper put up a fight to protect this area, and that over time the Army Corps of Engineers saw a solution, suitable to all actors that only became available after the process began. The topics of inconsistencies and validity as they relate to this case are described in chapter 9, in the section *Data gathering and analysis*. In this particular case, one could argue that the application of the theory did not fully capture informal sources of power. Drawing clearer connections between actors and informal power would improve future theory application. As with the PSE&G Wetland Restoration and Eagle Manor Farm cases the regulator role is not included as a formal source of power. These issues are addressed in the Chapter 11 section *Proposed revisions based on this study*.

Remaining barriers to implementation are not relevant in this case. This wetland restoration was specifically connected to mitigating destruction of wetlands caused by development. The destruction was mitigated and the original project is now immaterial.

Fenwick Manor Not Implemented (3)

Policies and/or Programs

Wetlands Reserve Program, New Jersey Pinelands Protection Act

Scores

Likelihood to implement at all Actors	**Motivation**	**Information**	**Power**
Implementer: Natural Resources Conservation Service/ landowner	12/13 (+.85)	10/11 (.91)	4/8 (.50)
Target: New Jersey Pinelands Commission	2/9 (-.56)	16/16 (1.00)	3/6 (.50)

Case History

The Natural Resources Conservation Service worked with a private landowner through their Wetlands Reserve Program, proposing restoration of a wetland in the New Jersey Pinelands National Reserve. The New Jersey Pinelands Commission manages this 1.1 million acre reserve (445,000 hectares) via the Pinelands Comprehensive Management Plan. Any individual or business wanting to develop within the area must apply for approval. Development means any disturbance; therefore building one house, 100 houses, sand mining, or building a commercial shopping area all fall under the category of changes that must be approved by the

commission. In this case the application was to restore a wetland; the applicants wanted to remove a failed sub-surface drainage system in a fallow field thereby restoring natural hydrology. Pockets of freshwater wetlands were already developing in this field at points of drainage failure. The implementers wanted to speed up this process by bringing in heavy equipment to remove the drainage system. An introduction of heavy equipment into the area would damage these existing pockets of wetlands on the site. Therefore, although immediate damage would yield a long term net gain in wetlands area, the New Jersey Pinelands Commission did not approve the project. By Natural Resources Conservation Service estimates, leaving the site as is would result in a 'natural' restoration in approximately 100 years. The Natural Resources Conservation Service states that the New Jersey Pinelands Commission is willing to wait for these natural processes rather than risk unknown affects of heavy equipment to the area.

Case Summary

Roles of actors, according to interviewees

	Implementer says	**Target says**
Who is the initiator?	Landowner/ Natural Resources Conservation Service	Landowner
Who are the users of the area?	Landowner	Landowner
Who are the stakeholders?	Landowner, Natural Resources Conservation Service, New Jersey Pinelands Commission	Landowner, Natural Resources Conservation Service
Who reports the results of this project?	Not applicable, not implemented	Not applicable, not implemented
Who monitors the site after implementation?	Not applicable, not implemented	Not applicable, not implemented
Who does the public think is primarily responsible?	Not applicable, not implemented	Not applicable, not implemented
Who sees that the policy requirements are fulfilled?	New Jersey Pinelands Commission (New Jersey Pinelands Protection Act)	Natural Resources Conservation Service (Wetlands Reserve Program)

In this case, the Natural Resources Conservation Service promotes and leads implementation of a wetland restoration project, making them the policy implementer. As the proposed area lies within a national preserve, this requires approval of the New Jersey Pinelands Commission, the target. The implementer shows motivation toward the restoration project with a highly positive motivation score, while the target displays motivation against this restoration project with a strongly negative motivation score. The implementer is in favor of this wetland restoration project, but it should be noted that the target is not "against" this wetland restoration project in principle. During the interview the target states repeatedly that this is simply a case of the project not fitting within Commission regulations. The task of the Pinelands Commission is protecting the national preserve, and though

they have an interest in maintaining biodiversity and habitat within the reserve, they have no mandate to restore wetlands. Both actors have high information scores, are familiar with policies and actors, and report access to necessary information for decision making. In hindsight the implementer reports uncertainties about the regulation process, mentioning that better communication with the target could have benefited the project. In this assessment both the target and implementer have moderate, equal power scores. The landowner has formal power regarding the land in his possession while the target has power as the group that will ultimately be responsible for the seeing that the policy requirements are fulfilled. The implementer is a financial contributor to the project while the target does not contribute financially. As with the Meadowlands Mitigation Bank case, the actors represent different aspects of power within the process; however in this case the core actors have different motivations about the project. The New Jersey Pinelands Commission representative describes this approximately 15 member board as an autonomous agency. Board approval is the first in a number of steps necessary when working to make changes within the Pinelands area. The implementer(s) have no say in board decisions and are left with few options when a project fails approval. The target describes the implementer's project plans as changing during the process, from a wetland restoration marginally allowable to one not allowable by commission regulations. While the implementer holds formal power to make decisions about this land, in this case his power is not relevant when compared to the formal power of the New Jersey Pinelands Commission Board in approving projects.

Hypotheses using Contextual interaction theory given the actor scores

Likelihood to implement at all: if application of the instrument would contribute positively to the objectives of one actor, while the other actor is negative, and the information of the positive actor is sufficient, then the character of the interaction process will be dependent on the balance of power between the actors. A relatively equal balance of power will lead to opposition. Opposition can take the forms of negotiation and conflict.

Does this case agree? Yes, this case is adequately described as opposition, though it has not taken the form of conflict or negotiation. When the project reached the state of opposition it was dropped by the implementer. The Commission made a final decision, but it is not necessarily true that it can never change. The variable scores indicate barriers to implementation. The target has a negative motivation score and power is balanced among actors. Clearly the New Jersey Pinelands Commission has no motivation toward this restoration (i.e. the New Jersey Pinelands Commission has no motivation to damage any wetlands, regardless of how others perceive the external benefits). According to the Commission interviewee, they do not make value judgments about wetlands; they simply abide by their regulations. The Commission interviewee mentions that regulations can change, through processes within the Commission body. Approaching the negative motivation of the Commission as a barrier may be a viable way for the target to work toward

implementation. In respect to power, it is likely that the commission will continue to exist as an autonomous body, making a change in power balance unlikely. Again we have a case with a lack of connection between an actor's regulatory power and their power score. This indicates an area for improvement in the way power is measured for this analysis, addressed further in the Chapter 11 section *Proposed revisions based on this study*.

Farnham Park Not Implemented (4)

Policies and/or Programs

Water Resource Development Act, section 1135 (Project Modifications for the Improvement of Environment)

Scores

Likelihood to implement at all

Actors	Motivation	Information	Power
Implementer: City of Camden	10/12 (+.67)	3/4 (.75)	4/8 (.50)
Target: Army Corps of Engineers	8/16 (0.0)	15/16 (.94)	4/6 (.67)

Case History

The City of Camden embanked the area between 1920 and 1940, changing it from a marsh into a city park. In the late 1960s a dijk breach destroyed the park, after which the city reformed the embankment, rebuilding the area as athletic fields. After approximately 10-15 years the dijk suffered from a second breach resulting in marsh-like conditions in this 10 acre (4.05 hectare) area. Some natural restoration currently occurs, but remnants of development (e.g. pavement) remain in marsh areas; therefore the area exists as a degraded marsh. The City of Camden began promoting the idea of increasing the size of the breach, making the area more natural and developing it as a recreation area. They worked with the Army Corps of Engineers to develop plans for this restoration. The Army Corps originally planned to cover 65% of the project budget, with the City of Camden funding the remaining 35%. Over time however the Army Corps of Engineers withdrew their support of the project, claiming incompatible goals.

Case Summary

The City of Camden initiates and leads the restoration project, playing the role of implementer. Implementation by the city requires funding which is dependent on Army Corps of Engineers approval of the project and participation. The implementer displays high motivation toward project goals. The interviewee feels higher nature values increase user satisfaction of local residents using the area for walking and fishing. The target has a neutral motivation score; he finds it "a good project" and a "good educational tool". While the target's responses are in favor of the project, he remarks that incompatibility in goals between the two groups became

obvious over time. Both implementer and target have high information scores. The implementer displays knowledge of actors and their qualifications as well as policy awareness. The target describes having knowledge about the case, awareness of the policy, its requirements and benefits, as well as knowledge of actors and their qualifications. Looking at the scores above, it is clear that the implementer answers far fewer questions regarding information than the target. This may point to a gap in analysis (described below). Both the implementer and target have moderate power scores. The balance of power is -0.17 from the perspective of the implementer. The power balance lies with the Army Corps of Engineers. Implementer and target make decisions together, but the implementer states: we "cannot do anything without the approval of the Army Corps of Engineers". While of course the City of Camden operates sufficiently without the Army Corps, in this case the interviewee refers to the final control the Army has over financial support for this project. The target reports that the City wants infrastructure (e.g. a walkway, a road that could support emergency vehicles) not conducive to a wetland area. The Army Corps of Engineers allows only 10% recreation-related project costs. The target remarks that the Army Corps simply does not support parks projects and that for the city this was primarily a parks project and secondarily an ecological restoration project.

Roles of actors, according to interviewees

	Implementer says	**Target says**
Who is the initiator?	City of Camden	City of Camden
Who are the users of the area?	locals, some kayaking	Local residents, for walking or fishing
Who are the stakeholders?	Army Corps of Engineers, City of Camden, New Jersey Department of Environmental Protection, Camden Greenways	Army Corps of Engineers, City of Camden, New Jersey Department of Environmental Protection, Camden Greenways
Who reports the results of this project?	Not applicable, not implemented	Not applicable, not implemented
Who monitors the site after implementation?	Not applicable, not implemented	Not applicable, not implemented
Who does the public think is primarily responsible?	Not applicable, not implemented	Not applicable, not implemented
Who sees that the policy requirements are fulfilled?	Did not answer	Army Corps of Engineers

Hypotheses using Contextual interaction theory given the actor scores

Likelihood to implement at all: if application of the instrument would contribute positively to the objectives of one actor, while the other actor is also positive or neutral, and the information of the positive actor(s) is sufficient to apply the instrument, then the interaction process will have the character of cooperation.

