Water, Works and Wages

The everyday politics of irrigation management reform in the Philippines

Joost Oorthuizen

Propositions

1. Limiting the study of an irrigation system to the domain of irrigation water management only is reductionist as it fails to see decisive structures in the domains of financial management and the management of physical works. It leads to overly optimistic accounts of the possibilities for sustainable management and good governance. (this thesis)
2. In the Philippines, the downward accountability of irrigation agency staff to users is less of a problem than the upward accountability of the users towards the irrigation agency. (this thesis)
3. Rent-seeking analysis and neo-institutionalism are two different manifestations of the 'science of suspicion' (Sabel 1997). This is not just an academic issue, as the most suspicious people make the biggest dupes (Tendler, 1997).
4. The title of the authoritative book 'Seeing Like a State' (Scott 1998) should have been 'Seeing like Some States'. Other states, and I believe them to be the majority, fail to see in a coherent way, let alone possess the capacity to act coherently and decisively.
5. Norman Long's 'encounters at the interface' concept, that guided much Wageningen research in policy and development studies, presupposes a far too strong boundary between state and society. The life worlds of 'state' and 'society' actors are blurred and inter-linked to the extent that is hard to distinguish the one from the other
6. The real tragedy of the commons is not caused by the common's properties, but rather by the fact that mismanagement does not stop nature from producing and water from flowing.

7. The surprise of the BBC's World Service about the Iraqis setting fire to the headquarters of an 'a-political' agency as the Ministry of Irrigation shows that the BBC journalists know little about British colonial history and that westerners in general do not grasp the characteristics of 'hydraulic societies' (cf. Wittfogel 1957).
8. Those questioning the validity of the 'garbage-can theory of organisational choice' (Morgan 1990) should take a look at the overwhelming evidence supporting this theory produced by rural households (mis-) using irrigation canals.

Propositions attached to the thesis
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The everyday politics of irrigation management reform in the Philippines

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Glossary

Barangay	Administrative unit under a municipality, which is governed by an elected captain and council
Barangay tanod	Village police
Barkada	Group of close friends
Bata	Literally it means 'child'. Colloquially, it often refers to someone who is thought to be a 'pawn' of another person
Baya-nihan	Spirit of helping each other
Bigas	Hulled rice
Bigay	Gift
Cavan	Sack of 75 litres of *palay* weighing around 50 kilos in the dry season, and 54 in the wet season
Dulo	Below or far-end
Hacendero	Landlord
Hueveteng	Officially illegal but highly popular numbers racket
Hukbalahap	Abbreviation for *Hukbo ng Bayan laban sa Hapon;* People's Anti-Japanese Army. This was the anti-Japanese resistance movement, including its guerrilla army
Kamag-anak	Family and kin
Kapitan	Elected village leader
Kumare	Female sponsor in baptism, confirmation or wedding
Kumpare	Male sponsor in baptism, confirmation or wedding
Kumpare-buo	A 'full kumpare' relation. This is established between the father and mother of a child being baptised, confirmed or married and the persons and their spouses asked to be sponsors. This is usually the strongest type of relation

Kumpare-hawa	Relation by contagion, like relations between co-sponsors, or between the siblings of sponsors and the siblings of the parents of the newly baptised, confirmed or wed child. This is usually a weak type of relation
Lagay	Bribe or payment of extortion
Maso	Sledgehammer
Matapang	Brave
Padrino	A backer, often political figure, who is supposedly instrumental in helping somebody to get a certain position in government or private business
Pakikisama	Maintaining smooth interpersonal relations
Palakasan	Recruitment and promotion based on (political) patronage provided by *padrinos*
Palay	Unhulled rice
Patalastas	Communiqué. In this book it refers to the notice of the NIA informing farmers about the planned program area and cropping patterns for the next irrigation season
Peso	Philippine currency. In 1996-97, one USD ≈ 25 Peso. In 2003, one USD ≈ 50 Peso.
Plantilla	Work standard, in this book of the NIA, indicating the number of different positions within the NIA organisation
Siga	Toughguy
Sitio	Subdivision of a *barangay*
Trapo	Abbreviation for a traditional politician, referring to a politician who makes use of methods like patronage, violence and vote buying
Tropa	Troop, group of people
Utang-na-loob	Literally it means 'internal debt'. It refers to feelings of life-long moral obligations between persons, often of unequal social status, who have exchanged favours and services

Abbreviations

ADB	Asian Development Bank
COA	Commission on Audit
DFFIA	District Federation of Irrigators' Associations
EOD	Engineering and Operations Department, UPRIIS
FAO	Food and Agricultural Organisation
FIA	Farmer Irrigators' Association, same as IA
FIO	Farmer Irrigator Organiser
FFIA	Farmer Federation of Irrigators' Associations
IA	Irrigators' Association
IDD	Institutional Development Department
IDO	Institutional Development Organiser
IFPRI	International Food Policy and Research Institute
IHE	International Institute for Infrastructural, Hydraulic and Environmental Engineering, Delft
IIMI	International Irrigation Management Institute
IMT	Irrigation Management Transfer
IWMI	International Water Management Institute
IOSP	Irrigation Organisation Support Program
IRRI	International Rice Research Institute
ISF	Irrigation Service Fees
IWMI	International Water Management Institute (before IIMI)
NIA	National Irrigation Administration
O&M	Operation and Maintenance
PenRIS	Peñaranda River Irrigation System
POW	Program of Works
SMD	System Management Department, NIA central office

TSA	Turnout Service Area
UPRIIS	Upper Pampanga River Integrated Irrigation System
UCFIA	UPRIIS Confederation of Farmer Irrigators' Associations
USAID	United States Agency for International Development
USD	United States Dollar
WAU	Wageningen Agricultural University
WUR	Wageningen University and Research Centre
WRFT	Water Resources Facilities Technician (a watermaster)
ZFFIA	Zone Federation of Farmer Irrigators' Associations

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This dissertation was shaped in different places around the globe. While roaming around the world, I came across a wonderful pallet of persons who, consciously or unconsciously, contributed to the ideas and insights presented here. The completion of this book is an appropriate moment for the acknowledgement of their intellectual and more practical contributions.

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proof to the fact that there is more to people's motivations than just rent seeking. Just for the sake of good science and friendliness, he carefully has gone through all the chapters of this book, providing detailed editorial comments, sensible analytical criticisms as well as useful and often funny empirical anecdotes of his own field findings. I greatly benefited from his eminent understanding of Central Luzon's political economy and village life. The world has truly become a small place. I never met Brian in person, but his regular e-mails made the writing process a far less lonely endeavour.

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1

Introduction

This book investigates the management of an irrigation system in the Philippines and the impact of reform policies on its management. The 'Philippine experience' has long been a model for irrigation management reforms throughout Asia. Both the reforms of the NIA, the National Irrigation Administration, and the participatory approach for farmers' involvement in system management were widely argued to be successful and worthwhile to be copied elsewhere. This book examines the impact of these policies and critically engages with its claimed successes.

Policy studies in irrigation management tend to be rather functionalistic. They often look at what goes in – the policies – and what comes out – the results. The study presented in this book took a different approach. Eighteen months of fieldwork in an irrigation system enabled me to open up the blackbox of irrigation system management. The book takes a close look at how people organise themselves, how they manage an irrigation system and deal with reform, and why they choose to do so. Moreover, it examines how these practices are embedded in wider state-society relations.

By doing so, a fascinating world comes into sight. It is, basically, a world of struggle involving the NIA engineers and fieldworkers, farmer leaders and local politicians. The most visible struggle is about the distribution of scarce water in this large-scale canal system. During the dry season people go out, often at night, to secure water in the main system. Farmer leaders build alliances with local politicians and NIA staff to bring the water to their areas. Then there is struggle about the allocation of scarce funds for physical works like de-silting canals and re-gravelling roads. As some people are more equal or effective than others, the

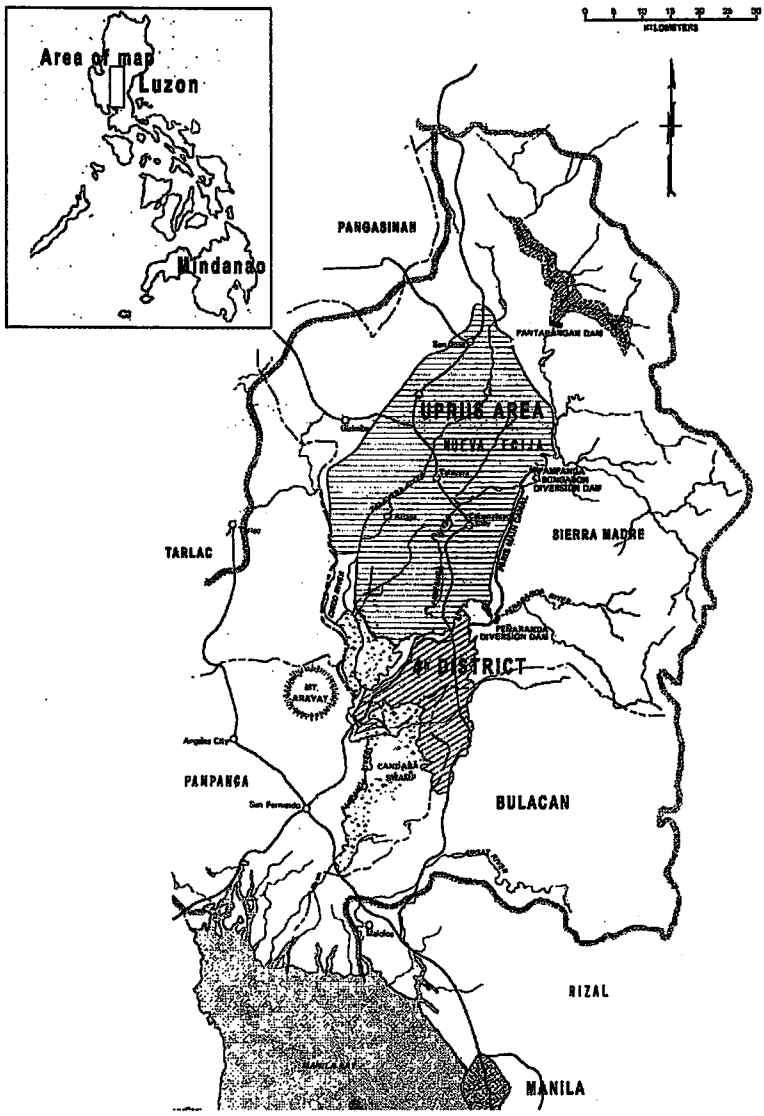
management of the system produces bountiful harvests as well as withering crops, both passable and unpassable roads, and both successful and failed political campaigns.

There is more to physical works then just getting your road or canal fixed. The book explores a complicated arena in which deals are made over lucrative work contracts. It involves higher-level politicians and is interwoven with the career possibilities of the NIA engineers. Finally, there is a struggle over wages. Since the NIA became financially autonomous in the early 1980s, NIA personnel need to earn their own wages through fee collection from the farmer water users. As the NIA services went down over the years, making farmers pay took a lot of effort and strategizing on the side of the NIA managers and fieldworkers.

These struggles are understood in the context of three different but inter-related types of policy reforms that changed the management of the system. I show how the different local actors give meaning to these policies and how they adopt, resist or transform them. Firstly, starting in the early 1980s streamlining policies forced the NIA to drastically downsize its number of staff. Secondly, the change to financial autonomy induced cost-cutting as well as different measures to increase the income of the NIA's organisation managing the system. Finally, so-called turn over policies contracted out management tasks to farmers organised in associations and federations. Though these policies did not work out as planned, they had a great impact on the management of the system and the relations between the different actors. I examine the everyday realities of these policy interventions and discuss how effective they are.

The system studied is located in the Central Luzon Plain, about one hundred kilometres north of Manila. It is one of the four sub-systems – locally called the 4th District - of the largest irrigation project in the Philippines, the Upper Pampanga River Integrated Irrigation System (UPRIIS). A huge reservoir checked by the Pantabangan Dam and local rivers bring year-round water to the fertile lands of the province of Nueva Ecija, and a part of Bulacan and Pampanga province. The area is part of one of the major rice bowls of the Philippines (see map 1.1).

MAP 1.1: The UPRIIS system and the studied 4th District located in the Pampanga river basin



Source: NIA 1975: 30

Main Motivations

My main motivation to write this book is practical. I am concerned about the plight of large-scale gravity systems in the Philippines as well as in other developing countries, and in the end, about the well being of their users and the economies depending on these systems. Hence, my concerns are related to policies to improve the management of these systems. Part of my concern is academic. The analytical understanding of irrigation management is important to how practical problems are understood and tackled. Hence, this book tries to contribute to irrigation management studies as an interdisciplinary field.

Before elaborating on these concerns, let me first put them in perspective. I am rather positive about large-scale gravity irrigation. Though many of the environmental and social concerns around the construction of large dams or large systems are legitimate (World Commission on Dams 2000), I do not object in principle to such large-scale ventures. On the contrary: it is amazing to see the magnitude of economic life brought about by such a simple technology like gravity irrigation. The UPRIIS system, which is nothing more than a reservoir, a number of dams in local rivers and a whole lot of earthen canals, forms the basis of life for hundreds of thousands of rural people. Also, I am rather positive about the NIA, the irrigation administration of the Philippines. Its openness to change, and the fact that it has many committed people among its managers and fieldworkers, gives good reason to be optimistic about future improvements of the management of these systems.

Having said this, there is much to be concerned about. Firstly, there is the decline of the NIA. While President Marcos quickly built up the NIA organisation during the martial law years of the 1970s, its budget and staff number fell dramatically during the 1980s and 1990s. Alongside this decline, the agency-managed national irrigation systems - amounting to 50% of the irrigated area in the Philippines - deteriorated in physical as well as managerial terms (cf. Kikuchi *et al.* 1998). At the inauguration of Pantabangan Dam in 1974, Amnon Golan of the World Bank classified the NIA as "the finest irrigation agency in the whole of Asia and in any developing country in the World" (NIA 1990). It is unfortunately a statement that refers to the NIA's glorious past. In more recent years, the NIA and its national systems were – and still are – in

serious trouble.

In itself, this system deterioration is bad enough. Worse though, this has been a story largely untold. It is almost as if there are two different realities. The reality of international irrigation policy discourse, which tells positive stories about farmer empowerment and system efficiency due to turn over and the fine results of the NIA's financially autonomous status (Gonzales 1993; NIACONSULT 1993; Svendsen 1993). Then there is the real world of harsh realities. These two worlds are not unrelated. The NIA's downsizing and the unbalanced cuts in the operational budgets of the national systems have been legitimised by the positive policy accounts of turn over and financial autonomy. I do not question the sincerity of those propagating these policies. With hindsight, it is easy to be critical. However, I do think it is due time to give recognition to this other, harsher reality.

Secondly, the question of turn over remains a central concern to irrigation management in the Philippines as well as in other Asian countries. During the 1980s, the so-called 'Philippine experience' has been sold in the world as a success story of bureaucratic transformation and farmer participation (Korten and Siy 1989). Then, in the mid-1990s, the World Bank dismissed the NIA. The NIA's transformative capacity was argued to be at the pace of a turtle (Sun and Groenfeldt 1995). Instead, the Bank made Mexico's 'Speedy-Gonzales' style of management reforms into the new global example for the twenty-first century.

Though there might be validity in the Bank's judgement, it is not a very helpful approach: neither to the Philippines, nor for many other Asian countries to which the Asian model of joint or participatory management rather than the American-Mexican model of irrigation management transfer is still reality (Meinzen-Dick *et al.* 1994, 1997). How to go about the turn over of management in the Philippines, as well as in the other Asian countries? This is not an easy question. There is a need for approaches that go beyond populist pro-farmer solutions that are still dominant in many reform programs (cf. Raby 1997). This book hopes to revive the discussion on management turn over in the Philippines. At the substantive level, it brings back the political as well as administrative parts of the state into the discussion. More specifically it puts forward the state fieldworker as a crucial actor in irrigation management (cf. Van der Zaag 1992).

It is my belief that the academic world has much to contribute to the quest for better management of large-scale systems. It is rather worrying that the policy world has to base its judgements on a rather meagre stock of analytical studies on irrigation management. There is not just a need for more studies, but more importantly, for a certain type of studies. Often, contributions remain at the descriptive level or look at outputs rather than at processes. Moreover, policy studies usually stay within the confines of the policy framework, and thus fail to see how certain changes came about, or why that was the case (see for instance the contributions to a turn over conference held in Wuhan 1994, in: Johnson *et al.* 1995).

Other contributions are written from a neo-institutional perspective. Though these might from time to time be illuminating (Repetto 1986 on rent-seeking) or put forward a sympathetic community-centered approach (Ostrom 1992), these have serious limitations as well. These frozen, static accounts of irrigation realities, based on a limited set of fixed preferences of its actors, leave too much out of the equation (Migdal 2001; Mollinga 2001). They cannot grasp the complex realities of irrigation management and the life-worlds of its actors.

Hence, there is a need for a more detailed and contextualized understanding of irrigation management. This book contributes to this need. It especially sheds light on its socio-political dimension. It shows the central role of local politicians in the irrigation management of the District studied, and challenges the idea that they can or even should be kept out of the management of large systems. It also shows that both the NIA engineers and fieldworkers are actors deeply entrenched the local societies of their work. Hence, the ties between the NIA and farmers water users are not only based on fees or formal organisations, but on political patronage, economic interests and relations of kin- and friendship as well. In short, this study stresses the importance of a more embedded view on irrigation management.

Conceptual Framework

How to conceptualise this 'contextualised understanding of irrigation management'? Fortunately, I do not start from scratch. Since the 1980s, students and staff members of the Irrigation and

Water Engineering (IWE) Group of the Wageningen Agricultural University have been developing such an approach. This has led to a clear framework for an interdisciplinary approach to irrigation management (Vincent 2001, 1997; Mollinga 1998). Central elements of this approach are the conceptualisation of irrigation as a combined sociotechnical phenomenon, and a focus on management practices as embedded in wider structures (for further detail, see below). Taking this approach as a starting point, this section outlines the conceptual framework used in the analysis of irrigation management in the UPRIIS system.

The everyday politics of irrigation management

I understand irrigation management in the UPRIIS system as a struggle over three vital but contested resources: water, works and fees (wages). I examine these struggles by focussing on the 'everyday politics' of irrigation management. This is defined as:

> (...) the debates, conflicts, decisions, and co-operation among individuals, groups and organisations regarding the control, allocation and use of resources and the values and ideas underlying these activities. (Kerkvliet 1990: 11)

This 'everyday politics' perspective has two conceptual advantages. Firstly, it is an active concept referring to managerial processes. Many irrigation studies do not do so. These either take a structural or formalistic approach (Nijman 1993) or examine management in terms of an input-output model, using a number of performance measurement criteria (Bos *et al.* 1994). As outlined above, the management process thus remains a blackbox in these approaches. To actually analyse system management, it is needed to examine people's day-to-day practices and strategies.

The second advantage is that 'politics' refers to social power relations. Politics is usually associated with party or state politics, but I refer here to its broader meaning of "any activity concerned with the acquisition of power", or "manoeuvres or factors leading up to or influencing (something)" (The New Collins Dictionary 1982).

This focus on social power and everyday politics is a common one in studies on resource management in rural Luzon.[1] It is also a

perspective that has been used to study large-scale irrigation management in other countries. Wade and Chambers (1980) were among the first to put forward a 'water is politics' perspective. In their discussion of main system management in Indian canal systems, they argued that

> water is politics. (...) Technical disciplines, partly from self-defence, treat water allocation as though it were a purely technical matter. In consequence, the real world of influence, inducements and threats is left out of the analysis. (Wade and Chambers 1980: A-111)

Later on, others followed[2].

When it comes to irrigation management studies in the Philippines however, this book is the first – to my knowledge – to take such an approach. Irrigation management in UPRIIS has been the subject of a good many consultancy reports, several M.Sc. studies and at least 3 Ph.D. studies.[3] All of these studies stayed well within a more conventional perspective on irrigation management.

This conventional perspective is one that models irrigation management along a Weberian line of thinking in functional, formal and non-political terms. One of the early contributions that fit this perspective was Uphoff's 3-dimensional cube, in which irrigation management is seen as a large number of concrete tasks (Uphoff 1986). A more sophisticated version of this approach defines irrigation management not as tasks but as decision-making processes in which the involved actors need to decide on a large sequence of activities (Nijman 1993).

Decision-making in this conventional perspective is seen as an administrative activity taken care of by a management authority that makes use of resources to realise certain objectives. There is a real socio-political world in which management is taking place, but it is defined as external to the management process. Like the climate or the water availability, politics and culture belong to a set of externally conditioning factors to be dealt with by the management (Jurriëns and de Jong 1989; Small and Svendsen 1992).

Of course, such formal management set-ups do exist. Nor do I deny that such models have practical use as ideal-typical models of governance. For instance, it is only sensible to manage by objectives. Likewise, it may be a good starting-point for irrigation managers to define politicians as outside intruders whose

interventions need to be neutralised. However, the analytical value of these formal models is very limited when it comes to the UPRIIS case.

To show the limitations of the conventional view on irrigation management and the need for a more embedded approach, I will critically discuss the findings of one of the earlier studies conducted in the UPRIIS system. At the same time, it serves as an introduction to the everyday politics of UPRIIS-style irrigation management.

The everyday politics of operation dulo

The study I discuss as an example is about an experiment on main system management, conducted during the 1974 and 1975 dry seasons. It was carried out in the Peñaranda river irrigation system that later became the 4th UPRIIS District, which is the subject of this book (for further detail, see chapter 2). The purpose of the experiment was to implement and evaluate a package of management practices to improve the distribution of water along a main lateral, and thus to improve the irrigated area and average yields (Valera and Wickham 1976: 3). The study became famous in the international irrigation scene, as it was one of the first studies that showed that poor water management first and foremost needs to be solved at the level of the main system, rather than at the field level (Chambers 1988: 109). The International Rice Research Institute (IRRI) carried it out, in collaboration with the NIA.

The experiment introduced water scheduling between the off-takes of the main lateral of one of the system's Zones. Also, it made farmers in the tail-end areas of this Zone start their land-preparation ahead of those in the mid- and upstream areas. It became locally known as operation *dulo* (*dulo* means 'below' or 'far-end'). To do so, the canal system of the Zone was divided in four management sections and a watermaster supervised each section. The experiment was very successful. The serious problems of water stress in the tail-end sections were nearly solved and the total rice production in the Zone rose sharply (Valera and Wickham 1976).

This IRRI study indeed gives you the impression that politics is external to the management process, and that management only involves consensual forms of decision-making. Although the experiment met some initial resistance of upstream farmers,

informal discussions in the field sufficed to ensure that: "farmers in the upper reaches of the lateral gradually came to support the new scheme once they were assured of an adequate share of water even in times of water shortage" (*ibid.*: 4).

However, the reality pictured by Valera and Wickham is a filtered one. In the years immediately preceding this experiment, Brian Fegan conducted an anthropological Ph.D. study in one of the tail-end villages of the Zone in which the experiment took place. His version of reality is a very different one. He points out that tail-end farmers were involved in severe struggles over water, to the extent that it had shaped social relationships in the area.

> Long series of violent clashes between families or kindreds, parts of villages and whole villages if plotted on a map of the irrigation system, indicate that though the incidents occurred at drinking parties, festivals, basket-ball games, courting, transplanting, etc., the enemies belong to adjacent areas upstream and downstream from each other on the irrigation system. (Fegan 1979: 132)

He furthermore points out that farmers made every effort to evade what controls and inspection exist, to get access to the water, and put pressure on the NIA's watermasters ranging from persuasion based on ties of kinship, friendship, locality and political alliances, through offers of bribery, to occasional threats of violence. Fegan also described bribery and the use of powerful politicians as strategies applied by local political leaders to influence the main system management practices of the NIA District engineers.

Apparently, the IRRI success in drastically changing the main system management practices must be contributed to its power to overrule local relations. My own findings however, indicate that IRRI needed a little more than just persuading upstream farmers, and was not able to fully overrule local political realities. Because of the experiment they came into conflict with the mayor of a municipality covering the upstream area of the Zone. Their experiment hampered the water supply to a large rice estate of the mayor's family, located along the main lateral of the Zone. This area was difficult to irrigate and needed the full closure of one the larger checks in the main lateral. The check was considered the territory of the mayor's family, not to be touched without their consent. The IRRI experiment challenged his control over this major check.

As one of the former section supervisors appointed by the IRRI told me, the mayor made it very clear that his rule should not be taken for granted. At one night, the mayor's brother – who was considered to be a trigger-happy toughguy – and his gang, entered the quarters of the four section supervisors. Being drunk, he engaged them into a fistfight. The mayor saw his opportunity and acted upon it. The next day, he sent policemen and put the supervisors in jail for molesting his brother and his gang. The NIA had to negotiate with the mayor for their release and they were transferred to another job. The IRRI experiment could continue, but without threatening the mayor's interests. None of this was reported in the article of Valera and Wickham.

This case study thus demonstrates the need for an approach to irrigation management in UPRIIS that includes the socio-political world in its analysis. As this book will show, water was still a contested resource during 1996-97, about 25 years after the IRRI experiment. Often, these contests took the form of political struggle or even violence. This is not to say that irrigation management is only about struggle. As will be shown, effective partnerships emerged in the management of water, works and fees that were based on mutual agreement and friendly and co-operative relationships. Still, these are seen as different manifestations of everyday politics, in the sense that people manoeuvre to get access to scarce resources at the expense of others. Hence, in the different contests over resource allocation and distribution, mediating institutions emerge that may work on different principles. To understand such institutions, a framework is required that integrates socio-political as well as cultural relations into the analysis of irrigation management.

The state in irrigation management

One of the major focus points of this book is about the role of the state – both the bureaucracy and the political system - in irrigation management.[4] Given the central role of irrigation bureaucracies in managing large-scale systems and implementing management reforms, one would expect that each and every study puts the state –and its relations to society – at the core of its analysis. This, however, is not the case. Despite its obvious importance, the state is very much absent in irrigation management studies.[5]

A few good exceptions are the studies conducted by Mick Moore (1989) and Robert Wade (1982a, 1988) on the well-managed systems in respectively Taiwan and South Korea. In somewhat lesser detail, Siriwardena (1989) and Uphoff (1992) shed light on the Sri Lankan irrigation bureaucracy. Other studies that pay attention to the state in irrigation management are Mollinga (1998) and Ramamurthy (1995) on Indian systems and Van der Zaag (1992) on Mexico. However, the analyses of the latter contributions open only a part of the blackbox. They analyse the doings of state workers and/or engineers in water management. However, the office life of these fieldworkers and engineers, their socio-political embeddedness in society and the overall concerns of the state's managing bodies remain more or less obscure.[6]

My contributions are the following. Firstly, I analyse the various ways in which the political system is tied in with the supposedly administrative domain of irrigation management. It is shown that this goes way beyond political interference in NIA matters. The 'political' and the 'administrative' are interrelated to the extent that is hard to separate one from the other.

Secondly, I take a close look at how the NIA fieldworkers shape their work. They cannot be dismissed as irrelevant lower-level bureaucrats. These so-called 'street-level-bureaucrats' (Lipsky 1980) or frontline workers, these people are policy-makers themselves. Given their boundary-spanning role as frontline workers, they are caught in between the pressures from the office as well as the water users. In this position, they actively shape irrigation management and policy reforms like turn over (for further conceptual detail, see chapter 5).

Thirdly, I go beyond an understanding of the irrigation engineers as 'technocrats' or 'bureaucrats', and analyse them as societal actors. Like the fieldworkers, they are deeply embedded in the local societies of their work. This is not just because of their social (family) history, but also because of the way they give shape to their work. To make a difference as managers of a District, to survive and/or to accumulate wealth, it is shown that they construct networks with NIA actors, farmer leaders as well as local and higher-level politicians.

Fourthly, these local relations are examined as part of Philippine state-society. This allows me to understand how and why 'the political' is so pervasively present in the management of the Irrigation District. The weakness of the Philippine central state (cf.

Migdal 1988; May 1998; Kerkvliet 1998) is seen as a major explanatory factor for the District's irrigation dynamics. Such an analysis also opens up the possibilities for a more comparative understanding of large-scale irrigation management in various countries. It may help to see why systems in the strong South Korean and Taiwanese states are well managed, and why 'disorder' is found in weaker states like the Philippines.

This state analysis also contributes to the general understanding of resource management in the rural areas of the Philippines. Many of the contributions from the political sciences are focused on electoral struggles of politicians and/or on the more spectacular parts of their controversial endeavours (see for instance the different contributions in McCoy 1994 and Rocamora 1995). So far, there has been little thorough study done on the more mundane involvement of politicians in public resource management. In addition, there have been few studies that closely examined how government agencies like the NIA are operating in the field, and how they for instance have dealt with the severe budget cuts of the 1980s and 1990s.[7]

At the policy level, this book may be seen as a warning against overly enthusiastic beliefs in decentralised forms of governance by elected officials. An effective state, according to Evans (1995), is both embedded in local society and autonomous from the dominant social groupings over which it reigns. This book shows that the embedded part of local governance in the Philippines is (more than) OK, but that the level of state autonomy is terribly low.

I have some difficulties with the presently popular concept of 'accountability' in the study of relations between irrigation agencies and water users. In itself, the focus on accountability is a positive development. It reflects the fact that irrigation studies have 'moved upwards', i.e. away from the earlier focus on field and tertiary unit management. Nowadays, studies also examine main system management. Also, it shows some willingness to take a critical look at the behaviour of irrigation bureaucracies. Moreover, as accountability is about 'answerability' and 'controlling the actions of one party by another party', it thus is about power relations (Vos 2002: 23). Hence, the concept of accountability is an improvement on the previously popular but powerfree notion of 'farmer participation'.

However, the accountability studies are usually restricted to questioning the responsive behaviour of irrigation bureaucracies towards the water users. This is referred to as 'downward accountability' (Small and Carruthers 1991; Merrey 1996). The underlying assumption is that much of the problems in irrigation management are caused by the lack of voice of water users to hold unresponsive bureaucrats accountable for their doings. This, I think, greatly exaggerates the powers of these agencies, and underestimates the problems caused by water users and their political representatives. There are real limits to the powers of bureaucracies like the NIA. In many cases the question of whether irrigation management bureaucracies are accountable to their clients may be far less to the point than the question of whether these agencies have the necessary room for manoeuvre to exert sufficient control over their clientele.

Moreover the accountability model reduces the participants to two: the irrigation engineers versus the farmer water users.[8] It leaves out of account the fieldworkers as well as fourth party intervenors: non-farmer local politicians and influentials. This study thus presents a two-way and four party examination of accountability. It explores the checks and balances available to the managing entity to control the behaviour of (parts/groups) of the water users. Furthermore, it examines the accountability relations between the fieldworkers and the engineers, as well as between these engineers and local politicians.

My other problem with the accountability studies is the biased focus on the bad governance of irrigation bureaucracies. They seem to be largely informed by mistrust. The seminal study of Robert Wade (1982) on institutionalised bribery as a key mechanism in the management of Indian canal systems has given good reason for this mistrust. Repetto's contribution (1986) used Wade's case study to build up a general theory around rent-seeking behaviour in public irrigation systems. Although criticised (Moore 1989), his rent-seeking framework – aptly called 'the science of suspicion' (Sabel 1997) - has strengthened the view that irrigation reform is needed to limit "the damage the public sector can do in developing countries" (Tendler 1997: 1).

Though there may be good reasons for mistrust, there is more to the behaviour of state officials than just rent-seeking and shirking (though this does shape behaviour in the UPRIIS case, see chapter 7). Whether we like it or not, as both the market and the

community fail to provide (all) the answers for good governance (Moore 1989), the state will continue to play a central role in the management of large-scale systems. Even in cases of full management transfer to farmer or private bodies, states remain important as controlling and regulatory bodies (Vermillion and Sagardoy 1999). Hence, it makes good sense to explore positive behaviour of state agents as well. This study thus also tries to understand the underlying motivations and ambitions of both NIA engineers and fieldworkers that give direction to their work. Given the present-day dominance of rather cynical, rent-seeking type of assumptions about people's behaviour, this, to me, seems a refreshing starting-point for research.

The analysis of accountability relations in this book furthermore goes beyond its formal manifestations. Many of the discussions and policy prescriptions on accountability – often informed by a neo-institutional perspective (see for instance Malano and Van Hofwegen 1999) - are rather formalistic in nature. They fit into a Weberian view of rational organisations in which

> responsibilities and authorities are clearly defined and ordered, and practices and decisions accurately reflected in written documentation. It presupposes a clear division between the authorities and the accountable actor and assumes that accountability takes place through formal mechanisms (Hilhorst 2000: 136).

Indeed, policy prescriptions in the field of irrigation management usually put their trust in formal organisational structures (meetings, elections of the board), formal forms of accounting (on contracts, see Murray-Rust and Snellen 1993) or formal financial structures (farmer-financed irrigation and financially autonomous agencies, see Small and Carruthers 1991).

However, as this book will show, accountability mechanisms are not necessarily limited to the formal structures of irrigation management. Mollinga (1995: 3) points to existence of political accountability mechanisms in irrigation management in South India. Politicians are effectively employed by both water users and irrigation staff to gain control over the doings of other actors in irrigation. Hilhorst (2000: 137) points to existence of moral or everyday forms of accountability, in which actors are held accountable on the basis of moral obligations or everyday pressures

put on people. Hence, accountability relations are not confined to formal organisational mechanisms, and thus are understood in this book in the context of wider cultural and socio-political structures. More specifically, it is shown how relations of political patronage and brokerage as well as friendship and kinship shape accountability relations (see chapters 4 and 6).

Arenas of struggle and accommodation in irrigation management

How then to conceptualise the state in the irrigation management of the UPRIIS system? My approach draws on the work of Joel Migdal (1988, 1994, 2001). Migdal propagates a 'state-in-society' approach to analyse patterns of social power and change. State and society are not two separate, unrelated entities, but they constitute each other: "states may help mold, but are also continuously molded by, the societies in which they are embedded" (Migdal 1994: 6).

The second starting-point of this approach is that states do not hold a monopoly on power, and that the state is not the only institution that tries to influence daily behaviour.

> states are fragmented and face a multitude of social organisations – families, clans, multinational corporations, domestic businesses, tribes, political parties, and patron-client dyads- that maintain and vie for the power to set the rules guiding people's behaviour. (Migdal 2001: 3)

There are thus real limits to the powers of state agents, like the engineers managing the UPRIIS Districts. Especially because they often operate in field offices far away from the state centres of power, their ruling does not carry very far. This point has been proven by Grindle's seminal study on state agents implementing policies in rural Mexico. They found themselves operating in a complex web of different state and non-state actors making their life very difficult. The only way to survive then was to "negotiate the maze of pressures and cross-pressures generated by all these groups" (Grindle 1980: 239).

In such environments, irrigation managers cannot act as administrators who stick to formal rules and regulations and act according to operational plans. To make things happen – and to survive – they will have to act strategically, and constantly adopt to

changing situations. This tallies with business management literature that describe the mode of conduct of (successful) managers operating in complex, uncertain and dynamic environments as 'groping along', 'muddling through' and 'learning-by-doing' (Behn 1988; for an example of such behaviour in irrigation management, see Manzungu 1999).

However, it is not only the state agent that needs to negotiate. In fact, usually no single actor has the upper hand. The reason is that each social actor does not only have to compete with the bureaucracy, but also with other non-state rival groupings.

> Leaders attempt to mobilise followers and exercise power in environments, in which leaders of other groups are doing the same. (...) Attempts at domination are invariably met with opposition by others also seeking to dominate or by those trying to avoid domination (Migdal 1994: 21)

The consequence of such a situation is that any actor can only achieve its goals by creating alliances, and accepting accommodations. In line with Migdal, then, I understand the irrigation management arena of UPRIIS as

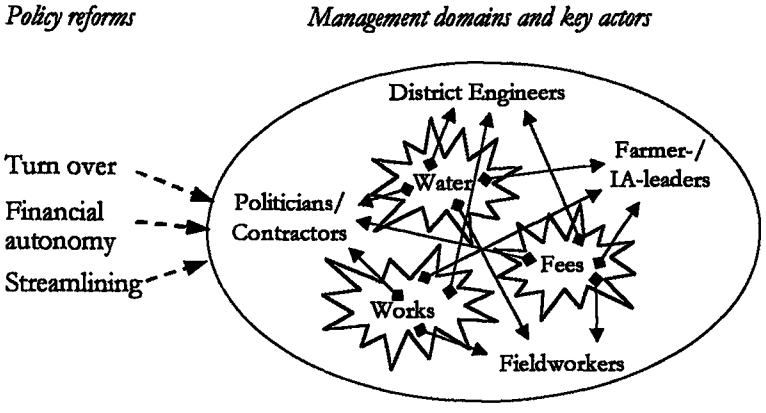
> an arena of domination and opposition, where various social forces engage one another over material and symbolic issues, vying for supremacy through struggles and accommodations, clashes and alliances. (*ibid.*: 21).

Which specific social groups are operating in the irrigation arena, and which specific issues are at stake, are empirical questions. This will differ for different irrigation systems, for different countries and at different points in time. For clarity though, I have sketched out the arena as I think it is shaped in the case of the UPRIIS 4th Irrigation District (figure 1.1).

This schematic picture of the irrigation management arena of the District raises a few points. Firstly, the arena actually consists of multiple, partly overlapping, inter-related 'sub-arena's, or to put it in more conceptual terms, different 'domains of interaction' (Villareal 1994: 207). There are different resources at stake that people struggle about. Obviously, not all resources are equally important to the different actors, nor are the rules of the game or the alliances created. Hence, the properties of the sub-arenas of

struggle or domains of interaction regarding 'works', 'water' and 'fees' are not necessarily similar to each other. On the other hand, they are not independent either. For instance, this study will show that the power relations between fieldworkers and farmer leaders in the management of water, partly shape – and are shaped by - their relations in the domain of fee collection.

FIGURE 1.1: Policy inflow into the local arena of struggle and accommodation over irrigation resources



Secondly, the actors discerned in the figure are abstract categories. In real life, it may very well be that the emerging alliances are composed of actors coming from several of these different categories. Hence, in the daily politics of irrigation management, certain politicians may have formed an alliance with a faction of the District engineers, trying to get control over certain resources. They might very well be in competition with alliances composed of other segments of the political and/or administrative system. Thus, the analysis needs to focus on real organisational processes, to understand which actors actually join forces to further their goals, and why others remain separate.

