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RESHAPING REALITIES IN THE ANDHRA PRADESH
IRRIGATION REFORMS

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CONFLICT, RESISTANCE AND ALLIANCES IN A MULTI-GOVERNANCE SETTING: RESHAPING REALITIES IN THE ANDHRA PRADESH IRRIGATION REFORMS

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ABSTRACT

In this article, we will explore how local politics of policy, in the interaction with governance mechanisms, have produced specific polity outcomes in the irrigation sector of Andhra Pradesh. The water sector of Andhra Pradesh, which has been struggling within inefficiency, poor performance, deterioration, and lack of participation as elsewhere in India, has undergone substantial reforms aiming at Participatory Irrigation Management (PIM). Previous research has indicated how reform policy choices were contested and mediated by relevant actors and how this affected the outcome in key areas of irrigation management. This is referred to as the *politics of policy*. We will look at multi-level governance in a situation where different tiers represent different institutional basis, and argue that the politics of policy at multiple levels of governance can be perceived as a form of support and/or resilience by actors to new governance mechanisms/arrangements.

Keywords: Water sector reforms, Irrigation management, Participation, Multi-level governance.

1. INTRODUCTION

During the eighties and nineties, India struggled with low cropping intensities, low yields, inequity and poor maintenance of the irrigation infrastructure. At the same time, the sector also faced various political, institutional and financial challenges, such as low revenues and poor cost-recovery, which prevented an effective approach to increase production and improve the maintenance and operation of its irrigation infrastructure. In other words, the agricultural production, and maintenance of India's irrigation infrastructure was clearly related to issues of governance, and embedded in the national political, economic and

institutional context. India's agricultural and water sector policy was not only shaped by the changing features of the eco-system (soil characteristics, surface and ground water, inundation, climate, vegetation, land use), the composition and interests of the multiple water users, but also by global economic trends, trade relations and donor pressures.

Environmental problems such as temporal and spatial-based water scarcity are topics which are not necessarily confined to boundaries. India's policies with regard to water flow, water augmentation and withdrawal also affected the water flow to its neighboring countries, in particular Pakistan and Bangladesh. For example, India's choice to construct the Farakka dam was based upon the wish to provide its farmers with reliable irrigation water supply. From the moment it was operational, in 1975, it affected the availability of water for users downstream in Bangladesh, which resulted in opposition, negotiations and treaties (1977 and 1996). Tanzeema and Faisal (2001) indicate how this influenced the bilateral relation between India and Bangladesh: "Sharing the Ganges has become a contentious issue since then, embittering the bilateral relation of the two neighboring countries/.../About 30 million people of Bangladesh depend on its water. The Ganges maintains the environment and ecology of the south-western region that constitutes about 37% of the total area of Bangladesh" (Tanzeema & Faisal, 2001, p. 15). This is just one of many issues with potential for conflict. In table 1, we give some examples of potential for conflict on environmental issues at multiple levels of governance and how institutional functioning or governance plays a role in this.

What is not included in this overview, are (perceived) threats to personal and organizational interests, such as one's socio-economic position; transfer or responsibilities to other organizations; or the joint responsibility for revenue collection. These play a key-role in water sector reforms in Andhra Pradesh, as we will see in the case study.

Table 1: Conflict issues and institutional failure

Level and issues	Examples of conflict/disputes	Institutional functioning/ governance
<i>Global and international level:</i>		
Climate Change, Trade, Sustainable Development and Biodiversity	Conflict over environmental standards; conflict between the private and public sector over the provisions of biodiversity or climate change conventions; over emissions and carbon trade	Availability of monitoring standards; adjustment of research data at national level for, or under pressure of, international organizations.

