

PROMOTING ENVIRONMENTAL MANAGEMENT IN DUTCH SMES
POLICY IMPLEMENTATION IN NETWORKS

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1 Introduction

The concept of sustainability presents an enormous challenge for industry. Where in the past a sound economic performance ensured survival, in the near future the triple-bottom-line will determine whether a company is successful or not. Next to outstanding economic results, companies will have to minimize environmental impacts and pay full attention to social aspects. Over the years, environmental management has therefore developed into a strategic issue for companies. The concept of sustainable development implies that environmental management in organizations has to go beyond compliance to regulation. Aspects such as waste minimization and life cycle analysis are becoming more and more part of environmental management. Moreover the environment is no longer the sole responsibility of governments. Companies and other organizations have to take up their share of responsibility. Throughout Europe one can witness a movement that blurs the lines between governments and private actors. Shared responsibility, one of the key principles of the Fifth Environmental Action Program 5EAP of the European Union (CEC 1993), was born out of a notion that none of the partners involved (governments, industry, NGOs or the general public) has the capacity on its own to bring about the changes needed. Shared responsibility is seen as crucial in achieving sustainable development. Therefore key elements in modern environmental policy are collaboration and interaction (Hartman et.al. 1999). Creating interaction among the main groups of actors including governments, public and private industry and the general public encourages collaboration.

The cornerstone of current Dutch environmental policy is the National Environmental Policy Plan. This plan aims at radical changes in order to make environmental problems manageable within the next 25 years. This means for instance that emissions of the most heavily polluting substances must fall by 80-90%. This can not be achieved with conventional policy-instruments only. Dutch environmental policy nowadays is being created through a process of close cooperation between government, the business community, NGOs, and other actors (Bressers and Plettenburg, 1996). One of the main goals is to create an atmosphere in which industry itself will take initiatives and not only respond to governmental action. Shared responsibility, as advocated by the European Union, is very much a central perspective in Dutch environmental policy. The policy program on environmental management is an example of this new policy approach.

In this chapter the policy program on environmental management in the Netherlands is being analyzed and evaluated. It was a voluntary program aiming at all Dutch companies that ran from 1989 until 1995. Adapting environmental values and the implementation of environmental management systems in SMEs were thought to be important steps in the transformation process towards sustainable companies. Instead of dealing with SMEs directly, the Dutch government tried to facilitate and manage the formation of networks in which intermediary organizations were expected to act as agents for change. The program can be seen as tool to increase the commitment of industry and to further the institutionalization of environmental management into environmental management systems. Although also direct environmental impacts were aimed for, the general idea was to generate mutual trust for government-industry collaboration, to enhance capacity building within industry, to involve third parties and build networks. From the start this trajectory was planned as a long-term strategy without very articulated goals at the time and therefore open to policy learning.

We studied the effectiveness of the network configuration in the Netherlands between 1990 and 1996. In this chapter we highlight some of our findings (see also De Bruijn and Lulofs 1996, 2000). In section 2 we describe the central elements of the Dutch policy program on environmental management. In section 3 we analyze the effects it led to in terms of company attitudes and behavior. The basic question in these sections is whether the network approach is valuable in reaching for sustainability within industry. We try to explain in section 4 why the program was relatively successful. Crucial factors are found in the wider policy approach and the fit with the general mediating policy style of the Netherlands, and the high level of public concern over environmental matters during the early 1990s. We end the chapter with section 5 in which we evaluate the prospects of the network approach in the light of its effectiveness for transforming SMEs.

Our main conclusion is positive concerning the effectiveness of the network approach. At the same time we conclude that the context in which the policy program has been implemented, and especially the close connection with co-regulatory and regulatory paths, has been a crucial factor in this.

2. The Dutch policy program on Environmental Management

The basis for environmental policy in the Netherlands was laid in the early seventies. In 1972 the Ministry of the Environment was installed. With some urgency media-specific environmental laws were formulated depending on command-and-control mechanisms. Since the 1980s there is a strong development towards integration (OECD 1995: 32; Liefferink 1997: 218), resulting in 1989 in the first National Environmental Policy Plan. This plan is the cornerstone of current Dutch environmental policy¹. The first plan aimed at radical changes in order to make environmental problems manageable within the next 25 years. The pub-

¹ It is published every four years. NEPP-4 will be published soon.

lication of the ambitious NEPP coincided with a growing lack of confidence in the traditional policy approach with its emphasis on direct regulation (Bressers and Klok 1996). This is one of the reasons for the Dutch government to broaden the mix of policy instruments in order to reach for shared responsibility. The policy program on environmental management is one of the examples of the new approach.

The central concept underlying environmental management is to stimulate the companies' own responsibility and activity. This should improve the responsiveness, capacity and capability of SMEs. In 1989, the Ministry of the Environment in the Netherlands published the Memorandum on Environmental Management (TK, 1988-1989, 20633, nr.3). The objective set by this Memorandum was that companies in the Netherlands should have introduced an environmental management system by 1995. It was however a voluntary program. No sanctions were set in the short run for companies who wouldn't implement management systems, other than stating that they might be subject to more and severe enforcement². The basic philosophy was to convince companies of the usefulness of environmental management by explaining its central concepts and offering concrete support during implementation.