Another useful concept to understand state-society relations in the irrigation management of UPRIIS is the concept of 'blurred boundaries' (Gupta 1995). This concept indicates that there is no strict or clear boundary between the state and society. The state is part of society, and state officials are its members. Irrigation management literature does often not recognise this point. Engineers are pictured to be state officials, strictly separated from

the societal category, the farmer water users (see for instance Vermillion 1991). This is particularly true for contributions based on a neo-institutional perspective, which come up with highly stylised pictures in which the action is frozen, and in which the individual is presented as "an integrated personality, with clear preferences that are hierarchically ordered and that motivate one to act." (Migdal 2001: 37).

Viewing the state as a social boundary, separating it from non-state actors goes all the way back to Weber. For Weber, the separation of the public and the private was a hallmark of the modern, bureaucratised state. On his discussion on the separation of public and private law, for instance, he argued:

> It presupposes the conceptual separation of the state as abstract bearer of sovereign prerogatives and the creator of 'legal norms', from all personal 'authorisations' of individuals. (Gerth and Mills 1958: 7).

In day-to-day reality though, the social boundaries between the state and the non-state, between the public and the private are 'blurred', sometimes to the extent that it becomes difficult to separate one from the other (Gupta 1995: 379). This is perhaps clearest for the lower ranks of irrigation bureaucracies, the fieldworkers. The 'roles' of a state representative and that of a farmer water user often meet in the very same person. As this study will show however, also engineers might own tracts of irrigated land, might be part of patron-client dyads, and/or may have entered – either during or outside of office hours – into a joint venture with a farmer-cum-businessman. In short, there is a lot of 'NIA-in-society', and likewise, a lot of 'society-in-NIA'.

Embeddedness

It is clear from the above that I make use of an actor-oriented approach to understand the everyday politics of irrigation management, by exploring people's practices and strategies, and trying to come to grasp their life-world, to understand their underlying values and motivations (Long 1989). However, this type of studies runs a real danger of becoming too voluntaristic.

The danger is

> to overemphasise the freedom which social actors have to choose and construct their organisational arrangements and to underemphasise the constraining influence of overarching structures of power and control ingrained within the institutional structure of the wider society. (Reed 1992: 92).

To balance this, irrigation management practices need to be analysed as embedded in wider structures. For irrigation studies, three different types of structures have been distinguished:

- The agro-ecological system and the technical infrastructure;
- The agrarian structure;
- The state and the institutions of society (from Mollinga 1998: 19).

Most attention in this study goes to the embeddedness of the management practices in the wider structures of the state and state-society relations. The structure and character of the Philippine political system is examined, and related to the day-to-day problems in the Irrigation District. Also, the agro-ecology and irrigation technology are examined (see further below). Admittedly, the agrarian structure largely remains a blackbox in this thesis. In the following chapter a short discussion of Central Luzon's agrarian structure is provided. However, this does not allow for a substantiated view on irrigation management practices as embedded in the structures of the agrarian society. Unfortunately, a single Ph.D. researcher cannot do everything.

Policy-as-process

To be able to understand the ways in which the implementation of the irrigation reform policies affect the politics of irrigation management in the District, I depart from conventional policy analyses. Conventional forms of policy analyses conceptualise public policy as a linear mechanical procedure from plan to implementation to outcomes. Policy evaluation studies conducted within this framework typically identify gaps between aims and outcomes and come up with a diagnosis of what is amiss and a recipe for improvements.A major problem with this type of policy analysis is that it evaluates policies in terms of the original policy

objectives. It thus blackboxes what different actors, like governments, actually do with policies in the implementation process:

> Rather than assume that governments attempt to maximise social or national welfare but fail to do so, it might be more suitable to assume that governments have quite different objectives and generally succeed in achieving them. Rather than criticising governments for failing to attain, or offering advice on how to attain a *non-goal*, it would be instructive if more time would be devoted to analysing what governments actually do and why. (Griffin 1975, pp. 2, as quoted in Clay and Schaffer 1984: 2)

Hence, it is more appropriate to understand policy implementation as a negotiated process, or as a social interaction shaped by the various participants (Mooij 1996, see also Grindle 1980). As Schaffer (1984: 189) states "policy is what it does", or to put it in actor-oriented vocabulary, 'policy is what people do with it'. I thus examine how local actors involved in the irrigation management of the District, give meaning to the reform policies, how they shape, embrace, accommodate, resist, or disregard it.

Sociotechnical perspective

An important shortcoming of many studies on irrigation management is that it is treated from either a technical or social disciplinary perspective. Engineering views on irrigation management tend to be technocratic and fail to see the human dimension. Likewise, the human sciences come up with studies that fail to see the importance of the physical dimension of irrigation systems shaping human behaviour (Vincent 2001; Eshuis *et al.* 1990). A comprehensive understanding of irrigation thus requires addressing both dimensions simultaneously, and not consecutively and separately, as is usually done.

The basic point is that "irrigation technologies not only mediate people's relationships with bio-physical processes, but also shape the people-people relationships that are part of irrigation." (Mollinga 1998: 14). The physical properties of systems can play a determining factor in the ways people organise themselves, as well as in processes of social change. Hence, the physical properties of

irrigation systems may become contested during the design and construction phase, but may also be re-designed when used.

The following physical properties of gravity systems have proven to be particularly relevant. Firstly, the type of water control structures may shape –and be shaped by- struggles over water between different groups of farmers as well as state-water user relationships (Bolding *et al.* 1995). Moreover, the extent to which these structures can be regulated is an important factor in the way water is distributed and controlled throughout the system (Horst 1998). Secondly, downstream controlled systems versus upstream controlled systems structure social relations in different ways (Vos 2002).

Thirdly, the particular layout of the canal system is important, as it structures the ways in which different groups of water users relate to each other, both in a spatial and temporal sense (Carlstein 1982; Uphoff *et al.* 1991). The space-time characteristics of an irrigation system are not just the setting of people's behaviour. These space-time characteristics are strategically used, contested and adapted by people in their daily practices, and may shape patterns of social differentiation (Molllinga 1998: 23 and 89-121).

This study contributes to the understanding of this latter, spatial dimension of irrigation management. It is shown how re-use systems in tail-end areas are ingeniously connected to the irrigation canal system and thus further complicate the struggle for scarce water. Also, it is explored how irrigation management dynamics are the result of the ways in which the canal layout criss-crosses political-administrative boundaries.

Research question

This conceptual framework brings me to the central question that I try to answer in this book. It reads as follows:

> How did local actors integrate irrigation reform policies (turn over, financial autonomy and streamlining) into the everyday politics of irrigation management of a UPRIIS Irrigation District during the mid-nineties?

Research Methodology

The methodology chosen to address the research question and the concerns outlined above was the intensive study of one particular case, i.e. one of the four Irrigation Districts of the UPRIIS system, (on the case study method, see Burawoy 1991; van Velsen 1967). In this case study, I mostly made use of qualitative methods of inquiry.

I opted for this in-depth type of study method, because – as outlined above – of the descriptive and/ or quantitative character of the available irrigation management and reform studies. These studies are useful as they provide a general idea on management of national systems and the impact of the policies (see for instance Jopillo and de los Reyes 1988). However, they fail to explain why and how certain outcomes come about (exceptions are Kikuchi *et al.* 1998; Oorthuizen and Sloot 1993). Hence, what is lacking are detailed and comprehensive studies on the way the systems are actually managed, how reform is actually taking place, and how both management and reform practices need to be explained. It is my belief that a larger number of in-depth studies on real people and real problems provide a more realistic basis for policy debates on the desired management reforms needed to improve the use of these systems.

The study tried to build 'grounded theory' rather than testing theoretically informed hypotheses (Strauss and Corbin 1990; Eisenhardt 1989). The reason to do so was that this study ventured into relatively new and unknown terrain. Irrigation studies nowadays look at main system management and have also started to include the irrigation bureaucracy into their analyses. However, these emphases are recent, and have not yet developed into theoretically coherent frameworks of analysis. As Mollinga (1998: 4) aptly put it for his study on irrigation management in South India, "the causal connections that needed to be brought to the surface were, at least to this researcher, far from obvious."

Choice of location

UPRIIS was chosen as the area of study for three reasons. Firstly, the irrigation system as well as the political economy of the area has been relatively well studied during the 1970s and 1980s.[9] This

provided me with a useful background understanding of the area.

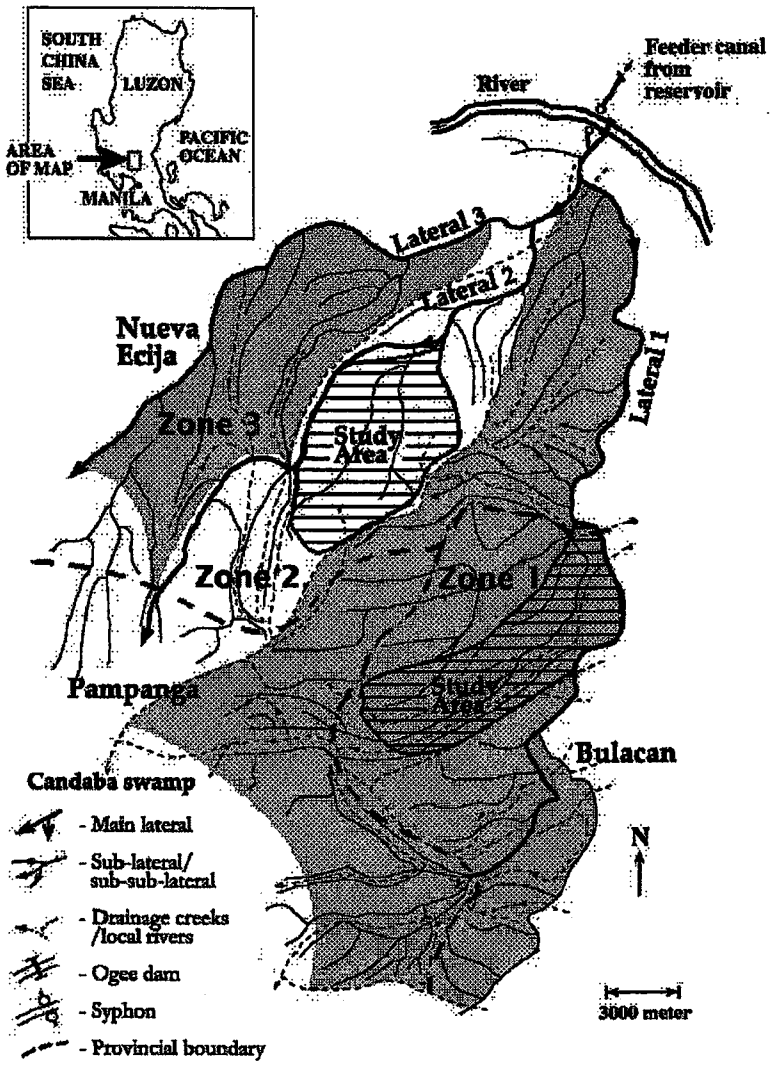
Secondly, UPRIIS has always been a showcase for irrigation in the Philippines. It is one of the largest systems in the country, and was considered to be its first modern system. This allowed me to study how management –and its reforms- were actually given shape in a system that was supposed to be an example for the rest of the country. Thirdly, its location was conveniently close to Manila, which fulfilled one of the conditions of my family life.

The study focussed mainly on one of the four Districts of UPRIIS, the so-called 4th District. The selected District was chosen because of a relatively severe problem of water scarcity. Though scarcity is found throughout UPRIIS, its extent was more problematic in the selected District. I figured that this situation would make the politics over water allocation and distribution relatively intense, and thus particularly visible. Also, both municipal and provincial boundaries were located within the District's boundaries. This, I thought, would help me to decipher the embeddedness of irrigation management in electoral struggles. For comparative reasons, around one month of field research was spent in the 1st District of UPRIIS.

Within the District, irrigation management was studied in two different Zones (i.e. Zone 1 and Zone 2, see map 1.2). Examining two cases is helpful to come to terms with reality as it forces one to explain the occurrence of different phenomena in the two areas (Long and van der Ploeg 1994). More specifically, it allowed me to compare and explain the everyday politics of management in these two Zones that - as it turned out - had differential access to water as well as other resources.[10]

Within each of the two Zones, I focussed my analysis on a watermaster division, and the IAs located within these divisions. A watermaster division is the area of responsibility of a NIA watermaster, ranging from 750 – 1500 hectares. Both were located at the mid-stream of the Zones, as I assumed that these locations show the most intensive levels of interaction over water (cf. Wade 1988a). This focus gave me an in-depth understanding of the practices, ideas and interests of the frontline workers (the watermaster and his or her field men), as well as the farmer leaders in the areas.

MAP 1.2: foci of study in the 4th District of UPRIIS



Source: cf. NIA-UPRIIS, 4th District 1983

Methods in field research

The study made use of social-anthropological research techniques like participant observation, unstructured and semi-structured interviews, life histories and situational analyses (Bertaux 1981). Each situational analysis provides a close-up view of social interaction and problem solving, in order to elucidate how the social relations work out in everyday, problematic situations (Long 1989).

As I made use of an actor-oriented approach (Long 1989), much of the study was about following actors and understanding their everyday practices and strategies. More precisely, I observed the ways in which different actors interacted over the mobilisation and allocation of water, works and fees. This combination of resources and actors largely determined the pace and locales of my study. For each resource, I examined the everyday politics of 'instructive events'.

The fieldwork was conducted from January 1996 until the end of 1997. This allowed me to examine the politics of water allocation and distribution for four consecutive irrigation seasons (dry 1996, wet 1996, dry 1997 and wet 1997). The actors' doings brought me to examine struggles and negotiations over water at the main and lateral level, both during day- and nighttime (Chambers 1988). To understand the dynamics of these struggles over water, I had to observe gate settings over large distances (up to 30 kilometres). Moreover, I participated in numerous informal as well as formal gatherings in which water allocation and distribution was often a 'hot' issue.

In the same manner, I could observe and analyse several cycles of fee collection as well as the cycle of the mobilisation and allocation of several programs for works. I thus joined NIA collectors in their tedious collection work, and also monitored the schedules of the NIA's heavy equipment in their assignments in the District. Moreover, I participated in meetings of the District engineers in which they discussed their works program.

As I was particularly interested in the process and outcomes of the turn over policy program, the two research assistants and I observed meetings and training sessions of the leaders of the IAs and federations, as well as the gatherings with the NIA fieldworkers or engineers.

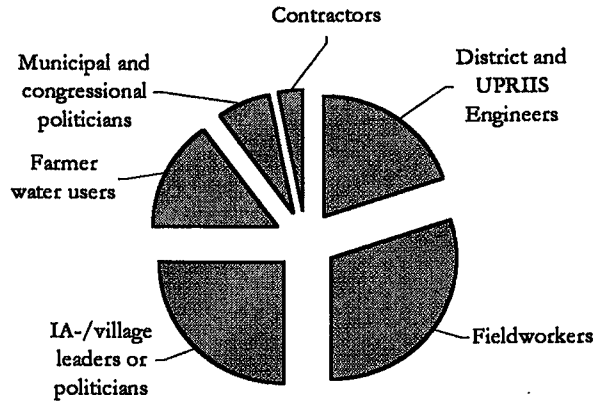
Much of the in-depth understanding of this study has been

derived from a limited number of key informants, which I was able to find among the NIA's engineers and fieldworkers, as well as among politicians and farmer leaders. They helped me a great deal in understanding the tactics of 'the other side' and reconstructing past events (cf. Fetterman 1989; Schwartzman 1993).

Studying the politics of water is relatively easy, as one can actually observe water flows. One can even reconstruct events on the day after the night before. However, water politics is full of rumour and allegations about people's (non-)doings, which are often deliberately spread by people from rival alliances. These key informants helped me to understand the meaning of these rumours, and how to trace their origins. Key informants were also useful to get access to information about the more 'hidden, back-room' politics of irrigation management, like the rent-seeking efforts on work contracts or the promotional struggles over vacant engineering positions.

One of the main problems with this kind of method is that one becomes easily associated with one of the rival alliances. Though I took great care to manoeuvre between the different sides, this could not be avoided all together. At the end of the day, however, it is my belief that getting close to key figures in one of the alliances is more instructive than remaining at a distance all together.

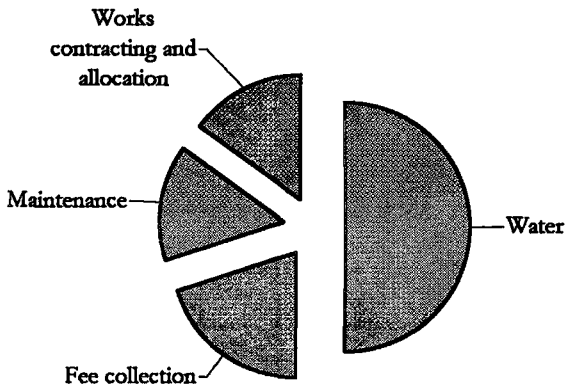
FIGURE 1.2: Distribution of research time over different actors



Concretely, the fieldwork of the two assistants and myself resulted in a total of over four hundred semi-structured interviews or minutes of observed formal or informal meetings, with an

average length of around 1,5-2 hours. The approximate attention given to the different resources and actors at stake are given in figure 1.2. and 1.3.

FIGURE 1.3: Distribution of research time over different resources



The study furthermore made ample use of secondary data gathered by the NIA's District office. The District collected useful (though not always reliable) data on agriculture, water management, fee collection, and the District's finances as well as personnel numbers.

Limitations of the research

One limitation has been mentioned already: the study did not relate the irrigation practices in the District to the wider agrarian structure. Another limitation is that the everyday politics of lower level water management were not examined in detail. Hence, the internal politics of an IA and its relations to village politics remain a blackbox. This was a deliberate choice. The usual practice in many irrigation studies is to start at the village or field level, and then move upwards. These studies then tend to become thin when it comes to main system management and the socio-political world of the engineers and the irrigation bureaucracy. To avoid this pitfall, I therefore chose to start higher-up in the system.

If I could do the study again, I would put even more emphasis on the higher levels of irrigation politics. As it is now, the

understanding of especially the UPRIIS level leadership –and its multiplex relations to the provincial elite – largely escape the attention of this study.

Ethics and politics of this research

I am aware that the findings in this book might become a resource in future irrigation politics in UPRIIS, and as such might do harm to some of the local actors. Though I changed the names of people as well as the locations, the events, places and people will still be traceable by informed actors. I still think it is justified to present these in-depth findings on the District's dynamics and people's doings. People interviewed were fully aware of my purposes in talking to them. Not telling the (full) story would probably be disappointing to the many people who devoted so much of their time and patience in making me understand the real and full picture. Many of them felt it to be a story worth being told. Apart from this, I can only hope that the study's impact on individuals will be limited. As the analysed events took place six years ago, it seems to be legitimate to assume that much of the discussed irrigation politics have lost its potential for 'dirty politics'.

With regard to the politics of the policy world, I want to stress here that this study should be seen as a general contribution to our understanding of irrigation management and its reform policies. I hope no policy maker will take the easy way out by concluding that these problems are specific to the UPRIIS or to the NIA. The last thing irrigation management in UPRIIS and the Philippines needs, is a (further) turning away from its realities by (inter)national donors and policy makers.

Outline of the Chapters

After this introduction, chapter 2 opens with a concise introduction of the management structures of the NIA, and the three management reform policies evaluated in this book. It also introduces the context of the District, by sketching the agrarian history and state-society relations in Central Luzon. Readers not familiar with either the NIA or Central Luzon may need this information to be able to situate the rest of the book.

Chapter 3, 4 and 5 all deal with water management. Chapter 3 is an introduction to the water management of the District. It describes the physical properties of the system as well as the organisational set-up. The magnitude of water scarcity is discussed as well as its major causes. The core of the chapter discusses the major strategies employed by water users in the struggle for scarce water. It is shown that these struggles not only focus on the use of the system, but also involve the re-design of its physical characteristics.

Chapter 4 analyses the everyday politics of the water struggles. It delineates the socio-political dimensions of water management in the main system of the District. It is thus about power: who has control over water and why. It discusses the alliances that emerge in the struggle for water, and analyses the bases for different actors to join forces. It is shown that political patronage and brokerage, kin and friendship and the threat of force all play a major role in the management of water. The chapter also discusses the role played by the farmer organisations in water management that were set up as part of the turn over policy program.

Chapter 5 focuses on the NIA fieldworkers. It analyses how these frontline workers survive and give shape to their daily work in the contested and politicised arena of water management. Furthermore, it makes clear how these people respond to the different reform policies. More specifically, it shows how they re-organised their relations to farmers in response to the turn over and streamlining policies, and thus gave meaning to the idea of 'joint management'.

Chapter 6 examines the impact of financial cutbacks and reforms on the management of the District. To understand the reduced access of the NIA towards government funds, its relation to government is put in a historical perspective. The chapter then outlines in detail the different measures taken by the District's management to improve its income and to reduce its costs. Theory has it that the financially autonomous status of the District supposedly improves its management and empowers farmers vis-à-vis the agency. The chapter shows how and why the assumptions of this theory fail to meet the dynamics in the District studied.

Chapter 7 looks into the arena of physical works. Much of the chapter is devoted to the politics of contracting. Rent-seeking practices are examined. It is also analysed how high-level politicians are involved in the struggle for lucrative contracts, through their

hold over the promotion and transfer of the NIA engineers. The chapter then looks into the way in which works are allocated within the District, and the influence farmer organisations have on these allocative practices. Finally, the chapter traces the existing mechanisms for control of the quality of the works implemented in the District, and evaluates whether the farmer organisations were able to get a say over quality control.

Chapter 8 is the conclusion of this book. It provides a summary answer to the central research question. It wonders how it is possible that policy discourse on irrigation reform is so far away from actual practices on the ground, and it discusses the constraints and opportunities for future management reform. It argues for the need to strengthen the accountability of farmer water users to the NIA rather than the other way around, and the empowerment of the NIA's frontline workers.

The epilogue (chapter 9) provides a short account of the major events and developments in the management of the 4th UPRIIS District during the 1998-2003 period. It is based on a two weeks re-visit to the District during January 2003.

Notes

[1] On land and tenancy struggles, see Wolters (1984) and Fegan (1979). On resource struggles in Luzon in general, see Kerkvliet (1990) and Resurrection and Sajor (1997).

[2] On Indian canal systems see Mollinga (1998) and Ramamurthy (1995). On Mexico, Rap (forthcoming). Merrey (1986), discussing a canal system in Pakistan, was one of the first to show the importance of integrating cultural relations in the examination of irrigation management

[3] These Ph.D. studies were Wickham (1971), Svendsen (1983) and Wensley (1989).

[4] This study focuses on the state's role in the management of systems, and does not look into more general questions on the relations between Philippine state formation and irrigation development. For such a more general discussion on the Philippines, see Boyce (1993). For such studies on other countries, see for instance Van Halsema (2002) and Gilmartin (1994) on colonial irrigation development in the Indus Basin and Attwood (1987) on India.

[5] Irrigation has been central to historical debates about the rise and fall of pre-colonial states and societies. Wittfogel (1957) triggered this 'hydraulic society debate'. He put forward a grand theory arguing that pre-colonial

despotic regimes in Asia and the Mediterranean had been able to build up and maintain their power through the construction and management of large-scale irrigation schemes. Through their control over water works, the tyrants and engineering bureaucracies of these 'hydraulic states' were able to control and exploit the peasantry. Though Wittfogel's thesis has been convincingly and heavily criticised (see for instance Bray 1986 and Ludden 1989), historians seem to agree that in many cases, state formation and large-scale irrigation (management) go hand in hand (Oorthuizen 1995).

[6] The state is also largely absent in the wide literature on farmer-managed irrigation systems (Coward 1986). This is perhaps somewhat understandable, but not correct. In for instance the case of farmer-managed tank irrigation in South India, the managerial set-up cannot be understood simply in terms of an absence of the state, but rather should be seen as the outcome of specific state interests and historically shaped state-society relations (Mosse 1997).

[7] An exception is the excellent study of Van der Top (1998) on the operations of the Department of Environment and Natural Resources (the DENR) in relation to (illegal) logging in Cagayan Valley. The other exception is the study of the Department of Agrarian Reform (DAR). This government agency has been the subject of many studies given the highly politicised issue of land reform. See for instance the work of Putzel (1992) and Borras (2001).

[8] Two recent studies that examined accountability relations in irrigation management in a much more comprehensive manner are Vos (2002) and Kloezen (2002). Vos provides a detailed account of the multiple ways in which different societal institutions shape accountability relations in two Peruvian large-scale canal irrigation systems. Kloezen's analysis of two large-scale canal systems in Mexico distinguishes between different forms of accountability, i.e. operational, financial, and political accountability.

[9] On the technical side, see the earlier reference to the three Ph.D. studies. On the social side, see the references given in chapter 2.

[10] Zone 3 of the District was excluded from the study because the time frame and the resources available did not allow me to investigate it.

2

The Policies and People of UPRIIS

This chapter is a prelude to later chapters: an exploration of people's struggles in irrigation management. It provides background information useful to situate and understand these struggles. It is written for those readers that are not yet familiar with either UPRIIS and its reform policies, or with the turbulent social history of the people living in the irrigated areas.

The UPRIIS Organisation and the Reform Policies

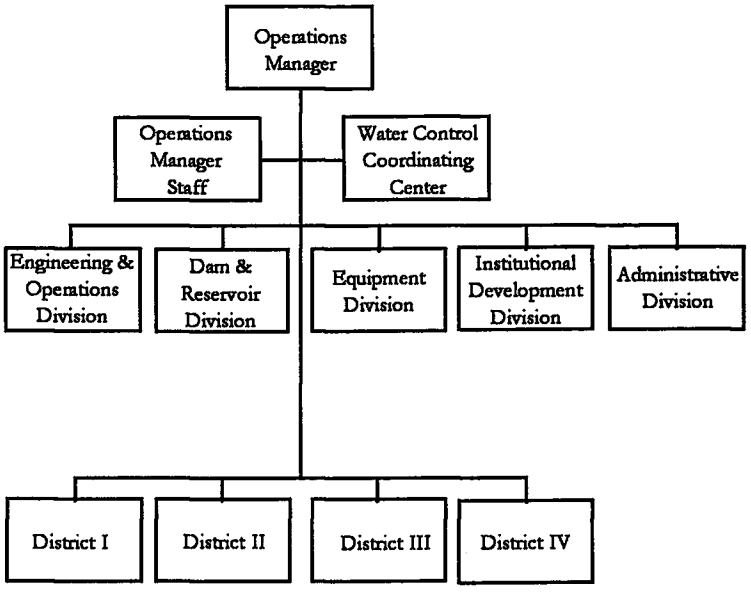
The UPRIIS system is classified as a so-called 'national system', which means that is being managed and maintained by the NIA. In contrast, 'communal systems', which are usually small systems, are operated and maintained by farmer organisations. The NIA's role in 'communal systems' is limited to their construction and/or rehabilitation.

The NIA manages more than ninety 'national systems', in total covering around 700,000 hectares. The service area of most of these systems is around 2,000 hectares only. Irrigation superintendents and field staff reporting to one of the NIA's regional offices manage these systems. With a service area of 100,000 hectares, UPRIIS stand out as a very large management unit. Together with the equally large Magat reservoir system in northern Luzon, these two systems cover nearly 30% of the irrigated area of the national systems. Given the size of these two systems, they do not fall under a regional office, but report directly to the NIA's central office.

The UPRIIS system is a centrally managed system. The Operations Manager, who is assisted by a number of Division

Chiefs, heads the UPRIIS office. This office is in charge of overall planning and management of the UPRIIS system. It controls most of the work with regard to projects, manages the reservoir and allocates its water towards the four Irrigation Districts (see figure 2.1).

FIGURE 2.1: Organisational set-up of the UPRIIS system



Source: NIA-UPRIIS annual report 1994)

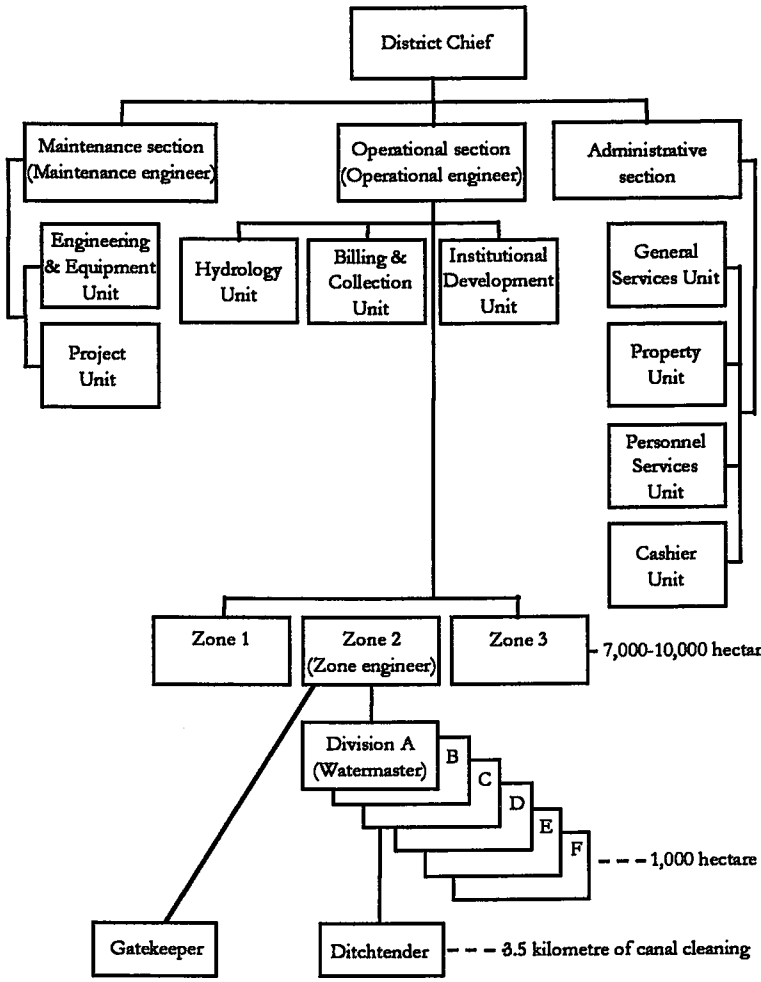
Each District office is in charge of the management of one of the four Irrigation Districts. Each Irrigation District covers an area of around 25,000 hectares. Each District diverts water from one or more local rivers, but all four are supplemented with reservoir water that reaches the Districts through feeder canals.

A District Chief heads the District offices. The Maintenance Engineer, who is in charge of the maintenance section, takes care of the preparation of Programs of Works (POWs) to be submitted to the UPRIIS office and finally the central office for approval and funding. Also, his unit manages the heavy equipment used for canal de-silting and road grading and re-gravelling, and checks the quality of contracted works.

The Operational Engineer is in charge of water management,

fee billing and collection and the development of the IAs and their federations. For water management, the hierarchy is as follows. A Zone Engineer, who commands a number of watermasters, each in charge of a so-called Division, heads each Zone. A ditchtender assists each watermaster. Moreover, the Zone Engineer also commands a few gatekeepers that manage crucial headgates (see figure 2.2).[1]

FIGURE 2.2 Organisational set-up of a District office



Source: NIA-UPRIIS, annual report 1994

To complete this brief introduction on the managerial set-up of the Irrigation District, I give some data on District IV that gives an idea of the resources of the NIA's office, and the magnitude of its tasks.

TABLE 2.1: Key-data on NIA-UPRIIS, 4th District

Service area (2002)	*(hectare)*
District:	23,400
Zone 1:	10,800
Zone 2:	5,200
Zone 3:	7,400
Benefited area (1990-2001 average)	
Wet season:	17,000
Dry season:	11,600
Number of NIA staff, IAs and farmers (2002)	
Total staff number:	71
Field staff:	39
Zone Engineers:	3
Watermasters:	19
Gatekeepers & ditchtenders:	17
Number of IAs	78
Farmer water users:	11,000
Length and number of facilities (2002)	*(km)*
Total length of canals	467
Main canals	42
Laterals	114
Sub-laterals	311
Canal roads	540
Number of turn out structures	700
Financial data	
Total O&M income (2001)	21 Million
Fee collection efficiency (1990-2001 average)	57 %

Source: NIA-UPRIIS 1993; NIA-UPRIIS, 4th District 2002a

Policy no. 1: management turn over

Management turn over policies were implemented in UPRIIS as part of the World Bank-funded Irrigation Operation Support Program (IOSP-1) that started in 1989. These policies aimed to organise farmers into associations and federations, and to make these organisations responsible for certain management tasks that

were previously carried out by the NIA. Until today, turn over policies are part of donor-funded programs in the Philippines, and are still being implemented in UPRIIS (for further discussion, see chapter 9, the epilogue).

The history of these turn over policies is a rich one, and involved many struggles within the NIA and the donor- and lending institutions. I will give a brief account of this history (for further detail, see Bagadion 1989; Korten 1989; Panella, forthcoming).

Until around 1985, a powerful group in the NIA that was formed around assistant-administrator Bagadion, was able to experiment and implement a number of rather far-reaching reforms in the way the NIA handled its construction- or rehabilitation projects in the communal sector. This became known as 'the participatory approach' that became a model for change in other Asian countries as well. A key role in this approach was given to community organisers that were fielded in the project areas for a long time to organise the farmer-beneficiaries.

This group – including the organisers - seemed to have been inspired by two types of philosophy. Firstly, there was a strong belief in the capability of farmer communities to organise themselves. This was partly based on romantic views of local culture in rural communities, i.e. *baya-nihan* (the spirit of helping each other) and *pakikisama* (the importance of maintaining smooth interpersonal relations) (Raby 1997: 4; Castillo 1983). The idea that farmer communities could very well take care of their own affairs was fed by studies of traditional farmer-managed schemes in the mountains of northern Luzon, the *Zanjera* systems (Lewis 1971; Siy 1982).

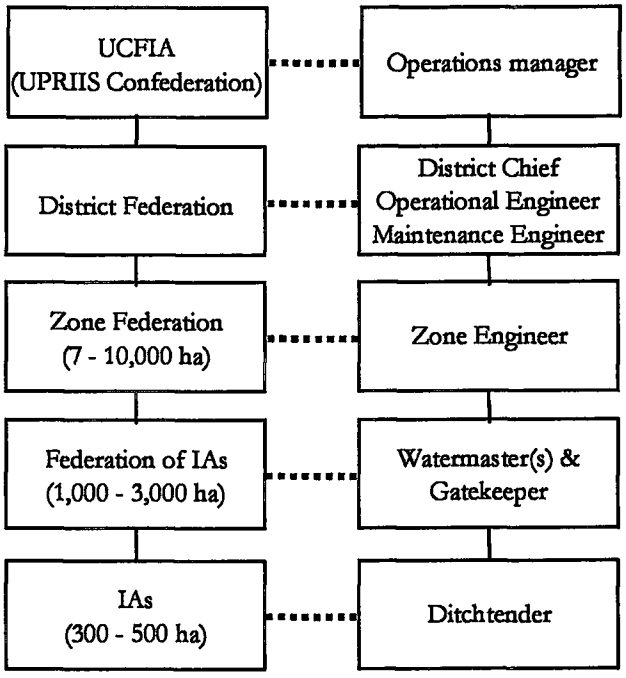
The second type of philosophy was focussed on farmer organisation and empowerment, as a way of fighting the anti-Marcos and anti-authoritarian struggle. As one of the former organisers put it: "it was as close to activism that one could get without going underground" (Panella, forthcoming). Organising tenant farmers was seen as way to empower them vis-à-vis the state (i.e. the NIA) as well as to liberate them from the semi-feudal structures that kept them without a voice (Illo and Volante 1984; Jopillo 1985).

From 1986 onwards, after the ousting of Marcos, the reform-oriented group within the NIA lost its power, and the reform programs were no longer aiming for substantial change in NIA –

farmer relationships. The early programs designed for national systems tried to build up strong farmer associations that would be given real authority in the management of the systems, and which would have access to considerable funds. Moreover, the IAs would enter into a progressive deal with the NIA: after having built up experience in stage I, the IAs would enter into the stage II and finally the stage III level of full turn over. This however, did not push through. Consequently, the World Bank funded IOSP program that brought turn over to the UPRIIS system had

> weakened NIA's earlier programs and retrogressed farmer's participation from broader managerial experience on system's operation and maintenance into narrowly defined tasks (Korten 1993).

FIGURE 2.3: The joint-management set-up of NIA, the IAs and their federations



Source: NIA-UPRIIS 1991

The turn over policies that were introduced by the IOSP

program - and that have not changed a great deal since then -, do not come close to the turn over policies that were implemented in countries like Mexico (Kloezen 2002) or Turkey (Svendsen and Nott 1997). The more apt term for the management model that was introduced in UPRIIS would be 'participatory management', or at best 'joint management'. Throughout this book however, I do use the term turn over as this happens to be the local term for the program. The reform model pushed for by the NIA is rather similar to those pushed for by irrigation agencies throughout much of Asia (on this 'Asian model', see Meinzen-Dick 1997).

The turn over program in UPRIIS organised the water users into associations and federations. The lowest level are the so-called Farmer Irrigation Associations (henceforth IAs). These are non-stock, non-profit, non-partisan and government-registered organisations. The IA board is made up of board members who are elected by the farmers of a turnout area. The general assembly of the IA determines – through election - who among them becomes the President of the IA, as well as who will be given some other official positions within the IA. The IA is supposed to take care of the management of its area, below the turnouts. This includes water distribution and maintenance of the farm ditches.

The IAs are furthermore federated at sub-lateral level, Zone level, District level and even UPRIIS level.[2] The board of these federations is elected by the IA Presidents who are represented at these different federated levels (see figure 2.3). At these different levels, the board members are to assist the NIA staff in decision-making and the actual management of the system. However, the federations lack clear responsibilities and authority, and do not have access to funds other than small contributions from the IAs.

The IAs could enter into so-called turn over contracts with the NIA. Under the type I contract, the Maintenance Turn over Contract (MTO), the IA is contracted by the NIA to undertake monthly maintenance of a stretch of sub-lateral canal. After inspection, the IA is remunerated for its work by the NIA (P1400/3.5 kilometres of canal, in 1997. This amount was still being paid in 2003).

Under the type II contract, the IAs enters into a so-called Irrigation Service Fee collection contract (ISF contract) with the NIA. This contract requires the IAs to assist the NIA collectors in collection, by distributing bills and remitting actual collections to the NIA deputised collector. In return, the IA may keep a certain

percentage of the collected amount, provided it reaches a minimal level (see table 2.2).

TABLE 2.2: IA incentives for fee collection

Collection efficiency (%)	*Incentives to the IA (%)*
< 50	0
50 - 60	2
60 - 70	5
70 - 90	10
90 - 100	15
Back-accounts	25

Source: World Bank 1996: annex 8, p. 6

By 1996, the 4th District had 78 IAs, of which virtually all (76) had entered into a collection contract, while a part (20) had entered into a canal-cleaning contract.