(Continued)

Level and issues	Examples of conflict/disputes	Institutional functioning/ governance
<i>Regional/multi-country level:</i>		
Regional water basin management, Multinational Environmental Agreements	Conflict over dams, freshwater withdrawal for irrigation, navigation, and power from transboundary river basin, cross-boundary aquifers, disputes over discharge of pollutants and waste water affecting other countries	Availability of monitoring standards and procedures, pressure of large industries in the negotiation or implementation process to avoid negative impacts for the industry
<i>National / macro level:</i>		
Natural Resource Management, Environment Policy; Irrigation Policy; Agricultural policy, National Conservation Strategy; National Environmental Management Action Plan	Disputes over the implementation of environmental policies and plans, in terms of implementation procedure; risk and uncertainty; potential adverse effects, and equity concerns; discharge of pollutants and waste water into rivers	Institutional capacity for the enforcement of environmental regulations; political alliances; corruption of police forces; stakeholders' participation in the formulation of policies; financial mechanisms and revenues for implementation
<i>Sub-National level:</i>		
Natural Resource Management, water program, infrastructure, livelihoods	Disputes over the lack of voice in the formulation / implementation of environmental policies and plans, in terms of implementation procedures; risk and uncertainty; potential adverse effects, and equity concerns; disputes over project management; off site environmental impacts	Communication, consultation and participation of relevant stakeholders and local populations; compliance to, or circumvention of, existing rules and regulations, law enforcement; political alliances; financial mechanisms and revenues for implementation
<i>Community/ societal level:</i>		
Social mobilization, local action for environmental natural resource management, livelihoods	Disputes over fishery grounds between private and communal land owners; disputes over lease arrangements; over land boundaries and property rights; over resource capture by local elite; and conflict over off-site environmental impacts affecting livelihoods.	Communication, consultation and participation of relevant population groups and stakeholders; compliance with, or circumvention of, existing rules and regulations, law enforcement; political alliances

(Source: Van der Molen and Rahman, 2007)

1.1. Politics of Policy

How can we understand the context in which these reforms were embedded? What are the challenges that bureaucrats face in the implementation of the reforms? While multi-level and multi-actor governance has added complexity to the processes of decision making and implementation, it does – by its very nature – allow more groups to have stakes in the process, to defend their interests and try to influence the outcome. This participation and agency of relevant stakeholders is generally expected to improve the decision making and the quality of the outcomes, and strengthen acceptance and legitimacy of policies. This understanding is somewhat simplistic, as it assumes all users have similar interests (in participation) and impact (on outcomes). To understand the challenges, it is useful to refer to the ‘politics of policy’. The ‘politics of policy’ refers to the dynamics, process and practices by which policy is formulated, adjusted, interpreted, implemented, promoted, resisted and reconstructed by relevant actors, including actors at the lower receiving end. The politics of policy is embedded in, and at the same time shaping, social structures, also known as ‘the duality of social structure’ (Giddens, 1984; Scott 2001, p. 75).

Important for this study are the ‘politics of policy implementation’ and ‘politics of policy resistance’. The first concept, the ‘politics of policy implementation’ identifies the social, financial, legal, political and organizational challenges of implementing public policy and enforcing public law. The second concept, the ‘politics of policy resistance’, is based on the assumption that policy transfer, in particular in a context of asymmetric interdependence, will result in some policy resistance and that the location and nature of this resistance depends partly on the features of policy transfer (e.g. voluntary or coercive transfer; external or internal). Policies are embedded in social relations, power structures, negotiation and cooperation practices that exist in society. Accordingly, Bache and Taylor argue that, “the nature of resistance to policy transfer will be shaped by past practices and embedded interests” (Bache and Taylor, 2003, p. 283). Policy actors mobilize individual and collective resources, networks and location in order to be able to intervene and influence the policy process.

Although Bache and Taylor (2003) are drawing on anthropology and democratization studies, with specific reference to policy transfers in a context of asymmetric interdependence between ‘donors’ and ‘recipients’, we argue that the above statement applies to water sector reforms in Andhra Pradesh as well. In the context of Andhra Pradesh, the emphasis has shifted from a state-oriented approach – with a stronghold for the Irrigation Department – towards multi-tier Participatory Irrigation Management (PIM). The Participatory Irrigation Management approach is based on multiple levels of governance and encouraged an approach with management responsibilities for both farmers (landholders, titleholders, tenants) and the Irrigation Department. As shifts in the distribution of political, legal, financial, organizational and informational resources (and thus power resources) are part and parcel of institutional reform processes, this will logically affect the nature of the interdependence between the actors and thereby the support for, and resistance against, the reforms.