Does this case agree? No, the theory does not adequately describe this case. While cooperation is the tone of all meetings between these two groups, at some point in the process the Army Corps of Engineers decides that the City of Camden's goals are no longer compatible. Ultimately the project does not involve cooperation

toward achievement of a wetland restoration. How can the theory account for cases where the powerful actor (here the Army Corps of Engineers) claims some support of the project yet ultimately stops the project by halting financial support. Both motivation and information scores in this case mislead the analysis. The target reports motivation toward wetland restoration in general, but ultimately not this project. The target gains motivation points for several reasons: their goals support the policy program objectives, they believe it is a good educational tool for the community, and there is strong community support from Camden Greenways and local politicians. This case is very similar to the Fenwick Manor case. However during the course of that interview the target makes a clear distinction between what he would like to do, and what he is able to do as a representative of his organization. It is interesting to note that in the Fenwick Manor case, wetland restoration is not the mandate of the target (New Jersey Pinelands Commission). In this case the Army Corps of Engineers conducts wetland restorations, but only with ecological function as a primary goal. The variable scores do not indicate barriers to implementation, but the target makes it very clear throughout the interview that the primary barrier is goal incompatibility.

The number of implementer responses regarding information is very low. The employee involved with the project is no longer employed by the City, and the City was unable to provide contact information for this individual. Only one person at the city of Camden was available for an interview, and this individual was not directly involved with the project. Therefore the respondent could only speak about the project in a second-hand way, and was unable to answer many questions about information sharing among actors. The target surmises there was a "lack of understanding" about what the Army Corps of Engineers can do. The implementer mentions the length of time was an uncertainty for the city, and mentions they would not have wasted the time of others if they knew the project would be unsuccessful. These comments also point to gaps in information or understanding by the City. Due to the interviewee's low level of project involvement, a low information score does not support these comments. More data about the information aspect of the project could shed light on any problems with a lack of information, as well as uncertainty, miscommunication or misunderstanding between the parties. Unfortunately for this analysis the city's full perspective of the project is lost when the employee knowledgeable about the project leaves the organization.

Appendix H Case Summaries Oregon

Chocktoot Drain Implemented (1)

Policies and/or Programs:

No net loss goal

Scores

Likelihood to implement at all

Actors	Motivation	Information	Power
Implementer: The Nature Conservancy	16/20 (+.60)	10/11 (.91)	5/8 (.63)
Target: Cattle Grazing Community	9/13 (+.39)	6/7 (.86)	3/8 (.38)

Adequacy of implementation

Actors	Motivation	Information	Power
Implementer: The Nature Conservancy	17/20 (+.70)	11/11 (1.00)	6/8 (.75)
Target: Cattle Grazing Community	9/13 (+.39)	7/7 (1.00)	3/8 (.38)

Case History

In the late 1990s The Nature Conservancy began working to restore hydrological functions to Sycan Marsh, an area modified in the past for irrigation purposes and to drain land for cattle grazing. They found that grazing levels at the time degraded water quality, affecting three species of endangered fish. This project involved restoring approximately 5000 acres (2020 hectares) by plugging a drain which depletes the wetland. Overarching goals included using less water while maintaining the existing level of grazing, and re-establishing both native plant communities and a natural hydro-period. The project obtained funding from several sources, including the Oregon Watershed Enhancement Board, private funds, The Nature Conservancy, and matching funds from state and federal sources. In this case implementation occurred, including installing piezometers from 1996 through 2002 to monitor area groundwater elevations and filling the drain in 2002.

Case Summary

The Nature Conservancy is the implementer as they lead the drive to implement the no net loss goal. The Nature Conservancy includes the cattle grazing community in implementation: their cooperation is necessary for the project to move forward therefore the cattle grazing community are policy targets. The target scores are based on an interview with one member of the cattle grazing community in the region. The implementer and target are both motivated toward project implementation. The Nature Conservancy interviewee reports that initially downstream irrigators and the grazing community had concerns. In particular the grazing community feared a decrease in forage area. The Nature Conservancy

worked to balance societal and ecological needs in this project, ensuring an increase in foraging area by project end. As a testament to their ability to alleviate these fears, the grazing community interviewee never described the project as negative for grazing interests. Instead this interviewee found the project "improves that land and the surrounding area" and states "no one lost" as a result of this project. Both target and implementer display high levels of information throughout this process, and both experience an increase of information over the course of the project. The implementer and target display knowledge of actors and their qualifications, describe effective channels for sharing information, and have no problems with accessibility. The implementer has a high power score which increases over the course of the project while the target displays a moderate score. The implementer is responsible for monitoring the site, financially supports the project and reports results, all sources of formal control. The target is a stakeholder in the process and a user of the land before the project, but does not have sources of formal control in this project. The balance of power from the perspective of the implementer is +0.25 in phase one and +0.37 in phase two. The implementer holds the balance of power in both phases of this case analysis.

Roles of actors, according to interviewees

	Implementer says	**Target says**
Who is the initiator?	The Nature Conservancy	The Nature Conservancy
Who are the users of the area?	Wildlife, grazing community, no recreational use	The Nature Conservancy, United States Forest Service, ZX Ranch
Who are the stakeholders?	Watershed Enhancement Board, private fund providers, United States Geological Survey, Oregon Department of Fish and Wildlife, Heritage Program,	The Nature Conservancy, United States Forest Service, ZX Ranch
Who reports the results of this project?	The Nature Conservancy	Not applicable, not a policy worker
Who monitors the site after implementation?	The Nature Conservancy	Not applicable, not a policy worker
Who does the public think is primarily responsible?	The Nature Conservancy	United States Forest Service on their land, The Nature Conservancy on their land
Who sees that the policy requirements are fulfilled?	Not a formal policy, only no net loss goals	Not a formal policy, only no net loss goals

Hypotheses using Contextual interaction theory given the actor scores

Likelihood to implement at all: if application of the instrument would contribute positively to the objectives of one actor, while the other actor is also positive or neutral, and the information of the positive actor(s) is sufficient to apply the instrument, then the interaction process will have the character of cooperation. When both actors are positive there will even be active cooperation.

Does this case agree? Yes, the tone of this project is active cooperation. Based on this analysis The Nature Conservancy took an active role to include relevant stakeholders in the process. The implementer interviewee describes an atmosphere of opposition existing in the past, particularly toward projects viewed as originating from "outside" the community. He found this type of opposition caused many delays in projects, determining over time that the most efficient method included informing stakeholders, even if they were not ultimately decision-makers. Now he finds it a personal decision to never move forward on a project without community support. Along similar lines, the representative of the cattle grazing community described the process as interactive and inclusive. He stated that if grazing issues became controversial, "we worked on it until we fixed it".

Adequacy of Implementation: if adequate application of the instrument would contribute positively to the objectives of one actor and also positively or neutral to the other actor, and these actors have sufficient information, then constructive cooperation will evolve. In case both actors are positive this will even be active (constructive) cooperation.

Does this case agree? Yes, the second phase of the project proceeded in an active constructive cooperative way. Once these stakeholders determined the project plan, no societal issues hampered the implementation. There were delays in implementation, but these were the result of weather constraints. Uncontrollable high levels of snowfall limited construction time and stretched the implementation period to nearly one year in length. Motivation score of the implementer increases slightly between phases, while the target's motivation score remains consistent from the first to second phase of analysis. Both implementer and target display an increase of information scores throughout the process. The target describes a logistic problem in moving cattle up and down through the creek. The implementer describes uncertainty about how much water would be used by the system, finding precise quantification difficult. However, both of these issues were resolved during the process, yielding an increase in each actor's information score. Regarding power the implementer experiences an increase in score over the course of the project, as they report becoming more confident about their chances of achieving their goals in the process. The target's score for power remains consistent between the analysis stages.

Kunz Marsh Implemented (2)

Policies and/or Programs

Oregon non-regulatory wetland program promoting habitat restoration, the United States Fish and Wildlife Coastal Wetlands Conservation Program.

Scores

Likelihood to implement at all

Actors	**Motivation**	**Information**	**Power**
Implementer: South Slough National Estuarine Research Reserve	16/19 (+.68)	11/12 (.92)	7/9 (.78)
Target: Coos Watershed Association	13/15 (+.73)	5/7 (.71)	4/7 (.57)

Adequacy of implementation

Actors	**Motivation**	**Information**	**Power**
Implementer: South Slough National Estuarine Research Reserve	16/19 (+.68)	11/12 (.92)	7/9 (.78)
Target: Coos Watershed Association	13/15 (+.73)	7/7 (1.00)	4/7 (.57)

Case History

The South Slough National Estuarine Research Reserve is a 5000 acre (2023 hectare) site that is one of 26 reserves within a national program. This program conducts research and promotes educational activities with the long term goal of improving estuary management. The Kunz Marsh wetland restoration at this experimental research station tests whether marsh recovery rate is affected by initial surface elevation. The Kunz Marsh site is 12.0 acres (4.85 hectares) of subsided tidal wetland dijked and drained around 1900 for agriculture. Researchers developed a plan to use earth from the dike to replace marsh subsidence, constructing experimental cells of varying elevations. The South Slough National Estuarine Research Reserve obtains grant funding through National Oceanic and Atmospheric Administration to support its activities. In addition this project gained funding through the United States Fish and Wildlife Service Coastal Wetlands Conservation Program and the Oregon Watershed Enhancement Board. In this case implementation occurred in August of 1996. As a result of the experiment the South Slough National Estuarine Research Reserve found that low elevation levels provide slower plant community development initially, while allowing more fish habitat in early stages via channeling (Cornu, 2005, p. 11). In contrast, middle elevations provided circumstances allowing for emergent vegetation colonization as well as channeling over time (Cornu, 2005, p. 11). This case is an example of successful project implementation

Case Summary

The South Slough National Estuarine Research Reserve designed and implemented the project, playing the role of implementer in this process. Identifying the project target is not a simple task. As the South Slough National Estuarine Research Reserve owns this land set aside as a research area, they do not require community involvement or approval for individual projects. The South Slough National Estuarine Research Reserve seeks to provide information to wetland and estuary managers. The Coos Watershed Association is a member of the Winchester Tidelands Restoration Project Advisory Group, which advises this project. The Coos

Watershed Association is also part of the funding mechanism for some South Slough National Estuarine Research Reserve projects. Specifically, the Oregon Watershed Enhancement Board receives 7.5% of state lottery profits which are distributed through watershed councils. The Coos Watershed Association is the project target. Both the target and implementer are positively motivated toward project implementation. Clearly the South Slough National Estuarine Research Reserve is motivated to fulfill its mandate to provide experimental information about estuarine management. The Coos Watershed Association is positively motivated as an agency concerned that restorations are not conducted only 'for restoration sake' but to produce high quality functioning wetlands. Both actors display high information scores in this analysis. Implementer and target are knowledgeable of actors and their qualifications, aware of applicable policies, and describe no problems with information sharing. The target's information score increases during the course of the project. The target has a moderate power score while the implementer has a high power score. The implementer is the project initiator and user of the area, is responsible for monitoring the project and reports project results. As the grant funding mechanism, the target also must report results of the project. The balance of power from the perspective of the implementer is +0.21; South Slough National Estuarine Research Reserve holds the balance of power in this analysis. Both actors describe the process as collaborative, the implementer remarks on the willingness within the advisory group to consider alternative approaches, while the target states that the group works in a "collegial fashion" to ensure success.