In the memorandum a distinction was made between the (few) larger companies and the main group of SMEs³. To reach for SMEs, the Memorandum presented a program of activities. This program was based mainly on the acquisition of specific knowledge through research and sample projects, for instance per sector of industry. This knowledge could then be disseminated among companies through guidance and education. By supplying information, attempts were made to stimulate the actual introduction of environmental management into the companies. The underlying idea was that by offering support, the uncertainty and therefore the costs to the individual companies could be reduced to such an extent that they would actually proceed with introducing environmental management. Intermediary organizations were asked to play a special role in this. They were responsible for keeping in touch with the individual companies. Policy implementation therefore took place in two distinct phases. In phase 1 the ministry stimulated intermediary organizations to translate the concept of environmental management into concrete actions for specific target groups. In phase 2 companies were expected to implement these actions into their daily management practices (with the help of intermediary organizations) in order to establish environmental management systems.

Thus, instead of dealing with SMEs directly the (central) government tried to facilitate and manage the formation of networks and tried to enable those networks in their attempts to reach for individual companies. The networks aimed for, in which for instance trade associations played an important role, were believed to be better capable than the government alone (cf. O'Toole 1990). The government anticipated that the necessary mutual respect between network-organizations and the target group might be higher in

² In 1995 the ministry published a note in which the importance of environmental management for the relationship between regulators and companies was stressed. Companies who had implemented a certified management system could qualify for a lighter and more flexible permit and enforcement regime (VROM 1995).

³ The memorandum mentioned 10,000-12,000 larger companies, and 250,000 SMEs.

such an arrangement, as was the accessibility of the target group. The intermediary organizations were responsible for keeping in touch with the individual companies. In order to guide the implementation of the policy program a special Program Office was established within the environmental ministry. It administered the funds available (especially for phase 1)⁴, tried to coordinate all activities and evaluated those. To this end an archive was established that we have used extensively for our research.

The policy network concerning environmental management consisted of various partners⁵:

The main role was foreseen for the *trade associations*. They had to convince their members (and possibly also non-members), help them actively by providing handbooks and courses, and use their position of authority and power to force them into environmental management. A second important category was formed by the *Industrial Environmental Agencies* (Dutch acronym: BMD). These organizations were set up especially for the introduction of environmental management in SMEs. They had a regional perspective and were mainly supposed to motivate and support companies. They were expected to deliver a kind of first aid. In cases of complex problems they were supposed to call in specialists (possibly an innovation center or a consultancy firm). The BMDs were also expected to make use of the material that trade associations had developed for their specific sector of industry. Spread all over the country there were some twenty BMDs, set up in general by Chambers of Commerce. Jointly they developed their own method for implementing environmental management. *Municipalities* were expected to support the activities of the trade associations and the BMDs for the companies within their borders. The idea was that they would adjust their permits and inspections to the level of environmental management in a company. *Labor Unions* were expected to inform their members and thus to create support on the shopfloor. Workers play an important role in adequately implementing and maintaining environmental management. They are involved in the daily management of substance flows within the company. So, employees are the key to improving the environmental performance. Labor unions were expected to raise consciousness amongst workers. *Consultancy agencies* could be valuable in assisting companies with the implementation process of environmental management. Finally the *Ministry of the Environment* saw a motivating task for themselves. And of course they co-financed some of the activities of the other network organizations.

In order to model the different activities of intermediary organizations we have developed a framework based on the subjective rational actor model (cf. Bressers and Klok 1988). The course of interaction processes is explained in this model on the basis of the motives of the actors involved, the resources they possess and their position of power. The activities of intermediary organizations within a policy network can aim at these three dimensions, hence they can perform three functions. We may speak of a *persuasive function* when a network organization tries to influence the motives of the dominant coalition within companies with regard to environmental management. Network organizations have to convince this

⁴ Almost 22,5 million Euro was available. A third part went to branch projects, another third to the establishment of BMDs.

⁵ This characterization was done by secondary analysis of the policy documents, by interviewing core officials that were responsible for implementing the stimulation policy and by observations in the four sectors of industry that were analyzed.

dominant coalition of the relevance of environmental management and improvements in their environmental performance. We speak of a *supporting function* when a network organization tries to increase the resources of companies by helping them with implementing environmental management and the measures needed for improvements of the environmental performance. This involves supplying model approaches, guidelines and manuals and offering courses and training. We speak of a *repressive function* if the network organization is intended to steer the unwilling members of the target group in the desired direction through gentle or hard pressure. Performing a repressive function means acting out of a position of power. The above is summarized in figure 1.

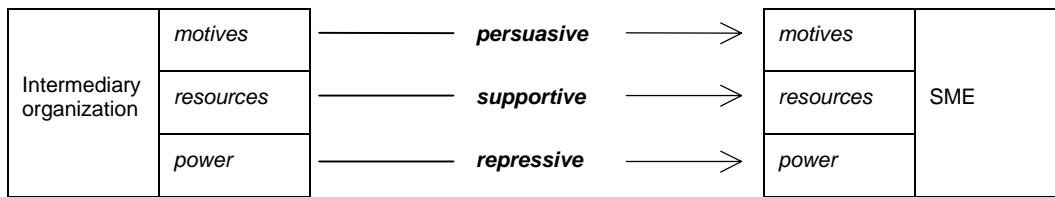


Figure 1: *The three network functions between SMEs and intermediary organizations*

The basic assumption of a network approach is that as the intended network relations are exercised to a greater extent, companies will show a more positive attitude and carry out more of the activities asked for. Table 1 summarizes the network organizations and their expected functions.