Much of the localized support for, or resistance against, the reforms is based on changes in the rules that “operate configurationally to structure an action situation” (Ostrom, 1986, p. 19):

1. Position rules that specify a set of positions and how many participants hold each position;
2. boundary rules that specify how participants are chosen to hold these positions and how participants leave these positions;
3. scope rules that specify the set of outcomes that may be affected and the external inducements and/or costs assigned to each of these outcomes;
4. authority rules that specify the set of actions assigned to a position at a particular node;
5. aggregation rules that specify the decision function to be used at a particular node to map actions into intermediate or final outcomes;
6. information rules that authorize channels of communication among participants in positions and specifying the language and form in which communication will take place;
7. pay-off rules that prescribe how costs & benefits are to be distributed between participants.

1.2. Outline

This article looks at some of the key-expectations and envisioned outcomes of the water sector reforms in Andhra Pradesh, in particular the finance mechanisms for better operation and maintenance, improved water delivery and irrigated area, and more accountable and realistic local irrigation revenue collection. The questions which will be addressed throughout the article and again in the conclusions are:

1. What were the features of the water sector reform in Andhra Pradesh?
2. Who are the policy actors and how have they reshaped the implementation process and the envisaged outcomes of the irrigation reforms?
3. Was there a common understanding and shared perception of the environmental problems to be dealt with throughout the multi-governance system?
4. How is the innate competition between different tiers resolved, and with what pay-offs to the different constituent parts?
5. How does multi-level governance function in a situation where the different tiers represent fundamentally different institutional basis (traditional, charismatic, rational forms of government) and how does this affect the outcomes?
6. Does institutional fragmentation lead to better outcomes (as a result of ability to respond flexibly to local realities) or to worse outcomes (due to regulatory unpredictability)?

1.3. Methodology

The findings are based on empirical research conducted from March 2001 to July 2002, and additional fieldwork during intervals from 2002–2004. The selected site for a case study was the Madhira Branch Canal (MBC) located on the Nagarjuna Sagar Left Bank Canal (NSLC), in Andhra Pradesh. The research adopted an interdisciplinary approach, using a combination of qualitative research tool, such as participant observation at the village and WUA level, semi-structured interviews with

irrigation bureaucrats and WUA leaders; and group and key-informant discussions with WUA members.

2. FEATURES OF THE ANDHRA PRADESH IRRIGATION REFORM

In 2002 India adjusted its National Water Policy and recognized the need for restructuring India's water sector. Five years earlier, in 1997, the State of Andhra Pradesh already initiated such a process. Andhra Pradesh is known as the rice bowl of India. The state has been a leading participant in the Green Revolution in the country. The state also has been benefited by the development of irrigation infrastructure which took place during both pre and postcolonial governments. However, decline in public investment and lack of users' participation in irrigation system management has led to deterioration of irrigation infrastructure. To address these challenges, Andhra Pradesh (AP) adopted far-reaching irrigation management reforms, sometimes also referred to as the 'Big Bang' approach of Andhra Pradesh.

These were put down in the Andhra Pradesh Farmers Management of Irrigation Systems Act in 1997 (Ananda and Crase, 2006, p. 931). The Act is the reflection of a more participatory approach, also referred to as Participatory Irrigation Management (PIM). The Government of Andhra Pradesh and donor organizations expected that the establishment of Water User Associations (WAUs) would contribute to (a) effective institutional change and (b) improved cost-recovery once these associations would be responsible for management of canal irrigation system, while maintaining technical support from – or working in collaboration with - the Irrigation Department. The restructuring and redesign of legal and institutional arrangements for allocation and distribution water resources has, however, not been an easy task: institutional reforms at multiple levels of governance is by definition a complex process due to the variety of actors and their interests.