Roles of actors, according to interviewees

	Implementer says	**Target says**
Who is the initiator?	South Slough National Estuarine Research Reserve	South Slough National Estuarine Research Reserve
Who are the users of the area?	South Slough National Estuarine Research Reserve	South Slough National Estuarine Research Reserve
Who are the stakeholders?	South Slough National Estuarine Research Reserve	United States Fish and Wildlife Service, Wetland scientists, Oregon Department of Fish and Wildlife, County Commissioners
Who reports the results of this project?	South Slough National Estuarine Research Reserve	Typically Coos Watershed Association
Who monitors the site after implementation?	South Slough National Estuarine Research Reserve	South Slough National Estuarine Research Reserve
Who does the public think is primarily responsible?	South Slough National Estuarine Research Reserve	South Slough National Estuarine Research Reserve
Who sees that the policy requirements are fulfilled?	Did not ask	Did not ask

Hypotheses using Contextual interaction theory given the actor scores

Likelihood to implement at all: if application of the instrument would contribute positively to the objectives of one actor, while the other actor is also positive or neutral, and the information of the positive actor(s) is sufficient to apply the instrument, then the interaction process will have the character of cooperation. When both actors are positive there will even be active cooperation.

Does this case agree? Yes, the tone of this process is that of active cooperation. There appears to be no problem with a lack of motivation from any community actors, most likely a result of the designation of this site as a research area. In addition, there are few community members affected by changes made on site.

Adequacy of Implementation: if adequate application of the instrument would contribute positively to the objectives of one actor and also positively or neutral to the other actor, and these actors have sufficient information, then constructive cooperation will evolve. In case both actors are positive this will even be active (constructive) cooperation.

Does this case agree? Yes, active constructive cooperation adequately describes the implementation application. These actors and other members of the advisory group continue to agree on goals as the project moves from design to implementation. There is no change in either actor's motivation scores during the course of the implementation. In likelihood this can be attributed to the fact that both of these organizations were highly supportive of the project plan from the beginning. The implementer mentions first submitting in 1993 a draft proposal to the Winchester Tidelands Restoration Project Advisory Group. In collaboration these actors substantially altered the design. As a member of this group the Coos Watershed Association had the opportunity to contribute to project design well before implementation. As a research station, the South Slough National Estuarine Research Reserve appears to have an advantage in the amount of time and planning they can dedicate to project design. The information level of the implementer remains constant between stages of the process, while the target's information score increases. The target reports a lack of information during planning of the project as is expected when testing new techniques, but finds this was not a problem during implementation. Power scores remain consistent between process stages.

Lower Powell Butte Salmon Habitat Restoration Implemented (3)

Policies and/or Programs

Not a policy, rather this project is based on a resolution passed to implement the plan as a part of an informal policy to restore natural functions in the landscape.

Scores

Likelihood to implement at all			
Actors	**Motivation**	**Information**	**Power**
Implementer: City of Portland	16/17 (+.88)	8/9 (.89)	5/7 (.71)
Target: Local resident	6/7 (+.71)	3/4 (.75)	2/6 (.33)

Adequacy of implementation			
Actors	**Motivation**	**Information**	**Power**
Implementer: City of Portland	16/17 (+.88)	8/9 (.89)	5/7 (.71)
Target: Local resident	6/7 (+.71)	3/4 (.75)	2/6 (.33)

Case History

This project is one part of a multi-phase wetland and creek restoration project. The portion of the project for analysis involves Johnson and Kelley Creeks in southeast Portland. Johnson Creek, approximately 26.0 miles (41.0 kilometers) long, was filled in the 1930s and 1940s as a part of the federal Works Progress Administration program. To control flooding workers filled and rock-lined 15.0 miles (24.0 kilometers) of the creek. The Works Progress Administration also filled a small portion of Kelley Creek where it joins Johnson Creek and realigned Kelley creek to the northeast. These unsuccessful solutions destroyed creek salmon habitat. In 1995 all jurisdictions in the watershed (Multnomah and Clackamas Counties, and the Cities of Portland, Gresham, Milwaukie, and Happy Valley) adopted the Johnson Creek Resources Management Plan, later updated in 2001 as the Johnson Creek Restoration Plan (Portland Bureau of Environmental Services, 2001, p. 2-3). The actors planned to construct a sinuous creek bed mimicking a United States Geological Survey map of the area from the early 1900s. This portion of the project seeks to reconnect this creek to the floodplain, restoring natural creek functions including flood reduction and improving salmon habitat. The entire project is estimated to cost 11 million dollars, to be raised through the City of Portland's capital program. Approximately 3 million dollars had been raised when these interviews took place in February of 2006. The initial phase of the project, re-aligning Kelley Creek, has been implemented.

Case Summary

The City of Portland promotes and funds the project implementation and is considered the implementer for this analysis. In addition to benefiting salmon populations, these measures aim to reduce flooding for local residents. To proceed with the project, implementers need the cooperation of local residents, who play the role of target in this analysis. These scores are based on an interview with one local resident who has lived near the site for 36 years. Both the implementer and target scores reflect positive motivation toward the project. The City of Portland has a clear stake in improving habitat and reducing flooding for its citizens. The local

resident reports some ambivalence toward the project in its initial stages. While in support of flood control, this resident was not convinced these changes would improve the situation until he could see improvements himself after implementation. The target states that he did not "have a say" in what happened with this project and that he did not expect it to impact his family in any way. Both the target and implementer have high information scores. The implementer is knowledgeable of actors and their qualifications, the policy, and policy requirements. The City of Portland representative states that information is shared among agencies involved with the restoration, and reports no problems with a lack of information. The target answers few questions about information; this individual is not a policy worker and is not penalized for a lack of information about the policy and its requirements. The target is knowledgeable of actors and their qualifications, but chose not to take an active role in the process, stating that he primarily "stayed out of the way" of the implementers. The target reported that the City did not include public comments in the plan. He states that citizens can give their opinions, but the implementers "do what they want to do anyway". In contrast the implementer reports that including the local community in the process was a priority for the City. She states that it is "hugely" important that community members are satisfied with the results, and that public meetings are a part of the formal process. She also finds that it is difficult to engage people along the rural/urban fringes of the city. She reports that 25 local citizens attended the first public meeting, which she calls a good response considering population density and public participation in general. The implementer has a high power score while the target has a low power score. The balance of power from the perspective of the implementer is +0.38. The City of Portland has formal responsibility as it monitors changes to the site and reports results to funding agencies. The local citizen interviewed for this project is a stakeholder, but chooses not to pursue informal channels of control in the process.

Roles of actors, according to interviewees

	Implementer says	**Target says**
Who is the initiator?	City of Portland	City of Portland
Who are the users of the area?	Not actively used	Vagrants or for illegal dumping (before implementation)
Who are the stakeholders?	Oregon Wetland Enhancement Board, Watershed Council, local residents	City people, such as contractors and inspectors
Who reports the results of this project?	The City reports results to their funding agencies	Not applicable, not a policy worker
Who monitors the site after implementation?	The City of Portland	Not applicable, not a policy worker
Who does the public think is primarily responsible?	The City of Portland	City of Portland and the parks department
Who sees that the policy requirements are fulfilled?	"It is not a policy, it is a resolution"	Not applicable, not a policy worker

Hypotheses using Contextual interaction theory given the actor scores

Likelihood to implement at all: if application of the instrument would contribute positively to the objectives of one actor, while the other actor is also positive or neutral, and the information of the positive actor(s) is sufficient to apply the instrument, then the interaction process will have the character of cooperation. When both actors are positive there will even be active cooperation.

Does this case agree? Cooperation accurately describes this process to date, though while the implementer is motivated toward the project the target reports disinterest in the project during implementation. Initially, he reports that he does not really understand the plan, but is in support of flood control in general. He is at least willing to let the city attempt this project. Neither he nor his neighbors make an effort to combat project implementation. Despite his perception of exclusion from the process, the target admits to seeking no other channels—formal or informal—to impact the project plan.

Adequacy of Implementation: if adequate application of the instrument would contribute positively to the objectives of one actor and also positively or neutral to the other actor, and these actors have sufficient information, then constructive cooperation will evolve. In case both actors are positive this will even be active (constructive) cooperation.

Does this case agree? Active constructive cooperation is an adequate description of this case. As the project progresses the local resident continues to consent to changes without attempting to stall the process in any way. After implementation his satisfaction with the project increases, as he sees first-hand the effects of this restoration. He reports that the site "does not look good" but that in the 5-6 years since implementation this formerly perpetually flooded area has not flooded once. He finds the results "a great improvement" and looks forward to the future when the small trees planted by the city grow into something more aesthetically pleasing. Though this actor reports some dissatisfaction with what he considers the exclusive nature of the City's planning process, this does not motivate him to seek more involvement in the process. The City is satisfied with this project and continues to seek funding for other phases of this habitat restoration.