Under the IOSP program, the organising and training process of the IAs and federations was taken very seriously. Five Institutional Development Organisers – college graduates – were employed in the District for three years, to supervise the organising process. Moreover, the District hired a so-called Farmer Irrigator Organiser (FIO) for every one or two IA's to assist the watermasters in organising the IAs under his jurisdiction. This person was supposed to be an irrigator resident in the community who was recruited for one year for a stipend of P500 per month. During this year, he was to update the parcellary maps of the IAs, and – together with the watermaster – organise the farmers into turnout groups and the IA, and motivate them to enter into the turn over contracts. Moreover, IA leaders - though in practice mostly limited to the IA Presidents - were given three types of training – each lasting two or three days - on leadership, system management and financial management.

After the IOSP-1 program was finished in 1991, one Institutional Development Organiser remained employed in the District office. It was his task to advice the NIA's engineers on institutional development and to assist the fieldworkers in keeping the IAs and federations 'alive'.

In short, the turn over policies implemented in the District aimed to create joint NIA-IA management, in which the water users associations and federations would participate in decision-making and water management, while taking care of canal cleaning and fee collection. This book examines the impact of these policies on irrigation management, and people's access to water (chapter 3, 4 and 5), fees (chapter 6) and physical works (chapter 7).

Policy no. 2: Streamlining

The second set of policies examined in this book are the so-called 'streamlining policies'. These policies aimed to cut costs by reducing the number of NIA staff employed by the agency. Streamlining policies started at the beginning of the 1980s, and continued to be implemented in UPRIIS until today.

These policies were pushed by central government. It implemented streamlining of its bureaucracy in response to its fiscal crisis that started in the beginning of the 1980s. However, even during the mid-nineties the government carried on with its 'attrition law' that forebade agencies to hire new staff, and/or to fill-up vacant positions.

The Philippine government's motivation for these policies was based on neo-liberal views on a 'lean and mean' state. Moreover, anti-authoritarian feelings inspired such policy making during especially the post-Marcos administration of President Aquino, whose key slogan was 'People's Power'. The bureaucracy had to be 'cleansed' from anti-democratic elements, and government corporations – like the NIA - had to be closed down or at least set free from Marcos cronies. The new Philippine constitution aimed at reducing the government's central executive powers and strengthening those of Congress as well as local government. The local government code passed in 1991 indeed decentralised much of the powers of the central state to local governments (Tapales 1992).

The NIA itself also implemented streamlining policies to solve its serious financial problems that started in the 1980s. The turn over contracts to the IAs were to make this reduction of NIA staff possible. Streamlining had a dramatic impact on the District's staffing-levels. The total NIA District staff fell from 275 in 1982 to 70 in January 2003 (see further chapter 6).

Policy no. 3: Financial autonomy

The third policy reform that is explored in this book for its consequences on the District's management, was the change towards financial autonomy. The NIA, as a government corporation, is supposed to earn its own income by collecting fee payments of farmer-beneficiaries. Though it was centrally funded during much of the Marcos era, government stopped subsidising the NIA's operational expenditures at the beginning of the 1980s. Since that time, the 4th District still gets government funds to maintain and rehabilitate existing systems and construct new ones. However, except for some occasional and limited operational subsidies, the District has to self-finance the salaries and benefits of its irrigation management staff, as well as other operational expenses like motorbikes, gasoline and office electricity bills.

In other words, the District needs to be 'financially viable'. To achieve this, the NIA implemented several policies. Firstly, it re-organised its accounting system and thus created separate cost centres, so-called 'responsibility centres' for each national system. This change made the status of fee collections and O&M expenditure for each system visible to both system managers and central office supervisors. UPRIIS is treated as one responsibility centre by NIA-Manila, but within UPRIIS each District has its own budget. When money is short in a District, salaries and benefits to its staff will be delayed. Other Districts might help out, but they would first prioritise the income needs of their own staff.

Secondly, the NIA introduced 'Viability Incentive Grants', that provided bonuses for NIA staff in Districts, provinces or regions that were able keep its budget in the black. Thirdly, administrative measures as well as various collection strategies were developed to increase the fee collection from farmer water users. Fourthly, several cost-cutting measures were implemented to reduce expenditures and thus to attain financial viability.

As will be shown in this book, the need of the District for financial viability has had a profound impact on the way the system is managed, and also shaped the various struggles between farmers, NIA and politicians over water and fees. It will furthermore become clear that the three policies outlined here were in practice interrelated to the extent that it becomes hard to separate one from

the other. Management turn over, for instance, was implemented to allow for staff streamlining, while both were part of the District's efforts to become financially viable. These inter-relations will be further explored in the various chapters.

The Agrarian Structure in UPRIIS: a Short History

The UPRIIS area is one of the archipelago's key rice granaries. It covers the larger part of the fertile plains of the province of Nueva Ecija, and small parts of the provinces of Bulacan and Pampanga. Due to land reform, the green revolution, the extension of irrigation and its proximity to Manila, it became one of the most densely populated and prosperous agricultural regions in the country.

It is one of Central Luzon's key rural areas, of which "Its people are the best educated and most politically sophisticated villagers and townsmen in the Philippines" (Fegan 1985: 164). By the late 1970s, the agrarian structure in its villages was composed of "small, essentially independent peasants farming their own fields and wage labourers who worked seasonally for these small producers" (Kerkvliet 2002: xvi). Since that time, this class composition has essentially remained the same, although population growth and the stagnation of growth in the rice sector has led to a rapid increase of the group of landless labourers.

In addition, an increasing proportion of households are no longer directly depending on agriculture but on small businesses or employment in transport, construction, buying and selling and remittances from members working away in the town proper, in other towns, in Manila and even abroad. Even the farmer and landless labourer households have members working away in dry season in construction, transport and logging.

It is, of course, not a people without history. What follows is a brief account of the dynamic history of agrarian relations in the UPRIIS area. I distinguish three periods. The first period describes the emergence of the hacienda system. It is followed by a discussion of rural unrest and revolt around the Second World War, while the third period looks at the period of agrarian reform and the green revolution that started in the 1960s.

Frontier agriculture and the hacienda system

The agrarian history of the UPRIIS areas is a young one. Its agricultural development started in its most southern part closest to Manila. The early Spanish regime had a belt of friar estates and church estates close to Manila, the most northerly of which were located in Bulacan. Further inland were Spanish cattle ranches, and between about 1780 and 1880 the Tobacco Monopoly controlled parts of southern Nueva Ecija. Capitalist expansion in rice and sugar farming spread north from the town of San Miguel de Mayumo.

It was established in 1725, as the first free town beyond the belt of church and friar estates (Fegan 1982: 94). By the end of the 18th century, the largest hacienda in San Miguel shifted from raising cattle for the Manila market to raising rainfed and some irrigated rice. However, the rest of what later became the UPRIIS area was still largely un-inhabited marshland of tropical forests, swamps and lakes until the 1840s (McLennan 1982: 64).

From the 1840s until around 1900 in the south and the 1930s in the north of the UPRIIS area, can be characterised as a period of frontier agriculture. Small farmers, both Tagalogs from the South and Ilocano's from the northwest, moved into the area and cleared the land. The newcomers from Ilocos, sometimes coming with whole communities, moved to a frontier barrio or town. They first settled in and sharecropped or laboured on the land of relatives who had preceded them to the frontier. As soon as they had accumulated enough savings to buy a water buffalo and other necessities, they sought out land to claim on their own. They would live from products gathered from the forest, and eventually from the rice grown on their cleared piece of land (McLennan 1982: 65).

Though being pioneer settlers, the majority did not become the owner of the land. Wealthy Spanish and Chinese mestizo families used their capital, legal knowledge and political and bureaucratic connections to acquire large tracts of land. In the town of San Miguel, these were the *Dons* and *Kapitans*, an elite class drawn from two elements: remnants of the old colonial *principalia* and the new Chinese mestizo families who diversified from trading cattle and commercial crops of sugar and rice into land-owning. Already during the 19th century, they sent their sons to universities in Manila and abroad, where "they became intellectual citizens of Europe, earning themselves the unofficial title *ilustrado*, or

enlightened" (Fegan 1982: 98). They were able to acquire large haciendas in what would later become the UPRIIS area and were to form the gentry elite class of Nueva Ecija.

In the beginning, when the frontier still existed and population was still relatively low, tenancy was mostly based on a fixed rent. Landowners used the farmers to clear the land. In return, the tenants did not have to pay rent for the first few years. Many others though, "settled on uncleared hacienda land and learned of their mistake only after investing labour in clearing the land" (McLennan 1982: 71).

As soon as the end of the frontier was reached and the demand for tenancy among the growing population increased, landowners shifted to a share tenancy system. Landowners provided more or less capital or farm inputs to the tenants, in return for which they were entitled to 50% of the harvest. Hence, landowners developed an interest in the productivity of the land. In San Miguel, this started already before the turn of the 20th century. Throughout Nueva Ecija in what would become the UPRIIS area, share tenancy became the dominant arrangement from the mid-twenties onwards.

The relations became highly exploitative and business-like. While landlords used to be patrons to their tenants, they soon became absentee landlords managing their estates through overseers. The tenants were charged exorbitant interests on capital loans, could no longer borrow rice for free to feed their family before the next harvest, and/or were evicted in case of disease or old age (Kerkvliet 1977: 1-25). Hence, before the Second World War the agrarian structure had become composed of a politico-economic elite of large and affluent *hacenderos* (landlords) and a class of impoverished and indebted tenant households.

Rural unrest, war and peasant rebellion

The peasants of what was later to become the UPRIIS area, as well as their colleagues in most of Central Luzon, struggled for a better future. Already at the turn of the century, tenants organised themselves on both nationalist anti-colonial lines and on anti-landlord lines, the two often overlapping. They used both legal and illegal means to defend their rights, fight the malpractices of the hacenderos and demand better treatment. By the mid-fifties the Central Luzon tenant unions had communist-socialist leadership

and military arms and experience from their recent role as the *Hukbalahap* (anti-Japanese resistance movement). They turned into a massive peasant movement that rose against the hacenderos and their military allies in the so-called *Huk-* rebellion.

The reasons that the tenants reached such high levels of organisation were threefold. Firstly, people organised because they felt they were losing ground. The loss of the landholders' patronage and the increasingly harsh conditions of the tenancy contracts were seen as highly unjust developments (Kerkvliet 1977: 1-25). Secondly, organising was greatly facilitated by the fact that many villages consisted of one homogeneous class of tenant farmers (Fegan 1985: 165). Thirdly, people organised to defend themselves against repression and terror of the overseers of landlords, the Japanese occupation forces, as well as the Philippine Constabulary and Military Police (Kerkvliet 1977).

The early peasant organisations were informed by folk-catholic and folk-Marxist ideas (Fegan 1982: 106-111). Although several key peasant leaders joined the communist party founded in 1930, the mainstream of the movement was geared towards protest and reform rather than rebellion or revolution. Their means of protest were both violent and non-violent. It could range from petitioning, striking, or court action to burning fields, attacking strike-breakers or killing a local landlord or one of his overseers. Before the war, its movements were able to organise mass-rallies, and win mayoral positions in municipal elections (Kerkvliet 1977: 43-44). Nevertheless, both the local and national government mostly supported and to a large extent overlapped with the land-owning elite. The Philippine Constabulary (PC) was practically an army for the landed elite, while also the municipal police, appointed by the mayor who was typically a landlord, helped to harass peasant leaders and break strikes (*ibid.*: 54).

When the Japanese invaded the Philippines in 1941, the peasant organisations became the backbone of the Hubalahap, in short the Huk. This guerrilla army was heavily based on the leftist-led pre-war KPMP national confederation of peasant unions. It received massive support from the villagers of Central Luzon, partly because of nationalistic sentiments and partly out of revenge for harm inflicted by the Japanese army on their family, kin and/or co-villagers (*ibid.*: 66-68). The Huk guerrillas were involved in intense fighting with the Japanese. By the end of the war, the Huk army exceeded ten thousand persons. Many of them came from the

villages that were later covered by the UPRIIS system.

When the war was over, the Huks to their surprise found that the American as well as Philippine military forces turned against them. Being branded as communists, they were forcefully disarmed, chased and imprisoned. Meanwhile, the landlords returned to the rural areas, and wanted to restore pre-war order. The peasantry however, realising their new organisational and military capabilities, were less willing than ever to accept that order. Repression of government forces as well as para-legal landlord forces increased, leading to the killing of tenant unionists and the disappearance of some key leaders of the PKM peasant union.

Eventually it led to the so-called Huk rebellion that started in 1946, reached its peak during 1951, and then faded away until around 1956. The Philippine government, supported by the U.S., waged an all-out war on what they saw as armed, lawless and/or communist peasants. Several national politicians argued that unjust agrarian relations and repression rather than communism were the cause of the rebellion, but they remained a minority. It was a very bloody period, in which both soldiers and so-called 'civilian guards' backing up overseers of landlords were allowed or at least encouraged to "abuse, arrest and kill in the name of peace and order" (*ibid.*: 211).

At its peak, the size of the Huk peasant army rose to nearly fifteen thousand people. It eventually died down because of 'battle fatigue' and military superiority on the side of the government's army. A third reason however, was that the government was finally able to improve its image by instilling discipline on its forces, starting development projects and promising agrarian reform programs (*ibid.*: 235-239).

This history of peasant struggle and violence provides an instructive historical background against which the irrigation management practices explored in this book can be understood. Without suggesting hard causal relations, my findings do of course have historical roots. It helps to understand why the farmers were not so easily turned into obedient water users following the instructions of the irrigation bureaucracy. It also gives a background to why farmers searching for water organised around tough people, capable of using force. Being *matapang* (brave) is not just an element of Philippine macho-culture reproduced by the American and local film industry. It is rooted in its recent history, as both during and after the war, people had very good reasons to

fear for their lives and seek the protection of strong local leaders capable of protecting them (Fegan 1982: 116-118).

In one case I found a clear link between the rebellious past and the present-day irrigation management of the District. As is further described in chapter 4, one of the leaders in the tail-end of the District called for the help of the military to guard the gates during the particularly dry seasons of 1983-84 and 1984-85. This leader came from one of the barrios located near the Candaba swamp (see map 1.1 and 1.2). These used to be strongholds of the Huks. In the 1970s, the rebel tradition was still there, though it had come to mean social banditry rather than rebellion. This leader's rebellious past had helped him to become close to a Philippine military officer.

He established these contacts in a remarkable instance of social banditry that occurred during the unprecedented floods of 1972, which was described by Fegan (1982: 118). During that time, the 'old Huks' of this area raided a convoy of government relief trucks that were stranded by a collapsed bridge. This particular leader was one of the leaders who organised the raid. Making used of motorised canoes and armed men, they unloaded the trucks and distributed the relief goods to the inhabitants of the flooded villages. The government responded by sending in the military to investigate the issue. They were after this particular leader. Instead of arresting him though, the colonel in charge felt sympathy for his brave move, and they thus became friends. Ten years later, it was the same colonel – then a general - who sent out his men to help out this particular leader in bringing water to the downstream villages of the Candaba swamp.

Land reform and the green revolution

In the 1960s and 1970s, the lives of the rice tenants of the UPRIIS improved considerably. Firstly, there was land reform. To pacify Central Luzon's tenants, post-war governments legislated, but - due to landlord resistance - did not implement land reform. It was under president Marcos that land reform had an impact. When Marcos declared martial law in 1972, land reform was high on his agenda. As he badly needed support from the peasantry for his regime, his proclamation of a "new society" and "a revolution from above" declared war on the old oligarchy (Litonjua 2000: 384).

By Presidential Degree 27, Marcos enforced the implementation of land reform in the rice sector. Though this was a counter insurgency ploy rather than a truly emancipatory measure (Kerkvliet 1979) and the immediate results were meagre nationwide (Wurfel 1988: 154-76), it did have a marked impact on the agrarian structure in the UPRIIS area. Share tenancy was abolished and replaced by fixed lease rents. Moreover, payments to the landowners went down from the 50 per cent crop shares usually paid under share tenancy to 25 per cent of the average normal harvests of the three years immediately preceding martial law. Also, tenants on land owned by landowners that possessed more than 7 hectares were given the opportunity to become the owner. They were to pay the same 25% of lease rent for 15 annual instalments to buy the farm, after which they would become the owner. This also brought an end to the direct relation between the landowner and the tenant. The tenants were to pay their fixed rents to the Land Bank of the Philippines, which in turn compensated the former landlords (Fegan 1985: 166-169).

Secondly, the Green Revolution and the related government support programs had a significant impact on rice production levels and tenants' welfare. Marcos – supported by foreign donors and banks – put lots of money into irrigation systems (like the UPRIIS system that started in the mid 1970s), extension work, rice buying stations and maintaining a rice support price. Moreover, the farmers were given cheap institutional credit released and recovered on soft political criteria that replaced high-interest landowner loans. The productivity increase helped to further reduce the burden of the land rent. As the rent remained fixed at a percentage of pre-Green revolution harvests, it thus amounted to an increasingly smaller part of the harvests attained in later years (Fegan 1985: 167).[3]

Despite this progress, not all families of the UPRIIS areas were able to prosper. By the time tenancy reform was implemented, the majority of the villagers were landless. Due to high population growth the class of landless families has increased only further. The former tenants became the new land-owning class in the villages, making use of the landless labourers through new types of tenancy contracts (Hayami *et al.* 1990). While selling land titles of tenanted land is officially illegal, the richer peasant families were able to *de facto* acquire the land of indebted poorer families. It did however not bring a new class of wealthy landlords. As the land is claimed

by many heirs, land fragmentation processes stopped even the well-to-do families from acquiring large tracts of land (Van den Muijzenberg 1991: 326; Hayami and Kikuchi 2000).

People's welfare became increasingly dependent on non- and off-farm labour. Money brought in from Manila and especially from abroad (the Gulf States and Japan) has become increasingly important (Van den Muijzenberg 1997). Due to the risks of crop failure, high input prices and low selling prices, rice growing has not been a very profitable enterprise. Hence, people tried to invest in other ventures, and especially in the education of their children.

Those who got a better education were able to make a career as a bank employee in Manila or even as an engineer in one of the Gulf states (Van den Muijzenberg 1991: 331; Banzon-Bautista 1989). Those originating from poorer families became taxi drivers living in the slums of Manila, or became domestic workers living in over-crowded apartments in Hong Kong. Many who stayed in the village took on year-round non-farm occupations: carpenter, bus or truck driver, security guard, factory worker, teacher and so on.

The poorest villagers are those who have neither land nor year-round off-farm work, so that they must rely on the seasonal farm work available. Unfortunately, rice does not provide them with much work anymore. Due to the mechanisation of land preparation and threshing, the use of direct wet-seeding instead of transplanting and the chemicalisation of other parts of the rice cycle - like the use of weed killers instead of manual weeding -, the labour demand in rice cultivation has dropped dramatically over the last few decades.

Politically, the post-war changes have been a mixed bag. On the one hand, the prosperous gentry landlords no longer control public office. A new middle class has emerged in the towns of the UPRIIS area that consist of commercial people like rice traders and machine-shop owners, construction contractors as well as professionals and semi-professionals like teachers and civil servants. This has brought forward a new type of political leaders who are popular with the peasants rather than with the old gentry, and who "have democratic manners, are accessible and have more professional staff than ever before" (Fegan 1985: 170). Likewise, the integration of the UPRIIS villagers into the wider national and international economy have reduced their dependency on local power holders. While people could earlier think that "the landlord and the mayor controlled their lives, such simple notions had

disappeared altogether. A host of 'connections' had to be activated for one's economic, educational and political goals to be reached. (Van den Muijzenberg 1997: 341)

On the other hand though, Philippine politics is still a kind of 'elite democracy' (Litonjua 2000: 386), with elite and upper peasant political families being entrepreneurs in votes and violence (Fegan 1994). The politics of Nueva Ecija are certainly no exception. After the people's power revolution ousted Marcos in 1986, the pre-martial law political system based on political patronage made its comeback in Nueva Ecija. Family clans of *trapos* (traditional politicians) and even pre-martial law warlords continued to control its municipal and provincial politics (Wolters 1991: 223).

The Joson family is a case in point. It is the single most powerful family dynasty in the province of Nueva Ecija, as it held power in the province for nearly fifty years. The old Joson, 'the gentle Lion of Nueva Ecija', established the Joson dynasty (Crisistomo 1989). Coming from a land-owning family, his star rose as a USAFFE guerrilla commander during the Second World War. Throughout the 1950s, he was mayor of a northern town of Nueva Ecija and then elected and re-elected as governor until martial law. His power was based on a combination of political patronage, and the use of violence with the help of an extensive private army. His opponents were several competing political clans, like the Diaz and Concepcion-Perez family. Though a *kumpare* (male sponsor in baptism, confirmation or wedding) of the Benigno Aquino family (Benigno Aquino was the chief political rival of Marcos, shot dead in 1983, while his wife – Cory Aquino – became President in 1986), Joson was able to strike a deal with Marcos and remain in power throughout the martial law years.

After the ousting of Marcos, a new type of politician ran for office as well, but they largely failed. The old clans like the Josons remained in power. In the 1988 elections, the Joson dynasty held the positions of governor, congressman and provincial board member as well as several vice-mayor and mayoral positions (Wolters 1991: 222).

The trapo politics, based on political patronage, vote buying and violence, were still prominently present during the time of the field research and have remained so ever since. During 1995, two of the most prominent members of the Joson dynasty - the provincial governor and a municipal mayor - shot their arch-rival, mayor Perez of Cabanatuan City during broad daylight. President Ramos

had them jailed in Manila. However, the next President, Estrada, released them in return for massive vote support. Hence, even in 2003, the second – and the upcoming third - generation of Josons control the provincial capital and the mayorships of several towns in the province.

Another important post-Huk change in the politics of the UPRIIS area is that the peasantry became less organised. As the tenancy struggle was over and the villages became internally class-stratified, "the rural people have unlearned the politics of collective action" (Wolters 1991: 224). Peasant organisations as well as non-government organisations were active in the District. However, in line with Wolters, their network was limited to a few villages (*ibid.*: 225). These groups were not strong enough to present themselves in electoral- or in my case, irrigation – politics.

To summarise, this chapter has described the irrigation management reform policies of which the implementation is examined in the rest of this book. Moreover, this chapter described the formal management set-up of the UPRIIS system that is being affected and altered due to these reform policies. On the socio-political side, this chapter gave a concise summary of the history of the UPRIIS area. It has pointed to the recent history of violence and struggle, and the importance of political patronage in rural life. As will be shown in the following chapters, the issues of violence and patronage are also crucial to my understanding of irrigation management (reforms) in the 4th District of the UPRIIS system.

Notes

[1] Gatekeepers of headgates for water distribution between Zones are directly under the control of the Operational Engineer.

[2] The water users are furthermore federated at regional and national level. The national federation of Irrigators Associations, the NCIA, did try to get one of the so-called 'party list' seats reserved for NGO's in Congress. Due to late subscription, they failed to make it. Given the huge number of farmer water users in the country and the nationwide structure of the IA-organisations, UCFIA leaders expect that the NCIA will be able to attract sufficient votes for a 'party list' seat in the next congressional elections.

[3] In reality, tenants often did not or hardly paid rent. As non-payment of arrears to the Land Bank *de facto* remained without consequences for their security of tenure, many chose to use their money for more pressing needs (Van den Muijzenberg 1991: 322).

3

Struggling with a Modern System

Properties and practices

The construction of the UPRIIS irrigation system in the 1970s must have been exciting to young Filipino civil- and irrigation engineers. Technically, it was a thrilling project. They were constructing the huge Pantabangan dam, at the time the largest in Asia. Moreover, they were constructing the first modern irrigation system in the Philippines, based on state of the art American and Taiwanese irrigation technologies. Unlike before, water flows in this new irrigation system could be well monitored and regulated, to allow for a precise watering of rice crops. At field level, it would do away with the backward irrigation practices of farmers, who would now apply water to their fields based on the instructions and co-ordination of well-trained NIA personnel.

Moreover, it must have been fulfilling to contribute to a project that was going to uplift the plight of about fifty thousand poor peasant households living in the irrigated areas of the UPRIIS system. With the miracle seeds of nearby IRRI and the stock of water in the Pantabangan reservoir, farmers would be assured of bountiful harvests during both the dry and wet season. It would boost the rice-based economy, also because of the canal roads connecting farms to markets and the electricity supply coming from the dam.

With hindsight, much of this excitement was correct. Twenty-five years of water, electricity and roads coming from the UPRIIS project have indeed greatly contributed to a flourishing rice economy. Wealth derived from the rice harvests have allowed people to invest in other ventures and thus facilitated the

emergence of a middle class in the UPRIIS-based towns and cities.

On the other hand the success has been partial, and many of the original intentions have proven to be illusive. The modern features of UPRIIS are hardly put to proper use. Actual control over water flows in the system is low, as is the NIA's control over the water users. Water scarcity has remained a serious problem and fierce struggles over water are the result.

This chapter looks further into the system's properties and the actual water management practices, focussing on the 4th District of UPRIIS. It starts with an introduction to the agro-ecology in the area, as well as the historical development of the system. It then takes a close look at the design properties and the managerial set-up of the fourth District. It is shown that – if used properly - the designed high levels of control over water and users should prevent water scarcity from occurring. Both of these first two sections are rather technical and thus perhaps less accessible to readers who do not have a background in agriculture or irrigation.

The subsequent sections discuss the actual management practices in the District. They picture the water scarcity problem in the District and discuss its reasons. In the final section I explore the major strategies used by tail-end farmers and their political representatives in the struggle for scarce water. It becomes clear that people found very ingenious solutions. For instance, they store water in the main lateral during daytime, to be brought downstream at night. Moreover, they do not just manipulate the gates but have actually re-designed parts of the system. Irrigation water is diverted into drains, and put to use in downstream areas.

The Agro-ecology and History of the 4th District

Originally, the 4th District of UPRIIS started out as a run-of-the-river gravity system. It was named after its source, the Peñaranda River Irrigation System (in short PenRIS[1]). The catchment of the Peñaranda River is found in the nearby Sierra Madre mountains, east of the system. The PenRIS extends downstream to the boundary of the vast Candaba swamp, which drains into the Pampanga River and then Manila Bay (see map 1.1 and 1.2).

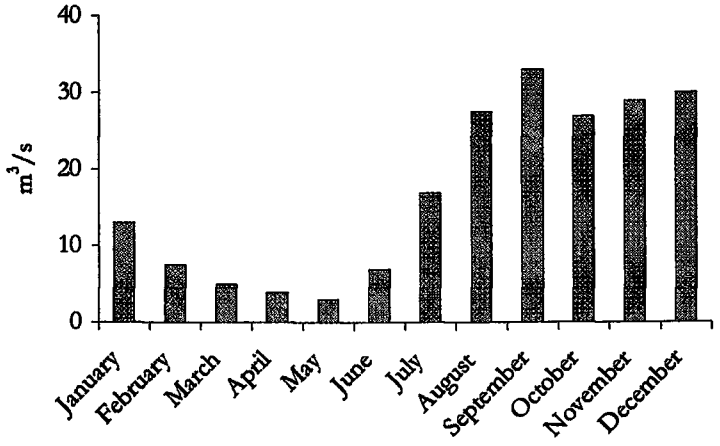
The PenRIS system was constructed between 1925 and 1933 by the Philippine government, supported by local hacenderos. Over the years, several dams on small rivers and drainage ways were

developed within the system. The service area of the system reached about 18,200 hectares in the beginning of the 1970s. (Wensley 1989: 62). During that time, the average cropped area was 16,700 hectares in the wet season and 10,800 hectare in the dry season. (ECI 1975).

Until today, the intake of the system consists of an Ogee-type weir and a diversion structure equipped with sliding gates. The canal system consisted of a main canal, laterals and sub-laterals. Headgates of larger laterals were at the time already provided with sliding gates. Most of the structures however, were simple concrete structures provided with wooden stop-logs. Farmers practiced field-to-field irrigation. Water was diverted from the canal system into fields by means of temporary checks and pipes or cuts in the canal banks (Wensley 1989).

The main source of supply for PenRIS was –and still is- the Peñaranda River. It has a fairly substantial mean annual flow of 17 m^3/s, but it runs low during the dry season months (figure 3.1).

FIGURE 3.1: Average monthly discharges of the Peñaranda river, 1945-1970

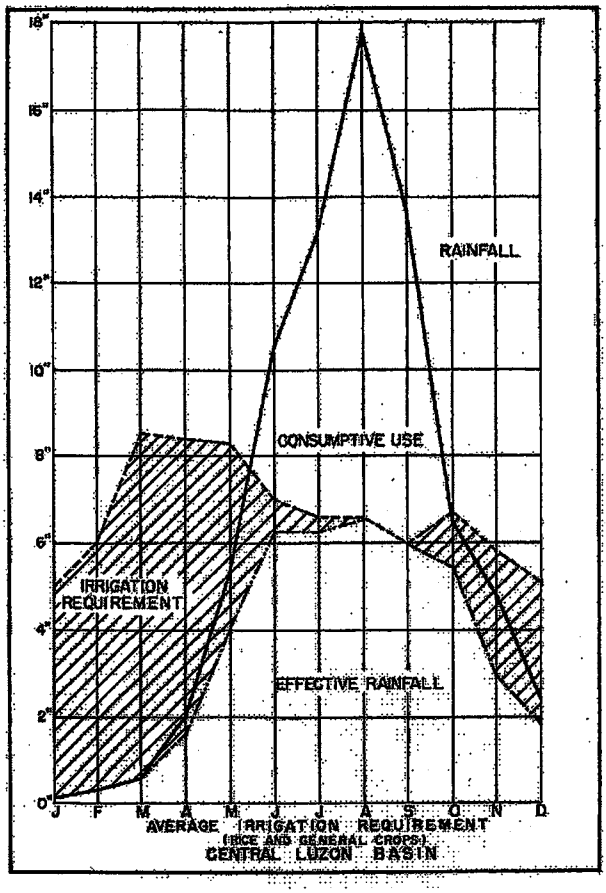


Source: Wensley 1989: 65

Farmers use irrigation water in both the wet and the dry season. The wet season lasts from May to November, and the dry season from December to April. During the wet season, average rainfall is 1720 mm. This is generally sufficient to cultivate a rainfed rice crop

without irrigation. However, farmers do use irrigation water to bring forward the start of the wet season crop. This reduces the chances of typhoon damage in the later part of the wet season. It also allows for an early start of the following dry season crop, and thus avoids the water-scarce months of March, April and May. Also, irrigation water is used to overcome temporary dry spells during the wet season. During the dry season, rainfall is too sparse to cultivate rice without irrigation. Average dry season rainfall is 147 mm (Wensley 1989: 61 and figure 3.2).

FIGURE 3.2: Average monthly irrigation requirements in the Central Luzon Basin



Source: USBR 1966: 129)

Farmers in the District almost exclusively grow rice. Until the late 1960s, farmers cultivated only one rice crop per year, as the photoperiod sensitive varieties of those days could not ripen beyond early January. After 1969, farmers started to use the IRRI photoperiod insensitive varieties and turned to double rice cropping (Fegan 1979). The start of the wet season crop sets the start of the two-season sequence of wet and dry seasons, which is determined by the start of the rains in the nearby Sierra Madre. This typically occurs between mid-April and early June. (Wensley 1989: 66).

The District's area is well suited for rice. Or, to put it differently, it is hard to grow something else. The soils are ideally suited for rice cultivation. In the upstream part of the system with a more rolling topography loamy soils predominate. In the flat mid- and downstream portions, clay, silty clay and clay loam predominate. The main soil types are vertisols of the subgroup Udorthenetic Pelluserts. These are deep, poorly drained soils that are sticky and plastic when wet, and extremely hard when dry. They are slightly acid to neutral in surface soil reaction, medium in organic matter content (1-3 percent), high in natural fertility and high in water holding capacity (FAO 1972, in: Svendsen 1983: 111).

These soils allow farmers to minimise percolation rates by puddling and harrowing their fields. Average seepage and percolation rates are 2 mm/day in the wet and 4 mm/day in the dry season. In some of the downstream parts of the system however, percolation rates can be negative. Due to high ground water levels, percolation rates may reach -2 to -3.7 mm/day. In these areas, dry season paddies may take up to two weeks to become dry and cracked after standing water disappeared from their surface (Svendsen 1983: 131).

Rice is also grown because the larger part of the system's area is low-lying, flat and poorly drained. The great bulk of the service area lies between the 10 and 20-meter contour lines. Most of the area has slopes of less than 0.25% (Svendsen 1983: 99). The system is criss-crossed by numerous creeks. Water-logging and flooding are common phenomena in the wet season. This is especially the case in the downstream areas at the boundary of the Candaba swamp. A large part of these areas cannot be cultivated at all, while crop damage to standing crops due to water-logging is a perennial problem. Rice is one of the few crops which at least has a chance to survive under such conditions.

On average, dry season yields surpass yields in the wet season. In the period 1987-96, average yields were 3.7 tons/ha in the dry season, against 3.0 tons/ha in the wet season (NIA-UPRIIS annual reports). Dry season yields are higher because of favourable solar radiation. Moreover, the dry season is free from destructive typhoons. In an average year, 15 of these tropical storms strike land somewhere in the Philippine Islands. In UPRIIS, the months with the highest incidence of typhoons are September and October. They can inflict heavy damage on standing rice crops, particularly when fields are approaching harvest (Svendsen 1983: 61). Finally, crop damage due to various pests and diseases is more frequent and severe in the wet season.

The integration into UPRIIS

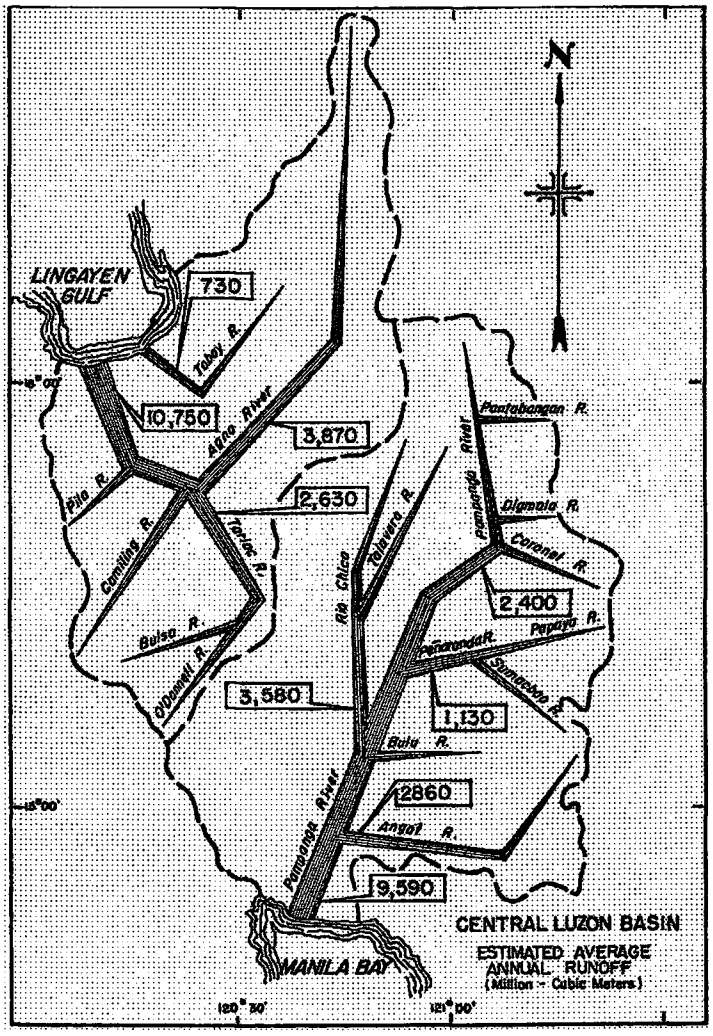
The PenRIS system was integrated into the UPRIIS system in the late 1970s. It thus became part of the modernisation drive of the Marcos administration. As a central part of Marcos's 'New Society' and the internationally promoted Green Revolution, irrigation development was to modernise the rice sector. It all started in 1964. That year, Marcos established the National Irrigation Administration (NIA). It had to ensure rapid expansion of the irrigated area in the Philippines especially by developing large, agency-managed schemes. The focus of development was the Central Luzon Plain (PRC *et al.* 1983: II-4).

The United States had a leading role in this modernisation program. It came up with an ambitious masterplan to develop the water resources of the Central Luzon Plain. The plan formulation was funded by USAID and carried out by the United States Bureau of Reclamation, together with the Philippine Bureau of Public Works. It was published in 1966. The masterplan concluded that the Plain had great potential for rural development, essentially by regulating the major rivers of the basin: "The economic and social welfare of the Central Luzon Basin is directly related to the development of its water resources" (USBR 1966: 4).

The USBR argued that without dry season irrigation, agriculture in the plain could not develop much further. While jungle at the turn of the century, almost every hectare of cultivable land was already under cultivation during the 1960s. The land frontier had been reached. Farmers were growing one rice crop during the wet

season. Due to lack of water, lands were idle during the remainder of the year. The average farm family at the time was occupied with on-farm operations for about five months of the year and two months of off-farm work. They were unemployed during the remaining five months. Agricultural growth was thus to be found in the intensification of land use.

MAP 3.1: Annual runoff of the major rivers in the Central Luzon Plain



Source: USBR 1966: 26

Due to the heavy rainfall in the catchment areas during the wet season, water storage would provide excellent opportunities for irrigation in the dry season. Approximately 90% of the average annual runoff occurred during June through December. Only 10% of the run-off was taking place from January to May, with a minimum of less than two percent during each of the Months of February, March and April (map 3.1). Much of this runoff could be put to beneficial use for dry season irrigation. All in all, the plan would provide year-round water for the irrigation of almost 300,000 hectares of land.

The masterplan also estimated that river control could reduce flood damage as well as water-logging. During the normal annual cycle of flow conditions the rivers in the Central Luzon Plain overflowed their banks and flood adjacent lowlands. This caused extensive flood damage to property and crops, and frequently endangered the lives of the basin's inhabitants. Though most of the problem was caused by rainfall over the relatively flat valley lands itself, the runoff occurring from the mountainous areas contributed to the problem. River regulation and water storage thus would control flood flows into the plain, and it would reduce the problem of water-logging. Hence, a significantly smaller area would be uncultivable during the wet season.

Finally, water control in the catchment areas would also help to solve the electricity problem of Central Luzon. Most of Central Luzon's villages were still without electricity, or received it only when there was a temporary surplus of power in the grid. Electricity demand was expected to increase dramatically in the years to come, and thus required extensive installation of additional generating capacity. The hydroelectric power plants proposed by the masterplan would almost double the electricity generating capacity available to Central Luzon (USBR 1966: 34).