Actor	Function	Persuasive	Supportive	Repressive
Trade Association		X	X	X
BMD		X	X	
Municipality		X	X	X
Labor Unions		X		
Consulting Agencies			X	
Central government		X		

Table 1: *Network organizations and their functions*

3 Implementation of the policy program and its effects

Phase 1: Construction of the policy network

As explained in the previous section, policy implementation took place in two distinct phases. During phase 1 the construction of the policy network stood central. Most of the funds available were used to this aim. Intermediary organizations could submit proposals for projects. Once approved, about half of the

budget could be covered by the ministry. Between 1989 and 1996 162 projects have been implemented (VROM 1996). 55 projects concerned initiatives by trade associations and some 20 BMDs have been established. The first question we asked ourselves was whether this meant that the different functions by the network organizations were realized to the perception of our respondents⁶. Of the 11 hypotheses (one for each expected network function) only one had to be rejected. Only the persuasive function by the labor unions had not developed. Based on these data, we feel it is safe to conclude that a real network has been built over the years. Below we give an example of the concrete activities of one trade association. The Royal Dutch Association for the Printing and Allied Industries (KVGO) represents the companies in pre-press, printing, binding and print finishing industry. KVGO acts an agent for its members and offers support on various issues. KVGO has a bureau where almost 80 people work. Some of them have environmental expertise. The printing industry is well organized: almost 90% of the companies is a member. KVGO started up an environmental management project together with another associated trade association. Together they founded a special foundation (Dutch acronym: SIMZ) that would take care of the introduction of environmental management within both sectors. SIMZ developed several handbooks that could be of value to individual companies. First of all they developed a handbook on environmental management (SIMZ, 1993). This handbook consists of three sections: Organizational aspects, legal aspects and technical aspects. Most emphasis was put on the organizational design of an environmental management system and compliance. The technical aspects were extensively covered in the Handbook Environmental Measures (1993). SIMZ also developed a scheme by which the model could be implemented by individual companies. This scheme foresees in courses and individual support. Regional information meetings had to attract the attention of companies. Special projects were organized with other partners, such as provinces and municipalities. SIMZ also carried out so-called pre-audits. This audit is voluntary for companies that collaborated in the environmental management project. The procedures and contents resembled that of a 'real' audit, but was less costly.

Phase 2: Developments within companies

Between 1990 and 1996 we closely followed the effects these and other efforts by partners in the policy network. We have analyzed and also partly participated in environmental management projects, both by network partners and at the level of individual companies. We also stood in close contact with the Program Office of the ministry. We have looked at four sectors of industry in particular: the chemical industry, the printing industry, synthetics processing industry and concrete products industry. Random samples were taken from these four industrial branches. Out of the 343 firms we contacted, 141 (41%) cooperated in our research. Our main research question was whether the new policy approach was successful. For this purpose we gathered data on 200 variables per company covering the way companies responded to incentives out of the network and the internal barriers they had to deal with. In our analysis we tried to

⁶ They were asked to evaluate the existence of a specific function on a 10-point scale. The average score was used to test the establishment of the various functions.

explain the level of progress of companies and the attitude they have towards environmental management. The main explanation was looked for in network activities. Below we highlight some of our findings.

First, we have determined the *level of progress* of implementing environmental management in the companies. The variable ‘progress’ comprises two aspects. First we determined to what extent the companies had implemented an environmental management system. This is seen as an indicator for the progress on an organizational level, indicating a growing commitment and responsibility. Secondly we’ve determined the amount of technical measures taken on environmentally relevant issues within a company. After all, sustainable environmental management is more than just an organizational matter. Earlier we mentioned that the program did also aim at direct environmental improvements. We have combined these two aspects to an index for the level of progress of environmental management within the company. The ‘inactive’ companies have developed few or none elements of an environmental management system and have taken hardly any concrete measures to minimize their environmental burden. The ‘advanced’ companies are the opposite of this: They have developed all or nearly all elements and have also take a lot of measures. Table 2 shows the distribution of the companies on the variable progress. The found level of progress is reasonably comparable with the data found by the official evaluation studies (e.g. Heida et.al., 1996)⁷.

Level of progress	Percentage of companies
• Inactive	6
• Orientating	39
• Initiating	51
• Advanced	4

Table 2: *The progress of environmental management in companies (in percentages)*

The implementation of environmental management requires changes within the organization, or in other words changes in the patterns of behavior of members of the organization. Moreover, the policy program also aimed at changing the *attitude* towards environmental management within a company. After all, the policy program was an important attempt by the Dutch government to reach for shared responsibility. The dependent variable ‘attitude’ regarding changes in the rules of behavior can be placed on a continuum ranging from acceptance to rejection of change. In our model, an attitude is formed by the combination of the actor’s motivation, his resources and his position of power. To measure the attitude of the companies we used a list of 20 items, each representing a different dimension of an attitude. Via the construction of scales for each dimension, we were able to determine the attitudes of the companies. Table 3 gives the overview.