West Eugene Wetlands Project Implemented (4)

Policies and/or Programs

Clean Water Act section 404 (dredge materials in navigable waters); No net loss goal

Scores

Likelihood to implement at all

Actors	**Motivation**	**Information**	**Power**
Implementer: City of Eugene	13/18	14/16	6/8
	(+.44)	(.88)	(.75)
Target: Bureau of Land Management	20/22	10/10	8/9
	(+.82)	(1.00)	(.89)

Adequacy of implementation

Actors	**Motivation**	**Information**	**Power**
Implementer: City of Eugene	16/18	15/16	6/8
	(+.78)	(.94)	(.75)
Target: Bureau of Land Management	20/22	10/10	8/9
	(+.82)	(1.00)	(.89)

Case History

In the late 1980s and early 1990s, an area on the edge of the city of Eugene, Oregon was zoned for light industrial development (meaning appropriate for businesses such as coffee roasters or storage facilities). The Bureau of Land Management owned a 12.0 acre (4.86 hectare) property in the area which they had an interest in developing. As a land management agency they found it logical to first buy more land, eventually buying 70-100 parcels. Concurrently the City of Eugene began to buy land in the area, and The Nature Conservancy also purchased land to protect two local threatened and endangered species. Eventually these purchases grew to 3000 acres (1210 hectares) within the urban land boundary. During this time all of these groups realized a great deal of this land was composed of wetlands. Geographically, the city is surrounded by hills to the south and a river to the north and east, making the west their only possibility for expansion. This presented a potential conflict between environmental and economic goals. An individual working at that time as a consultant for the City proposed bringing stakeholders together to determine if a plan could be created to develop some wetlands while preserving and enhancing others. Specifically, preserving and enhancing those wetlands of higher quality, and joining them in a cohesive group. This plan was implemented, with the City of Eugene using some of its land as a mitigation bank and the Bureau of Land Management using restoration areas for education and outreach.

Case Summary

The City of Eugene is the implementer, promoting enhancement of high quality wetlands and developing the mitigation bank to ensure no net loss. As a large landowner in the target area, the Bureau of Land Management's cooperation is integral to making a comprehensive plan for the area. The Bureau of Land Management is the target in this analysis. It is important to note that neither interviewee for this analysis had been with the project since its inception, and each was occasionally unable to answer specific questions about the project. Both implementer and target are positively motivated toward the project. The City of

Eugene sees it as an opportunity to benefit from wetland functions such as flood control, water quality improvement and protecting rare and endangered species. The Bureau of Land Management is not usually in the business of wetland restoration; in the region they most often deal with timber sales—a subject that can become controversial and may give them a bad reputation among some environmentalists. However, they saw this project as an opportunity to change people's perceptions about their organization. They currently manage a large-scale education center associated with the project, improving their image and helping them gain public support. Both target and implementer display high levels of information during the process. Implementer and target are knowledgeable of actors and their qualifications, aware of the policies used and their requirements, and report no problems with information sharing during the course of the project. The balance of power from the perspective of the implementer is -0.14. Both actors maintain high and comparable power scores. Both actors have formal responsibilities in this project, as they work together on monitoring, reporting, and seeing that the policy requirements are fulfilled. Each owns land within the area, and neither holds the balance of power in comparison. As these parties worked in agreement throughout the project to achieve similar goals, no clash of relative power ever took place.

Roles of actors, according to interviewees

	Implementer says	**Target says**
Who is the initiator?	The City of Eugene	Did not answer
Who are the users of the area?	Light industrial development and a small amount of heavier industrial use	Mitigation bank purchasers, light industrial development, recreational users, educational outreach programs
Who are the stakeholders?	Citizens, The Nature Conservancy, Bureau of Land Management, Army Corps of Engineers, Oregon Division of State Lands (became the Oregon Department of State Lands in 2003), Willamette Resources Educational Network, McKenzie River Land Trust, United States Fish and Wildlife Service	Citizens, The Nature Conservancy, Bureau of Land Management, Army Corps of Engineers, Willamette Resources Educational Network, McKenzie River Land Trust, United States Fish and Wildlife Service
Who reports the results of this project?	They report to other main stakeholders	They report collectively
Who monitors the site after implementation?	Both the City of Eugene and the Bureau of Land Management	The City of Eugene, Bureau of Land Management and local Universities and school groups
Who does the public think is primarily responsible?	City of Eugene and the Bureau of Land Management	West Eugene Wetlands Partnership
Who sees that the policy requirements are fulfilled?	West Eugene Wetlands Partnership	City of Eugene and the Bureau of Land Management

Hypotheses using Contextual interaction theory given the actor scores

Likelihood to implement at all: if application of the instrument would contribute positively to the objectives of one actor, while the other actor is also positive or neutral, and the information of the positive actor(s) is sufficient to apply the instrument, then the interaction process will have the character of cooperation. When both actors are positive there will even be active cooperation.

Does this case agree? Yes, both actors work together cooperatively on this project. As shown by motivation scores, the City of Eugene's motivation about this project increases over the course of the project. In the beginning the City is marginally reluctant about this restoration, and the loss of development possibilities it represents. While initially the City of Eugene may have been forced to compare economic and environmental goals, they soon realize this much needed expansion area cannot be completely developed, and create a balanced solution from this situation. The City works with the Bureau of Land Management and the Nature Conservancy in a collaborative way to apply criteria of wetland values to the area and choose wetlands with the most potential for enhancement. Both actors use this process to find a balance between their own economic and environmental interests, and see the project as contributing to the vitality of the Eugene community.

Adequacy of Implementation: if adequate application of the instrument would contribute positively to the objectives of one actor and also positively or neutral to the other actor, and these actors have sufficient information, then constructive cooperation will evolve. In case both actors are positive this will even be active (constructive) cooperation.

Does this case agree? Yes, during implementation actors continue to work together in an active, constructive, and cooperative manner. The implementer's high level of motivation toward the project increases, again due to a commitment to finding a balanced solution between economic and environmental interests. The City's information score increases between phases as well, primarily because of technical knowledge they gain about developing a mitigation bank during the course of the project. Neither interviewee reports problems in the implementation stage stemming from a lack of cooperation. Both interviewees emphasize the mutual support, collaboration and cooperative nature of this project.

McKay Claggett Creek Watershed Enhancement Not yet implemented (1)

Policies and/or Programs

Oregon State Mitigation Program, No net loss goal

Scores

Likelihood to implement at all Actors	Motivation	Information	Power
Implementer: McKay High School teacher	13/16 (+.63)	9/12 (.75)	3/5 (.60)
Target: Landowner and property developer	5/13 (-.23)	4/5 (.80)	5/6 (.83)

Case History

In 1996 there was a major flood in this community due to heavy rainfall, leading to evacuations and property damage. This McKay High School science teacher saw this disaster as an opportunity for a teachable moment, to show her students a real-life application of subjects often relegated to textbooks. Concurrently, this school district provides little funding for outdoor field trips. The teacher, in an attempt to provide a low-cost outdoor laboratory, took the students to observe a creek on school property. By analyzing old photographs of the area the class learned that this ditch had been a watershed head stream. As a class project they cleaned and named this creek, with help from the City Council, made signs to promote community awareness and planted vegetation in the area. In speaking with long-term area residents the class found the population of songbirds decreased over time and envisioned this project as a way to invite wildlife back to the area and use the creek for educating about wetland values. As this project drew to a close, a local property developer began the permitting process to build a large apartment complex on 5.00 acres (2.02 hectares) of property bordering the school. The students surveyed the area, making a presentation to the city council about the potential effects of increased development on the site. The City Council then reversed their decision to allow this property development plan. Next the class thought to acquire the land and change it into an outdoor lab for students, using older students to mentor younger classes. Then the property developer created an alternate plan that would create less impact on the area, building 5 houses on 2.00 acres (0.81 hectares). The school and students, in addition to neighborhood associations and the newly formed Claggett Creek Watershed Council opposed and blocked this development. These groups raised approximately $90,000 to purchase the land from the target, but in that time the price increased making this total insufficient for purchasing the land. Over time City Council members changed, creating a stalemate regarding development on the land and currently the actors are seeking a compromise. The landowner is considering a land trade deal (donating ½ of the land to the school district) to allow minimum development on site. Now actors are working to clarify this deal, which includes restoration to a standard that allows the landowner to register the property as part of a state lands mitigation project. This is a grass roots project seeking to qualify for inclusion in a state mitigation program for restoration. The second phase of this restoration project is not yet implemented and is the subject of analysis.

Case Summary

The McKay High School teacher leads efforts to block development and implement restoration on this site; this actor plays the role of implementer. Realizing restoration requires using the private land held by this property developer, the project target. The implementer is strongly positively motivated toward implementation, while the landowner is weakly motivated against implementation. The implementer sees this project as both a professional and personal goal; an opportunity to enhance teaching and protect the local environment. The landowner is not motivated toward wetland restoration in general, finding that the no net loss goal "opened the door for a huge bureaucracy" to develop, especially in Willamette Valley where "practically…every piece of ground" could be called a wetland. He also feels that restoration and development should focus on land outside of urban areas. However, after being blocked repeatedly in earlier planning projects he is reluctantly accepting that his only option may be negotiating. Both implementer and target display high levels of information in this case; both are knowledgeable of actors and their qualifications, show policy awareness, and report no problems with information sharing among actors. The target reports some difficulties with knowing "what it would take to make my proposal successful" while the implementer reports problems in dealing with various bureaucracies over the ten year course of the project. The balance of power from the perspective of the implementer is -0.23. The balance of formal power lies with the target, or landowner.

Roles of actors, according to interviewees

	Implementer says	**Target says**
Who is the initiator?	This science teacher and her students	McKay High School
Who are the users of the area?	McKay High School and neighborhood communities	He is the sole owner, but this open space is used as a "park" by locals
Who are the stakeholders?	Northwest Center for Sustainable Resources, POWER (Protect Our Wetlands Enhance and Restore), the Local School Council Advisory Group, Oregon Watershed Enhancement Board, Community Progress Team of the Salem School Foundation, Oregon Division of State Lands (this name changed in 2003 to the Oregon Department of State Lands), Claggett get Creek Watershed Council, Two Neighborhood Associations	Two Neighborhood Associations
Who reports the results of this project?	Will be Oregon Watershed Enhancement Board	Not applicable, not implemented
Who monitors the site after implementation?	Will be Oregon Watershed Enhancement Board	Not applicable, not implemented
Who does the public think is primarily responsible?	This science teacher and Oregon Watershed	This science teacher
Who sees that the policy requirements are fulfilled?	Not applicable, not implemented	Not applicable, not implemented

Hypotheses using Contextual interaction theory given the actor scores

Likelihood to implement at all: if application of the instrument would contribute positively to the objectives of one actor, while the other actor is negative, and the information of the positive actor is sufficient, then the character of the interaction process will be dependent on the balance of power between the actors. Dominance of the negative actor will lead to obstruction.

Does this case agree? Yes, this case has been obstructed to date, with neither actor admitting defeat. The landowner made 4-5 proposals for developing the land over the last twenty years, all defeated by neighborhood associations or the school district. It is clear that his ability to develop the property in the way he prefers is unlikely. He states that his chances of getting what he wants are "effectively zero". Though this landowner legally has every right afforded by ownership of this land, any effort he has made to develop the land has been stopped. These groups have been a perpetual immovable force that will not stop working to thwart any efforts of development for this land. The interviews reveal that after ten years both actors are currently working toward a compromise. The proposed compromise represents a lower profit for the landowner, but as he states, gives him the welcome opportunity to "move on".