The plan was well-accepted by the Marcos regime.[2] He followed the recommendation of the USBR to immediately start the construction of the so-called Upper Pampanga River Project (UPRP). Construction was authorised in 1969. Funded by the World Bank, it included the construction of the Pantabangan Dam and reservoir and irrigation facilities for approximately 77,000 hectares of land (PRC *et al.* 1983: II-5).

The project's scope and size was unprecedented in the irrigation

history of the Philippines. The multi-purpose reservoir was going to be the largest in the whole of Asia (110 meters above streambed, crest length of 920 meters, and a reservoir capacity of 3,000 MCM). At the time, six national irrigation systems were operational in the Upper Pampanga River Basin. Together, these systems covered less than 50,000 hectares in the wet season. The UPRP project was going to rehabilitate, modernise and enlarge these systems. The reservoir would allow these systems to provide a regulated water supply for the whole of the service area in both the wet and dry season. The six systems – and a number of smaller communal and private schemes – would be organised into three operational entities: District 1, 2 and 3. These Districts became operational in 1975. (PRC: II-3)

The PenRIS system was not included in original UPRP project. It was added to the system later on. The UPRP project would only serve the farmer population in the province of Nueva Ecija. Marcos however, wanted to bring irrigation to farmers in other provinces as well. Just after he declared martial law in 1972, he issued Presidential degree 35 to further enlarge the system (NIA 1977: 50). As a result, the Aurora-Peñaranda project started in 1974, under an additional World Bank loan. This project constructed a transbasin diversion from the Aurora river basin to the Pantabangan reservoir. It would bring the Pantabangan reservoir an extra annual inflow of around 165 MCM of water.

This extra water was to be allotted for the PenRIS system. Supplemental water from storage was to be delivered through 75 kilometres of river channel and UPRP supply canals to augment the flow of the Peñaranda River. This was to permit full development of the 17,000 hectares under the existing Peñaranda system, and an 8,260 ha extension. A large part of this system is located in Nueva Ecija as well, but especially the extension area was going to serve areas in the adjacent provinces of Bulacan and Pampanga (PRC: II-6).

As the PenRIS system was going to be served by the Pantabangan reservoir, it would become the fourth District of the UPRP system. By that time, it was renamed into its present name: the Upper Pampanga River Integrated Irrigation System (UPRIIS). The enlarged and improved PenRIS system, the 4th District of UPRIIS, became operational in 1978.

Control over Water and Farmers: the Properties of Water Delivery

The design and operational manuals of UPRIIS read like the text books of my training as an irrigation engineer at Wageningen University during the 1980s (see Meijer 1989). UPRIIS was going to be the first modern system in the Philippines, based on state-of-the-art Taiwanese and American irrigation design and management principles. Both design and management were geared towards high levels of control. The system design allows for a well-regulated water flow throughout the system. This would enable high irrigation efficiencies, as supplies can meet variation in water demands. The management of the system was – and still is - formally firmly controlled by the NIA. The agency regulates water in a planned manner. It prescribes in detail farmers' behaviour with regard to cropping patterns and field irrigation practices.

If managed properly, the UPRIIS system was supposed to dramatically increase yields as well as the cropping intensity (see table 3.1). The water supply was expected to be sufficient to irrigate the whole of the UPRIIS area during the dry season.[3] Shortage would only occur once in ten years. This would greatly enhance the farm income of some 44,000 farming families, cultivating about 2.4 hectares of irrigable land per family (Ng and Lethem 1983: 4).

TABLE 3.1: UPRIIS project targets

	Before project[4]	*After project*[5]
Irrigable area wet season (ha)	63,000	106,000
Irrigable area dry season (ha)	7,000	106,000
Annual paddy production (tons)	150,000	900,000
Average paddy yield wet season (tons/ha)	2.2	4.8
Average paddy yield dry season (tons/ha)	2.6	4.2
Cropping intensity (%)	110	190[6]

Sources: Ng and Lethem 1983; NIA 1977; PRC et al. 1983)

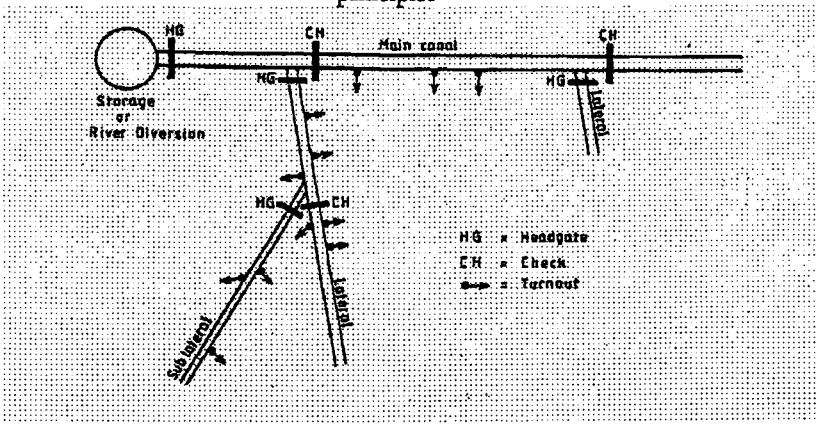
Control over water

Proper management of the reservoir water would make a well-regulated inflow into the different Districts possible. River

discharges – especially from smaller, deforested catchments - show daily variations. Supplemental releases of reservoir water were to ensure that water flows in the main system would not fluctuate. The reservoir's capacity was designed to supply about two-thirds of the total dry season water requirement in UPRIIS. About half that amount would be needed in the wet season. The remainder was to be derived from natural and return flows regulated by diversion dams, as well as from rainfall in the service area (Ng and Lethem 1983: 8). Given the relatively high discharges of the Peñaranda river, dry season support of the reservoir to the 4th District was estimated to be around 50% of the District's total water needs.

The main system was designed for precise regulation of water flows throughout the system, to be able to carefully match demand and supply at the turnouts. It was based on USBR design principles. Regulation structures and measuring devices were installed at all water distribution points. The headgates in the main, lateral and sub-lateral canals were provided with sliding gates for medium discharges, and radial gates for larger discharges. The checks - cross regulators - in the larger canals were also provided with sliding gates. All structures were supplied with measuring devices, mostly Parshall flumes or staff gauges (see figure 3.3).

FIGURE 3.3: Schematic lay-out of a main system, based on UPRIIS design principles



Source: Horst 1995: 4

Also the lowest level of the system was designed for a careful match of supply and demand. The traditional continuous-flow

method of irrigation was to be replaced by the modern rotational method practiced in Taiwan. The traditional method was considered to be inefficient: rotational irrigation could save about 20-30% of water use. (Cerdan 1975: 8). To allow for rotation, farmer fields were grouped into so-called turnout service areas (TSAs). Each TSA was to serve around 50 hectares, comprising around 20 farmers. Water flow through the turnout would be continuous (NIA 1979: 3).

Within the TSA, the water was to be distributed between five rotational units of 10 hectares each. The water supply would be delivered on a rotational basis for each 10-hectare unit of the Turnout Service Area. Following a 5-day interval, each unit would receive sufficient water to last for five days. Main farm ditches and supplementary farm ditches were constructed for this purpose (NIA 1979: 3-5).

Water supply to the TSAs was to be regulated, depending on water demand. Therefore, double-gated - orifice type - turnouts were introduced, or single gated turnouts with Parshall Flumes. These were installed just upstream of (sub-)lateral checks or road crossing structures. Checking was to be done with wooden stoplogs in smaller laterals, and sliding gates in the larger ones.

The turnout service areas were designed for optimal water use. The dimensions of the TSA were based on a range of considerations, like crop water requirements, cropping patterns, effective rainfall, and percolation and seepage losses (Horst 1995: 3). The capacity of the turnout pipes was based on the peak demand for rice cultivation, which occurs during land soaking and land preparation. During the first 8-10 days, water delivery would be at its maximum capacity and water levels in the sub-lateral would be at its highest. Using 18 inch turnout pipes, it would deliver the needed 100 mm of water for land soaking (excluding submergence) (NIA 1979: 6-8).

After these nine days, water inflow into the turnout area could be decreased to an amount sufficient for farmers to undertake the necessary land preparation work (NIA 1979: 3). During the crop maintenance stage, water supply inside the lateral would run at normal levels. Water requirements for land soaking were estimated to be 2.3 l/s/ha, and around 1.2 l/s/ha during the crop maintenance period. By carefully adjusting turnout deliveries to

crop water demands, it was expected that a field application efficiency of 80% could be achieved (NIA 1979: 6-8).

The management of scarcity

Even in cases of water scarcity, the system would still allow for a high control over water. Water scarcity would not affect the operation of the system. It was expected that – given the huge reservoir - water scarcity would not be much of a problem anyway. However, in the rare cases that it would happen, the solution was – and still is - to reduce the area to be irrigated.[7] This allows for normal irrigation to the limited area on which crops will be grown (Ng and Lethem 1983: 4).

The 'program area' is the term used to indicate the area to be irrigated in times of scarcity. The size of the program area is determined on the basis of the reservoir water levels: the lower the water level, the smaller the program area. Two months before the start of the dry cropping season the program area in the different UPRIIS Districts is to be determined, based on the reservoir water level at that point in time. Areas to be prioritised are those that are close to the water source, and those that are cultivated with high value crops. (NIA-UPRIIS annual report 1978: 52).

Finally, water control was to be ensured by the construction of an extensive drainage system. Farm ditches were to end into drainage ditches, which would be connected to larger drains and natural waterways. The design capacity for these drains was set at 5-6 l/sec*ha (NIA 1979: 34).

Agency control

Formally, the NIA is firmly in control of water management. The turnout, as well as the main system, are the exclusive domain of the irrigation agency.

> The NIA will operate and maintain all reservoirs, diversion works, main canals, laterals and sub-laterals and all appurtenant structures, gates and accessories of all irrigation systems constructed by the Government (...). No person other than the authorised employees of the NIA shall have any right to interfere (...) in any manner

except when permitted by the Irrigation Administrator or any of his duly authorised representatives (NIA 1987: 97).

The NIA has set up an extensive and hierarchical organisation for water management. At the top of the command structure is the Operations Manager of UPRIIS. He is in charge of overall planning, reservoir management and releases to the Districts. He is supported for these tasks by the staff of the Water Control Co-ordinating Centre (WCCC). Within each District, the Operational Engineer controls water management. He supervises a field staff of Zone Engineers, watermasters, gatekeepers and ditchtenders.

The initial role of farmers was limited to organise the rotational distribution of water within the TSAs. Due to the streamlining of the NIA's workforce, and the organisation of the water users into federations, farmers nowadays also have a role to play 'above the outlet'. The formal authority in water management, however, is still with the NIA. The farmer federations are to assist the NIA field personnel in water management. Their formal influence was however limited to consultation and providing support to the NIA management, because these organisations were not given any real decision making power (for further discussion, see chapter 2).

The NIA field staff was well-equipped to carry out their sophisticated management tasks. Watermasters were provided with gauge tables to adjust the gate settings of turnout structures to satisfy actual water demands within the TSA's. Likewise, gatekeepers and Zone Engineers were to be provided with calibrated discharge curves for proper main system management. Daily reading of rainfall and river flows were to ensure optimal use of water from rainfall and local rivers, in order to save reservoir water. Field staff were supposed to be equipped with walkie-talkies and motorbikes for quick communication and transport. Field offices were constructed to allow for a co-ordinated management of the system (PRC *et al.* 1983: pp. III 10-16).

The NIA's fieldworkers were also well trained for the job. Watermasters were required to have a BSc in agriculture. Zone Engineers and above required an MSc in engineering or agriculture. Moreover, field personnel received extensive on-the-job training courses. The UPRIIS project staffed a well-equipped training centre during the first years of the project. New graduates hired to take up the position of watermasters were given a two year on-the-job training on water management, agronomy, and institutional

development. Also the existing NIA staff went through an elaborate training program to learn how to deal with the modern system (NIA-UPRIIS annual reports 1977-1983).

Management by prescription

For a proper use of the system, farmer water users should carefully follow the NIA's prescriptions on cropping patterns and field irrigation practices. The NIA prescribes which areas may and may not be planted, and when this is supposed to happen. Two months before every season, the Operational Engineer of the District presents the so-called *patalastas* (communiqué). This document indicates the size of the program area, and stipulates the cropping patterns for each TSA and irrigation association of the District. It also indicates the so-called 'cut-off dates'. After that date, the NIA supposedly cuts off the water. This is done to synchronise the cropping patterns of farmers, and thus to optimise water use. Also, it allows for maintenance and repair of canals and canal structures.

The basis of the calculations for the patalastas are the allocated water flows from the reservoir, and a number of seasonal variables like river water flows, effective rainfall, crop water requirements and percolation rates. The idea is to balance supply and demand. As supply is given, demand is determined by setting the size of the program area. Also, monthly demand should not exceed supply. Critical months for these calculations are the beginning of both the wet and dry season. To avoid that demand exceeds supply, the Operational Engineer will limit the areas that can start land soaking activities in the beginning of both seasons. The last months of the dry season are also critical, given the low river discharges. The patalastas will thus put limitations to the areas still to be irrigated during this period (Wensley 1987: 153).

Farmers have little say in the decision-making process leading to the patalastas. Before turn over, the TSA farmer organisations were to convey their wishes about the cropping calendar to the watermaster. He would then pass it on to the Zone Engineer. Finally, all requests reached the Operations Manager of UPRIIS. He would then determine the boundaries of the program area of the next season, as well as the cropping calendars of the Districts. Decisions would then trickle down again to the level of the farmers. After the implementation of the turn over program in the

early 1990s, the NIA was still in charge. In the new situation, cropping calendars are supposedly discussed with the NIA personnel in so-called pre-season meetings. However, the formal role of the federations is limited to consultation. In the end, it is still the NIA that prescribes the program area to the farmers, and when to start land soaking and subsequent farming activities in the different TSAs.

In conclusion, this section has shown that the technological properties and the management principles of the UPRIIS Districts are designed for a high degree of control over water allocation and distribution. The NIA is supposed to be in control of the system, and prescribes detailed rules and regulations for farmer behaviour with regard to cropping patterns and field irrigation practices. In the following sections I examine how the system is actually used and managed.

Go with the Flow: Actual Management Practices

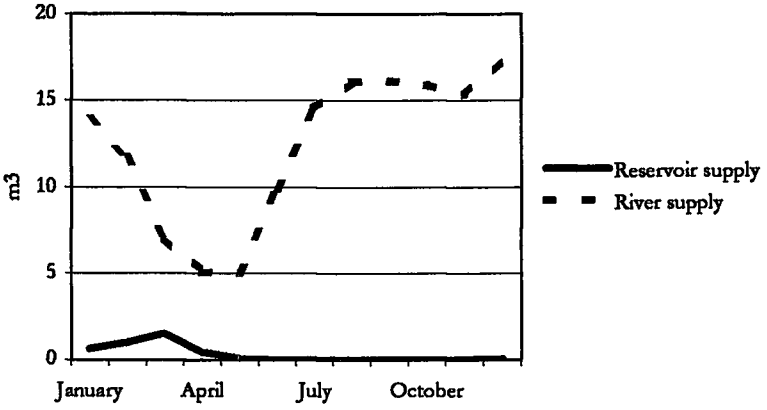
During the field research period –though this is still the case -, the actual use of the system was very different from what was intended by the design and management principles. There was low control over both water and water users. Water flows in the District proved – and still prove to be - insufficient, erratic and unreliable. Consequently, farmers could not rely on the NIA's planning, but rather based their decisions on the actual flows in the system. The NIA was not fully in control of the system and could not prescribe the behaviour of water users. Often, it was the other way around. The NIA followed farmer practices with regard to cropping patterns and irrigation practices. The operation of the system was the subject of struggle and negotiation between the NIA, rival groups of tail-end farmers and local politicians. Main system schedules were often disrupted, and actual operation takes place in a rather disorderly manner. We will take a look at these actual practices, going from the main system to the lateral and field level.

Limited control over the water supply to the District

As discussed above, the system was designed for a controlled, reliable and sufficient inflow of water into the main system of the

UPRIIS District. In reality though, water inflow into the system was insufficient, fluctuating and unreliable. The main reason was that reservoir water hardly reached the District. The District thus still had to rely on river water. Water supplies from the reservoir to District 4 were supposedly 15 m^3/s during the dry period from December until April (NIA 1981: 12). In reality though, average support during this period was less than 1 m^3/s. Support from the reservoir was at its highest during March, but even during this month average supply only reached 1.5 m^3/s (figure 3.4). The maximum supply did not surpass 3.5 m^3/s. Moreover, reservoir supplies were erratic.

FIGURE 3.4: Average river and reservoir supply to the 4th District (1986-97 period)



Source: NIA- UPRIIS 4th District 1997b

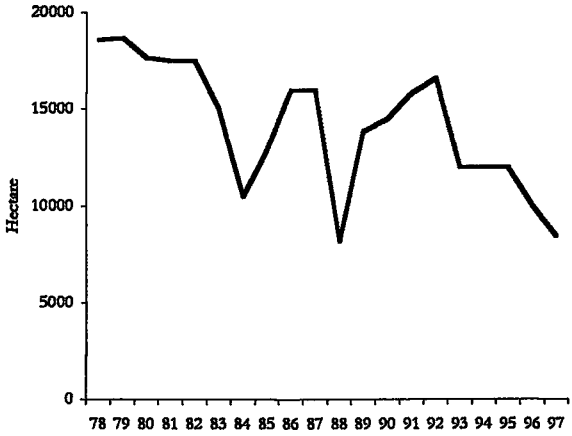
The limited reservoir supply to the District was partly caused by the relatively low water levels in the Pantabangan reservoir. Water releases were lower than was expected during the feasibility phase. It was expected that the water level would normally reach its maximum at the beginning of the dry season crop and thus would allow for a full programming of the UPRIIS service area. However, reservoir water levels at the beginning of the dry season started to drop below maximum in the beginning of the 1980s. This became a regular phenomenon in the following years (NIA-UPRIIS annual reports 1977-97).[8]

Consequently, the NIA reduced the program area of the different Districts, as well as the allotted reservoir supplies. Allotted

supplies to the 4th District were cut disproportional. This was done because of the relatively good access to river water of the District compared to other Districts. Also, the fourth District is the tail-end District, and the hardest to reach with reservoir water, because of upstream diversions. Hence, actual allotments of reservoir water to the fourth District are limited to around 6 m^3/s in 'good' years, and reduced to less than 2.5 m^3/s in years of low reservoir water levels (Wensley 1989: 216; NIA 4th District, operational plans 1988-97).

The limited supply of reservoir water to the 4th District was furthermore caused by inter-District distribution problems. Only a part of the intended allocation of water actually reached the 4th District, if it arrived at all. Moreover, arrival was highly erratic. This had three causes. Firstly, the capacity of the supply canal was limited. This canal served as the supply canal for the 4th District, but at the same time was the main lateral for one of the Zones of the 3rd District. The capacity of a main siphon structure was too limited to allow full support of water for both District 3 and 4 to pass (NIA 1981: 12).

FIGURE 3.5: Dry season program area of the 4th District



Sources: NIA-UPRIIS 1993; NIA-UPRIIS, 4th District 2002a

Secondly, water intended for the 4th District was diverted into District 3. Farmers in the tail-end areas of District 3 diverted the water into the headgates of their laterals. Thirdly, water was illegally diverted to hundreds of hectares of rice farms on the left bank of the supply canal. These farms were located outside the service area

of UPRIIS, and thus were not supposed to get water at all. These lands were highly elevated, and in some cases were irrigated by fully checking the supply canal of District 4. Irrigation of these lands thus further hampered the water supply to the 4th District.

Consequently, the District became mainly dependent on the supply of the Peñaranda river. As mentioned above, its supply was – and still is - insufficient – and moreover erratic - to satisfy the needs of the whole service area. Water became scarce especially during the second part of the dry season, in the months of March, April and May. To deal with this scarcity, the NIA's District management limited the program area. The average dry season program area of the District was only 56% of the service area during the 1978-97 period. The program area reached an all-time low during the 1996-97 dry season, when it was set at only a third of the service area (see figure 3.5).

Fluctuating water levels in the main system

An important consequence of the fluctuating supply of water into the system, was that controlled main system management became highly problematic. When river discharges were high, like in the period from July-November, the problem was manageable. As the District only needed a part of the river discharge during this period, regulating the main intake structure of the system could control fluctuations in the river discharge. During the dry season however, the Districts needed to divert the full flow of the river – except for limited losses passing the Ogee weir - to satisfy its water demands. Consequently, fluctuating river flows led to fluctuating water levels in the main system. This made – and still does make - control over water distribution a cumbersome affair. It requires frequent measurements of discharges and re-setting of gate openings of the headgates of laterals, distribution structures and the hundreds of turnout structures throughout the system.

The NIA was – and still is - not doing that. It was only measuring daily flows at the main intake, and at the two distribution points dividing the water between the 3 Zones. Measuring devices in the rest of the system have disappeared, broken down or were not calibrated since they were constructed. In any case, they were not used. The response of the NIA to a fluctuating inflow into the system was largely limited to these headgates, and a few headgates of major laterals. Gate settings in

the rest of the system were left untouched, or were operated on an *ad hoc* basis.

Usually, these fluctuations affected downstream (sub-) laterals. Farmers or NIA fieldstaff from upstream laterals responded to declining water levels by increasing the gate openings to their lateral. As a result, fluctuation in the lower parts further increased, while water flows were disproportionally reduced. Hence, the amplitude of fluctuations increased further down the system (Wensley 1989: 129; cf. Horst 1998: 64).

A second consequence of the fluctuating inflow into the system was that it limited the possibility to control the cropping patterns in the system. Both farmers and the NIA's management were forced to go with the flow. The determining factor for the start of the wet season crop was not the official patalastas of the NIA, but rather the start of the rains in the nearby Sierra Madre mountains. Recognising the importance of an early start of the wet season crop, the Operational Engineer would usually divert the river discharges into the system as soon as possible. The official starting date of the wet season crop was usually set at June 15, but if it rained early, farmers started one month ahead of schedule. In other years, rains in the mountains were late, and actual cropping patterns were later than planning prescribes. (Wensley 1989: 93)

Head-end farmers in the system began their wet season activities as soon as irrigation water becomes available. Tail-end farmers had to wait until the water demands of the upstream areas were fulfilled. The length of the waiting period was determined by the inflow of river water into the system, and by local rainfall. The difference between the start of the head and tail of the system could be up to one month.

The majority of upstream farmers practiced direct seeding of the wet season crop, to save on labour costs. The majority of the tail-end farmers however transplanted the rice. Obviously, they also liked to save on labour costs. However, they preferred to transplant seedlings, as this method allowed them to speed up the start of the wet season crop, and thus avoid water scarcity problems for the subsequent dry season crop. Through transplantation, and rapid land preparation, tail-end farmers were able to almost catch up with head-end farmers at the end of the season (Wensley 1989: 97).

Starting dates varied from year to year and from location to location. In some years, local rainfall started early in the season. Tail-end farmers might gamble that these rains would continue,

and would start early with land preparation. In some years they succeeded. In other years rains did not push through and they were then forced to wait for new rains or canal water to arrive at their fields. Farmers adjacent to one of the many creeks and local rivers often used pumps to have an early wet season start. Hence, rainfall patterns in the catchment areas of these creeks and rivers also determined the pacing of the agricultural activities in the system.

The cropping patterns in the low-lying areas of the District were again a different story. The determining factor of the planting dates in these areas was determined by the patterns of water-logging. This also varied from year to year. In some years, water receded quickly so that farmers could start early. In other years, wet season crops were destroyed because of flooding or higher than average water levels. In short, cropping patterns within the system differed substantially from year to year, and were largely beyond the control of the District's management.

Contested control over headgates

Controlled main system management was further jeopardised by the fact that the operation of gates in the main system was not the exclusive domain of the NIA. Gate settings during the dry season were highly contested. Rival alliances of tail-end and mid-stream farmers, headed by local politicians or farmer leaders were involved in day-to-day operation of the major gates. In some parts of the system the NIA was in control, but in other parts local politicians had *de facto* taken over control over crucial headgates. Finally, in other situations the NIA was still involved in gate management, but it was then forced to accommodate its operational practices to the interests of powerful actors. Consequently, main system management was the subject of negotiation and struggle. Multiple parties frequently changed gate settings during both daytime and night-time. This made planned main system management and an orderly scheduling of water throughout the system nearly impossible (for further detail, see chapter 4).

A major consequence of the NIA's failure to control headgates in large parts of the system, was that it could not effectively implement its policy for the management of scarcity. Tail-end farmers largely ignored the NIA's determination of the program area. They cultivated a dry season crop despite the fact that their

fields were excluded from the program area. Their access to water through the (contested) control over the headgates of the system allowed them to do so. As a result, the actually cultivated and irrigated area was usually much larger than the program area. In the dry season of 1996-97, the irrigated area even doubled the program area.[9]

The water control conditions in the District contributed to the NIA's inability to enforce its program area. As explained above, the inflow into the system was erratic, as it depended on the water of a local river. Consequently, it made good sense for the District's management to play safe and run the canals at full flow if river water allowed it. Often, part of this water would end up in the tail-end canals of the system, and farmers in these areas were thus very much tempted to start their land preparation. The system's physical properties allowed the NIA's management to divert this water into drains, to avoid that the water would reach areas outside the program area.[10] However, as also the NIA could not tell how much water the river would bring in the rest of the season, such a strict position would be very difficult to defend. Hence, 'going with the flow' was the more logical management strategy.

Farmers of these 'outside areas' realised the risk of growing a second crop. It might be less profitable as they would be forced to maintain their crop by pumping from NIA canals, drains or even through deep wells. Also, their harvest might be lower due to water stress, or in the worst case, they might not even harvest at all. Many took this calculated risk.

These farmers found very creative ways to get access to water. Some would start land preparation earlier by making use of pumps, to avoid the scarce period from March until May. Many also made use of re-use structures, which allowed them to use drainage water from the upstream areas. However, as I will show below, they also tried to get access to 'first-use' irrigation water from the main system. This led to intense struggles over scarce water. Hence, the concept of the program area as a allocation tool for the management of scarcity was not effective in the District. As a result, water was spread thinly over the cultivated areas, and intense struggles were the result.

A second consequence of the NIA's inability to effectively control gates, was that main system management scheduling became problematic as well. When water was scarce, the NIA's District management usually shifted from continuous irrigation in

the main system, to a rotational schedule between the different laterals. The underlying idea was that rotation in the main system facilitated water distribution. It supposedly speeded up the irrigation of the fields along a particular (sub-)lateral, as the water levels in these (sub-) laterals could be maintained at full supply levels. Also, it allowed the NIA to concentrate its field personnel in the targeted irrigated areas. In reality, local politicians and farmer leaders frequently disrupted these schedules. They implemented their own, rival schedules or interfered on an *ad hoc* basis. The consequence was that the actual distribution patterns of water in the main system were unpredictable.[11]

A third consequence was that the NIA hardly controlled the so-called cut-off dates, i.e. the dates that the NIA stops supplying water into the canal system. In between the dry season crop and the subsequent wet season crop, the NIA supposedly cut off water flows to allow for canal maintenance and repair. Also, it is a measure to discipline cropping patterns of the water users. Cut-off dates were stipulated in the patalastas. Actually enforcing cut-off dates while farmers still have standing crops is a drastic measure, and thus requires toughness on the side of the NIA. The problem already existed at the very start of the UPRIIS project. At an open forum meeting in 1975, a farmer asked a question to the UPRP assistant project manager.

> I am a farmer with a farm in division II. According to the schedule of water releases, it will end May 17, but most of us are still preparing their seedbed now (May 5). My question is, is it possible to extend the releases of water?

The answer of the UPRP manager was a tough one.

> We prepare schedules and we would like the farmers to work with us to be able to make use of the system most efficiently. If they do not, our timetable will go awry and we will not be able to make use of the more than P700 million worth of irrigation system. I remember an instance in Peñaranda. Farmers said that some 1,000 hectares will die because we cut the water. We extended service by one month and they asked for another extension. Again, we gave in fifteen days. They kept coming back and so what will happen to us? If we go on extending, the people who believe us will come and say, "Your word is no good". You did not follow what you told us. We lost because you told us not to plant.". We are here for a common

> purpose that is to bridge the gap between the managed and the management. To answer the question, I should say we will not extend. (Miranda 1975: 1)

I do not know what happened in reality, but I would be surprised if the UPRP manager actually enforced the cut off date. In the 4th District, the NIA would usually give in to farmers' demands. Cut-off dates for canal desilting or repairs were rescheduled to allow farmers to harvest their crops. Basically, water ran through the main system as long as standing crops required water.

Fixing headgates

Control over the main system was further subverted by the sorry state of the headgates. It was common practice of farmer leaders and local politicians to immobilise the adjustable structures by blocking, damaging or destroying these devices. The most innocent intervention was to put stones or other materials at the floor of the sliding gates. As these could then no longer be fully closed, water would pass even during 'closure'. One step further was to bend the rods of the lifting devices of the sliding gates of headgates and checks. The most destructive intervention was to remove the lifting device itself, or to destroy its concrete support structure. These 're-designs' were common practice. In 1996 for instance, two out of three of the headgates and cross regulators of the main lateral of Zone 1 were partly or fully immobilised.[12] In 1997, the NIA repaired six major headgates and checks. A few months later, three of them were at least partly damaged again.

The NIA's District management also took steps to reduce the adjustability of the water control structures in the main system. It thus departed from the concept of the modern, sophisticated water control regime based on adjustable gates. The District engineers had their fieldmen cut holes in a number of the cross-regulators located in the main laterals of Zone 1 and 2. These holes were made in the upper part of the sliding gates. This allowed water to pass the check during the dry season, flowing to the downstream laterals. They thus tried to find physical solutions for a problem that they were unable to solve by managerial means.

The problem they tried to solve was the full diversion of water from the main laterals of the Zones into the upstream or mid-

stream branch canals. By closing the cross-regulators and fully opening the headgates, the larger part of the limited dry season flow was often diverted into these laterals, to quickly satisfy the water needs of the rice areas served by these canals. Farmer leaders or local politicians representing these areas usually did this. This created turmoil in the downstream parts of the system. Farmers' anxieties would increase, and so would the pressure put on its farmer leaders and local politicians to act in order to bring the needed water downstream.

To avoid all this from happening, the engineering solution was to reduce the regulatory capacities of these main structures. By cutting the holes, the checking capacity of the cross-regulator was reduced. In such a way, only a part of the scarce water could be diverted into the upstream or mid-stream laterals. 'Automatically', at least part of the water would flow downstream.

The other reason for the engineers to cut the holes, was to avoid overtopping during the wet season. Due to poor maintenance, parts of the main laterals were heavily silted. Consequently, a full closure of cross regulators would lead to overtopping of the upstream canal section. This regularly happened, causing damage to canal dikes and roads. By cutting these holes, the overtopping was 'automatically' avoided.

Farmer control over the sub-lateral and field level

Though contested, the NIA still had an important say in headgate operations. Its authority to manage was however virtually absent at the lower levels of the system. Some of the watermasters still had some say over water distribution practices at the sub-lateral and turnout level, but farmers and their leaders mostly controlled it. The NIA thus only controlled a fraction of the total number of distribution structures in the system. In 1986 for instance, the NIA's control in one of the Zones of the District was limited to 17 headgates out of a total of 231 distribution structures (Wensley 1987: 165).

The actual use of the system at field and sub-lateral level did neither match the design properties of the system, nor the managerial prescriptions of the NIA. Firstly, the principle of rotational irrigation in the TSAs never became reality. From the very beginning of the UPRIIS system farmers ignored the idea. The

NIA introduced the concept through several pilot areas throughout the system, but farmers stuck to their 'traditional' practices of continuous field-to-field irrigation. Farmers removed the supplementary farm ditches and the division structures and in many cases the main farm ditch as well.[13]

To the farmers, the continuous field-to-field irrigation is a convenient practice. It is labour-extensive, as one does not have to regulate the water flow. Also, the continuous presence of a water layer in the field helps to reduce weed germination and growth.[14] Moreover, it avoids rights-of-way issues over the field canals. The consequence was that field application efficiencies were low. Especially in the upstream areas, it was often the case that continuous water flow from the irrigation system passed the rice fields into the (natural) drains.

Secondly, the rotational service areas themselves were abolished. Farmers constructed large numbers of so-called 'illegal turnout structures', to get direct access to canal water. It also allowed them to circumvent problems of conflict with neighbouring farmers (NIA 1985: 25). In 1983, only five years after the completion of the UPRIIS system, it was estimated that the number of 'unauthorised, farmer installed turnouts' equalled the number of legal ones (PRC 1983: III-7). During 1997, it was not uncommon to find four 'illegal turnouts' against each legal one in the tail-end areas (NIA-UPRIIS, 4th District 1997). The NIA does not act against these inlet pipes. Though officially still considered 'illegal', in practice their existence is accepted by the agency.

This phenomenon of the 'illegal' extra pipes is related to farmers' refusal to adopt the rotational method of irrigation. They did not want to wait for neighbouring farmers to finish land preparation. Instead, they wanted direct access to canal water. Also, the capacity of the inlet pipes was considered to be too limited, considering that it should be shared over the fifty hectares of a TSA. In the tail-end areas, the installation of high numbers of extra pipes was a reaction to the intermittent and unreliable water flows in the main system. In case water would arrive in the (sub-) laterals, the extra pipes allowed the farmers to quickly divert large amounts of water (NIA 1985: 26).

Farmers not only installed extra pipes, but also extra 'illegal' checking structures. Banana trunks and coconut lumber were used to check water at thresher crossings, bridges and/or siphons. In the smaller (sub-)laterals, farmers also constructed temporary checks

themselves.

These extra turnouts and checks had two major effects on main system management throughout the UPRIIS system. Firstly, it staggered cropping calendars along (sub-) laterals. The common practice was that upstream farmers along a (sub-)lateral started land preparation by checking the water. After they were finished, downstream farmers followed. Finally the tail-end portions would be reached. Especially when water flows were limited in the (sub-)lateral, cropping calendars would be much longer than intended by the NIA. For long laterals serving large areas, land soaking and transplantation activities took as much as three months (see table 3.2). Consequently, cropping seasons were prolonged and water was thus also required during the months of March, April and May when the local rivers were running dry. This hampered maintenance and rehabilitation work, as the cut-off period would become very short or non-existent (PRC 1983: III-17).

TABLE 3.2: Average duration of land soaking and transplanting period for different sized areas in UPRIIS

	Dry season		*Wet season*	
	Land soaking	*Transplanting*	*Land soaking*	*Transplanting*
('000 hectares)	*(days)*	*(days)*	*(days)*	*(days)*
< 2	42	54	30	54
2 – 4	45	61	24	60
4 – 6	51	70	28	75
6 – 10	45	81	33	72
10 – 18	60	90	45	96

Source: PRC 1983: III-16

The second consequence was that tail-end portions of relatively long (sub-) laterals would suffer from water stress. During times of scarcity, upstream and mid-stream farmers started to worry about future deliveries, and responded by checking whatever water was available in the (sub-)lateral. They would close their field bunds and build up the water level in their paddies. It thus would take a long time before water reached the area of the tail-enders along such a lateral. In case it took more than a week or so, water might not reach the tail-end areas at all. Upstream farmers might check again,

as their fields – at least in their anxious minds - required to be irrigated once more.

Poor canal maintenance

The last but certainly not least cause of improper system use and the occurrence of water stress in the 4th District, was the poor maintenance of the canals. Throughout the system, but especially in the downstream areas, laterals and sub-laterals were silted. Consequently, the carrying capacity of these canals was reduced. This further aggravated the problem for the tail-end areas along long canals.

A tail-end sub-lateral may serve as an example. Measurements were carried out in 1986. Due to siltation and poor canal maintenance, the cross-sectional area of the canal was reduced by one-third, compared to the design cross section. Also, velocities were much lower than designed, due to higher roughness coefficients, primarily attributable to growth of grasses. As a result of the loss of conveyance capacity of the canal, the effective service area declined by no less than two-thirds, from 1,600 hectares to 500 hectares (Wensley 1989: 173).

This section has shown that actual NIA control over water and water users was low. Water flows were insufficient and erratic, while the NIA's ruling over cropping patterns and the use of the system was either simply disregarded or at least challenged by farmers and politicians. Water stress to crops was the result.

The following section examines the magnitude of water stress in the District. The subsequent section explores the most important strategies employed by tail-end farmers to avoid such water stress.

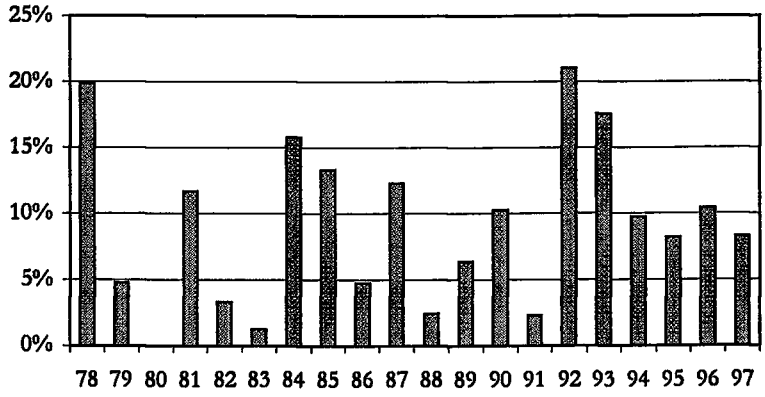
Water Stress in the District

Water stress was – and still is - a serious and perennial problem in the District. On average, 9% of the dry season program area during 1978-97 experienced severe yield reductions, mainly due to water stress (see figure 3.6). This is the equivalent of 1300 hectares.[15]

However, the actual acreage of yield reductions due to water stress was much higher than the NIA's figures suggest. This had

two reasons. Firstly, the NIA only reported yield reductions within the boundaries of its program area. It did so to determine the areas to be exempted for the billing of service fees. By definition, fields that harvested lower than 2 tons/hectare were exempted from irrigation fee payments.[16] However, the larger part of the problem of yield reduction due to water stress occurred in the tail-end areas outside of the program area. Secondly, farmers' yields may be affected by water stress but may still harvest more than 2 tons/ hectare. As dry season yields easily reached 4-5 tons/hectare, the exemption level of the NIA was set at a very low level. As the NIA did not keep (reliable) records of 'mild' yield reductions within their program area, and had no yield data on the 'outside areas', I have to rely on my own estimates.