Attitude⁸	Percentage of companies
• Negative	23
• Indifferent	21
• Positive	56

Table 3: *The progress of environmental management in companies (in percentages)*

Research expectations were formulated about the positive relations between the attitude and the level of progress of companies. These expectations proved to be true (Kendall tau-c = 0.42, T-value 5.84).

Explaining the results

At first glance you could say that the stimulation policy has been a quite successful given the fact that these results were achieved in only a few years time. The main question however is whether the policy program, implemented in a network configuration, is accountable for this. To this end we developed a theoretical model in which the organizational framework stood central (i.e. by establishing the mesolevel of intermediary organizations). The basic assumption was that as the intended network relations are exercised to a greater extent, companies will show a more positive attitude and consequently more measures will be taken. The research model is shown in figure 2.

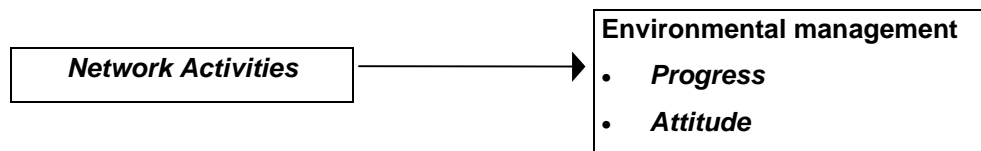


Figure 2: *Research model*

To test this model we first of all looked at the degree of penetration of the different activities that were carried out through the network. As said, network organizations (and especially trade associations) were supposed to develop model-approaches, handbooks, courses, meetings, etc. Table 4 summarizes the main findings on how companies perceived these activities. The outcomes point out that the activities in the network were certainly noticed by the companies.

⁷ Because the policy program was voluntary, the ministry wanted to follow closely its implementation process and the effects within companies in order to review its success. Several evaluation studies were carried out to this end.

⁸ In our analysis we distinguished between five different attitudes. For this chapter we have summarized these in three main categories.

Network indicators	Percentage of companies
• Familiar with terminology	92%
• In possession of the supporting material	62%
• Attended informative meetings	54%
• Implementation supported by the network	43%

Table 4: *The degree of penetration of the network activities (in percentages)*

Next, we determined the frequency of contacts between network organizations and the company. Furthermore we looked at the relation between the different network functions and the attitude. Each relation proved to be positive and significant (Table 5). This means that as network organizations are more active, companies show a more positive attitude towards environmental management and are more advanced with the implementation of it.

Indicator	Relation
• Frequency of contacts	Kendall tau-c = 0.18, T-value 1.99, significance: alfa approximately 0.02
• Persuasive function	Kendall tau-c = 0.27, T-value 3.08, significance: alfa approximately 0.00
• Supportive function	Kendall tau-c = 0.24, T-value 2.29, significance: alfa approximately 0.01
• Repressive function	Kendall tau-c = 0.16, T-value 1.71, significance: alfa approximately 0.04

Table 5 *Network relations*

These findings indicate that the network activities seem to have influenced the developments within companies. In order to get a better grip on this relationship, we carried out several regression analyses⁹. We used indicators of network activities as explanatory variables. These indicators covered the relations between network organizations and companies. Only indicators for the activities of trade associations and the Ministry of the Environment proved to contribute substantially to the explanation. Activities by other organizations in the network didn't add to explaining the development within companies. In total, network indicators could explain however only 22% of the variance in our dependent variables.

⁹ Through regression analyses one can determine the relation between a dependent variable and several independent variables ($Y = a + \beta_1 X_1 + \beta_2 X_2 + \dots + \beta_n X_n + e$). This gives an estimate of the explanatory power of independent variables. We excluded variables from the regression equation that explained less than 1% of the variance of the dependent variables. The level of significance of β was 0,10.

Broadening the explanation

The explanation offered by the network indicators was not satisfactory. Therefore, we also looked at (internal) factors in order to explain why certain companies were further advanced and stood much more favorable to environmental management than others, see figure 3.