Not yet implemented According to the theory, barriers to implementation in this project are the landowner's lack of motivation for the project and his formal control of this land. According to the theory application there are a few scenarios that would promote implementation in this case. First, the target's motivation toward the project could change from negative to neutral or positive, yielding cooperation. Another possibility is shifting the balance of power from the target to the implementer, yielding forced cooperation. This project appears to be progressing toward this eventuality. The landowner is the legal owner and controller of the area, but as a property developer he is dependent on City Council permit approval. In analysis this landowner holds the balance of power, yet this teacher and her students are effectively using tools such as petitioning the City Council and building a support network of stakeholders (especially neighborhood associations, who have direct power to influence city councils). This power development stalls all building projects put forward by the landowner. In the interview the target states he "has to [donate land] to get cooperation" for a limited development project. The candid nature of both interviewees provides information showing a compromise is inevitable, if only to allow the landowner to move on to less contentious projects.

Rose Dairy Not yet implemented (2)

Policies and/or Programs

Oregon Watershed Enhancement Board Grant Program

Scores

Likelihood to implement at all Actors	Motivation	Information	Power
Implementer: Coos Watershed Association	16/16 (+1.00)	14/15 (.93)	5/5 (1.00)
Target: Local citizens, as represented by Coos County Commissioner	0/10 (-1.00)	1/2 (.50)	2/4 (.50)
Third Actor: Another Coos County Commissioner	0/6 (-1.00)	1/1 (1.00)	2/4 (.50)

Case History

This highly contentious case began in July of 2000 when the Coos Watershed Association realized a local farm would be sold at an auction and decided to bid for the property. The dairy farm, reportedly out of use for a number of years, joined the market due to the former owner's financial problems. After gaining the approval of their Board of Directors, comprised of representatives from agriculture, ranching, fishery, and forestry sectors, the Coos Watershed Association successfully bid for the property. The Coos Watershed Association intended to use grant money to buy easements for the property, with goals of improving and expanding salmonid rearing habitat and restoring historic wetlands. This was a private transaction, and the Coos Watershed Association felt if changes did not affect neighboring property, community members' opinions were not necessary before proceeding with the purchase. In contrast, local community members felt the purchase and the project were "an assault on agriculture" as well as an improper use of public funds (an Oregon Watershed Enhancement Board grant financed the purchase). As the implementer states, the problem was not purchasing the land; the problem is doing what we want to do with the land after purchase. Local community members including county commissioners have fought to limit the restoration goals of the Coos Watershed Association. The restoration project has not yet been implemented.

Case Summary

It should be obvious immediately that there are three actors' scores listed above, as was the case with New Jersey case Eagle Manor Farm. In this case the extra interview is not attributable to researcher error. After sending an email to the target and receiving a reply about taking part in this research, I then received an email from the third actor, an individual who has been outspoken against the proposed restoration project. This actor became a county commissioner soon after the auction, in November of 2000. He requested to be interviewed about this project. To follow the methodology of all other cases, this third actor's scores will not be included in analysis. However, this will be used as an opportunity to have more information about the opinions of project detractors, and this information will be included in this case description. The Coos Watershed Association is project implementer, as they initiate and lead the wetland restoration project. The target does not meet the usual criterion of an actor *necessary* to realize implementer goals. This private transaction and subsequent project should not require cooperation from the local community.

That being said, local county commissioners have fought hard to stop the project. While to date unsuccessful, their efforts have delayed the project. The target is a county commissioner who in this case represents local community members dissatisfied with restoration project goals. The implementer displays positive motivation toward this wetland restoration project, while the target has a strong negative motivation against this project. It is notable that this is the only case in which the target has the maximum negative score (i.e., -1.00). As shown in the table above, the third actor in this also holds the maximum negative motivation score. While the implementer supports both wetland restorations in general and this project in particular, the target is against wetland restoration in general terms, and especially this project. The implementer has a positive information score while the target displays a moderate information score. The implementer displays knowledge about actors and their qualifications, and awareness of policy requirements and benefits. It is clear that the target answers few questions regarding information level. This is due to the interviewee not really being a part of this project, instead representing community members opposing and fighting to limit the project. The implementer displays a high power score, while the target's power score is moderate. The balance of power from the perspective of the implementer is +0.50. This adequately reflects the fact that the Coos Watershed Association holds the formal power, while the target and other community members attempt to thwart this process through informal channels. The implementer holds the balance of power in this analysis.

Roles of actors, according to interviewees

	Implementer says	**Target says**	**Third actor says**
Who is the initiator?	Coos Watershed Association	Coos Watershed Association	Coos Watershed Association
Who are the users of the area?	A dairy farmer, though out of use for several years	Dairy farmer	Dairy farmer
Who are the stakeholders?	Coos Watershed Association, Oregon Watershed Enhancement Board, Soil and Water Conservation District	Coos Watershed Association, Coos Bay- North Bend Waterboard	Coos Watershed Association, Oregon Watershed Enhancement Board
Who reports the results of this project?	Not applicable, not implemented	Not applicable, not implemented	Not applicable, not implemented
Who monitors the site after implementation?	Not applicable, not implemented	Not applicable, not implemented	Not applicable, not implemented
Who does the public think is primarily responsible?	Coos Watershed Association	Did not ask	Did not ask
Who sees that the policy requirements are fulfilled?	Not applicable, not implemented	Not applicable, not implemented	Not applicable, not implemented

Hypotheses using contextual interaction theory

Likelihood to implement at all: if application of the instrument would contribute positively to the objectives of one actor, while the other actor is negative, and the information of the positive actor is sufficient, then the character of the interaction process will be dependent on the balance of power between the actors. Dominance of the positive actor will lead to (forced) cooperation.

Does this case agree? Yes, forced cooperation is an apt description of this case. The Coos Watershed Association feels that changing the land use from agriculture to wetland is not only a valid option, but a positive enhancement for the region. In many ways, this project plays on the fears of property rights advocates, as it uses public money to enable a land use shift from agriculture to wetlands. In relatively recent American history, farmers considered wetlands a threat. The farming community, often with federal funds, was expected to transform these "useless" areas into viable farmland. It is not surprising that some individuals continue to feel this way about wetlands, thereby seeing this purchase as a personal attack. This case is similar to the in-depth Dutch case detailed in Chapter 7, the North Friesland *Buitendijks*. In the Dutch case, bird conservationists spent thirty years lobbying to return tidal influences to an area in the northern part of the Netherlands. The *Buitendijks* were created by the ancestors of local Dutch community members, often at great personal risk and toil. People literally died to create land from the Dutch marsh, and the neutralization of that effort proved very painful for local residents. This American case is not quite as dramatic as the Dutch case, but there is a similar impetus behind the target's motivation, i.e. a desire to protect a land use (e.g., agriculture) once considered not only valid but also extremely beneficial to the community. It is understandable that the local farming community takes this personally. That being said, a funding agency awarded the Coos Watershed Association a grant realizing their intentions, and any individual farmer or consortium of farmers had a legal right to bid against the Coos Watershed Association. After the sale, locals have no legal grounds for opposing what the Coos Watershed Association does to their purchased land. As the target states "farmers don't have any channels to go forward, they are only unsuccessful bidders". The third actor also remarks that there "are no channels for citizens to get involved". The use of public funds and the lack of ways to influence the process appear to frustrate these local community members

Not yet implemented It would be most appropriate to say local community members delay this project. After the sale, locals attempted to thwart the process by enacting a county ordinance to limit local land use from changing farmland into wetlands, unless as an act of mitigation. This passed at the county level but runs counter to state laws. After consulting the Attorney General to confirm the legality of state law over county law, the Coos Watershed Association decided to proceed with their plans. Local community members worked to have a state law enacted to limit wetland restoration as well, but were not successful. While the disapproval of community members may continue to slow this restoration process, these citizens

have no legal grounding to stop this restoration from taking place, as the Watershed Association are legal owners of this land. The theory reveals no barriers to implementation in this case. The Coos Watershed Association has the power to enable implementation and while they cannot force actors to support this project, they do not need community approval to continue with their plans.

Wilson-Trask Wetland Protection and Restoration Not yet implemented (3)

Policies and/or Programs

National Oceanic and Atmospheric Administration Coastal and Estuarine Land Conservation Program, United States Fish and Wildlife Service Coastal Wetland Planning, Protection and Restoration Act.

Scores

Likelihood to implement at all Actors	Motivation	Information	Power
Implementer: Tillamook Bay National Estuary Project	18/18 (+1.00)	13/17 (.77)	3/6 (.50)
Target: Oregon Department of Fish and Wildlife	12/16 (+.50)	13/15 (.87)	2/6 (.33)

Case History

Like the McKay Claggett Creek Watershed Enhancement case, this project developed after the 1996 floods in Oregon. Citizens demanded the prevention of major flooding in developed areas. In the late 1990s, the Tillamook Bay National Estuary Project, working with Oregon Watershed Enhancement Board and the Oregon Wetlands Joint Venture, identified areas suitable for inter-tidal wetland restoration. Specifically, they applied for grant to be used to acquire land suited to restoration, as the Tillamook Bay area had lost 85% of its original inter-tidal habitat. Using $750,000 from the United States Fish and Wildlife Service Coastal Wetland Planning, Protection and Restoration Act, $600,000 from the National Oceanic and Atmospheric Administration Coastal and Estuarine Land Conservation Program, as well as $250,000 in matching state funds, they purchased three land parcels of 142 acres (57.5 hectares), 81.0 acres (32.8 hectares), and 154 acres (62.3 hectares) lying between the Wilson and Trask Rivers. This 377 acre (153 hectare) area currently serves as a floodway as waters come through the ecosystem. The implementer interviewee describes the area as a “giant gated bathtub” which holds floodwaters which can then be gradually released. The goals of this restoration are to improve wildlife habitat, water quality, and decrease flooding hazards. At the beginning of the project the Tillamook Bay National Estuary Project was a part of the Tillamook County government, but has since become a 510c3 (non-profit) organization. In 2000 the Army Corps of Engineers and Tillamook County jointly created a feasibility study to insure any hydrological changes would not increase flooding risks. Of the 59 modeled projects, two projects were chosen for implementation.

These measures have not yet been implemented, and project partners are working to acquire funding, estimated to total five million dollars.