FIGURE 3.6: Low yield areas due to water stress in the 4th District as part of the dry season program area



Source: NIA-UPRIIS 1993; NIA-UPRIIS, 4th District 2002a

I have tried to establish the magnitude of yield reductions due to water stress for the 1996-97 dry season crop. The NIA records show that 600 hectares of paddy yields within the program area were classified as 'exempted' during that season. Based on my interviews with the NIA's watermasters however, the total area of affected yields due to water stress in the whole of the District ranged somewhere between 4 – 6,000 hectares. It must be noted however, that water was particularly scarce during that season. There was no support at all from the reservoir, due to construction activities of a collapsed siphon in the feeder canal. Also, river supplies were relatively low. Nevertheless, it seems safe to assume that dry season

yield reductions due to water stress occurred on average on at least two thousand hectares (with at least a few hundred to a thousand hectares that were seriously affected, in the range of 0-2 tons/hectare). Roughly, this equals over 10% of an average planted area of around 18,000 hectares during the dry season.

Wensley (1989) has measured water stress in more detail. He conducted a water balance study on three areas in one of the Zones of the 4th District in the dry season of 1986-87 (Zone 1 of my study area). Despite the relatively good water supply from river and reservoir during that season, crops in the tail-end areas – included in the program area - suffered from water stress (see table 3.3). His measurements show that the average water supply to a tail-end lateral was only 0.33 l/s/ha (against an average planned water allowance of 1.3 l/s/ha.). During most of the dry season, water supply to the tail-end lateral was lower than crop water demands. Average yields were lower than in the head-end and also the variation in yield was higher, but the deficient water supply did not cause massive crop failure. The reason was that many farmers in that tail-end area were able to irrigate their fields from other sources, like groundwater and pumping from a nearby river (Wensley 1989: 212-215).[17]

TABLE 3.3: Head-tail yield differences due to water stress in Zone 1

	Average water supply (l/s/ha)	*Average yield (t/ha)*
System-wide	0.8	4.0
Upstream lateral	1.1	5.0
Mid-stream lateral	0.7	4.3
Downstream lateral	0.4	3.5

Source: Wensley 1989: 213

Water scarcity was found in the tail-end areas of the District. As these areas are located at the end parts of the canal system, the chances of water scarcity leading to crop damages or failure were relatively high. However, there is more to say about the potential loci of water stress. Firstly, tail-ends were found at all levels of the irrigation system. One can be a tail-ender on a field canal, a sub-lateral, a lateral or a main canal. Water stress was mostly found in the downstream laterals of a Zone, but it also occurred on fields

located at the end portion of a head-end sub-lateral. Moreover, local rivers and drains criss-crossing the irrigation system also provided for scarce water. Hence, the locations of potential water stress were found throughout the system.

Secondly, water scarcity was not only determined by locational factors, but by several physical and ecological factors as well. Canal capacities, canal slopes, canal length, the number and condition of checking structures, soil types, percolation rates, local rainfall, re-use facilities and planting dates all played a role. As some of these factors changed over time, the areas that suffered from water scarcity were not fixed in time. For instance, the carrying capacity of a canal could improve considerably due to desilting. Hence, the struggle over water was a dynamic one. The loci of struggle changed weekly, monthly and from season to season, due to changes in physical and ecological circumstances.

Thirdly, also mid-stream areas were prone to water stress. The reason is, as Mollinga points out, that scarcity is both a cause and consequence of organisation (1998: 176). Effective networks of tail-end farmers could change the distribution of scarcity throughout the system. Upstream areas may experience water scarcity, caused by effective collective action of downstream colleagues. Over time, the areas suffering from water stress shifted as a consequence of changing power relations between rival networks. Consequently, also areas located in mid-stream sections of the canal system potentially suffered from water stress.

All in all, a large area in the District was potentially affected by water stress. The most problematic areas were located in the downstream parts of the District, but also end-portions of some upstream laterals were prone to water stress. Due to the effective strategies of tail-end farmers, water stress threatened to effect the mid-stream parts of the system as well. We will now take a look at some of the most important strategies of tail-end farmers in the struggle for scarce water.

Strategies in the Struggle for Water

Rival alliances headed by mid-stream and tail-end farmer leaders and local politicians struggled to get access to scarce water. The characteristics of these alliances are further examined in the following chapter. In this section we take a look at three major

strategies employed by these alliances in their struggle for water. The first strategy was to try to change and guard gate settings in the main system during the night. The second strategy made use of water storage in the main lateral at daytime, to be released to targeted areas during the night.

The third strategy was the most ingenious one. Tail-end leaders – supported by the NIA staff – actually 're-designed' the layout of the system. By connecting drains to irrigation canals, they were able to optimise the use of their 're-use' dams, and circumvent the control of upstream villages over the irrigation canals leading to their tail-end areas.

The nightly struggle in the main system

A lot of struggle focussed on the operation of the main system. The rival alliances tried to bring water to their areas, by struggling over the setting of gates and checks 'above the outlet' (Chambers 1988). The struggles focused upon the following structures.

- Headgates and cross-regulators at the main canal and at the lateral canals;
- Bifurcation and tri-furcation structures at smaller (sub-) laterals;
- 'Illegal' diversions from the main system into drains;
- Legal and illegal checks in the smaller laterals

These struggles were often intense and complicated. Firstly, they involved multiple alliances. In the tail-end of Zone 1, it was not exceptional to find the leaders of up to six rival tail-end and mid-stream groups all trying to operate the system in line with their own interests. It thus could be busy on the canal system. One could find up to twenty people from different alliances gathering at crucial headgates, who were all involved in negotiating its settings.

Secondly, to be effective in bringing water downstream, an alliance needed to control multiple points in the canal system. Guarding one gate or check in the main system was usually not enough. Other groups, either upstream or downstream of the structure that one was guarding might then divert water. Therefore, alliances brought groups of people, using one or more vehicles. They would patrol canals to remove checks in the smaller laterals and to change, guard and/or negotiate settings of major headgates.

Thirdly, it involved large distances. For instance, the distance between the headgate of Zone 1 and the far tail-end of the extension area was nearly 40 kilometres. Many canal roads were poorly maintained, which made the patrolling of canals a cumbersome affair. Fourthly, the struggle required a prolonged effort from the people involved. Water may be scarce for several weeks. Irrigation of the fields represented by a certain alliance may take several days of continuous effort. An example may clarify this point.

> I joined the group of the tail-end of the Zone 1 extension area, headed by the federation president, at eight in the evening. They were rather desperate. Around fifty hectares in their area still badly needed water. It had not been irrigated for two weeks now. This was the third consecutive night they went out to bring the water downstream. The last two nights they failed. Farmers from other tail-end areas were more successful in diverting the water. They made an agreement with these farmers that this night it would be their turn. However, also this night they could not make it.
>
> We started to move upstream from their area. Along the 15 kilometre stretch between their area and the headgate of the main lateral of the extension area, we counted around 20 motorpumps pumping from the canals and several farmer-constructed checks. They removed some of the checks, but the next morning farmers had re-installed them again. They were successful in changing the settings of two major headgates in the main lateral, which they guarded during most of the night. However, the water levels were low and they had to seek compromises with groups of farmers from other tail-end areas as well. Moreover, farmers who could not be persuaded to at least reduce their intake guarded two diversions in the main lateral. Tomorrow night they will try again. However, if the water discharges into the Zone do not increase, they do not believe they can make it in time. (fieldnotes, February 1996)

Much of the struggle for water in the main system took place at night. Tail-end leaders operated at night, because their chances of success were bigger than during the day. During daytime, farmers from the mid-stream areas were checking the (sub-) laterals to irrigate their fields. They usually did not allow these checks to be removed by downstream farmers. They argued that the tail-end farmers had to wait until the water needs of the mid-stream areas were served. Or they argued that the tail-end areas had no right to

water anyway, as they were not included in the program area. During daytime, the NIA field personnel were also around. They might insist on following schedules, and satisfy the needs of the program area first.

During the night however, many of these opponents to tail-end interests were sound asleep. The NIA fieldworkers were not required to be at work after office hours (except for a few gatekeepers)[18]. Most of the mid-stream farmers were asleep as well. They felt confident that their farms would receive sufficient water, by guarding their check or the headgates during daytime. At night, tail-end farmers moved upstream to remove checks and operate headgates. The next morning, mid-stream farmers would find their check removed or would notice that the water flow in their (sub-)lateral had been reduced. If they were still in need of water, they would re-install their check. Or they would contact their leaders or NIA field personnel, asking them to take action to increase the water flow in their (sub-)lateral.

Intermediate storage in the main canal

As will be explained in the following chapter, some of the major alliances involved in main system management are very powerful. This power allowed them to operate the main system during daytime. They could overrule or persuade the daytime claims for water of mid-stream farmers or leaders of rival alliances. Their daytime interventions in the main system made their efforts in bringing water to the tail-end areas more effective. Their practice was to store water in one of the main laterals during daytime, and then to subsequently release the water during the night. It was practiced to serve targeted tail-end areas. When lateral flows were limited, this was a common practice especially in Zone 1 of the District.

Intermediate storage was an effective practice for three reasons.[19] Firstly, it allowed one to increase the water releases to the tail-end areas during the night. During the day, water would be stored in the mid-stream part of the main lateral of the Zone, by closing the gates of several major cross-regulators. The inflow of water from the main canal would ensure the water level to build up behind these structures. In the evening, this water was then

released to targeted areas in the tail-end. At that time, the upstream farmers along the (sub-)laterals leading to such targeted tail-end areas were asleep, as explained above. It was thus easier to remove their checks, and to bring most of the water all the way down to a targeted area along one of the tail-end (sub-) laterals.[20]

Secondly, the relatively big volume of water released facilitated the passage of upstream and mid-stream checks and diversions. In the evening, the cross-regulators in the main lateral of the Zone would be fully opened. Consequently, a 'wall of water' would flow down into the canal system leading to the targeted tail-end area. The high discharge ensured that the many diversions along the way would not divert all the available water. Hence, water would actually arrive in the targeted tail-end area. Also, the high water level and high velocity would cause the overflow of the upstream and mid-stream checks and might destroy them as well. Especially the temporary checks made of bamboo and banana trunks would be (partly) flushed away. The result was that less water was diverted, and more water arrived at the tail-end.

Thirdly, this practice made effective use of the lag-time of water flow. The travel time for canal water to flow from the from the mid-stream part of the main lateral in Zone 1 towards the tail-end areas was between 6-12 hours. Depending on the time-distance of the targeted tail-end area, the stored water in the main lateral would be released during the late afternoon or early evening. This ensured water to arrive in the targeted area early in the night, and to drop off by early morning. Hence, most of the water would have arrived in the tail-end areas, before their upstream colleagues would be awake and might take action to check this water.

Potentially, intermediate storage could be carried out in the full stretch of the main lateral. However, this required a co-ordinated effort that went beyond the capacities of even the most powerful alliance operating in Zone 1. At best, they could manage to control water storage over a distance of around 6 kilometres. Roughly estimated, this allowed for an active storage of over 20,000 cubic meters.[21] If we assume that two thirds of this water actually arrived in the targeted area, then one day of storage was sufficient to irrigate fifty hectares of tail-end farms with 30 mm of water. It thus was a rather effective practice to irrigate water-thirsty crops in targeted tail-end areas.

Re-engineering space: the diversion of first-use water for re-use dams

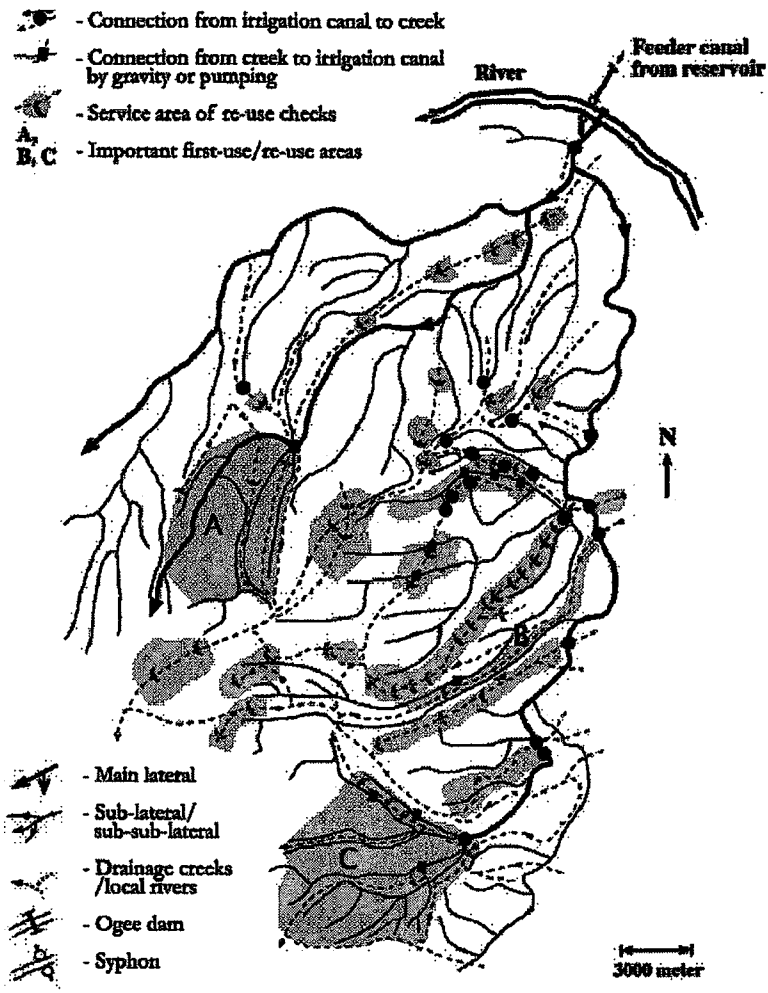
Last but not least, the third strategy to get access to scarce irrigation water involved the use of re-use checks and local river dams. Ever since the construction of the original irrigation system in the 1930s, there has been a continuous development of dams and re-use checks to counter the water scarcity problems in the District's area. The NIA, the old hacenderos as well as farmer leaders put up checks and dams in creeks and rivers criss-crossing the area, mostly located in the mid-stream and downstream parts of the District. This allowed them to make use of the limited flow of water in creeks and small rivers that came from relatively small catchments on the Eastern side of the District. These waterways passed the main lateral of Zone 1, and continued their way towards the Candaba swamps. Also, during the construction of the UPRIIS system, a bigger dam was constructed on a fairly large river in the very tail-end of Zone 1. This dam would supplement the water supply of lateral 1 to serve the water needs of the Zone's very tail-end area (see map 3.2; area C indicates the area served by that river diversion dam).

Moreover, the re-use checks in the system were constructed to make use of run-off water from the upstream areas in the District. Most of these checks were made of concrete and operated with wooden stop-logs. Sometimes also bulldozers were used to raise temporary earth dams in the natural drains to save whatever limited water was available for irrigation.

Nowadays, large parts of the downstream areas of the District receive water through drainage ways and local rivers, rather than through the irrigation canal system (see map 3.2). According to NIA data, the service area of the largest 16 checks and dams in the District was over five thousand hectares. During the 1996-97 dry season, the NIA included over 2400 hectares of rice areas irrigated by means of re-use checks and river dams in the program area. My own findings suggest that the total irrigated area through re-use checks and river dams might be as large as eight thousand hectares. This is one third of the total service area of the District.

At the start of the UPRIIS project, the NIA did not yet see the value of the re-use checks. Some were demolished, as they were considered a potential cause of flooding. Given the water supply of the reservoir, the modernised irrigation system and improved water management, these structures were considered to be redundant.

MAP 3.2: The re-use system of the 4th District and the interconnections with the irrigation system



Source: NIA-UPRIIS, 4th District 1983, 1995

As the UPRIIS did not meet its expectations, tail-end farmers started to use the drainage checks again. In several cases they were able to convince NIA to reconstruct the earlier demolished checks. Nowadays, the NIA management of the District has accepted the idea of dams in local rivers and the re- use checks to augment the water supply of the tail-end areas. Some of the larger re-use checks

were even operated by a NIA-employed gatekeeper.

Tail-end farmers resorted to re-use water for the simple reason that water was to be found in the drains rather than in the irrigation canals. Due to upstream checking, the tail-end parts of (sub-)laterals did not carry much water in the dry season. The drains however did carry water. The reason was that farmers along upstream laterals made abundant use of irrigation water. The excess water ran into the drains.[22] This water in the drains allowed the tail-end farmers to start early with the wet season crop, and thus with the subsequent dry season crop. Also, it gave them access to water in the first part of the dry season, when water was still easily available for the upstream laterals.

The re-use of water for irrigation in tail-end areas had its limitations. When irrigation water became scarce the drains also ran dry. This usually happened in the second half of the dry season crop. Upstream and mid-stream farmers responded to water scarcity by using water more prudently. Fearing water scarcity problems in the near future, they repaired their field bunds to avoid water leaking away. Farmers located in the upper parts of the tail-end areas used whatever available water was left in the drains. They closed the checks in the drains, and irrigated their fields. If possible they made use of gravity, but in case water levels in the drains were too low they would use pumps. Hence, water scarcity in the irrigation canals was followed by scarcity of re-use water in the drainage system.

Also the supply of the local rivers in the tail-end areas was insufficient. As the catchments of these rivers are small, and farmers upstream along this rivers – located outside of the District's service area - also diverted water, these rivers easily ran dry. Hence, farmers along these local rivers still needed the support of water from the main lateral.

To solve this problem, tail-end farmers as well as the NIA have connected these drainage creeks and local rivers to irrigation canals at relatively upstream points in the irrigation system. Over the years, numerous connections have been established (map 3.2). Through these connections the 're-use checks' and dams in local rivers were supplied with 'first-use' irrigation water from the District's canal system. The drains, creeks and rivers started to serve as shortcuts or feeder irrigation canals for the tail-end areas. The checks diverted both drainage 're-use' water as well as 'first-use' irrigation water. This supplemental 'first-use' water was crucially important to satisfy the water needs of the rice crops (see table 3.4).

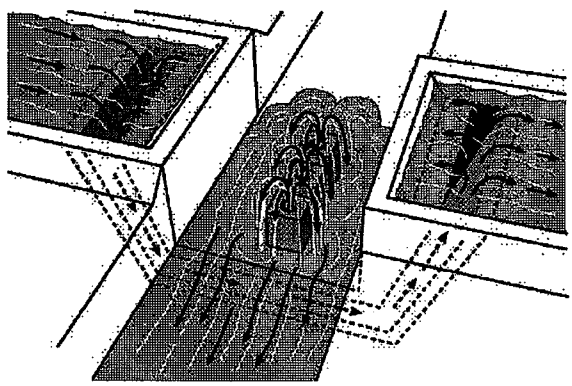
TABLE 3.4: Importance of first-use water from the main system during dry season for areas served by re-use checks and dams in local rivers

Area (see map 3.2)	*Program area (ha)*	*Irrigated area (ha)*	*Irrigable area without support of canal water (ha)*
A	1100	1200	100
B	500	950	200
C	400	900	300

Source: NIA-UPRIIS, 4th District 1995[23]

The connections were often ingenious. At crossings of irrigation canals with drainage creeks, holes were made in the bottom of concrete floors of the irrigation canals. To the farmers deprived of water, such a connection was hard to detect and even harder to repair.[24] In other cases pipes were installed in the bunds of the irrigation canal to divert water into the drain, or the irrigation canal was simply cut.

FIGURE 3.7: First-use/re-use connection by means of a manhole



It was not always necessary to demolish or re-design the physical infrastructure to establish a connection. Sometimes it sufficed to use the irrigation infrastructure in a different way. For instance, one connection - supplying water to area B in map 3.2 - was made at a point where a main lateral crossed a river through an inverted siphon. The water was diverted into the river by opening the manholes of the siphon. These manholes are meant to be used for cleaning purposes, but farmers discovered that these can be used

for diversion purposes as well. Due to the large water head, a 'fountain' of water pours out of the irrigation siphon into the river and supplements the water flow to several temporary and fixed checks in the river and connected drainage creeks (see figure 3.7).

In other cases, irrigation water was diverted into drains through escape structures. Located upstream of inverted siphons and larger division points, escape pipes allowed for the diversion of irrigation water into drains when supply exceeds the canal capacity. They are also constructed to drain the irrigation canal in case the canal or clogged-up structures need to be cleaned. Tail-end farmers, however, happily made use of these structures to divert water into the drains during times of scarcity.

The largest of such a type of diversion was feeding water to the re-use check serving area A (see map 3.2). This 're-use' area of around 1200 hectares almost fully depended upon first-use water diverted into a large drain. The area's diversion was located in the very upstream part of the system, taking water directly from the District's main canal. The diversion structure was a gated check that was constructed as the escape structure of the main canal. By opening these gates, main canal water went into the drain, and served the water needs of this large tail-end 're-use' area.

The tail-end farmers would often not have to manipulate this gate to get the water. Regularly, water entered the drain as the checking gates of the escape structure overflowed due to excessive checking of a nearby checking structure. Also a local crushing plant regularly diverted irrigation water into the drain to be used as washing water for the crushed stones. As the owner happened to be the vice-governor of Nueva Ecija, the NIA management tolerated this 'illegal' practice. However, in case water did become scarce, the farmer leaders, NIA fieldworkers or local politicians representing this tail-end area would go upstream and open the gates of this escape structure.

Formally, the NIA considered these connections to be 'illegal', but in practice they were tolerated. The NIA also made use of them and in several cases the NIA decided to strengthen temporary connections initially put up by water users.

The advantages of re-use/first-use connections

Accessing both re-use and first-use irrigation water through these back-door connections gave important advantages not available to

tail-end farmer fields only reached by irrigation canals. In several areas, the bypasses even allowed rice to be planted in areas located downstream of areas that could not be planted by rice due to a lack of water in the irrigation canals. Also, these bypasses sometimes allowed for better harvests. The advantages are several.

Firstly, a low number of checks were built in these drains and rivers that allowed water to flow downstream relatively quickly. The drains and local rivers were natural waterways of large dimensions, created by heavy rains and floods. Now and then, they were enlarged to lessen water-logging or flooding problems in the areas. It was therefore difficult for farmers to build temporary checks in these waterways. Hence, only a few large concrete checks were constructed in these waterways. In contrast, a high number of checks and legal and illegal turnout structures were located in the narrower irrigation canals, especially at the tail-end. If ever, it thus took a very long time before water reached the end of the canal.

Secondly, the large dimensions in combination with the relatively low elevation of drainage creeks and local rivers allowed large volumes of water to be diverted from irrigation canals in case water was available. The smaller and highly elevated irrigation sub-laterals could only divert part of this water. The water inflow was further hampered due to backwater effects of the legal and illegal checking structures in these canals. This was an important difference when one realises that water in the irrigation laterals in the tail-end areas usually comes at erratic times and in highly varying volumes.

Thirdly, the drainage creeks and rivers only served a relatively narrow strip (around 200 meters) of rice fields located directly along them. Farmers considered it to be too expensive to pump water from the creek to fields further away. Also, drainage creeks hardly had branches and distribution points from which water could be pumped into the fields, because an extensive drainage network was lacking. In contrast, the irrigation sub-lateral and its branches served large areas with a high number of farmers.

Fourthly, these differences in physical characteristics gave an important managerial advantage to the drainage and river bypasses. Negotiation over water distribution was limited to a small group of people. Downstream farmer leaders could limit their negotiations to the farmer leaders who were in charge of the few checks in the drains and rivers. In contrast, the tail-end farmers located along an irrigation sub-lateral or one of its branches needed to talk to a high number of upstream farmers, as they were all operating canal structures, like

small checks, cuts in the canal bunds, or outlets. It was easier to deal with the former than with the latter case.

To summarise, tail-end farmers developed ingenious strategies in the struggle for scarce water. They made use of the design characteristics of the modern system, but in ways very different from those supposed to be used. Also, they re-designed the system in line with their own interests. They operated at night, as they then had more 'room for manoeuvre' in the main system. If well-organised, tail-end alliances made use of intermediate storage in the main system. Finally, re-use structures in combination with first-use connections have proven to be a very effective way to bring the water downstream. These strategies of the tail-end farmers make the struggle for water a dynamic and complicated one. It moreover involves large areas, including the mid-stream sections of the system.

Conclusions

This chapter discussed the physical properties of and the water management practices in the 4th District of the UPRIIS system. It showed that the actual use of the system was very different from what was intended during the design phase. It was designed for high levels of control over water and the water users. By precise regulation of the gates, detailed prescription of farmers practices and clear-cut allocation procedures, the NIA hierarchy was going to ensure high water use efficiencies and a secure environment for crop growth.

In reality however, the actual control over the water in the system and the NIA's control over farmers' practices turned out to be low in large parts of the District. This situation was caused by a combination of technical as well as socio-political factors. On the technical side, poor canal maintenance and the erratic and inadequate inflow into the system made controlled main system management a cumbersome affair.

On the socio-political side, the NIA authority to enforce its regulations was compromised. Worse, its control over the headgates – let alone the lower levels of the system – was often contested by farmer leaders and local politicians (for further discussion, see the following chapter). Farmers and their leaders ignored cut-off dates of the NIA, as well as its program area that supposedly determined which areas could and could not be

irrigated during the dry season. Moreover, farmers installed large numbers of turnouts, checking structures and connections to drainage creeks and local rivers that compounded the complexities of controlled main system management.

In short, the idea of a highly controlled environment that was laid down in the system's design as well as its management procedures have proven to be an illusion. The system still functioned, was being managed and to some extent, water flows were predictable. However, it was much more 'messy' than expected. The behaviour of both farmers and NIA managers was guided by an *ad hoc* 'go-with-the-flow' attitude, rather than one of planned control.

These findings coincide with earlier studies of main system water management in canal systems (see for instance Chambers 1988). It also tallies with business management literature on the behaviour of managers. As they find themselves in dynamic, complex and uncertain environments, rigid behaviour based on planning and pre-determined activities will not work. Successful managers are good in 'groping along', 'muddling-through' and 'learning-by-doing'. (Behn 1988). This chapter has shown that the environment for the NIA's District managers as well as the farmers is also a complex, dynamic and uncertain one. Similarly, people and crops could only survive by adopting a flexible and pragmatic 'muddling through' approach.

My findings on water control also seem to support the thesis of Horst (1987, 1995, 1998) on 'the paradox of operational flexibility'. His argument is that systems designed for high levels of water control often attain the opposite. The higher the possibilities for regulation and adjustment to fine-tune water flows through the system, paradoxically, the lower the actual levels of predictability and water use efficiency. Indeed, the existence of gated structures throughout the system contributed to the system's problems, rather than lessened them. In times of scarcity, gate operations disproportionally reduced water flows to the tail-ends of the system, while also the amplitude of water level fluctuations increased further down the system.

Horst advocated the use of simple and fixed structures to increase the predictability of water flows, and to achieve a more equitable distribution of scarcity throughout the system. My findings support his idea. The NIA itself reduced the operational flexibility of the gates, by cutting holes in them. Their motivations

were very similar to what Horst advocated: to improve the predictability of the water flows, and to ensure that at least part of the water in the main system would 'automatically' flow to the tail-end areas.

I disagree however with Horst when it comes to the explanation for the occurrence of this managerial paradox. He argues that the problem arises because irrigation agencies in developing countries usually lack sufficient manpower and skills to properly manage these sophisticated systems. The NIA might indeed have been understaffed, especially since the mid-eighties when the streamlining policies took effect. However, skills were definitely not the problem. As was shown in this chapter, both the NIA engineers and fieldworkers were highly educated and well trained. They knew very well how to make use of this modern, sophisticated system.

The major reason for the improper use of the system was socio-political in nature. The NIA engineers could not employ their skills for high-tech management to proper use, as local power holders challenged their authority. Or they were not inclined to do so, as central control over their performance was limited, and the merit system for promotion was undermined by a system of favouritism and political backing (for further discussion, see chapters 4 and 7).

The last conclusion in relation to the issue of water control is about turn over. Given the findings presented in this chapter, it can be concluded that the idea of turn over stands out as an awkward one. Farmers were already deeply involved in main system management, before turn over came to their area. Put ironically, the more appropriate label for these turn over policies would be: 'let's-formalise-what-we-already-lost'. If put in more constructive terms, the policies tried to build up functional management organisations that came to terms with reality, and thus gave a larger formal role for farmers in the management of the system. At the same time however, the IAs and federations would help to discipline farmer behaviour and thus would allow the NIA to 're-take' control, rather than turning it over.

This chapter has also shown that water stress was a recurrent and serious phenomenon in the District. As farmers could pump from local rivers and drains, and also often had access to deep wells, water scarcity increased costs of production but not necessarily crop failure. Nevertheless, yield reductions and total crop failure were a recurrent phenomenon that – in particularly dry

seasons- involved thousand of hectares. Consequently, the risk and actual occurrence of water stress shaped farmer behaviour as well as the NIA's practices in large parts of the tail-end and mid-stream areas of the District. I described three major strategies employed in the struggles for scarce water. These were the nightly operations to guard and manipulate headgates, the practice of water storage in the main system, and the ingenious use of re-use checks and dams in local rivers, supplemented by legal and illegal diversions of irrigation water.

My findings on the interconnections between the re-use and first-use system allow me to warn against overly optimistic or simplistic views on the benefits of re-use systems. Re-use has been propagated in recent years by institutions like IWMI. It has been portrayed as a key solution to water management problems. By looking at catchments rather than individual systems, the problem of low irrigation efficiencies suddenly disappears, as re-users in the lower parts of a catchment pick up losses in the upstream. As water may be used several times before it finally reaches the sea, overall irrigation efficiencies might easily reach and surpass 100% (Seckler 1996; Keller and Seckler 1996; cf. Wolters and Bos 1990).

To a large extent, I agree that re-use systems are very helpful indeed. The checks in the drainage creeks - and the dams in local rivers supplemented by upstream irrigation water - helped a lot to solve water scarcity problems in the District. Also, it has been shown that it provided downstream farmers advantages to access water, which were not available through the irrigation canal system.

However, although the re-use structures thus eased the problem of main system management, they also further complicated the matter. Farmers and NIA workers alike did not simply wait for irrigation water to arrive in their drain. They started to manipulate the gates and even re-designed the system to make this happen. Hence, the re-use systems further increased the rivalry over scarce water, and further lessened the possibilities for a co-ordinated and agency-controlled main system management.

This chapter has shown the strong spatial dimension of struggles over water and the spatial distribution of scarcity in the District. It also showed how social action affected this spatial distribution of scarcity. This will be further examined in the subsequent chapter.

Notes

[1] It is also locally known as the PRIS system. However, PenRIS is used by the NIA, as PRIS gets confused with the acronym of the Pampanga River Irrigation System, another UPRIIS sub-system located further upstream.
[2] The plan is still the basis for water resources development in Central Luzon. For instance, one of the major dams and reservoirs suggested in the plan (the Balintingon dam and reservoir) was again on the political agenda of congressmen and senators during 1996-97.
[3] Overall irrigation efficiencies were initially set at relatively low levels of ambition (36% for the dry and 31% for the wet season). These were expected to rise to 70% for the dry season and 58% for the wet season (NIA UPRIIS 1978: 12). In time, this would allow for an expansion of the irrigable area. By 1997 however, the irrigation efficiencies did not go above 40%. These low efficiency figures were used by the NIA to determine the irrigable (program) area.
[4] These are pre-project data of the UPRP project, thus concerning the mid-sixties. By the time the Aurora-Peñaranda project started in the mid-seventies, pre-project yields as well as the cropping intensity were already much higher.
[5] To be achieved thirteen years after the full completion of the project in 1978 (Ng and Lethem: 1983: 4). The expectation that the wet season would yield higher than the dry is remarkable. I could however, not find an explanation.
[6] The cropping intensity was not expected to reach 200%, due to remaining drainage problems in the wet season.
[7] It thus follows a different principle than the protective irrigation schemes in the Indian sub-continent. In protective schemes, water is to be spread as thinly as possible throughout the irrigation system, to maximise the irrigated area (Jurriëns *et al.* 1996).
[8] The management of the reservoir was not part of my study. From what I learned from the NIA engineers, there were two reasons for the low reservoir levels. Firstly, rainfall in the catchment was less than expected and more erratic. The catchment of the reservoir is relatively small. A 'good' typhoon was needed to fill the reservoir, but – given the relatively small size of the reservoir's catchment - there was considerable chance that typhoon rains would fall outside the catchment. Secondly, water build-up for the dry season was said to be undermined by wet season water releases for electricity generation.
[9] There are no official data available on the actually planted areas. The reason is that the NIA management does not gather data outside the program areas. Watermasters of these areas are not required to report weekly on the farming activities in these areas, nor do they have to submit a harvest report. Only when these areas happen to have a good harvest due to good access to water, the District management may decide to

include these areas for billing. In that case a harvest report will be made.

[10] Even if the NIA had done so, their authority would probably still have been challenged. Farmers along these drains would have grabbed the opportunity and would have started growing rice. Over time, they would have pressured local politicians and the NIA to build 're-use' dams in the drains, and would organise themselves to divert water from the NIA canals into these drains. Hence, this NIA measure would simply have created a new tail-end alliance contesting the main system management operations of the NIA, rather than solving the problem.

[11] This was however not the case for the whole of the District. As chapter 4 shows, the NIA had formed an effective alliance with farmers and local politicians in Zone 2. In that Zone, rotational schedules were largely implemented as planned.

[12] Wensley (1989: 166) found the same situation in 1987.

[13] In several cases, the UPRIIS project failed to construct these facilities. This was partly because farmers resisted their construction.

[14] This is not to say that farmers do not manage water at all. Field water management is for instance taking place in cases of direct seeding and during the application of fertiliser and pesticides. In between these activities, continuous field-to-field irrigation is the dominant practice. Only in case of (expected) scarcity, farmers will repair and close the fieldbunds, to conserve as much water as possible on the field.

[15] Water scarcity was the most important cause of low yields in the dry season. However, rat and pest infestation also played a role.

[16] In practice, though officially not accepted by the NIA's management, NIA fee collectors would be accommodating to farmers who had relatively low harvests. Also, they were lenient to those farmers who had spent money for pumping from deep wells, or to bring water from NIA canals or local rivers to their fields. The NIA collector might then decide to exempt part of the farmers' area, although the actual harvest exceeded the 2 tons/hectare. Consequently, the magnitude of water stress in the program area might be smaller than the exemption figures suggest.

[17] Valera and Wickham (1976) reported more serious yield differences between the head and the tail of this Zone due to differential access to water. In their study on the 1972-73 dry season – thus before the start of the UPRIIS project -, they found yields to decline from 2.5 tons/hectare in the head of the Zone, to only 0.4 tons/hectare in the tail.

[18] See chapter 5 for the activities of the NIA fieldworkers during the night.

[19] See Horst (1998 111-115) for a general discussion of the advantages of intermediate storage.

[20] In case these upstream farmers were worried about their water supply, they might not go to sleep, though. In case they did not get water during daytime, they might decide to guard their check during night-time. They obviously knew what was going on, but they did not necessarily know

where the water would go during the night. They thus might decide to find out whether this big volume of water will pass their check during the night, or whether it was targeted to a tail-end area that was not located downstream of their check.

[21] A rough estimate is that the average active storage over this six-kilometre stretch was around 3.75 m^2 (2.5 m wide x 1.5 m depth (average depth in between structures, allowing for backwater curves)).

[22] From a system wide perspective, it can be argued that the practices of upstream farmers were inefficient. To them, however, it was not. They for instance 'over-irrigated' their paddies to avoid weed growth. Also, they preferred to irrigate their paddies in a continuous manner, to minimise the input of labour. Moreover, over the years hundreds of paddy fields in the upstream areas were converted into fishponds. A continuous flow of fresh water in these fishponds was a precondition for high fish yields.

[23] The data refer to the dry seasons of 1994-97. The data of the program area were obtained from the District office. The other data were estimates of watermasters or farmer leaders from the three areas.

[24] One would need to replace the concrete floor to repair it. Tail-end farmers affected by the diversion tried to close such a connection, by putting a sandbag into the hole. At night, farmers from the tail-end area making use of the diversion would again try to open the hole. A new diversion point, operated by farmers, had thus been created.

4

Forging Alliances for Main System Management

While I described the practices of main system management in the preceding chapter, this chapter explores the politics of these practices. It was already shown that water allocation and distribution 'above the outlet' is a seriously contested matter in the District. To give some initial flavour to the idea of main system management politics, this chapter starts with an interview held with a former *barangay kapitan* (elected village leader). His village is located in the tail-end of Zone 1 of the District. The interview talks about his tactical moves made in irrigation management during the dry season of 1984.

> Water was really critical at the time. I mobilised thirty men and thirty women from my own as well as the neighbouring barrio. We went to the headgate of San Anton and stayed there for nine consecutive days. We used the NIA quarters at the gate to sleep, cook and eat. The women cooked, but sometimes also joined guarding the gates. We believed that the presence of the women might stop others from attacking us.
>
> I had made a deal with the NIA District Chief, but he broke it. In the beginning of the season I gave him P10,000 as an advance payment of service fees, for which the NIA cashier gave me a receipt. In return, the NIA would help us to get water, although we were not included in the program area.
>
> During the season however, the NIA District Chief ordered the sliding gates of a major division structure to be welded, to stop water flowing to the tail-end areas located outside of the program area. I then ordered my men to destroy the sliding gates with a *maso* [a sledgehammer, JO]. When the Chief learned about it, he arrived

in his land cruiser. I said 'Good morning'. The Chief responded: "What's good about this morning, you are destroying NIA's property". I ignored what he said and we continued destroying the gate. Then the Chief raised his voice and told me stop it. I then told my man holding the maso: "I will count 1,2,3 and then you hit the Chief on his head!" The Chief got frightened and left to his office. I followed him, showed him the receipt and shouted at him that from that day onwards, I would be engineer as well as technician. I meant to say that I would take care of everything, without relying on the NIA anymore.

I then went to the hometown of General Ocampo, who at the time was commanding the Civil Relations Services. He instructed the mayor of my town – who was a local commander over these forces - to provide me with soldiers. The mayor gave me 12 soldiers who helped me guard the gates for two months.

I needed these soldiers for my protection and security. I was afraid of both the Juatco and Meneses factions of the municipality of Victoria. These two factions were fighting each other, and without realising it, I had become part of it. One day Juatco and his men harassed my group at the headgate, and chased them away. When I learned about it, I was very angry and went to Juatco's house, carrying my M-16 machine gun and .45 pistol. I decided to go alone, because in case things would go wrong, I would be the only one killed. Fortunately Juatco understood my anger, and we started to co-ordinate our efforts at the gates. It was only later that I learned about the feud between the Juatco and Meneses clan. I parted ways with Juatco, but I was afraid that Meneses would still consider me to be one of his enemies. That is why I looked for the protection of these soldiers. (Interview with a former barangay kapitan of a tail-end village in Zone 1, January 1997)

Within the 4th District, the bold moves of this kapitan were widely considered to be the starting-point of a politicised struggle over water that lasted at least until the time of my field research in the mid-nineties. However, if only out of fairness to all those 'civilised' and 'responsible' actors in the District, it should be stressed that this is one of the most dramatic accounts of irrigation politics I came to know of. To some extent it pictures a kind of irrigation politics that was no longer found during the mid-nineties. In 1984, the country was still under the military rule of President Marcos. Also, the leader interviewed belonged to one of the former Huk strongholds, who were known for their rebellious acts of

bravery long after the Huk rebellion came to a halt (see chapter 2). Hence, the story above is an extreme one. Nevertheless, it reveals a number of points that are valid for the everyday politics of main system management in the District in general.