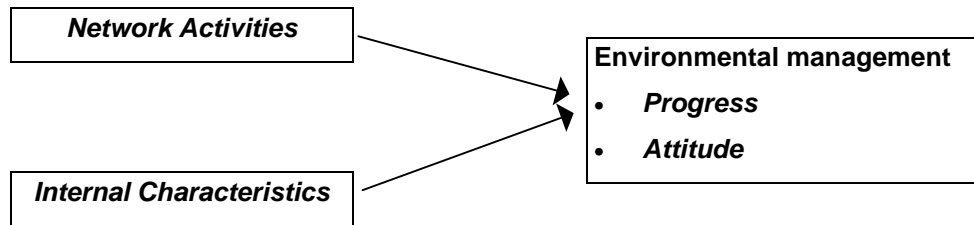


Figure 3: *Research model*

Out of a multitude of variables five variables proved to contribute significantly to the explanation. First of all companies that had a good internal communication structure achieved much better results. These companies for instance had clear decision-making rules and regular job consultations. Second, companies that already had environmental expertise before the implementation of the policy program started, proved to be much more advanced. For one thing they were able to respond to external pressures. A third explanatory variable was the level of profitability. Companies clearly need enough resources to work on environmental management. The level of competition was our fourth explanatory variable. Companies that are facing a very tough competition may lack the time to work on environmental management properly. The fifth and last variable was the nature of the immediate surrounding. Companies located within residential areas tended to be further advanced than companies on remote industrial estates. Taken together the network and internal variables can explain 58% of the variance in progress and attitude of the companies. Table 6 summarizes the variables that had significant explanatory power. It is important to realize that the specific variables that can explain why certain companies are more advanced and stand more favorable towards environmental management may be different in different settings (e.g. different national contexts).

	Explanatory variable	Explanatory power
Network indicator	<ul style="list-style-type: none"> • Activities of Trade Association • Activities of Ministry of Environment 	14% 7%
Internal characteristic	<ul style="list-style-type: none"> • Adequate communication structure • Environmental expertise • Profitability • Level of competition • Immediate surroundings 	12% 9% 10% 6% -
		58%

Table 6: *Explaining the progress and attitude of companies*

Based upon our results we may conclude that it is the interplay between external pressures and internal characteristics that enables companies to move forward. Companies with environmental expertise (e.g. visible in the presence of an environmental coordinator) may for instance be better equipped to recognize external pressures, especially in cases like ours where the implementation of environmental management was voluntary in the end.

Trade associations proved to be by far the most influential actors in the network. Newly established organizations, like for instance the BMDs, were not influential at all. The pro-active and influential role of trade-associations with regard to environmental affairs has recently also been observed in the USA (Nash 1999).

Still it is obvious that other, company specific factors can specify the exact influence of network relations. Stimulating companies out of a network configuration is therefore not the ultimate solution. We should not forget however that most of the internal characteristics of a company in itself do not evoke changes. What they can do is making a company more receptive for external stimuli. For instance: Making profits will in itself not transform a company into a more environmentally friendly production organization. Enough financial room will however enable companies to invest in environmental management. External pressures or stimulation may be the push needed under such circumstances. Therefore we still feel the stimulation policy was successful.

4 Broadening the explanation to the context of the program

The policy program on Environmental Management was a reasonable success. In this section we will try to understand why the program was successful by sketching the context in which the policy program was implemented. We will show that the policy program was not an isolated one, but highly integrated in a new policy approach that has developed during the last decade. We will also show that the program gave a close fit with the new, mediating policy style that has developed during the same period. We believe that this context contributed as much to the successfulness as the structure and contents of the program itself. Below we will argue that traditional policy approaches couldn't face the environmental problems of the Netherlands, especially also when the level of ambition was raised. As a response a new policy approach developed in which voluntary programs and selfregulation go hand in hand with more coercive programs.

The Netherlands is a highly densely populated country facing high environmental pressures

Of all European countries the Netherlands is one of the smallest but with the highest population density¹⁰. It has a comparatively large amount of industry, intensive farming and a fast growing infrastructure. There is a strong competition for physical space between businesses, households, agriculture, traffic and nature development. The system of physical planning was developed relatively early in order to prevent markets from absorbing available rural and nature areas. Special is also the fact that a large part of the country lays below sea level and that several major European rivers (Rhine, Meuse) have their mouth in the Netherlands. From early days on people were forced to collaborate, for instance in Water Boards, in order to fight the danger of floods (cf. Raadschelders and Toonen 1993; Van Hall et al. 1999). Maybe as a result a Dutch characteristic is the long tradition of governmental consultation with various groups in society (VROM, 1997). The Netherlands may be described as a highly consensus-based community with a planning tradition covering a wide range of social and economic aspects. The so-called "polder-model" relates to negotiations and agreements between government, industry and labor unions on issues such as competitiveness, wages, tax-systems, and social security. The *general* policy style of the Netherlands may therefore be described as a corporatist, active, comprehensive, consensual and pragmatic (cf. Van Waarden 1995)¹¹.

Traditional policy approaches gave disappointing results

Already since the 19th century there is legislation to prevent nuisance from industrial activities. Serious cleaning up activities however started only in the 1970s, for instance in the fields of water pollution and air quality. The style in environmental policies originally didn't fit the mediating policy style. Legislation was developed out of a distant, negative attitude towards industry and other target groups (Bressers and Plettenburg 1997). Media-specific environmental legislation was developed depending on strong command-and-control mechanisms. Environmental problems were seen as mainly hygienic problems within isolated environmental compartments (water, air, soil, waste, etc.). Different laws and policies were formulated for each compartment. The central instrument in Dutch environmental policy was the ban on performing any environmentally harmful activities without a permit. Permits were therefore the most often used policy-instrument. Lower authorities (mainly municipalities) were responsible for the employment of the instrument. The complex, fast changing rules were however not understandable and not specific enough for SMEs. Besides that, the monitoring of the rules by the public authorities and enforcement efforts, were not substantial and not very effective. A lot of evaluation research indicated that the traditional policy instruments were to a substantial extent ineffective (cf. Schuddeboom 1994).