Due to the success often attributed to the reforms, the reform model in Andhra Pradesh was quickly labeled as the 'AP model' of irrigation reforms. Andhra Pradesh was the first state in the country to enact legislation known as the Andhra Pradesh Farmers Management of Irrigation Systems Act (APFMIS Act) in 1997. This Act legalized the formation of WUAs and their mandatory participation in the management of irrigation systems. As a result more than 10,200 WUAs were democratically elected as part of the reform programme; covering 4.8 million ha of irrigated areas in the state.

The reforms were not only motivated by the state's response to poor performance of the irrigation systems, but also strongly encouraged by World Bank lending policies (Nikku, 2007, p.5&7). They fitted well with the neo-liberal policy to scale down irrigation bureaucracy, create water markets or increase water charges; and to transfer the operation and maintenance of irrigation infrastructure and the water distribution to farmer organization or water user associations (Nikku, 2007, p. 7). As an external funding agency, the World Bank played a crucial role in the design and implementation of the reform. The reform of the irrigation sector in Andhra Pradesh had a strong commitment from the Chief Minister of Andhra Pradesh, Mr. Chandra Babu Naidu, who hoped that successful reforms would increase his political credibility (Reddy & Reddy, 2002).

3. MULTI-LEVEL GOVERNANCE: POLICY ACTORS AND POLITICS

The main actors within the irrigation system are the water users or mainly the irrigators, WUA representatives, political leaders and the irrigation and revenue bureaucrats. The administration of irrigation sector is carried out at three levels. First the highest level of government supervision comes from the Minister of Major and Medium Irrigation, and the Minister of Minor Irrigation. Second, at bureaucratic level, there is Principal Secretary of Irrigation and Command Area Development (CAD) Department, and three to four secretaries. All of them belong to the Indian Administrative Service and influence policy making and implementation. The second level is made up of the heads of several departments, the Engineer in Chief of Irrigation and Administration, the Director General of the Water and Land Management, Training, and Research Institute, the Commissioner of Command Area Development Authorities (CADA), and the Director of the Groundwater board. The third level is responsible for field operations at the system level. The Chief Engineer (CE) is the head of the system level operations. The CE is assisted by Superintending Engineers. One or more districts fall under an irrigation circle and are under the control of a superintending engineer (SE). Each irrigation circle is divided into irrigation divisions headed by an executive engineer (EE). Traditionally each irrigation division has three to four irrigation sub-divisions, each is managed by a deputy executive engineer (DyEE). Each sub-division is again divided into four sections

Figure 1: Multiple levels of participatory irrigation management in medium and large irrigation schemes in Andhra Pradesh.

headed by the assistant Engineer (AE). One or more work inspectors (WIO and five to six *luskars* support an AE or section officer. They work as gatekeepers and assist in the distribution of water below the outlet level.

The basic structure for the Participatory Irrigation Management in medium and large irrigation projects can be found in figure 1. At system level, the Project Committee is supposed to communicate with the Superintending Engineer of the Irrigation Circle or the Chief Engineer of the Irrigation Project. At the level of secondary canals, the Distributory Committee communicates with the Deputy Executive Engineer of the Irrigation Sub-Division. At the level of tertiary canals, the WUA communicates with the Assistant Engineer of the Irrigation Section. Finally, at the level of minor canals and pipe outlets, farmers and other water users communicate with the *luskars*. Although the reform states to be non-political, access to political parties is one of the factors affecting to the nomination and election of WUA leaders, similar to one's caste (upper caste), belonging to the village elite, and landholding (Mollinga et al. 2004, p. 249; Nikku, 2003, p. 350).

The relationships among the various actors and their contestation with the reform policy within the irrigation reform policy space resulted in different outcomes than the expected policy objectives. As it is not possible to deal with each and every expectation and outcome, four particular policy-objectives are discussed in more detail below. (a) increased user participation in decision-making (b) improved maintenance; (c) higher rates of cess collection and thereby improved cost-recovery; (d) irrigation expansion and (e) improved water distribution practices¹.