Firstly, it shows that farmers do not passively obey the program or wait for water to arrive at their outlets. They move 'above the outlet' and are active players in the management of the main system. Secondly, it shows that the NIA's District managers – though *de jure* in charge – were *de facto* challenged in their control over the main system (for these first two points, see also the previous chapter). Thirdly, it shows the important role of politicians in managing water. Fourthly, people forge alliances – in this case with upstream political factions and the military - to get access to scarce water. Fifthly, the mechanisms at work in main system management (henceforth MSM) are not limited to administrative or financial ones. As the story above shows, political patronage and the threat of force and violence were also important.

This chapter further explores these points. The focus is on the social relations of power: who had control over MSM and why? It analyses the ways in which people organised, built alliances and fought each other. The leading questions for this analysis are: who were the main actors, what were their strategies, and how were they related to each other? To understand these practices and strategies, I examine how they are embedded in wider state-society relations. Finally, this chapter also examines how the different reform policies –notably turn over – changed the everyday politics of MSM.

The main arguments of this chapter is that the MSM in the District was the subject of struggle between rival alliances composed of politicians, NIA officials and IA leaders. These alliances were bound together by interpersonal relations based on political patronage, friendship and kinship.

This is a long chapter. It is structured as follows. The next section explains the NIA's weakness to control MSM, as the NIA is part of a weak state facing a strong society. As none of the involved actors in MSM have the upper hand, people are forced to forge alliances and accommodate their interests to those of others. Several of such alliances compete for scarce water. The section ends with discussing the major characteristics of these rival alliances.

The following two sections are the empirical heart of this chapter. They are detailed accounts of the two major irrigation alliances in the MSM of Zone 1 and 2. These two alliances have a very different character. Relations in Zone 1 between NIA engineers, local politicians and farmer leaders are rather antagonistic, while the relations in the Zone 2 alliance are more friendly and co-operative. In 'consultancy speak', Zone 1 is a case of partnership failure, while Zone 2 is a successful case of partnership between the NIA and the IA federations. However, it is shown that political patronage and brokerage are at the heart of both cases.

The fourth section draws these empirical findings together. The main binding forces of the water alliances are discussed one by one. These are the interpersonal relations based on political patronage and brokerage as well as friendship and kinship. Bribery is discussed as a third – though much less important – binding force. Finally, it is discussed how the threat of force shapes the MSM in the District.

In the concluding section I summarise the main findings, and stress the usefulness of the concepts of 'alliances' and 'accommodation' as well as the concept of 'blurred boundaries' between state and society for the study of main system management in canal systems.

The Weakness of NIA

The previous chapter has shown in detail that the NIA could not enforce its rulings in the management of the main system. For instance, it lacked the capacity to stop water from flowing outside the program area. Also, it had to accept the numerous 'illegal' turn outs and checking structures built by farmers. As this chapter will show, local politicians (barangay kapitans and mayors) as well as farmer leaders had a large say in the management of water. In some instances, – as in the case above – the NIA fully lost control and the politicians or farmer leaders took over. In most cases however, the NIA District managers and staff still had some say. They were forced – or willingly chose to do so – to adopt NIA policies and practices to the interests of local power holders, and/or built an alliance with them.

This section will explain why such accommodation and alliance building was taking place. It will do so by discussing wider state-society relations in the rural Philippines. First however, I turn to a more physical explanation for the NIA's limited power: canal water is a resource not easily controlled.

Canal water: a resource that is hard to control

During one of the coffee breaks in the period I was writing this section, I read a newspaper article on illegal immigrants trying to pass through the tunnel between France and England. The article discussed the various tactics of the immigrants to outsmart the French immigration authorities. It made me realise once again the difficulty of the NIA's task in controlling water. If two resourceful and effective states cannot even control one central point of passage (the tunnel entrance), how can one then expect the NIA to control numerous passage points spread out over a very large area? These immigrants may be desperate and very innovative, but so are farmers in tail-end areas.

The nature of the resource and the characteristics of the irrigation technology thus also help account for the NIA's lack of control over water management. Social and political scientists discussing the weakness or strength of states to control resources tend to ignore the importance the physical characteristics of a certain resource (e.g. Grindle 1990; Migdal 2001). However, it clearly makes a difference whether a state has to control for example the distribution of hand-tractors to a target group of farmers, or to control the distribution of water. Users are able to treat irrigation canal water as a common pool resource: "The basic feature of a common pool resource is that exclusion is difficult and yield is subtractable" (Ostrom and Gardner 1993: 93). The sheer size of a large-scale system simply provides too many opportunities to stop water users from interfering in MSM (Mollinga 1998: 150).

The odds are heavily against the NIA management. The operations engineer of the District commands around fifty fieldworkers who work five days a week, from nine to five. Let us assume that he had full control over his field personnel and that he desperately wanted to enforce the rules. Even then, he would still lack the capacity to control the (wrong) doings of around twenty thousand farmers. These farmers can divert water from the main

system during both day and night and during work days and weekends. They can do so, from hundreds of legal and illegal diversion points located along several hundreds kilometres of main canals, laterals and sub-laterals, and at intersections of these canals with drainage creeks.

Having said this, the socio-political context is clearly important as well. Public agencies in some East Asian countries managing equally large schemes attain higher levels of control (Lam 1996; Wade 1982a). Even in the protective irrigation schemes of India, the irrigation agencies seem to be more in control than the NIA does in the management of the District studied (on India, see Wade 1988). The socio-political relations between the NIA and local forces thus deserve further examination.

A weak state in a strong society

The NIA is weak, as it is part of a weak state, the weakest in Asia (Cammack *et al.* 1993). A state is considered to be weak if it has a limited capacity "to penetrate society, regulate social relationships, extract resources and appropriate or use resources in determined ways" (Migdal 1988: 4). As the Philippine state enjoys little autonomy from "dominant social classes and entrenched particularistic groups, it has been captured by competing societal interests" (Rivera 1991). The capabilities of the state to manage public resources are thus seriously undermined by a 'strong society'. This has historical roots.

> In the course of Philippine history there has been no phase during which the central state has expropriated the means of coercion and extraction from autonomous and private power holders through their subordination or incorporation into paid public servants (Sidel 1995: 41).

This does not mean that the state is absent in the countryside of Central Luzon. On the contrary, there is an extensive multi-tier Local Government Units (LGU) system of barangays, municipalities, provinces plus elements of the national system including congressional Districts and agencies of the national government. Elected barangay kapitans and councils, municipal mayors and councils, province governors and councils and finally

congressmen head these. Especially after the implementation of the Local Government Code in 1991, the LGUs have been relatively well funded and staffed.

However, the politicians governing these bodies are elected. They thus do not owe their appointment, re-appointment, salary or promotion to the central government (Fegan 1994). Moreover, the political parties to which these politicians are related do not aggregate ideological, principled or even partisan interests; it is standard for successful candidates to switch, soon after the election, to the party of the winning executive of that unit. Political parties consist of loose alliances of politicians that distribute political patronage in return for electoral support. Hence the central government or the ruling party has little means to discipline, dismiss or otherwise punish these elected officials. The local politicians appoint most of the staff in the local government bodies, and the congressmen try to intervene in the appointment, promotion and transfer of staff in central government agencies in or affecting their congressional District. These state workers thus tend to follow local interests rather than the laws, regulations and policies of the central state.

Ironically, much of the power of local power holders is derived from their control over the political institutions of the state. Firstly, it gives them access to state funds. In the post-war period, they captured the ever-increasing state resources to increase their power and wealth, while further weakening the state in the process (McCoy 1994). The Philippine state became a predatory state, but one that is plundered rather than plunderer.

> The primary direction of rent extraction is not toward a bureaucratic elite inside the state but rather toward oligarchic forces with a firm independent base outside the state (Hutchcroft 1993: 167).

Secondly, the control of elected politicians over the state gave them access to its ruling powers. Being modelled after the American polity, political positions provide for large discretionary powers. In the Philippine context this has led to the emergence of so-called "local and provincial 'bosses' who exercise considerable regulatory powers over the legal and illegal economies in their jurisdiction." (Sidel 1995: 230).

The local and provincial power holders are predominantly

organised along family lines. Not only is the Philippine family the primary unit of economic organisation and capital accumulation, it is also "the most enduring political unit and the one into which, failing some wider principle of organisation, all other units dissolve (Fegan 1994: 51).

Roughly speaking, there are three levels at which the families in control of political power operate. The most powerful and richest families in the country operate at the highest level. These are family dynasties or 'family-based conglomerates' that combine economic might with political power, by getting family members "elected as congressmen, and provincial governors, to such an extent that political office remains seemingly inherited (Sidel 1994: 112).

In the post-war period, the country's political economy became controlled by an 'anarchy of families'. Under martial law, these families at first lost much of their power to the central state, which soon came to mean the Marcos family, or "the conjugal dictatorship". Soon however, the political survival of Marcos became to depend on selected elite families. This time became known as a period of 'crony capitalism', in which Marcos divided "the whole economy into different fiefs managed by relatives and cronies who regularly shared their earnings with the dictator" (Manapat 1991: 58).

> Each crony had his kingdom: Benedicto was the sugar king, Cojuanco the coconut king, Floirendo the banana king, Campos the drug king, and, according to the buttons on the intercom system at Malacañang Palace, Ferdinand Marcos was simply the King (Thompson 1995: 54).

Though much has changed after martial law and many of the cronies have lost their hold over elements of the state, the larger picture - a weak state versus strong oligarchic families - still holds true today (Kang, 2002).

In the UPRIIS area, such family dynasties also prevail until the present day. Some originate from the old landed gentry, like the dynasty of the Lopez family. After the Pacific war, they branched out into industrial and commercial enterprises, as well as construction (Gutierrez 1994). Different factions of this family have been able to hold the seat of their congressional District as well as a local municipality for several decades. Their municipality as well as the larger part of the congressional District is located

within the boundaries of the 4th UPRIIS Irrigation District. If the local rumours are correct, they feel strong enough to fight for a seat in Congress as well as for the position of Nueva Ecija governor in the 2004 elections.

Their decision to actually fight for the governor's position will not be taken lightly. It will require vast financial resources and powerful allies, as they will have to unseat the single most powerful dynasty in the province of Nueva Ecija: the Joson family. The Josons have been in power in the province for nearly fifty years. While the power of the Lopez family is limited to the southern part of Nueva Ecija, the Josons rule in the rest of the province further up north (for further detail, see chapter 2).

At the middle level there are the political families that fight over the control for mayorship of a municipality. Though less powerful than governors or congressmen, the mayor's large discretionary powers, still allow them to act as local bosses in their municipality. They control the municipal police and through them they control the *hueweteng* (numbers racket) and other vice. Moreover, mayors and mayoral candidates usually come from wealthy families that are involved in different economic activities, including construction contracting.

Family dynasties also operate at this level. Within the District boundaries, the Meneses family is a good example of such a dynasty. As will be shown below, the Meneses family was actively involved in the water management of the District. The late Meneses ruled the town of Victoria for most of the post-war period (see map 4.2). His popularity rose when he was only a well-known toughguy operating as the manager of a local cock-fighting arena. During the 1998 elections, two of his sons ran as rival candidates. One of them was able to take the seat, but then lost in the 2001 elections. So far, their dynasty has lasted for more than three decades. During this period, they acquired vast landholdings in rice, mango fields and agribusiness activities (poultry), with one of the sons active in construction, and again another – who was recently killed - in alleged illegal activities like drug trafficking.

Finally, at the lowest level, there are the political families fighting for the position of barangay kapitan. Those in power control much of local decision making, leaving outsiders without much voice.

> Everybody expects the ruling political family in the village (...) to take a leading role whenever (...) official or non-government

> organisations are making decisions that directly affect the village and its environs; and to prevent, openly or covertly, implementation of decisions about which they were not consulted or that they do not like. (Fegan 1994: 101).

As the political institutions of the state are firmly controlled by local interests, the power of centrally administered bureaucracies is compromised as well. The NIA is a case in point. Its administrators in the central office supposedly control this Weberian type of bureaucracy. Selection and promotion is formally based on the merit system. Reality however is different. The NIA District managers are hardly controlled by their superior officers, nor are they well protected from interventions of local power holders. The merit system is compromised by the *padrino* or *palakasan* system (a system of recruitment and promotion based on –mostly political – backing), that allows local or provincial politicians to meddle in the affairs of the NIA District. In particular, the capacity of the congressman to intervene in appointments, promotions and transfers of NIA personnel makes it very difficult for NIA staff to refuse to do their will and then retain their position. (see further chapter 7; for a general discussion on the NIA, see the ADB 1990; on the Philippine bureaucracy, see Varela 1996).

The case of the NIA: a triangle of accommodation

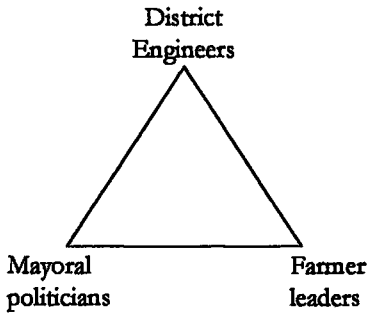
After this general introduction of the weakness of the state versus local power holders, I will now turn to a more specific discussion of power relations in MSM in the District.

Two other actors compromise the power of the NIA District engineers in the domain of water management: the mayoral politicians and farmer leaders (figure 4.1).

Absent in this triangle are the political families operating at the highest levels of power. People like governor Joson or congressman Lopez now and then called-up the District Chief, arguing for the inclusion of a part of a municipality in the NIA's program area, or to help such an area with an extra gift of water. Obviously, the 'requests' of such powerful people are not easily disregarded and the NIA engineers would usually comply. However, such requests were only done occasionally. Moreover, these interventions were not very effective either. As this chapter

will show, to make a difference in MSM requires intensive supervision. Apparently, the matter was too local for these higher-level politicians to be of interest. Or, as a NIA engineer commented: "They only go where the money is, and there is no money in water management".

FIGURE 4.1 A triangle of accommodation



Source: cf. Migdal 1988

The mayoral politicians, on the other hand, were very active players in main system management. As irrigation water is a crucial resource for the rural voting population, ability to influence its delivery is an important means of political patronage. The incumbent mayors and vice-mayors were the most active in irrigation management, as their police and legal powers gave them the means to do so. Also rival families fighting for political control tried to use main system water management as a way of building an effective alliance to overthrow the incumbent mayor.

Farmer leaders were the third type of actor involved in main system management. This category refers to a rather wide variety of people. They were leaders who represented groups of tail-end- or mid-stream farmers trying to get a hold of scarce water. Apart from leadership capabilities, they had the interest and/or resources to do so. Some were rich farmer-tenants or even landowners, cultivating tens of hectares of tail-end rice land. They clearly had the interest to fight for water, and also had the resources (capital for food and vehicles, followers or armed allies) to make possible a long-lasting campaign for capturing water.

Others were local politicians like barangay kapitans or municipal councillors, or vote brokers for mayoral or higher-level politicians. This type of leader could be effective as they could mobilise

government resources (like for instance the barangay police) and/or make use of their connections to other village politicians or mayoral politicians in the municipality. As local politicians they used their influence in water distribution as a means for getting electoral support in their village. As vote brokers they tried to deliver support to mayor, vice-mayor or political candidates, in return for benefits derived from their patronage. Some of them were – or had been – IA leaders.

Again others could be put forward to lead based on their particular skills. Some were put forward as they were known as *siga*, (toughguys), with a proven record of bravery. Others, on the other hand, had well-developed diplomatic skills. Their oratorical and negotiating qualities were seen as useful in convincing upstream leaders, politicians or NIA people to give in to their demands. Obviously, some farmer leaders combined several of these characteristics.

Though these mayoral politicians and farmer leaders seriously compromise the power of the NIA District engineers, it does not mean that the engineers are left without any power at all. They still have 'room for manoeuvre'. Firstly, they derive power from the fact that they are the only actors who are legitimately allowed to operate the gates and allocate the water. Secondly, they command fifty or so fieldworkers and several vehicles, more than any of the other local power holders can mobilise in a given point in time. Though their *de facto* control over their field men is compromised as well, they are still able to at least command their 'trusted men'. However it is difficult and provocative for NIA engineers to assemble those fieldworkers as a tactical force, whereas some of the other actors do not face such constraints and have the advantages of local concentration, surprise and the night.

Thirdly, these NIA engineers are socially powerful themselves. They are embedded in the local society of the District. They married into more or less powerful families, are backed up by padrinos and kumpares in political as well as administrative circles, and have nested themselves in religious organisations or societal brotherhoods. If not, these people would not have become what they are: ranking engineers of a national bureaucracy. Hence, the mayoral candidates and farmer leaders are not simply dealing with local engineers, but with well-established people who know how to survive in a politicised environment.

Fourthly, and most importantly, the mayoral politicians and farmer leaders do not represent one group vis-à-vis the NIA engineers, but consist of several rival groups competing with each other.

> Leaders attempt to mobilise followers and exercise power in environments, in which leaders of other groups are doing the same. (...) Attempts at domination are invariably met with opposition by others also seeking to dominate or by those trying to avoid domination (Migdal 1994: 21)

Consequently, none of the local power holders fully has the upper hand. To be effective, any power holder can only achieve his goals by forging alliances, and accepting accommodations. This is true for the NIA engineers, but it is also true for the mayoral politicians or various farmer leaders seeking control over water management. Hence, the water management in the District can be seen as

> (...) an arena of domination and opposition, where various social actors engage one another, vying for supremacy through struggles and accommodations, clashes and alliances. (*ibid.*: 21)

To end this general introduction on the power relations around water management in the District, I will now describe some of the major characteristics of these alliances. This will be further explored in detail in the case studies of the Zone 1 and 2 alliances.

Trust-based alliances organised in space

The alliances around water have three major characteristics. Firstly, the alliances typically criss-cross formal boundaries between the state and society, as well as between the bureaucratic and political parts of the state. The core of a typical alliance consists of a few farmer leaders representing a tail-end area, including both IA Presidents and village-level politicians. They have forged an alliance with one or more local politicians at village and municipal level. These politicians may be upstream within their own municipality, but may also be found in a municipality located further upstream.

A typical alliance also includes one or more NIA fieldworkers, and one or more NIA engineers. Such alliances with NIA staff are however rather subtle in nature. Precisely because water is a contested resource, it makes good sense for NIA staff to avoid being recognised as supporters of certain particular interests. Many try to stay out of such alliances altogether. Others however, combine the image of the neutral NIA engineer professionally loyal only to the NIA organisation with covert support for certain friends, villages and/or political groupings.

Often, the 'state', 'non-state', and the 'political' and 'bureaucratic' meet in one person. The boundaries between these categories are blurred to the extent that it is hard to delineate one from the other. As shown below, a NIA engineer is not only a bureaucratic agent. He may at the same time be also a political actor, a local villager, a rice farmer and/or an IA representative. Actors operating in these alliances thus often have multiple loyalties and interests.

The second main characteristic of the alliances is the importance of interpersonal ties between the actors involved. Relations between the core-actors are cemented in informal, inter-personal "trust-based relationships, such as those of kinship, affinity, compadrazgo or political ties" (Long 2001: 154).

This is a common feature of organisations involved in the use of resources in the Philippines. People build dyadic alliances by the reciprocated exchange of favours, each striving to maximise his own security (Landé 1977). In the struggle for resources, people make as much use of non-discrete as of discrete social structures.

> People rely upon a great net of dyadic (interpersonal) alliances, some of the horizontal, but more of them vertical, leading inward and upward from the villages to the national government, from 'little people' to 'big people', and from those who have favours to ask (...) to those who have the power to grant them. This network of alliances often shows little regard for the boundaries that separate discrete structures, whether they be interest groups, parties, or the various instrumentalities of government. In performing its various tasks, the Philippine political system proceeds as much through particular decisions affecting individuals, and based on the principles of favouritism, as through categorical decisions applied impersonally and in accordance with the law (Landé 1977: 86).

A third characteristic of the alliances in MSM is that they possess strong spatial characteristics. Farmer leaders who represent the interests of farmers cultivating land in neighbouring villages join forces to manipulate upstream checks or distribution gates. They will try to ally with upstream politicians, and to fight rival alliances that seek water for competing areas.

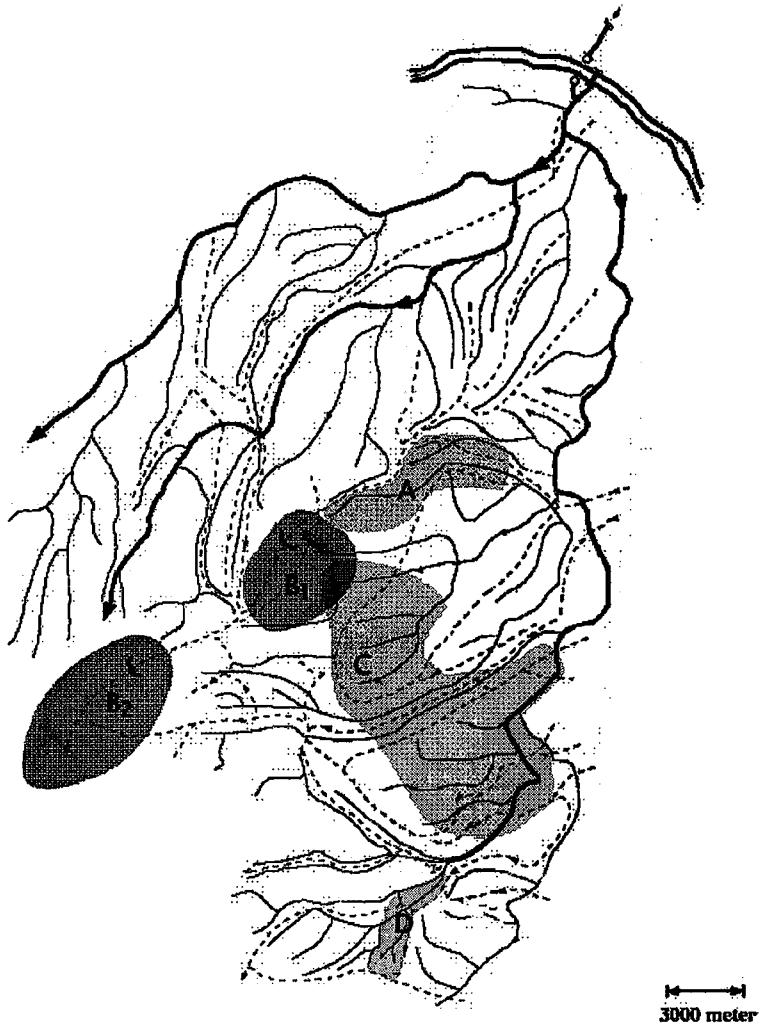
Within the District, several of these alliances were active in struggling for scarce water in the main system to secure rice crops in tail-end and mid-stream areas. Some alliances were rather stable, while the composition of others changed from one season to another, or even within the same season. The major stable or persisting alliances are shown in map 4.1 and table 4.1. Indicated are the areas represented by the different alliances, their key actors and the main types of interpersonal relations that brought these key actors together.

TABLE 4.1: Key actors and types of interpersonal relations of the major alliances

Alliance	*Key actors*	*Types of interpersonal relations*
A	Mayoral politician Village politicians Gatekeeper	Political patronage and brokerage Threat of violence
B1[1]	Gatekeeper Village kapitan	Gifts/friendship
B2	Gatekeeper Large landowners	Bribes
C	Village politicians Farmer leaders Watermaster Engineer	ISF payments Gifts/friendship Bribes
D	District Chief Tail-end farmer leader/ federation president	Friendship Private business partnership

In summary, this section has shown that the NIA District's managers do not have supreme power in water management. They have to accommodate their rulings and practices towards the interests of especially mayoral political families and farmer leaders. However, none of these actors have the permanent upper hand.

MAP 4.1: Areas represented by some of the major irrigation alliances



Source: cf. NIA-UPRIIS, 4th District 1983

Hence, they are forced to forge alliances and accommodate their interests to those of others. The water management in the District thus involves a number of rival alliances struggling to control the allocation and distribution of scarce water. These alliances combine state and non-state actors and criss-cross bureaucratic and political boundaries. Relations between the actors are trust-based and

interpersonal in nature.

The following two sections further explore the characteristics of these alliances. The next section discusses in detail the dominant alliance active in Zone 1, while the subsequent section looks into the dominant alliance that was operational in Zone 2. As will be shown, the characteristics of these two alliances are remarkably different. The Zone 1 alliance is about political rivalry, while the Zone 2 alliance is an example of a co-operative constellation of actors.

Main System Management in Zone 1: a Case of Political Rivalry

The management of water in Zone 1 is a highly contested matter. During the larger part of the 1980s and 1990s, water has been the subject of struggle between two opposing political alliances. Local politicians were the dominant players in the actual distribution of water throughout the Zone. The formal organisation of the NIA and the IAs was operational, but had little control over water. The authority of the NIA engineers was compromised, and sometimes totally disregarded. The section first looks into the composition and activities of the political alliances. It subsequently discusses the main strategies of the NIA engineers in dealing with these political alliances. Given the perilous situation in Zone 1, the engineers tried to play safe, be accommodating to the politicians and stay out of conflict. Finally, I discuss the role of the IAs and the Zone federation of IAs in the MSM of Zone 1. Given the politicised character of MSM in this Zone, these farmer institutions did remain rather weak.

The emergence of the Juatco alliance in irrigation

The dry seasons of 1983-84 and 1984-85 stand out as landmarks in the water management of Zone 1. During these years, water management became mixed up with electoral political struggles in the upstream municipality of Victoria. This has remained so until the time of the field research in 1996-97.[2]

There are three reasons why this started during these two years. Firstly, these two dry seasons happened to be particularly dry ones. During both seasons, farmers experienced severe water scarcity,

and crops withered on thousands of hectares in the tail-end and mid-stream parts of the Zone (see figure 3.6). To prevent their standing rice crops from dying, desperate farmers turned to their leaders to take action. These leaders tried to mobilise powerful people within their networks to help them in their search for water. As was shown in the opening story of this chapter, one tail-end village leader was able to get military support by seeking the support of a befriended general. Other farmer leaders turned to the political leaders of Victoria municipality to help them out.

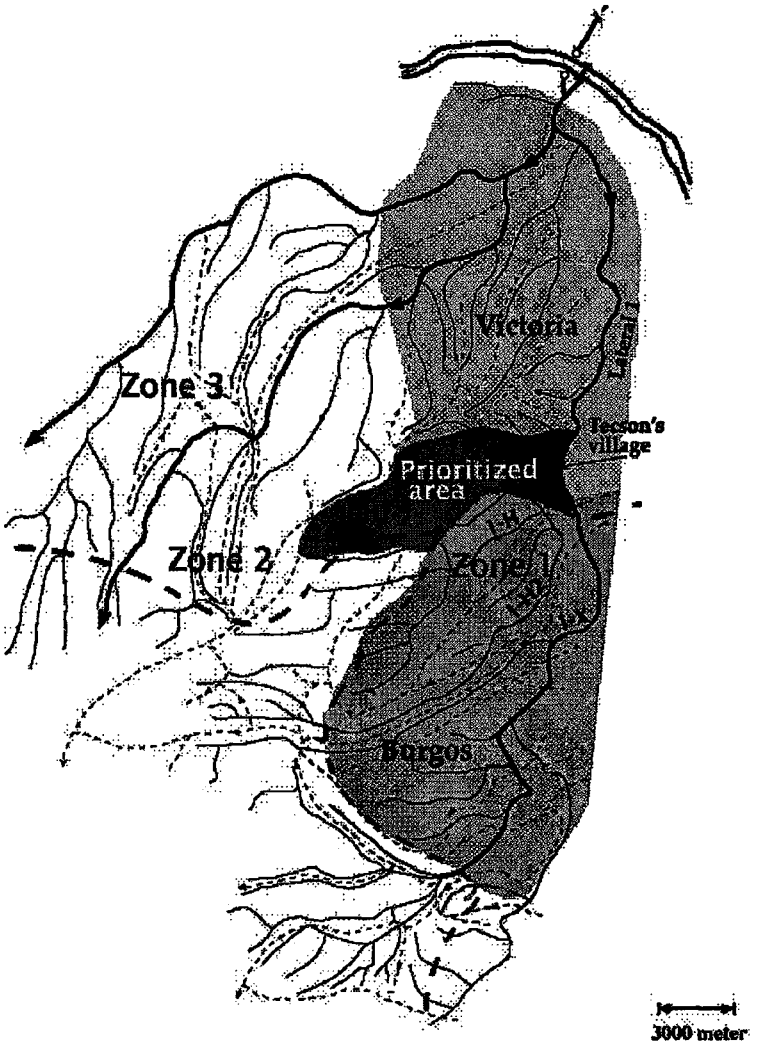
Secondly, in the years prior to 1984 and 1985 the Zone had been greatly enlarged, through the construction of the so-called extension area. The extension area enlarged the service area of the Zone by 40% to a total of 12,000 hectares.[3] This extension area was part of the UPRIIS project. As the Peñaranda system became hooked up to the Pantabangan reservoir, it was expected that the extra supply of water from the reservoir would be enough to support this expansion of the system. However, as water from Pantabangan hardly reached the District, the enlarged system had to depend on the fluctuating, insufficient supply of the Peñaranda river. Though not included in the program area, farmers in the extension area planted their paddies just the same. They explored both legal and illegal means to bring water to their area. Farmers located within the boundaries of the original system likewise tried to protect their interests. An intensified struggle for water was the result (for further discussion see the previous chapter).

Thirdly, the early 1980s saw the return of local (and national) politics. From the declaration of Martial Law in 1972 to 1981, no genuine elections were held. Especially during the first period of Martial Law, Marcos iron-rule had put an end to much of local politics. He closed down Congress, and purged any province, town and even village elected leaders who tried to remain autonomous. From 1981 onwards, when Marcos's empire started to crumble, politics livened up again. In 1981 village elections were allowed to resume and opposition candidates to run. Village elections were followed by municipal and then national elections (Fegan 2000: 377). Hence, during the mid-eighties – just before the ousting of Marcos in 1986 -, politics had really loosened up, and found irrigation to be an attractive issue for electoral struggles.

It was during these two dry seasons of 1984 and 1985 that the irrigation alliance of municipal secretary Juatco came into being. He was a core member of the 'conflict kindred'[4] headed by his uncle,

who was able to hold the mayorship of Victoria from 1980 to 1986. As one of his trusted men and political kingpin, the mayor gave to his nephew the politically important and powerful position of municipal secretary.

MAP 4.2: The 4 priority villages located in the downstream part of Victoria



Source: cf. NIA-UPRIIS, 4th District 1983

Soon, secretary Juatco discovered the political virtues of water management.

> The first time I became involved in irrigation was simply because I wanted to save my own fields from drought as well as the fields of my good friend kapitan Tecson. At the time I knew nothing about irrigation. During the dry season of 1983-84 however, more and more people started to come to my house and asked me to help them to get water to their field or village. That is when I discovered the political virtue of irrigation. Once you enable farmers to harvest, they will have strong feelings of *utang-na-loob* [debt-of-gratitude, JO], and their family will vote for you in the next election. (Interview held in March 1997)

His key concern was to bring water to the rice-fields of the four most southern villages of Victoria, mostly located along the canal networks of laterals 1-G and 1-H1, in the mid-stream part of the Zone (see map 4.2). The rice fields along especially the tail-end parts of these laterals are prone to water stress, as these laterals are long and have a limited carrying capacity. Moreover, the distribution gates for these villages had become focal points of conflict. Whenever given the chance, farmer leaders of downstream alliances of the original as well as the extension area of Zone 1 would try to change the gate settings in order to bring the water to their own areas. As these alliances were fighting for the rice fields of two downstream municipalities, it was not in Juatco's political interest to help them.[5]

Finally, water management was problematic as the water flow into the main lateral 1 was erratic as well. Upstream alliances along lateral 1, alliances from other Zones and even alliances along the District's feeder canal in the upstream District, were all struggling for water and changed upstream gate settings in their favour whenever possible.

Two other people belonged to the core of Juatco's irrigation alliance. One of them was a NIA ditchtender who had become a barangay kapitan of one of the four tail-end villages of Victoria. His son, who was also a NIA ditchtender, helped this man. The other principal ally of Juatco was Mr. Tecson, who at the time was gearing up to become barangay kapitan in another of these four tail-end villages. Secretary Juatco himself also came from this area. He was moreover in a good position to help this area, as he had

land as well as many family members located around a crucial headgate in the upstream part of lateral 1. Taking advantage of his potential control over this gate, and the crucial gates further downstream, he tried to do well for Victoria's tail-end villages, and thus win the support of their voting population.

Each of these people were seen as siga, capable of ruthless action, including killing if necessary. The father of secretary Juatco and the kapitan had become known for their bravery as Huk guerrillas in defending Victoria against the Japanese occupation army. Ever since the war, the kapitan had been the no.1 bodyguard of the mayor (and thus at the same time a NIA ditchtender). He was known for killing several Huk 'bandits' that challenged the rule of the mayor (who at the time was only a barangay kapitan) during the 1950s and 1960s.

Secretary Juatco was a toughguy as well. Next to irrigation, peace and order was his political business. Together with the kapitan, they would fight NPA guerrillas in the remote barangays in the municipality (NPA is the New People's Army, the communist guerrilla group still active today). Also the tail-end villages of Victoria, especially those located near the hills around lateral 1, were 'NPA-infested' during that time. The son of this kapitan, the NIA ditchtender, was also considered to be a tough man. He operated as one of the bodyguards of the secretary.

During these years, this irrigation alliance was patrolling the canals of Zone 1, and now and then went to the upstream District to open gates and bring the water to their area. Their reputation for toughness was useful during their operations. At the peak of the alliance's power nobody dared to touch the crucial headgates in the main lateral of the Zone, without the consent of Juatco or his principal allies.

The irrigation syndicate of kapitan Tecson

By 1986, the irrigation alliance around secretary Juatco lost much of its power, as the Juatcos lost the mayorship, hence the municipal secretary position, to their arch-enemy, the Meneses family. In the meantime, Mr. Tecson had managed to become the kapitan of his village. By being a member of Juatco's irrigation and political alliance, he became popular in his village for being able to secure water and to bring peace and order to this remote village. Kapitan

Tecson was able to further increase his power in the community, and was re-elected for three consecutive terms. As the law forbade him to stay for another term, he successfully launched his son as kapitan in the village elections of 2002. So far, he thus managed to rule his village for nearly two decades. Key to his political (and economic) success was his control over main system management in the Zone. He developed a secretive but well-established irrigation alliance that locally became known as the 'irrigation syndicate'.

Through his syndicate, the kapitan became the single most important player in the management of water of most of the mid-stream and tail-end parts of the Zone. How can a kapitan of a remote, little village can become so powerful? This can only be understood by recognising the peculiar position of his village in the irrigation layout of the canal system as well as the political layout of the area.

The village happens to be a bottleneck in the irrigation system of the Zone. Three major headgates are located within the boundaries of the village. Together, these gates control the water flowing to around 75% of the Zone's service area, and around 50% of the planted area during the dry season. Especially the 1-H headgate is important. This is the distribution point between the whole of the extension area (the 1-X canal system) and the original tail-end parts of the system, served by 1-H canal system (see map 4.2). Hence, the settings of these gates are crucially important for the distribution of water in the mid-stream and tail-end areas of the Zone.

Moreover, the village of kapitan Tecson happens to be at the boundary of two municipalities and even two provinces. This border-position gives the kapitan a lot of power over the downstream municipalities. The local and provincial politicians and farmer leaders of his own municipality and province do not really care about the captain's doings in irrigation, as long as his activities to favour the downstream municipalities/province do not threaten delivery of sufficient water to their upstream bailiwicks. The downstream politicians and farmer leaders, on the other hand, do care about his doings, but lack the political means to control the kapitan. As he is not a part of their political networks, he is – to a large extent - 'out of reach'.

The kapitan explored and exploited this strategic and peculiar position to the fullest extent. Economically, he has been able to

earn a significant income from his control over water. He entered into deals with farmer leaders of the downstream areas, mostly located outside of his own municipality. These farmer leaders usually represented areas that were excluded from the NIA's program area. Seeking the support of the NIA did not help them very much. The NIA could not stop them from planting their fields, but would only help them after serving the interests of the - politically powerful – upstream areas that were included in the program area. These farmer leaders could also not expect much support from Victoria's political leaders, as they would also first prioritise the needs of their own citizens. Hence, they had little option but to enter into a deal with kapitan Tecson.

Three different types of deals were being made, usually at the beginning of the dry season.[6] In exchange for the promise of the kapitan to do his best to secure water supplies to the area represented by a tail-end leader, farmer-leaders offered one or more of the following promises in return.

- *Water-for-threshing rights.* This was the most common deal. The kapitan would be allowed to thresh the area being served by irrigation water at the end of the season. The kapitan charged the regular threshing fee (6 sacks for every 100 sacks of threshed paddy). Local thresher owners were obviously not happy with this deal. The disadvantage to farmers was that local thresher owners would often provide them with credit in cash or kind (farm inputs) at the beginning of the season, in return for threshing rights. The kapitan would not enter into such a deal.[7]
- *Water-for-palay.* In return for water, farmers served would give one or two sacks of *palay* (unhulled rice) per hectare, to be collected and handed over by their leader;
- *Water-for-land.* In return for the promise to irrigate a certain area, the kapitan was given the right to cultivate a few hectares of land in that particular area.

These were not easy deals on the side of the kapitan. It was not certain whether the deal made would actually push through. He was not certain that he could deliver, as the total water in the system depended on the rainfall and river flow and water supply flowing towards the District and the Zone was to a large extent beyond his control. Even if he could deliver, he was not certain that the farmer leaders would actually meet their promise. Local leaders frequently experienced difficulty in collecting the promised

paddy at the end of the season. Farmers in the tail-end areas were often poor, and thus had many other financial obligations. Or they were unwilling to pay, as they were dissatisfied with the supply of water. In other cases, local leaders pocketed part of the palay collected from the farmers, as a return for their activities. Hence, this 'water market' was full of politics as well.