¹⁰ The total area of the Netherlands is only some 41,000 km² (EU-15: 3,193,000 km²). The population density in the Netherlands is about 380 citizens/km², where the EU average is 117 (Eurostat).

¹¹ Van Waarden distinguishes several sub-dimensions of policy styles: corporatist vs. liberal-pluralist vs. étatist; active vs. reactive; comprehensive vs. fragmented; consensual vs. adversarial vs. paternalistic; pragmatic vs. legalistic.

Numerous incidents and the concept of sustainable development called for new ambitions

The 1987 report of the UN World Commission on Environment and Development (Commission Brundtland) 'Our common future' became very popular in the Netherlands. Part of this popularity can be understood if we look at a number of environmental incidents at that time. We refer for instance to the highly visible problem of acidification. The social impact of 'Waldsterben' was first strongly felt in Germany, however gradually affected also the Dutch public opinion. Another example of major incidents are the numerous cases of land contamination. More than a 1000 serious cases of land contamination were discovered after the first incidents appeared. Land contamination is a very serious problem if you take into account the hydro-geological characteristics of the Netherlands. Pollution can easily reach groundwater levels and via diffusion threaten drinking water supplies. Since space is very scarce every polluted piece of land constitutes a major problem. In order to remove or isolate contamination a number of residential areas had to be pulled down. The social impact of this might be illustrated by the fact that citizens occupied the city hall and even held the mayor hostage. Waste incineration was also compromised (Lulofs, 2001). Dioxins were found near waste incinerators and in dairy products produced from milk delivered by cows grazing near waste incinerators. These and other incidents led to a high level of public concern over environmental affairs in the late 1980s. It prepared the political stage for an integral study on the state of the environment in the Netherlands. The resulting report was called in Dutch 'Zorgen voor morgen' (RIVM 1988)¹². This report became, in the context of high public concern, very influential. The policy response to the report was given by the first National Environmental Policy Plan (NEPP), published in 1989. NEPP is the cornerstone of current Dutch environmental policy. It aimed at radical changes in order to make environmental problems manageable within the next 25 years. This means for instance that emissions of the most heavily polluting substances should be reduced by 80-90%. The mediaspecific, problem-oriented approach was, as in the RIVM study, left behind and replaced by a thematic one. For each theme table 7 indicates the objectives for the next 25 years.

Policy themes	Targets (simplified)
• Climate change	reduction of CO ₂ emissions by 20-30%
• Acidification	reduction of SO ₂ emissions by 80-90%
• Eutrophication	reduction by 90%
• Diffusion of toxic and hazardous waste	reduction of emissions by 50-90%
• Waste disposal	reduction of amount of waste dumped by 60%
• Disturbance	reduction of the number of people significantly hindered by noise or odor by 70-90%
• Groundwater depletion	reduction of affected areas by 25%
• Dissipation	increased material intensity

Table 7: Dutch policy themes and targets

Efforts to avoid shifting environmental burden from one compartment to others (air, water and soil) became an important base for the second generation of environmental policy. A fundamental principle underlying NEPP is that the responsibility for reaching the environmental targets lies primarily with the target group itself (Suurland, 1994). Furthermore, the polluter should pay for the costs to repair the environmental damage caused.

The need for a new policy approach

The publication of the ambitious NEPP coincided with the growing lack of confidence mentioned already in the traditional policy approach with its emphasis on direct regulation (Bressers and Klok 1996). From this perspective it was inevitable that a complete rethink of the environmental policy strategy took place (Bressers and Plettenburg 1997: 127). Our open economy and the membership of the European Union limit however the possibilities to use financial incentives. The understanding also grew that the kind of goals of NEPP required a change in more than one segment in product-chains. Therefore collaboration between different segments had to be established. Because regulation usually only addresses one segment and financial incentives necessarily have to be limited, the understanding was born that the toolbox for environmental policy should be expanded with more co-operative and voluntary programs. The new ambitions and the lack of confidence in traditional approaches thus called for another strategy and style than the authoritarian style that accompanied the use of direct regulation. The new strategy should aim more specifically at eliciting private initiatives and shared responsibility. This approach is not only aiming at achieving more broadly based support for government policy, but also recognizes that the know-how necessary to reduce environmental pollution can be largely found at the polluters themselves. From this perspective industry is not only part of the problem but also part of the solution.

The new strategy leans heavily on more voluntary approaches. Voluntary agreements have become a widely used policy instrument in the Netherlands. Not only are the most agreements (in absolute terms) concluded in the Netherlands, but also is the instrument broadly used in various aspects and themes of environmental policy (EEA 1997). The setting of targets at the state-level remains the exclusive responsibility of the government (as employed in the NEPP). The target groups have a strong say in all further stages of the policy process, once the setting of targets at the state-level has been done. In the so-called target-group policy several sectors of industry participate in consultation and negotiating processes with the authorities. The resulting agreement (covenant) specifies the targets for a sector of industry. Quite a large number of the agreements are legally binding, which distinguishes the Dutch practice from others (EEA 1997). The trade association is an important actor during and after the negotiations. The target-group policy (as a central approach in current Dutch environmental policy) brought the environmental policy field more in line with the basically mediating national policy style (Lieverink 1997: 224). Over the years the authoritarian

¹² The Dutch word 'zorgen' has a double meaning: The title of the report indicates as well 'Concerns about tomorrow' as 'Taking

policy style with a distant, negative attitude towards target groups has therefore changed into a new approach designed to encourage self-regulation (Bressers and Plettenburg 1997: 116). Of course, direct regulation also plays an important part in Dutch environmental policy today. But even here, consultation with all the relevant parties is important. Instead of simply imposing legislation, the Dutch government often concludes agreements with, for example, relevant sectors of industry regarding the implementation of environmental objectives.