A. Improved participation in decision making

Under the reforms the rehabilitation and maintenance of irrigation structure was given a high priority. The act mandates users' participation in this process. The reform policy aimed to strengthen the user associations by transferring duties that were traditionally under the control of the irrigation department. The WUAs were given power to implement the works with funds sanctioned by the government. At the same time, the APFMIS act enhanced and legitimized the powers of irrigation bureaucrats to supervise, monitor and provide technical and financial clearances for activities carried out by the WUAs (Nikku, 2007, p. 129/130).

Contrary to the policy objectives, field evidence suggests that the irrigation users were neither involved in decision making nor participated in irrigation works voluntarily. According to the APFMIS Act, a General Body meeting of the WUA shall be held at least twice a year. Additional meetings may be called (a) when requested by the president or managing committee members with a majority resolution, (b) when requested by members through a requisition signed by more than 2/3rd of the members with voting rights, or (c) on the direction of the Government or from the Commissioner,

¹"The objects of the farmers' organization shall be to promote and secure distribution of water among its users, adequate maintenance of the irrigation system, efficient and economical utilization of water to optimize agricultural production, to protect the environment and to ensure ecological balance by involving the farmers, inculcating a sense of ownership of the irrigation system in accordance with the water budget and the operational plan" (GoAP, 1997, Art. 16, APFMIS Act).

the Command Area Development or the next higher tier of the farmers organization in respect of matters relating to urgent public importance. In reality, during the period studied, participation by the members in the WUA meetings was minimal, due to:

- Difficulties to make the logistic arrangements for presidents who do not live near the designated head quarter of the WUA where meetings are to be held;
- Spatial spreading of the WUAs membership base, which makes mobilization time-intensive. WUA presidents claim they do not have the manpower to mobilize all members;
- Hierarchy in social status (caste- and gender differences) and legal status of tenants (usually lower-caste) who do not own land;
- Opportunity costs of participation in meetings for agricultural laborers as compared to daily wage earning opportunities;
- Absenteeism of absentee landowners whose land is cultivated by tenants, and absenteeism of resident landowners whose primary occupation is not cultivation.

B. Improved maintenance

The APFMIS Act states “scientific and systematic development and maintenance of irrigation infrastructure is considered best possible through WUAs. These organizations have to be given an effective role in the management and maintenance of the irrigation system for effective and reliable supply and distribution of water” (GoAP, 1997). The government issued an order on the 8th of August 1997, allowing the WUAs to use government provided funds for immediate operation and maintenance works. This included repairs such as desilting, weed removal, embankment repairs, revetment, repairs of shutters, masonry, lining, clearing, oiling of screw gearing shutters, painting of hoists and gates and emergent breach closing works. The Irrigation department would remain responsible for the construction of sluices, drops, regulators and measuring devices, and the rehabilitation and modernization of the system. The findings from field research show that these objectives were not met, largely due to serious constraints in the allocation and release of funds for maintenance, which seem to have been aggravated by the multiple levels of financial management. While in 1997 no funds were made available for irrigation works, during the first years of the APFMIS (1998 and 1999) the government did release funds for both rehabilitation and maintenance. The funds for irrigation works were allocated uniformly to all WUAs across the state on the base of their command area. For example, in April 1998, the government released a total grant of Rs. 1,064.7 million to the WAUs at a rate of Rs 247/ha for the total localized command area of approximately 4.4 million hectares. According to government records, more than 22,000 works were taken up by WUAs and completed by 31st March 1998. During 1999 and 2000 the focus was entirely on the small rehabilitation works of the irrigation structures. 49,000 works worth Rs. 4 billion were taken up at state level. However, from 2000-2001 onwards, the WUAs were expected by to meet the costs of regular maintenance works from internal resources and from the share of cess collection they received from the concerned revenue department. Not surprisingly, the interest of the

WUA to take up irrigation maintenance works decreased with the decline of funds made available to the WUAs in subsequent years.