Case Summary

Roles of actors, according to interviewees

	Implementer says	Target says
Who is the initiator?	Tillamook Bay National Estuary Project, Oregon Watershed Enhancement Board, Oregon Wetlands Joint Venture	Tillamook Bay National Estuary Project, United States Fish and Wildlife Service, Tillamook County
Who are the users of the area?	Dairy farms, duck hunting, and some fishing lodges. Use will not change until implementation.	Now almost no one; some property is leased for agriculture to cover costs
Who are the stakeholders?	Tillamook Bay National Estuary Project, Oregon Watershed Enhancement Board, Oregon Wetlands Joint Venture, Ducks Unlimited, Oregon Division of Fish and Wildlife, United States Fish and Wildlife Service, City of Tillamook, Trust for Public Lands	Tillamook Bay National Estuary Project, Oregon Division of Fish and Wildlife, Tillamook County, Tillamook County Soil and Water Conservation District, Tillamook Bay Habitat and Estuary Improvement District, Trask River Drainage District
Who reports the results of this project?	Not applicable, not implemented	Not applicable, not implemented
Who monitors the site after implementation?	Not applicable, not implemented	Not applicable, not implemented
Who does the public think is primarily responsible?	Hopefully the Tillamook Bay National Estuary Project, but do not know the public's perception	Tillamook Bay National Estuary Project
Who sees that the policy requirements are fulfilled?	Would have been Tillamook Bay National Estuary Project, but since it became a non-profit this responsibility will shift to Tillamook County	Not applicable, not implemented

The Tillamook Bay National Estuary Project leads implementation efforts and is therefore considered implementer for analysis. The Oregon Department of Fish and Wildlife obtained a $750,000 grant (with the Oregon Watershed Enhancement Board, Oregon Wetlands Joint Venture, and Ducks Unlimited) from the United States Fish and Wildlife Service to purchase land for the project. The Oregon Department of Fish and Wildlife is the target for analysis. Both implementer and target are motivated toward implementation. That being said, the target's motivation is comparatively lower. While the goals of the project support the organizational goals of both groups, the target displays a small amount of trepidation about how the project will be received by the public. The target interviewee finds that flooding interests trump environmental interests for most citizens, which could affect long term support for the project. Both actors display high levels of information in this

analysis. Implementer and target are knowledgeable of actors and their qualifications, and report no problems with information sharing among actors, accessibility or documentation. Implementer and target describe the inherent uncertainties found in wetland restoration, and both remark on the great strides made in wetland restoration research since the plan was developed. In essence, both actors found less information available on the topic in general in the 1990s. The implementer has a moderate power score while the target has a low power score. While both are stakeholders, it cannot be determined who monitors the site, or who reports the results of the project until implementation is underway. The balance of power from the perspective of the implementer is +0.17. Therefore the balance of power is held by the implementer in this analysis.

Hypotheses using Contextual interaction theory given the actor scores

Likelihood to implement at all: if application of the instrument would contribute positively to the objectives of one actor, while the other actor is also positive or neutral, and the information of the positive actor(s) is sufficient to apply the instrument, then the interaction process will have the character of cooperation. When both actors are positive there will even be active cooperation.

Does this case agree? Yes, the tone of interactions to date can be described as active cooperation. Over the course of interviews both actors describe constraints that could be problematic during the course of the project. As described above, the target mentions the tendency of local citizens to prefer anti-flooding goals to strictly environmental goals. The implementer describes the potential divisiveness of taking private lands and changing their ownership to public lands. However, it appears that neither of these issues is stalling the project in any way. It is unknown whether this restoration can proceed unimpeded through the entire process. Both actors report the core problem halting implementation is funding.

Not yet implemented If things are proceeding in a cooperative manner, why is this project not yet implemented? No barriers to implementation are indicated by analysis. As with several New Jersey cases (Pond Creek, Stone Harbor Point, and Liberty State Park) this case awaits funding from the Army Corps of Engineers. Like actors involved in these other cases, the implementer in this case remarks that "the Corps does not have money… because of Louisiana and Iraq". This project is on hold pending funding from the Army Corps of Engineers. As was the case with the New Jersey Pond Creek case, core actor resources are not a limiting factor. When applying the theory, it will be useful to include the way a third actor influences the work of policy implementers and targets. I will address this possibility in detail in chapter 11, in the section *Proposed revisions based on this study*.

Cedar Hill Farm Wetland Not yet implemented (4)

Policies and/or Programs

Undetermined conservation easement programs

Scores

Likelihood to implement at all Actors	Motivation	Information	Power
Implementer: Grande Ronde Model	15/17	15/17	4/6
Watershed Foundation	(+.77)	(.88)	(.67)
Target: Private Landowner	10/11	13/13	4/7
	(+.82)	(1.00)	(.57)

Case History

The landowner is seeking to generate revenue while protecting the "integrity of the land". The director of the Grande Ronde Model Watershed knew the landowner, and talked with him about the possibilities of using his land for a constructed wetland and conservation easement. A conservation easement means the owner relinquishes future development rights while retaining ownership (Nebel and Wright, 2000). Ecologically, the project goal is to send irrigation water through a series of natural ditches in a 50.0 acre (20.0 hectare) constructed and enhanced wetland site, cleaning and cooling the water before it returns to the Lostine and Wallowa Rivers. The landowner was open to this idea, and the Grande Ronde Model Watershed Foundation worked on a preliminary design. The current owner operates a large farm, and already receives government farm subsidies. As the total amount of federal funding is limited per landowner, the owner does not qualify for federal government conservation easement programs (such as the Wetlands Reserve Program). Currently the Grande Ronde Model Watershed Foundation is working to find other sources of funding for the project at a level that satisfies both the landowner and funding agencies. The Grande Ronde Model Watershed Foundation would like to match their funding with other sources, commit seed money to start the process, and then serve a primarily administrative role.

Case Summary

The Grande Ronde Model Watershed Foundation is seeking to implement the wetland restoration in this case, and is therefore the implementer. Restoring ecosystem functions on private land requires the cooperation of the private landowner, the target in this case. Both the Grande Ronde Model Watershed Foundation and the landowner are motivated toward the project, displaying strongly positive motivation scores. It is the goal of the Grande Ronde Model Watershed Foundation to coordinate public and private land restorations inside the Grande Ronde Basin (Grande Ronde Model Watershed, 2007). The landowner is not opposed to restoration projects, but seems primarily motivated to find a way to generate income while using the land in a suitable way. Both target and implementer display positive information scores. Both have knowledge of actors and their

qualifications and awareness of applicable federal policies, though the implementer is still searching for other conservation easement sources. Neither actor describes problems in information sharing, accessibility or documentation. Both implementer and target have moderate and comparable power scores. The balance of power from the perspective of the implementer is +0.10. The implementer holds formal power within the project as a financial contributor while the landowner clearly holds all formal power associated with private property ownership. Power is balanced between the two actors according to this analysis.

Roles of actors, according to interviewees

	Implementer says	**Target says**
Who is the initiator?	Executive Director of the Grande Ronde Model Watershed Foundation	Landowner's father's idea
Who are the users of the area?	Pasture	Farmland
Who are the stakeholders?	Federal regulatory agencies (United States Fish and Wildlife Service, National Oceanic and Atmospheric Administration, Army Corps of Engineers), local groups, engineering firm, Department of State Lands, Department of Environmental Quality, Oregon Fish and Wildlife Service, Local tribe	Grande Ronde Model Watershed Foundation, landowner
Who reports the results of this project?	Not applicable, not implemented	Not applicable, not implemented
Who monitors the site after implementation?	Not applicable, not implemented	Not applicable, not implemented
Who does the public think is primarily responsible?	Grande Ronde Model Watershed Foundation	Not applicable, not implemented
Who sees that the policy requirements are fulfilled?	With the wetlands reserve program, usually Natural Resource Conservation Service	Grande Ronde Model Watershed Foundation

Hypotheses using Contextual interaction theory given the actor scores

Likelihood to implement at all: if application of the instrument would contribute positively to the objectives of one actor, while the other actor is also positive or neutral, and the information of the positive actor(s) is sufficient to apply the instrument, then the interaction process will have the character of cooperation. When both actors are positive there will even be active cooperation.

Does this case agree? Yes, the tone of meetings and interactions to date has been active cooperation. Both actors are interested in implementing the project. The target calls this landscape "a natural fit" for the project. Information seems sufficient for implementation in this analysis. The target describes some consternation with the

slow-moving interactions of governmental agencies. As a business owner, he usually does not require the input of multiple groups and organizations to accomplish tasks. While he describes this as frustrating he never indicates this as a reason for not implementing the project. While the theory application indicates no barriers to implementation, according to interviewees the primary barrier to implementation is arranging appropriate funding for the project.

Not yet implemented This case involves a private landowner trying to determine the best use for wetlands on his land. In his own lifetime this landowner experienced a shift in wetland management; as a child growing up on a farm, draining wetlands was permissible while now such an activity requires permits. He is seeking to evolve his own farm management as the laws and policies relating to wetlands evolve. At the same time, he wants the best price available for his land. Ideally, he would like the same compensation for an easement as one would receive for developing land. While the target is positive about the project, he is pessimistic about funding. The implementer seeks not only to enhance the habitat and satisfy the landowner, but must also guarantee a protection of any public investment in the project. In this way the landowner's financial compensation is just one in a series of goals for the implementer. Guaranteeing public investment may in fact be one of the most important goals for the Grande Ronde Model Watershed Foundation, as it cements their reputation as a reliable organization with integrity. In this way spending time to find the most appropriate funding for the project and satisfying all stakeholders may provide the sustainable groundwork to ensure a successful project at the expense of delaying project implementation. As with most not yet implemented cases, the project plans can be shelved for a length of time while funding is secured. Again we have a case where despite an adequate power score the implementer in practice lacks the funds to implement a project. In this case the implementer seeks financial input from other actors. As with the Pond Creek and Wilson Trask cases, this analysis fails to show a limitation in resources as they relate to implementation. I will address this issue fully in the Chapter 11 section *Proposed revisions based on this study*.

Mouse Lake Not Implemented (1)

Policies and/or Programs

This voluntary project might have been funded through Oregon's state mitigation program had it reached the funding stage.