Also, the deals were not that 'business-like', or at least not in all cases. Several of the farmer leaders had befriended the kapitan, while some had even become his kumpare. Many argued that the kapitan 'helped' them to get water, and they naturally should return the favour by allowing him to thresh in their area. Still, others felt that they had no option but to enter into a deal and considered it *lagay* (a bribe or payment of extortion).

In addition to these deals made at the start of the season, and payable at its end, these farmer leaders were expected to provide during the season food, drinks and cigarettes to the kapitan's fieldworkers who were actually managing the water. Finally, these leaders also spent thousands of Pesos to buy a goat, a *lechon* (a roasted pig) or a bottle of Johnny Walker Whiskey as birthday presents for the kapitan's anniversary (this happened to be in the beginning of January, which was also the period of negotiating the deals for the coming dry season).

All in all it must have been a profitable venture. Most of the income seems to have come from the threshing business. At the height of his power in irrigation during the beginning of the 1990s, the kapitan operated no less than six threshers, which made him one of the largest thresher owners in the area. Given his popularity and power in the village, he threshed almost all fields in his own barangay. All in all, he told me that his maximum earnings from the threshers in a dry season had reached 10,000 *cavans* (a *cavan* is a sack of 75 liters of palay weighing around 50 kilos in the dry season, and 54 in the wet season). Assuming that farmers had an average harvest of 100 cavans (5 tons) per hectare, it meant that the kapitan was able to thresh an area as large as 1700 hectares.

Local people called it a 'syndicate', because of the secretive nature of the above-mentioned deals, and because of the secretive (and formally illegal) operation of the kapitan's workers in distributing the water to the different tail-end areas. The kapitan headed this 'syndicate', but never left his house. During times of scarcity farmer leaders frequently visited him, during both day and night. His men did the actual field operations; i.e. changing and

guarding gate settings and patrolling canals. The core of the kapitan's group consisted of three men. One was locally known as the *Hari*, meaning 'the King'. This nickname referred to his toughness, indicating that he would not bow for anybody. Another one was a local policeman hired by the barangay. These trusted men were also operating the kapitan's threshers at the end of the dry (and wet) season.

Politically, the syndicate was also important for this kapitan. It allowed him to build a wide socio-political network of powerful friends and allies in the area. His network was bigger than what is usual for a leader of a remote, small and resource-poor village.

> Today, I went to the birthday party of kapitan Tecson. It was even a greater event than I expected. Hundreds of people were there, and certainly not only mere farmers. I saw several village kapitans from the downstream areas, as well as a mayoral candidate and two incumbent municipal councillors. The place was loaded with drinks and roasted pigs. He boasted that these were all presents given to him. A brass band from the nearby military camp played during the party. It was an attention from his good friend, a ranking military officer from the camp. The Zone Engineer was there, as well as some of the fieldworkers. Conspicuously absent was the Operational Engineer (I learned a few days later that he secretly visited the kapitan the next day) (excerpt of research diary, January 1997).

The kapitan became such a crucial figure for the downstream municipality of Burgos, that he even started to play a role in its electoral politics. During 1997, when mayoral candidates of this municipality were gearing up for next year's elections, different candidates sought his endorsement. His control over water apparently allowed him to influence the electoral behaviour of farmer leaders of these tail-end areas. He even cracked jokes about it: "The municipality of Burgos consists of 50 barangays: The 49 ones officially included in its boundaries, and mine...".

His network and economic well-being built on his control over water made him an unbeatable politician in his village. Villagers voted for him for several reasons. Firstly, he ensured water in his village. Secondly, his threshing and irrigation operation provided work for many of his villagers. Thirdly, his connections allowed him to act as a broker to the outside world for many of the needs of his citizens.

The take-over of the Meneses alliance

Together, secretary Juatco and kapitan Tecson formed a strong alliance in irrigation. While Juatco could control a crucial upstream headgate, kapitan Tecson controlled the major gates located more downstream in the Zone. The power of Juatco to operate the upstream headgates was however dependent upon his position as municipal secretary. He lost this position when the political alliance headed by his mayor-uncle had to give way to another mayor in 1986 (see below).

Juatco's power was further reduced when his family's rivals, the Meneses family, re-gained the mayoral position in the 1988 elections. As discussed above, mayor Meneses was by far the most powerful municipal politician in the recent history of Victoria. Mayor Meneses was the typical 'self-made man'. His family did not even originate from Victoria, but from the downstream municipality of Burgos. He built his political career on his popularity as a manager of the local cock-fighting arena. He was vice-mayor from 1968-72, and mayor from 1972-80 and the 1988-98 period.

Secretary Juatco and the Meneses family were not just political rivals: they were archenemies. While being politically close before, the Juatco and Meneses family became involved in severe political struggle during the 1980s and 1990s. Consequently, when the Meneses alliance took over the control of the town hall, ex-secretary Juatco lost much of his power in irrigation.[8]

This also hampered the operations of kapitan Tecson, as he could no longer co-ordinate with Juatco in the scheduling of water in the head-parts of the Zone. Kapitan Tecson could not turn to Mayor Meneses as they were political rivals as well. During barangay elections, Mayor Meneses launched and supported several local political leaders to unseat the kapitan, but to no avail. The kapitan returned the favour by supporting mayoral candidates running against Mayor Meneses.[9]

Until around 1995, Mayor Meneses did not bother too much about the irrigation activities of kapitan Tecson. The mayor would occasionally show up in Tecson's village following complaints of water scarcity in the tail-end villages of his upstream municipality. However, the mayor did not care about the deals of the kapitan with farmer leaders outside of his jurisdiction. Hence, the 'syndicate' could flourish during this period.

Starting 1995, kapitan Tecson's rule in irrigation came to an end when one of the four legal sons[10] of Mayor Meneses became active in water management. This son – henceforth Meneses Jr. - took over the control of water management in the Zone. Being endorsed by his father, Meneses Jr. was too powerful an actor for kapitan Tecson. Tecson could no longer control the headgates of the lateral, not even those located within his own territory. His men were still operational in the field, but their control over water was greatly reduced. Consequently, he could no longer help the tail-end farmer leaders in their search for water, and his threshing activities in the downstream municipalities came to a standstill.

The reasons for the Meneses family to get involved in water management were similar to those of the Juatco alliance. Their primary objective was to gain politically in the four tail-end villages of the Victoria municipality. By showing their capacity to safeguard the crops of these villagers, they hoped to get the votes of these villagers in return. The principal allies of Meneses Jr. in his irrigation operations were vote brokers and political candidates from these four villages. It was hoped that their public activities in irrigation would lead to their election during for instance the 1997 barangay elections, and/ or would generate votes for the Meneses family in the 1998 mayoral elections.

Moreover, Meneses Jr. had political aspirations himself. While he publicly claimed that he was only active in irrigation because he was asked to do so by his father, he was at the same time working for his personal political career. Mayor Meneses was old and was legally not allowed to run again in the 1998 elections. The family was undecided about who should take-over his position. The elder brother of Meneses Jr. wanted to run, but his father was hesitant because of the poor public image of this person. Just before the elections, the family broke into two rival factions, that each put forward a mayoral candidate. The son involved in water management turned out to be one of them.[11]

Meneses Jr. was particularly active in irrigation during the 1997 dry season. He tried to use the irrigation issue as a vehicle to boost his own popularity and to develop his political network. He carefully selected his allies in the tail-end villages, and involved them in his irrigation campaigns. He put them in charge of guarding crucial gates, so that they could claim to be responsible for water deliveries to reach their respective villages.[12] He also combined his time spent in irrigation with political activities. Managing water is a time-consuming

activity as it requires long hours of guarding gates and patrolling canals. It involves many eating and drinking sessions, which are excellent opportunities for political strategizing. Meneses Jr. had numerous meetings with his allies during these irrigation activities. He had overt discussions while guarding gates, as well as back-door meetings to discuss politics.

Meneses Jr.'s control over water management in the Zone was – like secretary Juatco before – facilitated by spatial factors. His home village and the political bailiwick of the Meneses family were located along the main lateral, just upstream of Juatco's area. This gave him an easy control over two upstream headgates of lateral 1 (one of his brothers was even barangay kapitan in that area), which helped him to secure water supplies to the tail-end villages of his municipality.

The Meneses family also had previous experience in the water management of the Zone. The family rice lands (amounting to eighty hectares) were located along lateral 1 as well. Most of the land was located along the left side of the canal, outside the official service area of the District. In order to irrigate these lands - which is thus formally illegal - a checking structure in the lateral needed to be checked to the maximum level, and for a long period of time. This operation conflicted with water needs in the rest of the Zone. The family thus had previous experiences in co-operation and struggle over the water in the lateral.

The management practices of the political alliances

The political leaders of the Juatco/Tecson as well as the Meneses alliances were directly and intensively involved in irrigation management. They did not remain powerful outsiders who occasionally interfered by pressuring the NIA officials. Nor were they just mediating in conflicts between the irrigation agency and groups of tail-end farmers. On the contrary: they were actually managing the system themselves. When water became scarce, the municipal-level politicians led their alliance in operating gates, patrolling canals, and scheduling water deliveries to the different areas of the Zone. They would be operational as long as it took to satisfy their clients' demands, which could be several weeks.

Their involvement was intense. It was a full-time job, and more than that. It could have the intensity of an electoral or even military campaign. The irrigation campaign of Meneses Jr. during the 1996-

97 dry season may serve as an example. That year, it took him around 25 days of hard, full-time, around-the-clock work to satisfy water demands in the tail-end areas of his municipality. A year earlier, he spent even longer to do the job. His core group consisted of himself, a bodyguard and three close allies (all politically active in the town or the downstream villages of the municipality). During their operations, they mobilised several more people to guard the main gates and checking structures. Most of the work in the field was done at night. During the night it was relatively easy to bring water downstream, since the farmers in upstream villages were not present in the field. Also, one has to be present at night to stop rival groups of tail-end farmers from changing gate-settings and 'stealing water'.

During the day he was also busy with irrigation matters. He had to make sure that the gate-settings of the previous night would not be altered. Or, that the gates would be set to build up a stock of water in the main lateral, for distribution during the coming night. Also, he had to entertain several farmer leaders who daily visited his house in the morning, seeking help and information. He was also busy with mobilising support for his doings and fighting opposition. Both day and night he and his allies had to contact their followers guarding gates, discipline farmers in water use, seek advice, solve conflicts and counteract moves of rival groups seeking control over the water. Hence, their operations required a vast intelligence network, to know the events taking place in the field and the moves of their enemies.

It was also a costly operation. Meneses and his core allies were expected to provide meals and drinks to their followers involved in the irrigation campaign. During the 1996-97 operation, Meneses used a pick-up truck and one or two motorbikes. All in all he estimated his costs for the one-month operation to be around thirty thousand Pesos (≈ 900 USD) for food, drinks, gasoline and repairs to the vehicles.

In short, this section has shown so far that municipal and barangay politicians were deeply involved in the main system management of Zone 1. To these politicians, controlling irrigation water was a way of building political alliances as well as gaining electoral support. For one village politician, it brought economic gains as well. As was shown, these politicians do not simply interfere in irrigation management: they were actually in charge of distributing the water. In other words, they were deeply involved in

a matter that is properly 'internal' to the bureaucracy, i.e. the NIA, in partnership with the IAs. Below, I explore how the NIA District engineers were related to – and dealt with - these political alliances. Subsequently, I will examine the doings of the IA farmer leaders in this Zone 1.

The Strategy of the NIA Engineers in Zone 1: Risk Aversion and Delegation

The water management in Zone 1 was controlled by the political leaders discussed above, rather than by the NIA engineers. These engineers were involved in the management of the Zone. They made allocation plans, scheduled water, and actually had their fieldworkers operate the gates, especially during daytime. They also made a difference and thus were frequently visited by tail-end farmer leaders to help them out, but the local politicians had the upper hand. To these politicians it made sense to co-ordinate with the NIA engineers, if only to legitimate their doings. However, it was rather the other way around. Given their subordinate position, the engineers needed to accommodate their doings to the dominant politicians in charge.

Both secretary Juatco and Meneses Jr. would probably disagree with this line of reasoning. They both argued that they were involved in water management because the engineers were not doing their job properly. As Meneses Jr. put it, while guarding a gate during the night:

> Do you think I like being out here, and get my pick-up battered to pieces due to these poorly maintained canal roads?! I would prefer to be sound asleep just like these engineers

In fairness to these politicians, they had a point. NIA fieldworkers also frequently criticised the NIA engineers for not leaving their office, and not supporting them in the field. The Zone Engineer of this Zone did not seem to make a serious effort to lead his men and get control over the water flows. He lived in a municipality outside of the Irrigation District, and did not spend long hours in the field, even during times of scarcity. During the 1996-97 dry season, I found the Operational Engineer in the field taking charge of water management on two occasions only. Both times, he went

to the field to satisfy demands of superior officers in the NIA's central office in Manila, following successful visits to the NIA's central office by a leader of tail-end farmers.

However, given the perilous and politicised character of water management in the Zone, keeping a low profile was the logical thing for these engineers to do. As the opening quote of this chapter already indicated, the authority of these engineers was easily over-ruled by local politicians, toughguys and or farmer leaders. In case of conflict, these engineers were not so certain that their superior officers would back them up (see chapter 7 for an example). Under these circumstances, playing safe is a survival strategy often adopted by bureaucrats leading to apathy or formalistic behaviour.

> Bureaucrats face such personal and career insecurity that they adopt highly formalistic procedures to protect themselves against possible allegations of wrongdoing or even of responsibility for particular events or outcomes. (Moore 1992: 67)[13].

During the Juatco-Tecson hegemony the NIA engineers had developed more or less friendly relations with the Juatco alliance, with the wife of secretary Juatco working in the NIA office. Relations with kapitan Tecson were more than just friendly. One of the engineers had become a kumpare of the kapitan, and the two were also frequently meeting each other in the local chapter of their religious denomination. Favours were flowing both ways. NIA equipment as well as NIA water was used to construct and 'irrigate' the kapitan's fish-pond, and its product regularly found its way to an outdoor lunch of the engineers. Also, as mentioned above already, the kapitan's birthday party was well visited by the engineers

The engineers co-ordinated their actions in main system management with the kapitan. Farmer leaders visiting the office as well as the NIA gatekeepers were told to co-ordinate with the kapitan, and the Zone Engineer frequently visited him in his village. Rumour among tail-end farmers had it that the engineers were financially benefiting from the deals made by the syndicate. This rumour however, did not seem to match with the rather humble and straight character of the engineer involved. However, even if he would be open to such 'grease money', the kapitan would probably not be inclined to pay for it. He simply did not need the support of the engineers that badly.

The more logical explanation for their co-ordination with the

kapitan is that they genuinely felt that it helped them to carry out their work. As one fieldworker put it: "If we can't beat them [the politicians, JO], let's join them". Obviously, such co-operation is a sensitive matter. The NIA's engineers should not openly support or join local interest groups, let alone politicians. The Operational Engineer legitimised their co-operation with the kapitan as follows.

> There is nothing wrong with his doings. He simple helps us in managing the system. Actually he is a great help to us. I regularly discuss with him how to prioritise the different areas. Also, the Zone Engineer and the gatekeepers in his area co-ordinate with him. He helps me in securing the water needs of the program area. If possible we also do our best to also help those farmers outside the program area.

By joining forces with the local politician usurping their functions, the NIA engineers could at least still claim to be relevant actors in irrigation. This is important to the office, if only for financial reasons: their income crucially depends on the collection of irrigation fees. For kapitan Tecson, the alliance with the engineers also made sense. It gave him the opportunity to legitimise his role in irrigation management, and to counter the allegations that he was running a clandestine operation. Rather than being a syndicate leader illegally operating the NIA gates, he could now claim that he was actually helping the NIA to serve the needs of the farmers. Once again, this is the way the Operational Engineer put it.

> I am actually grateful to the kapitan. It is only practical. Often, farmers enter his village at night to look for water. He requires them to first visit his house. Being the barangay kapitan, that is the logical thing to do. It is his responsibility to look after the safety of his people. This village is located in a remote area that was an NPA area before. He is also protecting my gatekeeper, who is sometimes staying there overnight. They then co-ordinate the water flows to the different areas.

In the case of Meneses Jr. , there was no alliance with the NIA's engineers.[14] This is partly because the mayor's son did not feel the need for such an alliance. He could do without them. There is another reason as well. The NIA engineers were related to rival political or irrigation alliances. As explained already, kapitan Tecson was an archenemy of the Meneses family. Also, many of the NIA

engineers were sympathetic to a rival irrigation alliance active in Zone 2 (see further below) Hence, there was animosity between Meneses and the engineers. In his case however, he was powerful enough to implement his rule, despite the opposition of the NIA's engineers.

Since Meneses Jr. was the mayor's son, - and intervened in irrigation with the approval of his father - the NIA engineers had little option but to accept his 'interference' in water management. As said earlier, mayors have considerable regulatory powers in their jurisdiction. He can therefore harass the NIA in many ways, especially because the District office is located in the centre of Victoria. The District Chief put it as follows.

> What can I do about it? You better not mess with the mayor. He is a hot-headed man, and has many means to have it his way. One time he was angry with me, and he forced me to humbly make it up with him. He ordered his police men to stop the NIA trucks carrying gravel and sand from passing town. If he likes, he could do other odd things like having his policemen fining my field men for driving a motorbike without a helmet.[15]

Given their inferior position vis-à-vis Meneses Jr., the main strategy of the NIA's engineers in Zone 1 thus was to accept his power, be accommodating, and to stay out of trouble. They had developed five kinds of practices that fitted this strategy.[16]

Their first practice was to always include the whole of the Victoria rice fields in the program area. As this suits the interests of the politicians of Victoria, it gives the NIA's field staff room for manoeuvre. The Zone Engineer can actually take charge of water management during daytime. It also means that he can order his field personnel to co-ordinate with the intervening politicians, as both are directed towards serving the same areas.

Moreover, the engineers set the boundaries of the program area rather conservatively. They excluded the areas outside of Victoria that had proven to be prone to water stress. The engineers of course realised that the actually irrigated area might double the size of the program area. However, by doing so they could prioritise the upstream areas of Victoria, and at the same time avoid legal claims or formal petitions from the larger part of the tail-end areas. The engineers could still be accommodating to these tail-end farmer leaders and politicians, by giving water whenever its availability

allowed them to so. They thus satisfied the powerful demands of the upstream politicians, while at the same time avoiding conflict with downstream power holders.[17]

Secondly, the allocation schedules of the District would start the land preparation activities in the upstream areas, while the tail-ends were the last to receive water. The IRRI experiment with scheduling water in Zone 1 in the 1970s showed that it made sense to do otherwise (see chapter 1). It reduced crop failure in the tail-end, without affecting the upstream areas. Even during that time, mayor Meneses already resisted this type of water scheduling, as it hampered the irrigation of his estate. After IRRI stopped the experiment, the NIA's management never again tried to pursue this politically dangerous 'operation dulo' to irrigate the tail-end areas first. It is the official - and politically convenient - practice of the NIA that the upstream areas of Victoria are to start ahead of downstream areas.

Thirdly, water flows are only measured at the intake of the system and at the headgate of the lateral of Zone 1. The engineers did not bother to measure water in the Zone itself. They argued that they lacked the resources to maintain these measuring devices, and that farmers would destroy them anyway. Whatever the validity of these arguments, the convenient result was that it thus remained unknown how much water was being delivered to different parts of the system, and how much was wasted. In such a way it became impossible for field-staff or farmer leaders to present substantiated claims about areas not having received their due share of water.

Fourthly, the engineers avoided taking a firm position when farmer leaders visited their office asking for water. Their regular practice was to grant all requests. As the District Chief commented: "I dance the *sarzuela* with them (an old Spanish light opera or dance, JO) I go wherever they want to go." The regular practice was to give a visiting farmer leader a piece of paper, which was a written order to a certain gatekeeper to help this particular farmer leader as much as possible. The latter practice led to awkward situations in the field. For instance, NIA gatekeepers sometimes received several conflicting commands regarding gate settings during one day.

Fifthly, the engineers tried to delegate their responsibilities to the field level. During times of scarcity, the Chief tried to be out of office to avoid meeting angry or desperate farmer leaders. Also, they tried to stay out of the field, and preferably would not accompany farmer leaders that visited the office to their respective field areas. As said, they provided them with (conflicting) commands written on

small pieces of paper intended for their field-personnel. In such a way, the management of water in Zone 1 was thus thrown back to the NIA's field staff as well as the farmer leaders themselves.

In short, the NIA engineers found themselves in a weak position vis-à-vis the political alliances operating in the Zone. In order to survive, they took a low-profile role. They tried to develop friendly relations with the politicians, be accommodating, and first and foremost, tried to stay out of trouble.

The weakness of the farmer federations in Zone 1

According to the organisational contracts, the IAs and its federations in the Zone were to be non-partisan, a-political organisations of farmer water users. Their role was to support the NIA in main system management. Given the dominance of the political alliances, it is no surprise that this did not become reality. The federations were formed and to some extent became operational, but they remained weak organisations, largely disregarded by both the politicians and the NIA engineers. To farmer leaders in the tail-end and mid-stream areas, the IAs and federations were seen as one of the possible ways to pursue their interests in irrigation.

The Juatco alliance was organised along political lines, and had little to do with the IAs and its federations. This is logical, given the fact that these farmer organisations were set up after the heyday of the Juatco alliance. However, although kapitan Tecson's network continued to exist after the IAs were instituted, he was not forced to accommodate with the federation. The federation was too weak to be taken seriously by Tecson. One of the original federation leaders tried to develop the strength and cohesion of a tail-end federation. He wanted it to become an organisation that was in charge of water scheduling in the Zone, in co-operation with the NIA. After a few years he resigned. He was frustrated with both the NIA and his farmer colleagues.

> I am disappointed and angry. All this talk about partnership, and all the training on water management. It was useless. The monkey business in water is still going on. Even the engineers are involved in it.

Similarly, Meneses Jr. did not pay any attention to the IAs or the Zone federation. It was not in his interest. As shown, he wanted to use irrigation to build his political network, not a functional, a-political organisation. He dealt with political leaders and ignored the IA leaders.

The farmer leaders representing water-scarce areas were pragmatic about the irrigation institutions. They tried to discover and develop any new ways and means that would give them access to those in control of water. To get access to the politicians – including kapitan Tecson – it was not necessary to be an IA or federation representative. However, to get access to the NIA engineers or field staff it might help.

The most successful tail-end villages (or a group of villages located along a sub-lateral) were those that followed different strategies at the same time. They would put forward a group of leaders that tried to establish relations in different alliances relevant for irrigation. Hence, one of them would become an IA leader and thus become close to a watermaster, the Zone Engineer or the Operational Engineer. At the same time, other leaders would try make a deal with kapitan Tecson. If needed, a third actor would try to become close to Meneses Jr., to see if he could help them out. They thus made use of variety of formal, informal, legal and illegal strategies. It was perfectly possible to find a group of village leaders participating in a formal meeting in the NIA office during daytime, while at night the same group might join forces with one of the political leaders.

The IAs and the federations were thus not irrelevant. The IA organisation helped and legitimised tail-end villages to develop fruitful relations with the NIA fieldworkers and the engineers. The Zone federation now and then came together, usually on the initiative of the NIA. During times of scarcity, the IA leaders of water-scarce areas would visit such a meeting. They would try to influence the NIA engineers and technicians to favour their respective areas, and try to gather information. They would learn about the NIA plans and the plans of their rivals. This might help them to (re-) design their tactics to bring water to their own areas. At the end of the day though, these meetings did not count for much. As Meneses was pulling the strings, the real decisions were not made in the federation meeting.

> Today was a funny day. The Zone Engineer called for a Zone federation meeting in the field. This was the first time this season.

> Apparently the lobby of one the tail-end leaders in the NIA's central office has been effective. I pitied the Zone Engineer. He did not seem to realise what was going on. He discussed the water problems in the Zone, and determined a rotation scheme for the days to come. He seemed to be satisfied with the results of the meeting, and seemed to believe that his plan would actually push through.
>
> What he did not know, was that earlier that morning a meeting had been held at the house of Meneses Jr. Some of the leaders present had also visited that meeting. Most of the field personnel also knew about it, but did not bother to tell the Zone Engineer. It was clear to everybody –except perhaps the Zone Engineer - what was going to happen in the coming days. Meneses had already instructed his men to build up a stock of water in the main lateral during the day. Tonight, he would start implementing his schedule. No matter what the Zone Engineer might have decided. At best, Jerry, one of the influential watermasters, might be able to bridge the gap. He might try to show Meneses the advantages of gearing his nightly schedules to the schedule of the Zone Engineer. If not, the Zone Engineers' schedule is doomed to fail. (field notes, February 1997)"

To conclude, rival and politically informed alliances were dominating water management in Zone 1. In the triangle of accommodation (Migdal 1988) between local politicians, NIA engineers and farmer leaders, the local politicians had the upper hand. They used their control over water as a source of political patronage, and in one case for economic benefit. The NIA engineers had little option but to be accommodating to these political interests, while the power of local politicians turned the IAs and federations into rather weak organisations. This, however, was not true for the whole of the District. The alliances in the water management of Zone 2 had a very different outlook.

The Case of Zone 2: an Effective NIA-IA Partnership in Water Management

The dominant alliance in the water management of Zone 2 was remarkably different from the rival alliances of Zone 1. It was an effective alliance of NIA engineers, NIA field staff and IA leaders. Any evaluation study would argue that turn over was a success in this Zone. The study would probably enthusiastically conclude that

it was a true partnership between the NIA and IA leaders, who successfully co-managed the water in this Zone. As we will see however, this alliance was as much about politics as the alliances in Zone 1. The difference is that the politics in Zone 2 were internal to the NIA-IA institutions. It will moreover become clear that this alliance was based on strong and multiple interpersonal relations of political patronage, friendship and real and ritual kinship.

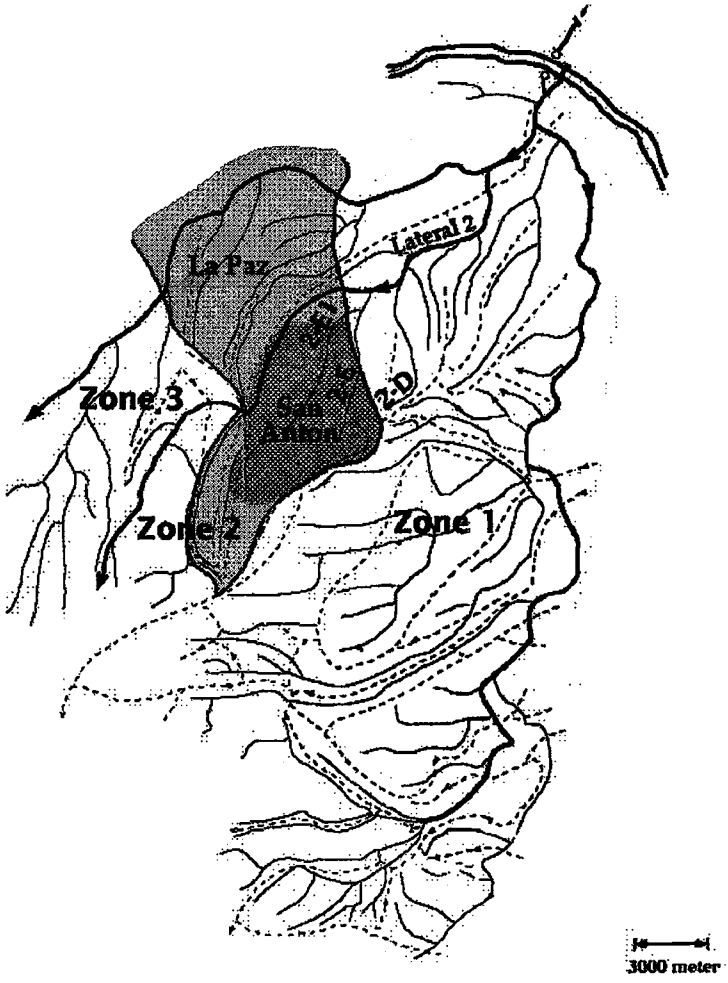
An effective alliance in water management

The Zone 2 alliance was very effective in water management. The challenge for this alliance was a relatively easy one, as the physical conditions were more favourable than in Zone 1. Zone 2 was a much smaller Zone (5,200 ha against 10,800 ha for Zone 1), and was conveniently located in the middle of the District. Due to its relatively low elevation, surplus water from the two other Zones supplemented the water supply of this Zone. Nevertheless, good water management was still difficult to achieve. The tail-end sub-lateral network (2-E and its branches) consisted of long canals serving a large area (see map 4.3).[18] It required much effort to prevent water stress in this area. The alliance was able to overcome these difficulties. Some measures of its success are that only a few hundred hectares were usually excluded from the program area in Zone 2, against several thousands of hectares in Zone 1. Also crop damage due to water stress was much less of a problem in Zone 2, than in Zone 1.

This alliance effectively combated scarcity in Zone 2, by controlling the headgates and schedule of water distribution within the Zone. If necessary, the alliance would go out at night to fight the practices of rival alliances from other Zones. They would defend the gate settings of the major gates distributing water between the different Zones, and – if given the chance – would change these settings to their advantage. Within the Zone, they followed a strict scheduling of water among the different sub-laterals. They saw to it that the different sub-laterals received their due share. Gate settings and the rotation schedule were now and then violated, but these transgressions were effectively acted upon. Within the territories of the IAs, IA Presidents and NIA field men worked together in water management in the sub-lateral system. They removed upstream checks to ensure that water flows were

not unnecessarily delayed, and could reach the tail-end areas as well.

MAP 4.3: San Anton village as part of the municipality of La Paz



Source: cf. NIA-UPRIIS, 4th District 1983

During times of scarcity, the IA leaders of the tail-end areas, the NIA field men and the Zone Engineer met each other almost daily at a NIA field office located along the main lateral. They would discuss the water distribution problems, and how to solve them. It

was also the pick-up point for nightly raids, to defend their interests vis-à-vis the other Zones.

Other things were managed smoothly as well. The NIA – often with the support from the municipality or the congressman – ensured well-maintained roads and canals. The remaining ditchtenders and the IAs took care of canal cleaning. Moreover, fee collection was relatively high (mostly between 50-90%) as many farmers were willing to pay in full.[19]

The Zone Engineer of this Zone was the central figure in this alliance. He was an industrious manager who commanded his field men in the Zone, and ensured they showed up for work. He was in charge of the water scheduling practices, and he was actively involved in patrolling canals and – if necessary – in the nightly raids.

A political alliance

It is not just water, that brought these people together and what made the Zone Engineer so eager to make it happen. First and foremost, this water alliance was a political alliance.

The Zone Engineer was the son of the vice-mayor of La Paz. The village of San Anton –and its surrounding villages - was the bailiwick of his father. This village covered the larger part of the tail-end area of Zone 2 (the 2-E irrigation network, see map 4.3). The family of the Zone Engineer originated from this village. His father had been in public office for almost three decades. Over ninety percent of the San Anton voting population voted for this man, while he also got a majority vote in the neighbouring villages. As San Anton village was good for more than 10% of the total voting population of La Paz, it provided the vice-mayor with a mass base that might help him to win. He was very popular in the area. As irrigation was vital to the economy of these tail-end rice villages, his son's doings as a Zone Engineer were strategically important to reproduce the political popularity of his father.

The three IA leaders of San Anton, and some of the NIA field men that lived in this village, were part of the political machinery of the vice-mayor. During election time, they campaigned for his re-election. As kindred leaders, they ensured that the votes of their kindred and allies went the right way. Moreover, they also campaigned for the (re-) election of the son of one of the three IA

leaders of San Anton. This son was a municipal councillor (and a former NIA engineer and a contractor of NIA works as well), and a close ally of the vice-mayor. The IA President's membership of this effective alliance that brought the needed water to the village helped to boost his son's popularity in the village. Finally, this irrigation *tropa* (troop), was also close to the barangay kapitan of San Anton, and helped him to get elected. In return, the barangay kapitan was supporting the irrigation alliance.

> Sometimes, I order my barangay *tanod* [the village police, JO] to accompany the NIA collectors, because they are carrying a lot of money with them. Now and then they also escort the IA Presidents at night, because they might meet armed men of other groups at the gates (interview with the barangay kapitan of San Anton, January 1997).

An economic and financial alliance

The Zone Engineer spent a lot of money in water management and keeping the alliance together. He usually paid for the daily lunches and drinks with the field men and the IA leaders in the NIA's field quarter. They used his truck to patrol the gates and to move upstream in the nightly patrols and raids for water. After such a nightly raid, he would sometimes bring the gang to their favourite beer house. He would then shoulder most of the costs involved. He was not only doing this to facilitate his NIA water management duties and to further the political career of his family. His effectiveness in water management was also important for his own businesses. If he succeeded in bringing water to the tail-end of Zone 2, his business would flourish.

Firstly, he owned one of the largest grocery stores in the town of La Paz. Many villagers of San Anton favoured his place. As their incomes mainly depended on the rice harvest, their expenditures in his shop (and their capability to repay their credit) were related to the quality of the water supply.

Secondly, the Zone Engineer had been able – through connections of his father - to acquire the exclusive distributing rights for certain beer and soft-drinks brands to the outlets in the tail-end villages of Zone 2. He thus had a clear stake in supplying the rice fields of this tail-end village with sufficient irrigation water.

> My sales during the dry season depend on the yields of the farmers. If they have a good harvest, they will spend much on drinks. During March, [this is the harvest month of the dry season crop, JO] many villages celebrate their barrio fiestas. If the harvest is good, my sales will at least triple. I will earn good money then, because of the large volumes involved (interview with the Zone Engineer, October 1997).

The Zone Engineer developed an economic stake in fee collection as well. Many farmers chose to pay their irrigation fees in kind, i.e. by sacks of palay.[20] The NIA provided the collectors of these sacks an allowance for carrying and hauling. This could be a lucrative activity, provided that one could collect large quantities in accessible areas in a relatively short period of time. This Zone Engineer was able to meet all these conditions.

As he was well known to the farmers and as the majority was pleased with his performance, it did not take much time and effort to persuade these farmers to pay their dues. He could make a substantial income from carrying and hauling large quantities of fee payments in kind, since he already possessed a truck for his grocery and distributing businesses. Finally, he was able to use his connections in the District office as well as among politicians to keep the canal roads in good condition (see chapter 5). This allowed him to use his truck. Also, as the passable roads allowed his truck to get close to farmers' fields or houses, his expenses for labourers hauling sacks of palay could be limited.

Being close to this industrious and well-connected Zone Engineer helped the tail-end IA leaders to develop their own interests as well. For instance, it helped one of the IA leaders to establish his name. He had married a woman of San Anton and had recently moved into the village. As a small-time broker of irrigation water and services, as well as a vote-broker for the vice-mayor and the town councillor, his star rose quickly. Another IA leader, who was already involved in palay trading, was able to get an extra-income from collection-in-kind. Through the patronage of the Zone Engineer, he was also given a NIA contract for hauling palay to the office.

Finally, they were all able to acquire an income out of the fee collection incentives given to the IAs. Collections in the area were usually high (on average between 50-90%) as farmers had good harvests and were willing to pay, as they felt the difference made by

the alliance. Moreover, the Zone Engineer ensured that his collectors were doing their utmost best to collect the dues from the farmers. Consequently, the incentives for the IAs were high as well.[21] Though officially not allowed, the IA Presidents would use at least part of that money for their personal benefit. The Zone Engineer, though aware of these practices, looked the other way (see further chapter 6).

To summarise, the effective irrigation alliance of Zone 2 was not just about water. It was an alliance for which water management was the key to a sophisticated political and economic project. The Zone Engineer was the central figure in this alliance. Through his patronage, participating in this alliance was a fruitful endeavour for the field personnel as well as the IA leaders.

An inter-personal alliance: friend- and kinship

This tight and effective alliance did not emerge out of the blue. Firstly, it was grounded in family- and kin relationships. The IA leaders and NIA fieldworkers of San Anton as well as the Zone Engineer were all related to each other as family members or through wider kin relationships. Secondly, the alliance invested a lot of time in befriending each other. The alliance started to emerge in the end of the 1980s. At that time the IAs were being formed. The alliance however got momentum when the Zone Engineer took the position from his predecessor in 1994. As described above, he spent a lot of money in building and reproducing the alliance. By 1997, the IA Presidents, some of the NIA fieldworkers and the Zone Engineer had developed into a *barkada* (a group of close friends).
The barkada started with the three IA Presidents of San Anton. Soon, a fourth IA President from a neighbouring upstream village – and upstream municipality - joined the group.

> The IA Presidents of San Anton befriended him to neutralise their upstream problem with water. They always had problems with the main gates of 2-D and 2-C. This IA President was actively involved in operating these gates, as the 2-D gate leads to his area. Having him as their friend, the co-ordination has improved a lot. (interview with a ditchtender working in the San Anton area, October 1997)

During times of water scarcity and during the collection periods of irrigation service fees, the irrigation alliance had intensive contact. Daily, at least part of the group could be found enjoying lunch, coffee or a drinking session at the NIA's field quarters, or in the house of one of them. The barkada also gathered during the birthdays of the members and of their spouses, and during barangay fiestas. It is safe to say that at least a part of the group had a social gathering once every week, and that they met almost daily during the dry season.

In several cases, the friendly relations were further cemented in kumpare relations. As the majority of the people belonged to the same village, they often had already become each others *mare* or *pare* in earlier confirmation, wedding or baptism occasions. Two occasions stand out, as they were directly related to the barkada of the irrigation alliance. One of the IA Presidents of San Anton asked the Zone Engineer as well as the two other IA Presidents of the village to be kumpares at his daughter's wedding. Secondly, the IA President of the upstream village also entered into a *kumpare-buo* relation with the NIA's watermaster in the area.[22]

San Anton: the breeding-ground of the NIA

The Zone 2 alliance was not confined to the field only. There were good relations with the NIA District office as well. The Zone Engineer, the NIA field men and the IA leaders had easy access to the office, and friendly relations with the engineers. The office was sympathetic to the needs of the Zone. The engineers tended to support the Zone, when the need for water was critical. The office included the tail-end areas of San Anton in the program area, although these areas were difficult to irrigate. The Zone, and especially the San Anton area, was also favoured when it came to the selection of areas for maintenance and improvement works. When the works started, the equipment would often first go to this Zone. As a result, the condition of the irrigation canals and roads were good, much better than the infrastructure in Zone 1 (see chapter 6 for more discussion).