Contrary to the expectations from the government, many of the WUAs did not prepare a maintenance plan, which describes the need and scope of the maintenance activities to be carried out by WUA and Irrigation Department. According to the formal prescriptions of the Act, the competent authority from the Irrigation Department should prepare the estimates of the works by the end of February, and a WUA General Body meeting should be conducted in March, to discuss the financial expenditure for the completed year and the maintenance proposals for the following year. The WUA leaders claimed that 'the Irrigation Department neither insisted nor assisted in preparing such plans'. The irrigation staff argued, 'what is the use of making such plans when we do not know the quantum of funds available'. The reason for such statements was that both the irrigation department staff and WUA leaders excessively depended on the government funding to carry out the maintenance works. WUA presidents complained that the delays in cess remittance from the Revenue Department did not allow them to carry out the works as planned and that irrigation staff spent huge budgets through contracting in the absence of the Project Committees. Local irrigation staff, on the other hand, expressed their difficulties in motivating the WUA leaders to take up the activities without the necessary funds.

C. Cess collection and the establishment of the Joint Azmoish

The Joint Azmoish (JA) is a joint supervision of survey of irrigated command area in a hydraulic unit. It is a joint survey conducted by the representatives of the WUA, departmental staff members of irrigation, revenue and agriculture to agree and report irrigated area and type of crop. The activities of each participating department are jointly coordinated and are complimentary. As a result the Joint Azmoish is another important arena where we could find the interplay of actor interests.

The irrigation reform policy legitimises for the first time the participation of WUAs in the JA process. In 1999, the government issued order no 610, empowering the WUAs to participate in the Joint Azmoish process. Participation of the Irrigation, Revenue and Agriculture departments and the WUAs in Joint Azmoish was made mandatory. It was expected by the policy makers that the participation of WUAs in the process of JA would ensure correct reporting practices of the irrigated area leading to a higher rate of cess collection. The participation of WUAs is also seen as an opportunity to forge linkages between the participating agencies in irrigated agriculture.

The policy objectives of the Joint Azmoish – correct reporting practices and higher rate of cess collection – were not achieved. Among the participating departments especially the Revenue Department did not show interest in the policy. The reason for this is not yet clear. One of the potential explanations could be that the JA is a threat to their traditional power of collecting cess from users directly. The Agricultural Department acted in a laissez-faire manner. The Irrigation Department showed interest but tried to control the process. The majority of WUAs did not play an important role and were less interested to motivate users to pay the cess. They feared that too much pressure on paying cess would jeopardize their re-election, in particular as long as the promises for improved irrigation distribution and maintenance and operation were still

not fulfilled. Although the policy objectives were therefore not met, their personal interests were safeguarded. The leaders shared their concerns regarding the impact of mandatory contribution of cess with the competent authorities, and worked out informal procedures by which some of the WUA leaders themselves would deposit money in the name of users' contribution. Irrigation officers helped in retrieving this money from state contributions by escalating the estimated costs for maintenance works which were then conducted by the leaders on behalf of the WUA.

D. Irrigation Expansion

The state government claimed that during the period 1998 – 2000 more than 290,000 ha of 'gap command' was bridged as a result of irrigation reforms in the state (GoAP 2000). Research at local level did, however, not show evidence of the irrigation expansion claimed by the government. It did show evidence that the positive exaggeration of irrigation expansion data helped the government to construct the popular perception that the reform policies yielded good results. The findings of research at local level suggest a role by political executives of the then ruling government in the social construction of data (Nikku, 2007, p. 169). The possible reasons for manipulation of data are threefold: (a) practices by the luskars to report low levels of discharge than in reality, allowing for an exchange of unaccounted water to individual farmers or groups of farmers who are not entitled to more water; usually with the consent of other irrigation officers; (b) official rules which makes assistant engineers accountable for reporting illegal tapping and canal losses. By reporting lower discharges, the unaccounted water can be exchanged for monetary gain, and there is no need for exaggeration of the irrigated area; (c) external unofficial pressures from political representatives and higher officials for additional water which can only be accounted for by adjusting the data on water supply; (d) changes in cultivation patterns, benefiting farmers cultivating wet-crops at the head-end areas, at the cost of farmers at the tail-end cultivating irrigated dry-crops.