Scores

Likelihood to implement at all			
Actors	**Motivation**	**Information**	**Power**
Implementer: Ducks Unlimited	13/16 (+.63)	7/9 (.78)	3/5 (.60)
Target: Group of ten private landowners	6/12 (0.0)	0/4 (0.0)	7/7 (1.00)

Case History

This property of 350 acres (142 hectares) is owned collectively by ten individuals who use it for duck hunting and lease a portion as farmland. They contacted Ducks Unlimited about a project to restore seasonal wetlands on the property. To enable this plan, the owners made a donation to Ducks Unlimited who used those funds to create a plan indicating several restoration options. Ducks Unlimited then gave the owners options for how they could achieve project realization. The landowners make decisions formally by a majority rules principle. After Ducks Unlimited presented data to the land owners they decided not to proceed with the implementation.

Case Summary

Roles of actors, according to interviewees

	Implementer says	**Target says**
Who is the initiator?	Landowners	Landowners
Who are the users of the area?	Farmers and recreational users	Duck hunters and a farmer
Who are the stakeholders?	Landowners	Landowners and Ducks Unlimited
Who reports the results of this project?	Not applicable, not implemented	Not applicable, not implemented
Who monitors the site after implementation?	Not applicable, not implemented	Not applicable, not implemented
Who does the public think is primarily responsible?	Not applicable, not implemented	Not applicable, not implemented
Who sees that the policy requirements are fulfilled?	Not applicable, not implemented	Not applicable, not implemented

Ducks Unlimited is the implementer, as they are working to enable a successful wetland restoration project. Any restoration on this land requires the cooperation of the private landowners, the target in this case. Ducks Unlimited is a non profit organization working for wetland conservation and restoration, especially as it supports waterfowl populations. The implementer shows strong positive motivation toward this implementation project; in contrast the target is ultimately neutral about the restoration project. Ducks Unlimited has clear reasons for supporting the project, and while the target is not against implementation, the interviewee describes a few elements of the plan which made them hesitant. Specifically, they were uncomfortable losing control of their land. Implementing this project through Ducks Unlimited would mean others would have access to the area (e.g. for monitoring). The landowners also did not want the ongoing commitment of a ten year agreement with Ducks Unlimited, and had reservations about the costs of monitoring. The target has the lowest possible information score. They report a lack of

communication and information about the plan, though some of this could be because the project only reached early stages. They also display a lack of awareness about the policy that might be used for this type of project. The implementer displays a high information score. This interviewee displays knowledge of actors and their qualifications and the type of policy that would have been used if the case had gone forward; the implementer also provides a great deal of information during the process. These scores also reflect that Ducks Unlimited provides technical expertise during the project. It is important to note that like the target, the implementer reports a lack of communication between actors in this case. The implementer has a moderate power score while the target has a high power score. The balance of power from the perspective of the implementer is -0.40. The target holds the balance of power in this analysis. The owners are absolutely in control of what happens to this land.

Hypotheses using Contextual interaction theory given the actor scores

Likelihood to implement at all: if application of the instrument would contribute positively to the objectives of one actor, while the other actor is also positive or neutral, and the information of the positive actor(s) is sufficient to apply the instrument, then the interaction process will have the character of cooperation.

Does this case agree? Given the scores of the implementer and target, this case garners the above hypothesis. While in a manner of speaking the actors cooperated, it was only to a point. There is more to this case than is captured by the theoretical prediction. Cooperation was the tone of meetings, but at some point in the process the target moved forward alone, conducting the implementation without the implementer. In essence, the target cooperated to a point, at which time they cut the implementer out of the process. The landowners took the information provided by Ducks Unlimited and, using their own equipment, conducted the restoration themselves. While these wetlands and this project are not accredited to any state wetlands list, the net result is that some type of restoration took place. The target interviewee states “we accomplished what we wanted to with the wetlands on our own”. Of course, this restoration does not have input from state scientists and Ducks Unlimited, and it is unlikely the owners are monitoring the changes over time to understand long term effects. The target implemented the project, though chose to make changes by working outside of this social interaction process. As landowners this is their right. As a result the restoration exists but without the supervision and ongoing input of the implementer. When the target answered questions about their motivation, they describe it as neutral overall. However, their motivation to conduct the project alone without the constraints of working with governmental agencies and oversight clearly outweighed their motivation to take part in the project. The target reports that at the time they told Ducks Unlimited that they were not ready to make changes. According to the Ducks Unlimited interviewee, several influential owners failed to communicate their true goals for the project until the end of their interactions with Ducks Unlimited. These actors cooperated up until the moment the target changed plans, deciding to implement the project on their own. Does the

theory fail to predict this interaction correctly? The theory may not adequately capture actor information in this case. The implementer has a high information score, but arguably this actor lacks a great deal of information in this case. In addition, the target has a neutral motivation score, when they are ultimately motivated against conducting the project *with* Ducks Unlimited, but motivated *toward* conducting the project alone. In this case, the interview instrument was not capable of discerning the difference. Questions ask about the motivation toward the project, and the target is motivated toward implementing the project. They in fact implement the project in a timely manner. Questions do not distinguish between motivation for implementing the project alone and motivation for implementing the project with other actors in a cooperative social interaction process. It is unclear at this time whether the interview instrument should be expanded to include questions that can capture this difference. This situation may in fact be quite rare. Analysis with the contextual interaction theory highlights barriers to implementation, but in this case numerating them seems unnecessary as the restoration has taken place, just not under the auspices of Ducks Unlimited.

Warren Slough Not Implemented (2)

Policies and/or Programs:

No policy involved yet, though project like this are often funded via the United States Fish and Wildlife Service or the Oregon Watershed Enhancement Board.

Scores

Likelihood to implement at all Actors	**Motivation**	**Information**	**Power**
Implementer: Ducks Unlimited	12/13 (+.85)	3/10 (.30)	4/5 (.80)
Target: Private landowner	5/11 (-.09)	10/11 (.91)	5/5 (1.00)

Case History

The land in question was bought in 1940 by the current owner's parents. With Army Corps of Engineers money the owners built a berm to control water flow in this 35.0 acre (14.2 hectare) tidally influenced area. Ducks Unlimited spoke with the owner about breaching the berm to improve salmon habitat. Initially both actors felt this was a project with some potential. Ducks Unlimited began to write grants to fund the project, however over time the landowner decided against this project. Eventually the landowner installed an aluminum gate with tide box to control water flow in the area.

Case Summary

Ducks Unlimited is the implementer in this case as they seek to restore tidal influence to this area. To implement this project Ducks Unlimited must gain

cooperation of the landowner. The implementer displays high positive motivation toward the project goals while the target has neutral motivation for this restoration. Ducks Unlimited supports both wetland conservation and restoration, particularly for the benefit of waterfowl populations. Though initially interested, the target developed concerns during the course of the project, yielding an ultimately lukewarm motivation about the project goals. The target felt that completely breaching the berm would result not in a tideland but a bog. This actor also voices reluctance to lose all control of water flow in the area. The target has a high information score. He has knowledge of the actors involved and their qualifications, is aware of potential policies used for similar projects, and found there were no problems with information sharing. In contrast the implementer has a low information score. This actor reports a lack of information sharing as well as uncertainties developing during the project. Both target and implementer hold high power scores. The balance of power from the implementer's perspective is -0.20. In other words, the target holds the balance of power in this analysis. Both interviewees agree that the landowner makes all final decisions regarding the project.

Roles of actors, according to interviewees

	Implementer says	**Target says**
Who is the initiator?	Ducks Unlimited	Ducks Unlimited
Who are the users of the area?	Landowner	Landowner
Who are the stakeholders?	Funding partners including Oregon Watershed Enhancement Board, United States Fish and Wildlife Service, Lower Columbia River Estuary Partnership	Ducks Unlimited, landowner
Who reports the results of this project?	Not applicable, not implemented	Not applicable, not implemented
Who monitors the site after implementation?	Not applicable, not implemented	Not applicable, not implemented
Who does the public think is primarily responsible?	Not applicable, not implemented	Not applicable, not implemented
Who sees that the policy requirements are fulfilled?	Not applicable, not implemented	Not applicable, not implemented

Hypotheses using Contextual interaction theory given the actor scores

Likelihood to implement at all: If application of the instrument would contribute positively to the objectives of one actor (motivation), while the other actor is also positive or neutral, but the information of the positive actor(s) is insufficient to apply the instrument, then a joint learning process will evolve that will sooner or later create another situation.

Does this case agree? Yes, while this is a valid description of events, the ultimate result is that the restoration is not implemented. The chances of the implementer

learning on his own *toward implementation* are irrelevant when the learning can only involve information about the private land of an uninterested party. As the implementer remarks, “when we looked at it closely it soon died”. The implementer also describes the project as being “run backwards” and as “never having a chance”. Two particular issues concerned the landowner. First, a neighbor also uses a portion of the area in question for grazing cattle. The implementer laments not including the neighboring landowner in the project, as their disinterest eventually influences the process. In addition, the site includes a railroad line, which brought costly transportation infrastructure issues into the plan. When the neighbor’s disinterest and transportation issues became evident, actors lost interest in the project. Instead of the berm breach, the landowner installed an aluminum tide gate and box which allows the owner to control water movement in the area. In fact the landowner finds the current situation allows more water movement than before and that salmon populations benefit from the change; remarking it should “count” as a wetland as is. The implementer states that while biologically this was a good plan, socially and politically it was the wrong place and time.

The most obvious barrier to implementation is the target’s lack of motivation for the wetland restoration project. A change in motivation score of the target could yield a situation of learning toward cooperation. The second barrier to implementation is the implementer’s low information score. There were many uncertainties that eventually halted this project. The implementer states that at the time, the project was run from a regional office in California, which also contributed to the disconnection between the actors in this case. If the implementer develops a positive information score, he still must contend with the lack of power he holds. Ultimately the landowner holds power in decision making, therefore the only way to implement this restoration project would be with a target motivated toward implementation. However, the target reports satisfaction with the changes already made to the area, and it is unlikely he would be interested in a full restoration.

Marshland Restoration Not Implemented (3)

Policies and/or Programs: Policy dependent on the instrument enabling the project; in this case the process did not reach this stage.

Scores

Likelihood to implement at all Actors	**Motivation**	**Information**	**Power**
Implementer: Ducks Unlimited	13/14	6/9	1/4
	(+.86)	(.67)	(.25)
Target: GreenWood Resources	5/10	4/8	5/5
	(0.0)	(.50)	(1.00)

Case History

GreenWood Resources manage fast-growing tree farms within Oregon. Finding this 600 acre (242.8 hectare) area less productive, they sought another use for this land. In 2003 managers examined a wetland restoration project as an option for the area. Specifically, they worked with Ducks Unlimited on an idea to restore seasonal wetlands in order to improve wildlife habitat. They began preliminary discussions with Ducks Unlimited about using their expertise to enable the project. However, over time upper management within the company decided this project was not viable. This project never formally reached the funding stage.