Self-regulation in a context of regulation and co-regulation

The policy program on environmental management was a voluntary program. As explained above, it was however certainly not an isolated program. It was closely embedded in the total system of environmental policy in the Netherlands. In this system regulation, co-regulation and self-regulation are all important and coherent ingredients (cf. Lévêque 1996)¹³. Here we are approaching the core of arguments why this kind of network implementation might produce positive results. In pure self-regulatory systems the environmental objectives and measures are set unilaterally by industry. The drivers for industry can be found in regaining confidence of customers and the public opinion. The central problem are free-riders and the lack of credibility of such arrangements. Public regulation leads to bad timing and inappropriate measures from a business perspective. It is the sheer difference between decision-making on central level and decision-making at de-central level by the better-informed agent. The problems can be overcome by a comprehensive and balanced system such as the Dutch one. The government decides on overall targets, industry gets a say on sets of measures to achieve the targets. The gains for industry are increased flexibility and efficiency. In the Dutch system of co-regulation free-riders will be forced in the end by the regulators to meet the same objectives as participating companies. Regulators are obliged to take the covenants into account when issuing new permits. From the government perspective there is also the benefit of having to concentrate on a smaller number of laggards. Besides that, in this system of co-regulation the knowledge of the private sector is absorbed into the public sector, and the speed of change is no longer determined by the laggards¹⁴.

Therefore, we have to acknowledge that the policy program on Environmental Management was no isolated voluntary program, but a closely embedded approach in the total environmental policy system. The linkage with the system of co-regulation is found in the covenants that are agreed upon with sectors of industry. Those covenants not only render national environmental targets into targets for sectors of industry and individual companies, they also contain agreements on elements of environmental management (systems). The policy program was also a first step in a careful strategy aiming at capacity building within industry. With the program on environmental management still running, the next step was introduced that tried to integrate environmental friendly product-design into environmental management systems and environmental management activities.

care of tomorrow'.

¹³ In a situation of self-regulation the regulation is the result of a collective action and a bargaining process between firms. Co-regulation is hybrid form between self-regulation and public regulation.

¹⁴ We are not proclaiming that the Dutch system, in which the targetgroup policy stands central, is an overall success, although certain successes cannot be denied. See also the chapter by Hofman and Schrama.

In conclusion, one can observe a strong development towards integration and shared responsibility in the Dutch environmental policy system since the late 1980s (OECD 1995: 32; Liefferink 1997: 218). Dutch environmental policy nowadays is being created through a process of close cooperation between government, the business community, non-governmental organizations (NGOs), and other actors (Bressers and Plettenburg, 1996). The introduction of the strong neo-corporatist traits of the Dutch society into the environmental field introduced a multi-level approach in which top-down and bottom-up interaction becomes interconnected. Beside the macro-level (national government) and the micro-level (SMEs) the meso-level (intermediary organizations) is involved to get access to actors at the micro-level. The fact that the system is multi-level is not that new. Special is the way in which the levels communicate, adjust to each other, produce agreements and implement those agreements. The actors at the meso-level are responsible and have to use their influence, resources and power towards the actors at micro level. Various programs contribute to the new strategy. The policy program on environmental management and the target-group policy are two important elements of it. Where the target-group policy specifies what needs to be done, companies are expected to learn how to implement these requirements via environmental management.

5 Conclusions

In this chapter we have described and evaluated the Dutch policy program on Environmental Management. To reach for SMEs an indirect, consensual steering model is used in which policy networks play an important role. Within these networks intermediary organizations (and especially trade associations) are partners in policy shaping and refining, and in policy implementation. Collaborating with intermediary organizations and negotiating over implementation formats led to positive results even in a setting of self-regulation. A lot of specific knowledge that is of use to companies has been developed as a result of the activities of the policy network. The formation of this network was also a success. Our research has shown that a real network has been built over the years. Trade associations proved to be the most pro-active and influential actor in this respect.

We also outlined the context of the policy program. It is closely linked to a well thought-out new environmental strategy. We enumerated some of the developments and characteristics that made the Netherlands a pioneer in this. Certainly the fact that the Netherlands is densely populated and facing high environmental pressures were important factors. When public environmental awareness grew fast, and serious environmental incidents were reported, the stage was set for drastic changes. This resulted in a new policy approach designed to encourage self-regulation by industry.