E. Water Distribution

A critical justification for irrigation reforms was to achieve improved water supply in irrigation systems generally not operating at full supply. Water distribution and supply was primarily under control of the irrigation department before introduction of introduction of irrigation reforms. As we explained earlier, the irrigation reform policy transfers the responsibility of water distribution to WUAs. With the government-sanctioned budgets, the WUAs carried out minimum rehabilitation and maintenance works. Though there were implementation problems in carrying out works, one could see minor improvements in water flows as canal were cleaned and structures were repaired. The practical outcome of these repairs should have been the improved water flows, and that the WUAs have taken up responsibilities in the water distribution. The field evidence suggests there is insufficient evidence of improved water distribution practices in the study area, and that the irrigation staff still dominate the decisions regarding water distribution.

The tail end farmers of Kesavapuram on Punyapuram major and of Kambampadu and Chilukuru on Nidanapuram major claimed that their situation has not changed since introduction of WUAs. The farmers stated that they used to spend a lot of time and money on *canal gasti* (canal watch by private people) to bring water from the head reaches to their tail-end plots. The WUAs could not implement an operation plan. As a result, the gap command has remained in the tail reaches of tertiary canals on Madhira Branch Canal. In absence of water sharing rules, the tail-end farmers continued to be deprived of their legitimate share of water (Nikku 2007: 163).

4. DISCUSSION

In the introduction, we stated that much of the localized support for, or resistance against, the reforms is based on (proposed or realized) changes in the rules that “operate configurationally to structure an action situation” (Ostrom, 1986, p. 19), which were (1) position rules; (2) boundary rules; (3) scope rules; (4) authority rules; (5) aggregation rules; (6) information rules, and (7) pay-off rules that prescribe how costs & benefits are to be distributed between participants. Moreover, resistance against particular elements of the reforms also manifests itself in the strategic interpretation and bending of some of the rules which constitute the ‘action situation’.

Position rules: In the Andhra Pradesh reforms, changes were proposed in the position of civil servants vis-à-vis farmers in water user organizations. The ‘farmers’ are, however, not a homogenous group of actors: caste, gender, size of landholding, location of landholding, and residence have a clear impact on their position (voting/non-voting; chance to be elected as president).

Also, when the government of Andhra Pradesh wanted to bring the job of the luskar, the lowest tier of civil servants of the irrigation department, under the supervision of the WUA, they strongly protested. The luskars feared that – with such a shift – their identity as government servants in society was threatened, thereby also the respect and protection from society.

Position, Authority and Aggregation rules: The middle-level bureaucrats were not consulted from the beginning and they perceived the reform programme as top-down, with no direct benefits to them. For example, the governments’ plans to appoint Superintending Engineers as PIM coordinators and District Consultants was resisted by senior and middle level bureaucrats at district level, who feared that these new positions would create hierarchical problems within the department, but also as competition to their power and decision-making. Not surprisingly, they resisted the plans.

Scope rules: The higher-level irrigation bureaucrats realized they would benefit from portraying a more positive picture of improvements in water distribution and irrigation expansion in terms of more budgets. The irrigation reforms were, for some, an opportunity to improve their career chances. At political level, there was pressure to exaggerate the positive outcomes and underreport problems in terms of political credibility. The mid-level irrigation staff realized their performance was assessed in relation to their compliance with official rules, since irrigated area can be calculated

based on discharge levels, crop type and soil type. They adjusted their reporting to the outcome, to avoid inaccuracy due to illegal tapping practices and unaccounted favours.

Pay-off rules: The 'farmers' are not a homogenous group of actors: caste, gender, size of landholding, location of landholding, and residence have a clear impact on the perceived individual and collective costs and benefits of participation (*pay-off rules*) and thereby the extent and nature of participation in decision-making and implementation. The findings also indicate that within the Water User Associations, commitment to participation and payment of cess by farmers is directly related to the services provided, to location-specific water distribution (head-end and tail-end), and to the operation and maintenance of the irrigation system. The WUA leaders strategically weigh the costs and benefits of pressuring the farmers to pay the cess against the chances of being re-elected, and sorted out a creative solution with the consent of irrigation staff to solve the financial shortage. Here, the process of nomination and election of WUA leaders (*boundary rules*) interact with the authority and position of WUA leaders and their expected cost-benefit analysis of using their authority.