Case Summary

Roles of actors, according to interviewees

	Implementer says	Target says
Who is the initiator?	Ducks Unlimited, Greenwood Resources	Greenwood Resources
Who are the users of the area?	A timber company	Tree farmers
Who are the stakeholders?	Some discussion with Natural Resources Conservation Service	None
Who reports the results of this project?	Not applicable, not implemented	Not applicable, not implemented
Who monitors the site after implementation?	Not applicable, not implemented	Not applicable, not implemented
Who does the public think is primarily responsible?	Not applicable, not implemented	Not applicable, not implemented
Who sees that the policy requirements are fulfilled?	Not applicable, not implemented	Not applicable, not implemented

Ducks Unlimited is the implementer as they are working to enable this restoration. GreenWood Resources plays the role of target because as landowners their agreement is necessary for implementation. Ducks Unlimited displays a positive motivation score, while GreenWood Resources holds a neutral motivation score. Ducks Unlimited is a non profit organization working for wetland conservation and restoration, especially as it supports waterfowl populations. They develop and manage wetland restoration projects and show strong motivation for this project, calling it a “fantastic opportunity”. While not against wetland restoration, GreenWood is a for-profit business, and financial gain is the primary driver for management decisions. The interviewee representing GreenWood finds project goals positive, yet he also mentions the importance of balancing environmental with corporate goals. The implementer holds a high information score, displaying knowledge of actors and their qualifications, as well as awareness of what types of policy would be appropriate for use in this project. The implementer also remarks that there were no problems with gathering information to enable this restoration. The target displays a moderate information score. This may be a reflection of the

project coming to an end at a relatively early stage. The target reports no problems with accessibility to the implementer's technical information, but does not report sharing information with the implementer in turn. The implementer has a low power score while the target has a high power score. The balance of power from the perspective of the implementer is -0.75, therefore the target holds the balance of power in this analysis. In this case the target has the final word on whether the project proceeds or not.

Hypotheses using Contextual interaction theory given the actor scores

Likelihood to implement at all: if application of the instrument would contribute positively to the objectives of one actor, while the other actor is also positive or neutral, and the information of the positive actor(s) is sufficient to apply the instrument, then the interaction process will have the character of cooperation.

Does this case agree? In this case, cooperation has been the tone of all meetings. At the same time, as with the Mouse Lake case, a prediction of cooperation fails to tell the whole story. While interactions displayed a cooperative tone, the target halted the process, and no wetland restoration project is implemented. This is one of the few cases in which both actors remark that while in this particular interaction the decision was "no", such a project is not unheard of for the future. Both actors are shelving the project at this time. The implementer states his organization is "still hoping to make it work" and that it is still a viable option. The target remarks that while similar projects were not part of their management plan in the past, they will be in the future. In particular the organization is moving toward certification through the Forest Stewardship Council which includes having 10% of their total acreage restored to native habitats. Regarding this case, the target states there was not a "negative connotation" to the failure of the project, only that it was not a part of their current business model. The actors are cooperating to date, but without the incentive of Forest Stewardship Council certification, the target is not convinced that this project benefits both waterfowl and the corporation. Has the theory failed to capture the circumstances in this case? Though this case is listed as 'not implemented', it has potential to be picked up again in the future, though arguably a future project may take a different form. In a way, it is more similar to several 'not yet implemented' cases where actors hope to implement the project in future. The difference is that in this case, it is not the relatively tangible issue of funding that has held back implementation, instead it is the motivation of the target, who is also the landowner. Under the present circumstances, the target hesitates to agree to implement the project. In interview responses, the target's motivation is neutral. He supports the project on some levels, but describes the issues that keep them from implementing it at this time. Therefore, while actors are cooperating, implementation is not forthcoming at this time.

Boone Slough Not Implemented (4)

Policies and/or Programs

Permanent wetland conservation easement.

Scores

Likelihood to implement at all Actors	Motivation	Information	Power
Implementer: The Wetland Conservancy	14/14 (+1.00)	11/11 (1.00)	3/5 (.60)
Target: Private landowner	4/11 (-.27)	4/11 (.36)	5/6 (.83)

Case History

Boone Slough is an area including federally and state listed species. One owner along an oxbow of the slough mentioned an interest in improving fish and wildlife on his land to The Wetland Conservancy. The Conservancy developed a plan to reconnect a channel in a bottomland part of the oxbow, reintroducing native wetland restoration to approximately 100 acres (40.5 hectares) of grazing land. This restoration plan also involved purchasing a conservation easement. At the end of one and a half years of discussions, the owner and his wife determined they did not want to proceed with the project.

Case Summary

The Wetland Conservancy is the implementer in this case as they are promoting the restoration project. Implementing this plan requires the cooperation of the landowner, the target. The implementer displays strongly positive motivation toward the project, while the target has a weakly negative motivation score in this analysis. The Wetlands Conservancy works to protect and conserve state wetlands via public and private partnerships (The Wetlands Conservancy, 2006). The landowner owns and operates a cattle ranch, and while in favor of wetlands in general, some aspects of this arrangement were not ideal for his family. The Wetland Conservancy planned a permanent easement for the area, which means the owner relinquishes future development rights while retaining ownership (Nebel and Wright, 2000). A permanent easement remains legally binding even when the land is sold to other individuals. The permanent nature of this option was a factor in diminishing the landowner's motivation for the project. The target also mentions the numerous agencies (he estimates around fifty) who get involved in projects regarding andronomous[13] fish runs served as a deterrent. While the target has a moderate level of information, the implementer displays a high information level. The implementer is knowledgeable of actors and their qualifications, aware of the easement program,

[13] fish spawning in fresh water but living in salt water.

as well as its requirements and benefits. The target is less familiar with the program that would have supported this project, felt some information was lacking, and dealt with uncertainties, especially regarding control of his property. In this case both target and implementer achieve high power scores. The balance of power from the perspective of the implementer is -0.23, meaning the target holds the balance of power in this analysis. Both actors agree that the landowner and his family make the final decision regarding the project.

Roles of actors, according to interviewees

	Implementer says	**Target says**
Who is the initiator?	Landowner	Landowner
Who are the users of the area?	Cattle grazing	Cattle grazing
Who are the stakeholders?	Wetlands Conservancy board	Director of the Wetlands Conservancy
Who reports the results of this project?	Not applicable, not implemented	Not applicable, not implemented
Who monitors the site after implementation?	Not applicable, not implemented	Not applicable, not implemented
Who does the public think is primarily responsible?	Not applicable, not implemented	Not applicable, not implemented
Who sees that the policy requirements are fulfilled?	Usually in a project like this, it is the landowner; in this case not yet determined	Not applicable, not implemented

Hypotheses using Contextual interaction theory given the actor scores

Likelihood to implement at all: if application of the instrument would contribute positively to the objectives of one actor, while the other actor is negative, and the information of the positive actor is sufficient, then the character of the interaction process will be dependent on the balance of power between the actors. Dominance of the negative actor will lead to obstruction.

Does this case agree? Yes, the target obstructs the process and the restoration does not proceed. The implementer describes conservation easements as a big commitment, almost "like a marriage". In this case, the implementer finds that at the end of a long "courtship" the actors had two different visions for the project. The implementer finds that regardless of the output it was a good learning experience, particularly regarding communication and compromise. The landowner and his wife maintain some skepticism about losing control of their private land in perpetuity, especially for the amount of money usually offered for property easements. They found the experience positive and felt the implementer was sincere, but report that some state and federal programs are more lenient regarding control and do not include a lifetime commitment.

According to the contextual interaction theory analysis, implementation could occur in two scenarios. First, the balance of power could shift from the target to the implementer, yielding forced cooperation. Unlike other cases where ultimate power could shift via formal or informal channels, the land owner has the undisputed

control of what happens on this land. A shift in power balance is highly unlikely in a case involving private land. Alternatively, the target's motivation regarding the project could shift from being against to being in favor of this project, yielding an active cooperative process. It is notable that the target is not against the *project* as much as wary of the conditions of the easement facilitating the project. Ideally, the owner would like a program where land stewards receive remuneration for managing land in a way that supports target numbers of species. In other words, a program rewarding him for creating and managing a landscape supporting high levels of wildlife, making him the equivalent of a rancher of wildlife. Until that time, or unless he decides to proceed with another less stringent project, it is unlikely this restoration will take place.

Appendix I Sample scores using the contextual interaction theory formula

Case	Contextual interaction theory formula score
Korenburgerveen	0.45
Tiengemeten	0.87
Fochteloerveen	0.68
Bargerveen	0.72
Water op Maat Project	0.33
Meijegraslanden	0.71
Drents Fries Wold	0.63
Ameland Dune Fringe Project	0.10
Randmeer	0.34
Tjongerkanaal	0.56
Ottershagen	0.29
Horstermeer	0.37
Siikalahti	0.62
Hainikaruapa	0.86
Koitajoki	1.00
Lake *Vaahersalonlampi*	0.86
Yyteri Peninsula	n/a
Alhonlahti	1.00
Sääperinjärvi	0.62
Iso Huppio	0.77
Central Finland Regional Environmental Center	n/a
Site within *Paljakka* Nature Reserve	0.13
Viikki-Vanhankaupunginlahti	0.00
Hyoteikonsuo aapa mire	0.33
Meadowlands Mitigation Bank	0.90
Rahway River Flood Plain Restoration	0.89
Franklin Parker Preserve	0.82
PSE&G Wetland Restoration	0.74
Teaneck Creek Wetland Restoration	0.91
Pond Creek Wetland Restoration	0.91
Stone Harbor Point	0.67
Liberty State Park	0.83
Eagle Manor Farm	0.65
Allied Junction Rail Project	0.37
Fenwick Manor	0.56
Farnham Park	0.50
Chocktoot Drain	0.55
Kunz Marsh	0.67
Lower Powell Butte Restoration	0.78
West Eugene Wetlands Project	0.82
McKay Clagget Creek	0.41
Rose Dairy	0.62
Wilson-Trask Wetland Project	0.87
Cedar Hill Farm	0.82
Mouse Lake	0.49
Warren Slough	0.24
Marshland Restoration	0.58
Boone Slough	0.84