We should also realize, that the policy program fits closely with the Dutch tradition of neo-corporatism. And although the policy-program looks at first glance as an examples of self-regulation, it is embedded in a broader policy mix. This careful mix might be an important success factor. In the end industry might be

most susceptible to a careful balance between elements of self-regulation, co-regulation and -threatening with- regulation to overcome deadlocks. Reflecting on the Dutch policy mix it is important to note that it also offers options for governments to collaborate with pro-active companies while at the same time employing a strict regime towards laggards. While pro-active companies meet a collaborative government ready for constructive dialogue, laggards will be tackled by regulators, and the central government will consider using direct regulation in a sector if no agreement can be reached in the target group policy. For industry it is important that there will be no room for free riders and efforts are rewarded.

Our empirical case proves that the new policy approach based on shared responsibility really can make a difference. We found a positive correlation between the activities of network-organizations on the meso-level and a positive environmental attitude and the implementation of organizational and technical environmental measures on the micro level of individual SMEs. Will this policy approach make *the* difference to reach for sustainable production? Will it lead to radical changes within the industrial production system? After all, after a decade of intensifying the goals and implementation of environmental policy the 'low hanging fruit' within companies has been picked (De Bruijn, Groenewegen and Grolin, 1997: 175). Some proclaim that a step-by-step improvement (eco-efficiency) will eventually lead to sustainability (see for instance Schmidheiny, 1992; Von Weizsäcker, 1997). Assuming that businesses will perceive a growing pressure (from governments and other stakeholders), companies will be forced to change their production step-by-step. Especially in developed countries a lot of companies have indeed managed to improve their environmental efficiency. At the same time economic growth nullifies much of these benefits. The real challenge for the coming years therefore is in forcing fundamental, structural changes in the production and consumption system since sustainable development can only be achieved if these types of changes are realized.

Environmental management as promoted by the Dutch policy program is a clear example of a step-by-step approach. The goal is to transform patterns of growth into more sustainable ones by de-materializing and using less fossil fuel (CEC 1993: 55). Decreasing the use of natural resources and fossil fuels enormously will require the change of whole production chains. Governments alone cannot prescribe such far-reaching innovations in a permit (De Hoog 1998: 27). In this perspective the long term strategy of Dutch environmental policy is of importance. The sub-programs are not isolated steps but coherent parts of a more or less well thought out long term strategy. The new policy approach is certainly not perfect. The incisive question however is whether there is an alternative. We should realize that substantial de-materialization and re-designing of industries couldn't be done on a national scale alone for a country the size of the Netherlands. Otherwise there will be 'international free riders'. However, using the capacity, knowledge and flexibility of industry might help us to reach for the fruits that are hanging in the 'middle of the tree'. The greatest benefit in this approach lies in the regained flexibility. The current policy mix gives some room to pro-active companies and supports them actively. At the same time the permit system can tackle laggards and secure developments in other companies. Therefore we feel that the network approach is a promising new supplement to reach out for SMEs in the context of the slogan the ministry used to promote its envi-

ronmental management policy: voluntary but not without obligations.

Finally we enumerate some factors that seem of importance for the effectiveness of network approaches in voluntary and information-based policies:

- *Context of neo-corporatism;*
The cultural background of our case cannot be denied. For trade associations in the Netherlands for instance it is to a certain extent normal practice to collaborate with governmental agencies. They really perform intermediary functions between industry and governments. The formation of the policy networks was therefore fairly easy, and of course facilitated by the funds available. Network approaches might be more successful in such a context. In countries where environmental policies are developed from another policy perspective, examples of neo-corporatist structures (that could be used) might be found in different policy fields.
- *Building of sufficient pressure;*
For more voluntary approaches, it seems crucial that the target group perceives changes of behavior in the long run as unavoidable. This can not be done by running isolated programs but by concentrating on a long-term strategy for change in which the program is embedded. The strategy should foresee in fall back options in case the voluntary approach doesn't pay off. The level of public awareness also is a key-factor, however not easily manipulated. In an atmosphere where there is wide consensus of the necessity of changes, companies will move more easily in the desired direction.
- *The accessibility of the target group;*
The set-up of networks deserves some careful attention from the perspective of accessibility of the target group. Important determinants are homogeneity of the target group, the number of players involved and the existence of a strong representative body that can act and negotiate on behalf of the group. In our case trade associations proved to be valuable in the policy network. They acted as a good partner for governments and were trustworthy for the companies involved.
- *The problem of free-riders;*
'Free riders' should be dealt with. Companies who engage themselves in voluntary programs should be rewarded one way or the other, especially in cases where there are no direct market or financial gains foreseen. This does not necessarily imply regulation or a threat of regulation, however a mix of self-regulation and co-regulation (and if necessary enforcement of regulation) seems essential.
- *Building of mutual trust.*
Voluntary and information-based policies have an impact that goes beyond a specific program. They assume that mutual trust and respect develops between authorities and target groups. For this a stable and clear governmental policy on sustainability is inevitable, as is the handling of 'free riders'.

These recommendations underline our conclusions that on the one hand the Dutch policy program on Environmental Management was well thought-out in terms of implementation structure, instrumentation and content. On the other hand we feel the context in which the program was implemented made companies

more susceptible to accepting the challenges in the voluntary program, and thus contributed significantly to its success.

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