Although applied here, the framework by Ostrom clearly has its limitations. Some aspects could be arranged under more than one 'rule', while others seem to be outside any of the rules mentioned. For example, in the case of Andhra Pradesh, the institutional arrangements (Joint Azmoish) regarding the allocation and release of financial resources for operation and the formal procedures for budgeting maintenance and rehabilitation of the irrigation works seem to have played a key-role in the failure to achieve the stated policy objectives. It is unclear from Ostroms categorization how these financial arrangements contribute to the 'action situation'.

5. CONCLUSION

What then, do these findings tell us about the context in which the reforms were embedded? The first two questions (about features of the reforms, policy actors and politics of policy) have been addressed in previous sections. The remaining questions (no. 3, 4, 5 and 6) from the introduction are still not resolved. Was there a common understanding and shared perception of the (environmental, institutional and financial) problems to be dealt with throughout the multi-governance system? Yes, there seem to have been a common understanding of some of the core problems the water sector was facing, prior to 1997. The farmers, irrigation staff, policy-makers and politicians (the Chief Minister) understood the serious nature of the problems. Yet, the institutional reforms also resulted in (perceived or real) threats for the status and position of individuals and institutions throughout the multiple levels of (co-) governance, from the lowest to the highest levels, both within the bureaucracy and within the multi-tier farmer organizations.

The fourth question was related to the competition to different tiers: how is the competition between different tiers resolved, and with what pay-offs to the different constituent parts? The research shows that competition between different tiers in irrigation management in Andhra Pradesh is not being resolved, but purposely used by various actors to influence the outcome of water sector reforms, often in alliance or with the consent of the next tier. The competition between the various governmental

and non-governmental organizations represented in the JA (Irrigation Department, Agriculture Department and Revenue Department) is more problematic, as well as the competition between irrigation staff and WAU. The partial transfer of responsibilities was challenged by the irrigation bureaucracy, claiming a lack of capacity and commitment from the WUAs.

The fifth question raised was: how does multi-level governance function in a situation where the different tiers represent fundamentally different institutional basis (traditional, charismatic, rational forms of government) and how does this affect the outcomes? We will reformulate this question slightly different: how does multi-level governance function in a situation where actors represent fundamentally different institutional bases (elected and non-governmental versus staff of governmental organizations)? The answer to can be found not in the differences but in the similarities across different institutional bases. At the start of this article, we argued, in accordance with Bache and Taylor that, “the nature of resistance to policy transfer will be shaped by past practices and embedded interests” (Bache and Taylor, 2003, p. 283). The field research in Andhra Pradesh confirmed that actors from different institutional basis all mobilize individual and collective resources, networks and location in order to be able to intervene and influence the policy implementation process to safeguard their personal interests as opposed to the collective interest.

Finally, can we say that institutional fragmentation leads to better outcomes (as a result of ability to respond flexibly to local realities) or to worse outcomes (due to regulatory unpredictability)? Yes, we have found indeed indications that irrigation staff has been willing and able to respond flexible to individual requests for additional water releases. It is important to note, however, that these strategies have been beneficial for particular groups of farmers (head end, influential, with political ties) at the cost of other groups of farmers (tail end farmers, small farmers). WUA leaders have equally adjusted existing procedures, mindful of their political accountability (read: *the chance of being re-elected*). In other words, while the water sector reforms did allow for flexible responses to individual requests, these did not result in collective benefits. The expectations with regard to the active participation and involvement of water users in decision-making and implementation have not been accomplished.

Bache and Taylor argue: ‘Thus, even where shared ideological goals/.../ raise the prospects for successful policy transfer, existing policies and practices still place constraints. Other factors constraining the potential for transfer include the stock of political, bureaucratic and financial resources available to the recipient organization ...’ (Bache and Taylor, 2003, p. 282). When applying this to the water sector reforms in Andhra Pradesh, we can conclude that: “Where shared understanding and perceptions of the problems across multiple levels of governance raise the prospects for successful policy transfer, existing policies and practices still place constraints in reality”.

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