To explain this, the Zone Engineer was undoubtedly the crucial factor. He could be classified as a 'champion of change'. He was able to develop an effective alliance, both in the field and in the office. He managed to enrol the other actors into a complex

political-economic project, that served the needs of the farmer water users, the political interests of his family as well as his own commercial interests. However, it cannot be all attributed to the personal skills and motivations of one man. Relations between the NIA and San Anton were well developed long before that Zone Engineer came into the picture. A key-factor in the success story was the intimate socio-political relations between the NIA leadership and the tail-end village of San Anton.

No less than three of the engineers of the District office originated from this rice village. This was about a third of the total engineers. Moreover, they occupied ranking positions. One of them was the Zone Engineer, the other two headed the operations and the maintenance sections. Moreover, two others engineers from this village had previously been involved in the management of the District, but had left the NIA. Being contractors, they were still connected to the District office, as they were now and then carrying out projects for the agency. Finally, the village had 'delivered' other engineers to the NIA when the system was still under construction in the 1970s.

This, of course, is no coincidence. It is a clear case of the padrino system of hiring people into the bureaucracy (Varela 1996). When the NIA was in need of engineers during the 1970s, the NIA fieldworkers from San Anton mobilised a prominent co-villager to utilise his close friendship with the District's superintendent of those days. They had him recommend their sons to this Chief. When the first of these sons were able to enter the NIA, co-villagers got also attracted, and were subsequently helped by their predecessors to get into the agency.

> When the UPRIIS project started in 1973, the NIA was in need of engineers. I was among the first batch of engineers from San Anton that graduated during that time and that entered the NIA. In 1978, a second crop of engineers from San Anton graduated. Many of them had taken up engineering, because seeing us having good jobs within the NIA inspired them. Other barangays also had engineers graduating, but they went into other agencies or companies, following their predecessors as well. (interview with an engineers previously employed by the District office, September 1997)

The success of the Zone 2 partnership between the NIA and the IAs then, has emerged from 'thick' socio-political relations between

its tail-end village of San Anton and the engineers and fieldworkers of the NIA. The San Anton engineers were family- or kin related to each other, to the NIA fieldworkers and to many of the San Anton villagers. The padrino system not only brought several engineers of San Anton into the NIA, but also around ten NIA fieldworkers. This gave way to smooth NIA-village relations. A NIA fieldworker who originated from a neighbouring village put it as follows.

> NIA and San Anton are very close, because so many NIA employees and engineers came from that place. I am the only NIA worker from my barangay. That makes a big difference. The people of San Anton are sympathetic to the NIA's needs. There is a good collection because the farmers understand the need to support the NIA, as otherwise the engineers might feel ashamed. Also, there is a good information drive between the village and the NIA. Whenever there is a problem with water or a structure, you can be sure this information will quickly reach the District office. (interview with a ditchtender, October 1997)

The San Anton engineers were not crudely or very openly prioritising San Anton, but - as one of them commented -, "charity of course begins at home". Several District Chiefs, though they did not originate from this village, also became sympathetic to its needs.

> Twenty years ago, San Anton was really a depressed area. It did not have roads, it was hard to reach, it was neglected by the NIA, and it did not pay its fees. Then we started to help the village, with the support of the District Chief. Also the present Chief continues to support them. They like the village, because it is so easy to become popular there. (interview with one of the San Anton engineers, September 1997)

The San Anton case is an example of the close interconnectedness of family ties, political ties and ties of friendship. A good example is the relation between the NIA engineers and fieldworkers and the electoral politics of La Paz. The San Anton engineers were relatives of La Paz's vice-mayor, the father of the Zone Engineer. They supported him him during election time. As one of them said:

> When I was young, I was a *kanto-boy* [a teenager killing time and drinking at a street corner, JO] It was my uncle [the vice-mayor of

La Paz, JO], who took me from the streets and sent me to Manila to study. Siempre, I am indebted to him.

The vice-mayor was also supported by the NIA fieldworkers from San Anton and the surrounding villages, who were all close to him: "whenever one of the 12 NIA employees have their birthday, everybody is there, including the vice-mayor." Through these engineers, also the District Chief had become a friend and kumpare of the vice-mayor as well as the mayor of La Paz. This helped to develop smooth relations between the NIA and the La Paz municipality. For instance, in case the NIA needed *krudo* (diesel fuel) to run its equipment, it was easy to find their way to municipality funds.

These inter-related political and kin ties also existed at a higher political level. It happened to be the case that the Lopez family - who occupied the congressional seat for a long time already – was living within the boundaries of the La Paz municipality. Multiple ties of political patronage, and kin and kumpare relations connected the NIA engineers, workers and IA leaders to this elite political family.

The family of the Zone Engineer was not in good terms with the congressman because of earlier political struggles, but others were. Both the former NIA engineers were getting construction contracts through his patronage. The NIA Maintenance Engineer had him become the sponsor of his child, and had his family and other relations support him during the congressional elections. The result was that NIA people as well as villagers from San Anton used this congressional family to get access to projects. The grader of the congressman was regularly found on the NIA's canals of San Anton and neighbouring villages (see chapter 7 for further discussion on the relations of this congressman with NIA and its projects).

To conclude, the two case studies in Zone 1 and 2 have shown that water in the main system is being managed by alliances of NIA engineers and fieldworkers, farmer leaders and local politicians. In the case of Zone 1, local politicians who undermined the authority of the NIA engineers, and left the IAs and the federations as weak organisations controlled the dominant alliance. In the Zone 2 alliance, electoral politics was also interwoven with irrigation management. In that case however, it did not undermine the NIA's authority, but rather reinforced the effective alliance of NIA

engineers, fieldworkers and IA leaders. The Zone 2 case also showed the importance of friend- and kinship relations in the functioning of the alliance in the management of the Zone.

The alliances that emerged in the two Zones cannot simply be understood as diverse outcomes of a uniform set of management reform policies. The 'failed' turn over case of Zone 1 is related to the success story of Zone 2. Firstly, the resources managed by the District office (water, equipment and money) can only be spent once. Hence, better services to Zone 2 go hand in hand with poorer services to Zone 1. This affects the willingness of farmers to pay their dues, which in turn reinforces the nearness of NIA-farmer relations in Zone 2 and the somewhat distant relations in the other Zone. Secondly, the friendly relations of the NIA engineers to the Zone 2 alliance did not remain unnoticed to the dominant alliance in Zone 1. This reinforced the tense relations between the NIA engineers and the Meneses family.

The Binding Forces of the Water Alliances

This chapter has shown that water management in the District is a matter of struggle and accommodation between the different parties involved. Nobody has the permanent upper hand, and alliances are the result. The composition of these alliances can be very different, as we have seen in the cases of Zone 1 and 2. Nevertheless, these alliances are based on the same set of relationships. This section discusses these relationships one by one.

It starts with a discussion of two major binding forces of these alliances. These are 1) the interpersonal relations based on political patronage and brokerage and 2) friendship and kinship. The third type of relationship discussed is that of bribery. Bribery did not play a major role in the main system management of the District. It is nevertheless discussed here, because bribery has been singled out as a major force in irrigation management in other countries. Finally, this section discusses the threat of force as a structuring element of main system management in the District.

Management through political patronage and brokerage

The analysis of the water alliances has provided ample evidence that political patronage (and brokerage) is a key mechanism in

water management. The alliances are led by political patrons. In Zone 1, the primary motivation of both secretary Juatco and Meneses Jr. was to bring water to their constituency, in return for votes. Their political clients sought their patronage to selectively deliver scarce water, and they eagerly responded to it. Juatco was already cited about the political virtues of water. Meneses, his arch enemy, had the same message.

> My father asked me to make sure that the whole of Victoria is able to get a good harvest during the dry season. My father depends on the 'poor man's vote'. His platform is a very simple one: to provide electricity, security and irrigation water. He asked me to take care of the latter promise. (February 1997)

At the surface, the dominant Zone 2 alliance in water management seemed to be perfectly innocent. The Zone Engineer and his fieldworkers - in a perfect partnership with IA leaders - were in control of the water. One might think that the group is held together by the functional hierarchy of the NIA organisation, and the formal rules and regulations stipulated in the contracts between the NIA and the IAs. In actual fact, this alliance existed to a large extent on relations of political patronage and brokerage as well.

The alliance had a strong political dimension, as it was part of the political network of the Zone Engineer's father, a vice-mayor. The IA leaders were enrolled in this political alliance as small-time vote-brokers (cf. Fegan 1994). They acted as intermediaries between the individual irrigators and the Zone Engineer's father. In the village, they helped to maintain electoral support to the vice-mayor, in exchange for services, like water and maintenance works. Their position as vote and service brokers gave them access to different kinds of benefits, provided by the Zone Engineer (e.g. hauling contracts and collection benefits for personal use). For others, access to this political and irrigation alliance allowed them to further the political interests of their own families.

Patronage is central to Philippine politics. Patronage politics are a remedy for the weak political and moral legitimacy of the central Philippine State among the electorate.

> The provincial elite compete among themselves for elective posts from national to municipal levels, and depend mainly on the poor population for the votes. Candidates can credibly present

> themselves to the electorate as indispensable conduits to state patronage, thereby seeking '*legitimacy through patronage*' (Wurfel 1988: 38).

Essential to a political career, is the capability of a politician to have the 'image of a good patron' (Rutten 1994: 3). Or, as van der Top puts it:

> Local, non-political elite families can bring a politician voting blocks that are often as large as an entire barangay. In return, the delivery of infrastructure projects and personalised assistance in times of need are part of the image of the good patron on the basis of which the rural electorate and their leaders measure politicians (Van der Top 1998: 253).

In present-day vocabulary, local politicians are constantly seeking for what are called *pogi points* (these are earning points to look 'politically handsome' in the eyes of the voter).

> We scrutinise what to do and what not, on the basis of three criteria: it should bring in money, it should score *pogi points*, and it should deliver real services to the people concerned (interview with a municipal secretary, January 2003)

As two of the three criteria are being met, mingling in water management affairs may thus be attractive to a local politician.

Present day scholars of Philippine politics have correctly criticised the earlier idea that it consists only of exchange type of relations between the good patron and the faithful client. Politicians are not just 'good patrons', but some are better pictured as 'bosses', as their power is derived from massive vote buying and violence (Sidel 1995). Indeed, as I will show below, a credible threat of violence is an important resource in water management .

Nevertheless, my analysis shows that patronage and broker exchanges remain important ways for local politicians to amass parcels of votes. The Meneses family is a case in point. Vote buying and violence were part of their strategy to stay in power. Meneses Jr. still felt it necessary to win the hearts of the constituency, and build up his network of local vote brokers in the different barangays. He spent a month in the field, to bring the services the farmers so badly needed. [23]

Management through kinship and friendship

The analysis of the Zone 2 alliance showed that water management in the District is organised through *trust-based networks* (Long 2001: 154), which criss-cross formal boundaries between the irrigation bureaucracy, the farmers and local politicians. As was shown, family, kumpadrazgo and friendship ties gave shape to the relations within the NIA District's bureaucracy, as well as between the NIA and a favoured tail-end village in the Zone. It was also shown that those seeking control of the water put a lot of time, money and energy into the creation and/or reproduction of instrumental friendships. Often, people tried to further strengthen this friendship by turning it into a kumpare (or kumare) relationship, i.e. a ritual kin relation.

In the Philippines, the family is of paramount importance, and people organise along kin lines. However, as Filipinos count kin on both sides equally, any person is simultaneously a member of such a large number of descent groups that descent cannot on its own be the organising principle of organisational units like the irrigation alliances. Hence, people choose within this large kin group whom they will ally with and whom they will follow. Fegan (1994) has called this conflict kindreds.

These conflict kindreds, based on cognatic, affinal and ritual kinship are thus the primary organisations in the struggle for resources (McCoy 1994). A strong senior leader - the *matanda* - heads these conflict kindreds. In politics, the *matanda* are the vote-brokers of the kindred that they lead. Politicians try to attract such leaders of big kindreds to their alliance.

In the case of main system management, such leaders were operational, trying to secure water for their conflict kindred. However, the irrigation alliances could only be partly organised along kin lines. Obviously, the location of farmers in the canal network primarily determines their interests. Although many of the farmers along a certain sub-lateral or creek supplied with irrigation water would be close kin, others would only be distantly related, or not at all.

Hence, tThough kin relations may partly work to organise interest groups of one sub-lateral, they become far less helpful when it comes to alliances at Zone level. The reason is that leaders representing the different areas or villages in a Zone are not likely to belong to the same kin group. Hence, as 'descent' did not

suffice, people were befriending each other in irrigation, and tried to build up ritual kin ties.

Kumpare relations are ritual kin relations. They are formed on major family occasions such as a baptism, confirmation or the wedding of a child. Multiple patrons, the godfathers and godmothers, are invited to sponsor these celebrations and in this way become ritual kin of the family. Patrons may be selected from the same socio-economic strata, or – if that person is willing - from somebody of the political or economic elite.

Kumpare relations signify friendship between equals, and a patron-client type of relationship between different social strata. The functional nature of *kumpadrazgo* is openly acknowledged.[24] It builds trust between the parties involved and it gives a sense of belonging. Kumpares are supposed to help each other in times of need, and should not betray each other (Landé 1977: 87). These are useful attributes for building a functional and lasting alliance in main system management.

Management by bribery

Bribery - and extortion - were not important mechanisms in the main system management in the District. I discuss it here, because this contrasts with the findings of researchers in Indian canal systems (Wade 1982; Ramamurthy 1995). More recent research in a canal system next to the system studied by Wade found far less bribery in water management (Mollinga 1998). Nevertheless, Wade's findings on institutionalised bribery still seem to play a role in international irrigation discourse and thus warrant discussion.

In Wade's study, the mid-level staff of the operation and maintenance department collected bribes (and extortion money) from farmers. Parts of the collected bribes were forwarded to satisfy demands of their superiors, who again had to pay-off politicians. These politicians could demand bribes from these officials, because they control the latter through their discretionary power over their transfer, which happened once every three years. This led to an awkward situation in which higher-level irrigation officials paid large amounts of money to politicians to get access to a lucrative moneymaking post in operation and maintenance. Bribery thus had become a lucrative business for irrigation officials, and it was part of a system through which Indian politicians financed their re-election

campaigns. Though the larger part of the rent-seeking practices focused on construction funds, it also involved water management (Wade 1982).

The bribes taken for water management were not a great burden on the side of the farmers. Nevertheless, it provided an extra income for these mid-level irrigation engineers amounting to twice their yearly salary. Also field-staff were being provided with 'gifts' in terms of a few sacks of rice. The ability of these engineers to demand bribes was based on their control over the main gates of water distribution. Village leaders collected the bribes from their villagers and paid the engineers, in return for a guarantee that water would reach their areas that were not authorised to be irrigated, or which were not allowed to be planted with water demanding crops. Also, bribes were given in return for extra water in times of scarcity, especially in the tail-end areas. Even upstream villages sometimes paid bribes, responding to threats of engineers to close off the water flows to their areas. These engineers purposely created uncertainty and scarcity of water availability and -delivery, to stimulate farmers' willingness for illicit payments (Wade 1982).

In the case of the Irrigation District in the Philippines, bribes for water involving NIA staff did occur. The largest case of bribery I heard of involved a gatekeeper of a tail-end gate. By diverting irrigation water at upstream diversions into drainage creeks, he was able to bring big volumes of water to his tail-end gate. Part of this water was used within the program area or at least the service area of the District, without large monetary returns. Another part was now and then being sold for 'real money' to large land- and fishpond owners, whose areas were even located outside the service area of the District. This practice has been going on from the mid-eighties until the beginning of the 1990s. Though I did not find any evidence of the involvement of NIA engineers in these deals, they knew about it, and did not bother to stop it. [25]

However, bribery did not become an institutionalised practice of the irrigation engineers. If it happened, the amount involved was much lower than in the case of the South Indian system studied by Wade, and it usually concerned gifts of consumer items rather then money. A typical 'bribe' from a tail-end village to the NIA engineers was limited to one or two sacks of palay, a bottle of whiskey, or perhaps a roasted pig. The stakeholders involved considered this to be a matter of *bigay* (a gift), rather than lagay. Moreover, these transactions were not made in a business-like fashion. These 'gifts'

were usually given during birthday parties of the NIA engineers and other drinking sessions. The farmer leaders involved frequently visited these NIA engineers, and had often established friendly relations with them. Deals over water between NIA engineers and tail-end farmers were, unlike in the system studied by Wade, thus based on social relationships, rather than financial ones.

One explanation for the difference between the Indian and the Philippine situation, might be the relative strength of the bureaucracy vis-à-vis local politicians. Wade states that the Indian engineers were not able to control the whole of the system very well, but could control some of the gates and distributaries through a concentrated effort. In such a way, farmers had no option but to offer bribes. In the UPRIIS case, the NIA engineers may have had the manpower for such concentrated efforts, but they lacked the socio-political power to control the gates in order to demand bribes. As was shown, municipal politicians use water management as a means of political patronage. They would not allow their constituents to be the victim of systematic bribery, or extortion as it would go against their 'image of the good patron'. Apparently, irrigation bureaucrats are more powerful vis-à-vis local politicians in South India, compared to this case in the Philippines.

As will be shown in chapter 7, the UPRIIS leaders were no saints. Rent-seeking was an institutionalised practice in the case of construction contracts for infrastructural works. Why then is bribe taking hardly occurring in the case of MSMP I have two explanations.

Firstly, taking bribes on infrastructural programs is relatively easy to organise. It involves a few people only, and deals are of a secretive character. Water involves a high number of people, while its results – areas irrigated – are easily observable. Zone Engineers do not have such access to bribes from construction works, and thus might be interested to trade bribes for water. As said, politicians will however stop them from doing so. Also the superior officers will not allow them. It will affect their relationships with farmers and the income of the office through irrigation fees. Moreover, it might be reported to their superior officers in Manila, and thus may cause their transfer to another District or other part of the agency.

Secondly, taking bribes on infrastructural programs is more compelling. As chapter 7 will show, the contract works involve big money, big contractors and high-level politicians. A 'realistic' NIA official will accept the grease-money offered, accept the deal, and look the other way. In the case of water management, the arena is a

different one. In the absence of powerful private interests or higher-level politicians, the NIA's engineers are not 'forced into bribery'.[26]

Management by force

The last mechanism that structured the alliances in water was (the threat of) violence. Violence is an important ingredient of the everyday politics in the Philippines at large. To politicians, force - along with patronage - is the key means for seeking and maintaining power, and to many it is a way of life - and death - (see for instance Cullinane 1994; Coronel 1995). In popular terms, the power of politicians is based on the three 'G's': Goons, Guns and Gold. Being tough, or even better being a known killer - or having such men in your entourage -, is a crucial asset in political careers (Fegan 1994). The politicians in the District make no exception. Secretary Juatco, kapitan Tecson, and Meneses Jr. were all known as toughguys. They – or their closest family members or allies - had a track record of violence, including killing.

However, violence goes beyond the realm of electoral politics. As was described in chapter 1, the recent history of rural Central Luzon is a violent one, including anti-Japanese guerrilla wars, peasant uprisings and communist insurgency. Also today most of the rural households are armed. In the evening, drinking parties in the villages might end with people shooting their guns in the air. Also, day-to-day conflicts over land, sexual affairs and issues of inheritance run the risk of being bloody.

The fear of violence played a role in water management. In the recent history of the Irrigation District, there were only two cases in which people died because of a water-related conflict. However, coercive acts and shows of force took place in every dry season. People feared for their lives and consequently acted carefully. Most field personnel of NIA had experienced physical threats when doing their duty. This is just one of the many experiences which were shared with me by the field personnel:

> Several years ago, I was stopped on the road by a toughguy, who was the son of a notorious village leader. He was angry at the way I distributed the water. He drew his gun and shot a hole in my helmet, which was at the carrier of my motorbike. He told that me

> that he would put a hole in my head the next time I would enter his village again. (Excerpt of interview with a former Zone Engineer, March 1997)

To the local politicians who led their alliances in seeking water in Zone 1, the ordinary person's fear of violence was an asset. Their reputation as toughguys and their possession of arms helped them to control the gates. Only the brave and powerful dared to challenge their authority. Mere farmers and even NIA field personnel would usually think twice before touching the gates. Especially at night they would consult the politicians involved before doing so, even if the gates were left unattended.

This fear helped the local politicians of Zone 1 to control the gatekeepers of NIA as well. The gatekeepers were afraid of being molested or worse. One of their survival strategies was to seek the protection of the dominant politician involved in water management. They would follow his orders in the operation of the gate – or would at least pretend to do so - in return for his protection.

The behaviour of farmers was also structured by the threat of violence. Farmer leaders of tail-end villages employed several tactics of risk-avoidance. When they went out at night to look for water upstream, they would often bring one or more armed people with them. They would also make sure that none of them was 'hot-headed' in temperament. Furthermore, they would usually only enter upstream villages at night to remove checks in the sub-laterals and close turnouts, after they made a courtesy-call to the local barangay kapitan or an upstream farmer-leader. Also, they usually first found out during daytime, whether the water needs of the upstream area were more or less satisfied already (Svendsen 1983).

In my interpretation, the time and energy put into befriending people and building alliances was also related to this fear of the threat of violence. Bribes or gifts to upstream farmer leaders or local politicians were not only given to 'buy' water, but also served as a way to avoid being shot at during the long hours of the nightly raids.

Conclusions

This chapter has shown that the rule of the central state does not carry very far in the management of water in the main system of

the UPRIIS Irrigation District. Though the NIA, as a central state bureaucracy, is formally in control of water management, its actual authority is seriously contested and undermined by local power holders. Consequently, water in the main system is the subject of fierce struggle between rival groups of tail-end and mid-stream farmers.

This is not to say that 'anarchy ruled' on the banks of the irrigation canals. There was no disorder in which nobody followed rules and individual free-riding farmers – following the Prisoner's Dilemma – grabbed whatever they could (Wade 1988: 490). Free riding at main system level is hardly possible anyway. To manipulate and guard gates, individual action will not suffice. More importantly however, those in power checked free-riding behaviour of individual farmer water users. Order did exist and it was fairly predictable which areas would and which would not get sufficient and timely supply of water to irrigate the rice paddies during the dry season.

Wade (1984), following Seckler (1982) has used the term 'populist anarchy' to characterize the situation in South Indian canal irrigation systems (on 'anarchy' in irrigation, see also Hart 1978). 'Anarchy' refers to weak governmental authority for carrying out its programs. 'Populist' refers to a situation in which the electorate has come to control the use of a valuable political resource (in this case water), and which is moved primarily by short term material inducements rather than by longer term policy choices (Wade 1984: 298). This comes close to the Philippine case described in this chapter.

Also anthropologists discussing 'lawless' cases of tribal political systems have introduced terms like "ordered anarchy" (Evans-Pritchard 1960), or similar contradictory expressions like "the peace in the feud" or "the frailty in authority" (Gluckman 1963). In a situation of "ordered anarchy", every individual has to belong to an alliance in order to a) protect himself and his interests from other individuals and alliances, and b) to struggle to get what he wants, in competition with others who want the same non-divisible thing. This also comes close to the situation of water management in the District. However, the term anarchy is misleading and too strong, as a good part of the order was organised around NIA engineers and elected state politicians. The more suitable expression for the water management in the District would be something like a 'contested, accommodated and populist order'.

Three actors contested the control over water: the NIA engineers, local politicians and farmer leaders. As none of them had the

permanent upper hand, they were forced to build alliances and accommodate to the interests of the other actors. The order in main system management thus came from the balance of power between a number of rival, fairly long-lived alliances representing different areas in the irrigation system.

To a large extent, the order in main system management was the result of the political configuration in the Irrigation District, and its dynamics were thus shaped by electoral struggles. Mayoral politicians seeking (re-) election tried to secure water for tail-end or mid-stream areas in return for electoral support. This tied in to village level vote brokers – some of them IA leaders - whose brokerage gave them access to different kinds of benefits generated by the mayoral politicians and/or irrigation engineers heading these alliances.

Politics was not necessarily a bad thing for water management. Electoral politics did indeed hamper the emergence of a functional NIA-IA alliance in one of the Zones. In another Zone however, the same kind of politics helped to produce a very effective partnership that would meet all the criteria of conventional evaluation studies to be classified as a 'success story' of turn over.

Next to politics, there were others forces at work that bound these irrigation alliances together –or drove them apart. Reciprocity, friendship and real as well ritual kinship created tight alliances based on inter-personal, trust-based relations that brought stability in the distribution of water, and – in one case – a successful, functional partnership of NIA officials and IA leaders.

Another alliance was built on the economic benefits of a village-level politician, who used his strategic location and following to deliver water in exchange for exclusive rights to thresh palay from those farmers. His control over water was based on a very particular way in which the irrigation canals criss-crossed administrative boundaries. In general though, bribery or extortion were not very important mechanisms in the allocation or actual distribution of water. My findings thus differ from those of Wade (1982) on bribery in Indian canal systems.

Finally, it has been shown that (the threat of) violence was an organising principle as well. It helped the potentially violent actors to get control over gates, and it explains a number of measures taken by local actors to avoid water management from becoming bloody.

This chapter has shown the importance of understanding water management from a wider state-society perspective. Without such

an embedded analysis, I would not have been able to decipher the socio-political relationships discussed here. It proves the need for approaches that go beyond the reductionist models of neo-institutionalism.

Further proof of the need for such a wider perspective can be found in an article analysing the success of Taiwanese irrigation systems (Lam 1996). The author of this article started out with Ostrom's neo-institutional rule-crafting framework, and indeed carefully analyses the main institutional arrangements. However, to explain why certain rules came about the author could not help but to turn to the wider state-society relations of Taiwan. In the end, for the greater part the effective management is explained in terms of the authoritarian state, the effectiveness of the government to enforce fee payments, the subservient behaviour of Taiwanese farmers and the embeddedness of the state irrigation agency in the local communities and electoral political system.[27]

The 'alliance' and 'accommodation' concepts have proven to be useful concepts to understand main system management. These concepts help to focus on the dynamics of water management, as the analytical interest is on how different actors 'wheel and deal' with each other. Though formal rules and organisational structures may be important, they get transformed, resisted or simply over-ruled in the processes of struggle and accommodation that emerge when people are involved in the management of a precious but scarce resource like canal water.

These concepts may also prove helpful for the implementation of policy programs. Lasting reforms are not simply created by policy programs designed in the NIA's or World Bank's central offices. It requires strategic manoeuvring to construct the proper alliances and the proper set of incentives that get powerful local actors to accommodate their interests to certain policy goals. For instance, this chapter has shown that policies that would simply deny the role of local politicians make little sense. The task is to involve them in such a way that they will be beneficial to the larger policy goals and programs. In other words, local level policy implementers thus need to be able to build strategic alliances and seek –and offer – useful accommodations of interests.

There is nothing wrong with forging alliances and seeking accommodation. According to Evans (1995) that is what good governance is all about. He has argued that the effective post-war developmental states of East Asia were in a position of 'embedded

autonomy'. On the one hand, these states were closely related – and thus accountable to - the needs and interests of certain societal (in this case industrial) forces. On the other hand, these states kept a certain level of autonomy, to be able to change the economy and social structures over which they presided. Hence, crafting effective organisations is about forming strategic alliances with different power groups, and a continuous search for a proper mixture of accommodations.

At the conceptual level, future research could further develop the concepts of 'alliances' and 'accommodation'. A first step would be to develop a typology of different alliances and the various forms of accommodation. A second step would be to identify the sociotechnical conditions under which certain kinds of alliances arise or do not arise. The major differences in the conditions that account for the emergence of the alliances in the two Zones of the District were the following: a) the size of the two Zones and the physical properties of the canal systems that conditioned the ease/difficulty in bringing water to the tail-ends, b) the relation of the NIA engineers and fieldworkers to local politicians (in Zone 2, politicians were closely related to the NIA, in Zone 1 the two parties were rivals rather than allies), and c) the variation in familial and wider kinship relations between the NIA and the water users communities.

Finally, this chapter has shown the importance of the recognition of 'blurred boundaries' between formal structures. Engineers are not simply or only 'bureaucrats' or 'technocrats' but may be deeply embedded in society as members of a kin group, as villagers, farmers, entrepreneurs, or politicians all at the same time. In other words, abstract categories – and the boundaries between these categories - should not be taken at face value. This is also true for such labels as 'IA leaders' or 'federation presidents'. Further inquiry shows that the actual socio-political position of the actors involved may be far more complicated than the formal label suggests.

Notes

[1] The B1 and B2 alliances were operational from the mid-eighties until the early 1990s. The alliances faded away after a key actor fell ill during the early 1990s.

[2] This is not to say that 1983 was the start of political involvement in water management in the District. As was discussed in chapter 1, local politicians and farmer leaders were already involved in struggles for water during the early 1970s. However, it seems that the water management in the Zone became more politicised during the 1980s and 1990s.

[3] It soon became clear however, that the tail-end part of the extension area was not serviceable. Hence, the extension area to be served by the District was reduced to around 3,500 hectares, while the NIA set the total service area of the Zone at only 11,000 hectares from the early 1990s onwards.

[4] A conflict kindred is defined as "all those people who choose to support, crucially with all their household votes in elections, a leader to whom they are related – however distantly – as kin, affines and ritual kin, and who in return expect that leader to represent them in conflicts with members of other led kindreds, outsiders and the state (cf. Fegan 1994: 46).

[5] Actually, reality is somewhat more complicated. Rice fields located in villages bordering the municipality of Victoria were often owned or cultivated by citizens of Victoria's tail-end villages, or by their close relatives. Hence, serving these areas with water was also in the interest of people trying to win votes in Victoria. Whenever water was available, Juatco would thus try to irrigate the fields in border villages of these neighbouring municipalities as well.

[6] Sometimes farmer leaders also went to the kapitan later during the season, when water scarcity was already occurring. This, however, was risky, as the kapitan already had made pledges to other areas. Chances were that the request would be turned down.

[7] He did not do so because he lacked the capital to finance the credit needs of such a large clientele. Moreover, as these farmers were living outside his village and municipality, it would have been a risky enterprise, as he had few means to sanction defaulters.

[8] As he had made many enemies – among them the Meneses family or their close allies – he feared for his life, and hardly left his house.

[9] Often they would also find themselves in opposing alliances during congressional and provincial elections. The main reason was that Juatco and Tecson were 'Joson-boys', while mayor Meneses was in the anti-Joson faction during most of his political career.

[10] His father was not only a powerful politician, but a powerful male as well. It was said that Mayor Meneses had as many as one hundred children, raised by more than ten women. This son is one of the four sons from the mayor's legally married wife.

[11] This split in the family turned out to have dramatic consequences for the Meneses family. It allowed a rival political alliance of another candidate to come to power. Though this candidate got most of the votes, Meneses Jr. successfully challenged the legality of this victory and

eventually became the new mayor of Victoria. During the 2001 elections however, this rival candidate won over the still divided Meneses family.

[12] This strategy was only partially successful. Two of the four candidates lost during the barangay elections, one of them was a newcomer. Meneses Jr. argued that their defeat was caused by not putting enough effort into the irrigation management. They did not always show up to support him during the nightly raids. Another reason – put forward by the defeated candidates themselves – was the potential split in the Meneses family, and the likely defeat of Meneses in the coming municipal elections. Local leaders thus turned to rival political networks.

[13] For a similar line of reasoning, see Hood 1998: 44-45.

[14] There is however, an important alliance between Meneses and some fieldworkers of the NIA. This is elaborated in the next chapter.

[15] The mayor's power over the NIA engineers is also based on the fact that the engineers all reside in the town of Victoria. If he wants, he can thus harass them on a personal level as well (e.g. withholding permits, checking on tax payments).

[16] These strategies were not only valid for Zone 1. Risk-avoidance was important in the other Zones as well, but given the tense situation it was particularly relevant for Zone 1.

[17] The downside of this arrangement was that the NIA's fee collection was affected. The office tried to solve this problem by still collecting fees outside of the program area, in case the farmers were well served with water. In these cases the office would credit the collection to the back-account of the farmers.

[18] As figure 4.4 shows, 2-E is actually located in the middle of the Zone. However, the areas downstream of 2-E are irrigated by means of two re-use check gates that draw water from the drainage system. These are not included in this discussion.

[19] Many farmers in the downstream villages of this Zone (and Zone 3) however, served by the re-use gates, were members of two farmer organisations that proclaimed that irrigation services should be free of charge. Consequently, collection was relatively low in these areas (for further discussion, see chapter 6).

[20] Whether farmers in paid in kind or in cash, depended on different factors. Firstly, it depended on the strategy chosen by the NIA collector. Some collectors preferred to collect in kind, while others preferred cash collection. This preference had a clear effect on the mode of payment chosen by the farmers. Secondly, it depended on the rice price and quality. During the dry season, the market price of palay was usually higher than the government support price followed by the NIA. Farmers then preferred to market their palay, and pay the NIA in cash. During the wet season, especially when the quality of the rice was not very good due to problems with drying, the market price was low, and farmers then preferred to pay the NIA in-kind (and sometimes with moist palay).

[21] For instance, the total collectible amount of fees in an IA with an average area of 350 hectares during dry season was around 370,000 Pesos. If over 90% of that amount was indeed collected, the IA was entitled to 15% of the collected amount. This amounted to 50,000 Pesos for one season..

[22] A kumpare-buo means a 'full kumpare' relation. This is established between the father and mother of a child being baptised, confirmed or married and the persons and their spouses asked to be sponsors. This is usually the strongest type of relation. Weaker 'kumpare' relations are usually those between co-sponsors, or between the siblings of sponsors and the siblings of the parents of the newly baptised, confirmed or wed child, who are kumpare *hawa*, i.e. by contagion. Finally, people may even call each other 'pare' or 'mare' to indicate an affectionate tie, without having actually entered into such a ritual kin relationship. The kumpare relationship is stronger than that between the sponsor and the sponsored child and Tagalogs liken it in strength and obligations to the tie between siblings.

[23] Further evidence for the importance of patronage in present-day politics is found in a case study of the politics in the most modern part of Philippine society: the city of Makati, the business centre of Manila. The mayor of that city made it a point to have a daily walk through the slum areas of Makati, and listen to slum dwellers'grievances. Though the money for his re-election campaign came from the business community, he apparently realised that the basis of his power was in maintaining personalised patron-client networks (Gloria 1995)

[24] Though there are limits to its use. It has to be handled with a sense of *delicadeza* (subtleness, sensitivity), while its use should be reciprocal (Paredes 1989: 50, cited in van der Top 1998: 254).

[25] Fairly large monetary bribes have reportedly been paid to NIA engineers in the past by contract-growers of the capital-intensive cultivation of cucumbers, operating in some of the tail-end villages. However, as the area grown with cucumber sharply decreased since the early 1990s, such bribes were no longer heard off.

[26] A comparison can be made with the study of Van den Top (1998) on illegal logging in the Sierra Madre in the Philippines. In that case, officials are 'forced into bribery'. It has much similarity to Wade's analysis of irrigation in India. It involves institutionalised bribery of the DENR officials. Lucrative positions have a price. High-level politicians-*cum*-loggers, who transfer officials who do not cooperate, control their doings.

[27] The conceptual struggle of the author in this article may perhaps be attributed to the fact that earlier drafts were commented upon by people with very different paradigmatic backgrounds. Comments were provided by on the one hand Elinor Ostrom, and on the other hand Peter Evans, Mick Moore and Judith Tendler. The latter three are political economists who all put a state-society perspective at the core of their analyses.

5

Making the Best of it: Frontline Workers Implementing Reform

> Comments and Recommendations:
> The NIA move to trim down its Working Force ... and especially Ditchtenders weakens the capacity of NIA to maintain needed services to the end-users. Majority of Gatekeepers and Ditchtenders has an age 55-64, old enough to remove debris and stop logs at critical checking structures ..., even more difficult for them to carry cavans of palay as ISF collection in kind. The canals vacated by the retired Ditchtender without MTO were abandoned, deteriorated ... due to lack of manpower and inability of IAs to accept responsibilities. ... We recommend that NIA must hire young, energetic, responsible, capable new Daily Ditchtenders... (NIA-UPRIIS, 4th Distrtict. 1996c)

This chapter is about the NIA's fieldworkers. It discusses the behaviour, the interests and motivations of these 'lesser people', like ditchtenders, gatekeepers and watermasters. Also, this chapter takes a look at the doings of a newer kind of fieldworker, the institutional development officer (IDO). In the previous chapter on main system management, I have hardly discussed these officers. However, this was a practical rather than a substantive choice. I think these people matter so much that they deserve a full chapter.

One reason for giving them attention is that I sympathise with them, as I pity their fate. In the Philippines, as well as other parts of the globe, irrigation agencies are reducing their staff numbers. Employees are offered early retirement packages, or are simply laid-off. In the case of the 4th Irrigation District of UPRIIS, streamlining reduced their numbers from 180 in 1982, to only 80

during 1996-97. Since then, their number further fell to only 40 at the beginning of 2003.

Another reason to discuss fieldworkers is that I think that they deserve more credit than is usually given to them. Funnily enough, the little documentation that I know of is rather positive about their behaviour. A study conducted on irrigation management in the national systems that would later become the UPRIIS system emphasised the central position of the ditchtender.

> The ditchtender is the person most farmers go to when they have an irrigation problem. He is easily approachable since he lives with the farmers. (...) In turn, the ditchtender takes his responsibility of providing water within his area quite seriously. (Wickham 1972: 11)

The opening quote above also indicates that the NIA District engineers saw the downsizing of their fieldworkers as a great loss for system management. Similar findings were reported on Mexican fieldworkers. Van der Zaag (1992) presented a detailed account of *canaleros* in a Mexican system, before it was turned over to farmers. He found them to be committed and knowledgeable workers, who made the complex irrigation system work, and ensured that farmers were satisfied. In another study on Mexico after turn over, it was reported that the farmer organisations that took control of the system, hired the 'good' laid-off engineers and fieldworkers to do the work for them (Kloezen 2002).

Apparently, fieldworkers are not all bad, or can do well under certain circumstances. My own findings also suggest that these fieldworkers can be committed to their jobs, can play important roles in making the system work, represent farmer interests within the agency and give meaning to the reform policies. This chapter thus questions the downsizing trends in irrigation reforms. Has the NIA been getting rid of people that it should have kept?

Finally, the fieldworkers deserve attention because they are not just the victims of the streamlining and turn over policies, they also have to implement them, and live with the consequences. It is interesting to analyse how fieldworkers give shape to turn over policies that create the conditions for the streamlining of their colleagues or even themselves and that potentially increase their own work load. What happens in such a situation? Do they resist it, do they make the best of it, or are they even enthusiastic about the chances provided by the new management set-up?

What made turn over and streamlining policies so popular all around the globe? One of the reasons is financial: cutting staff-levels helped governments to curb public spending and irrigation agencies to keep their reduced budgets in the black (cf. Nunberg 1995; Kikuchi *et al.* 1999; for further discussion on the NIA and UPRIIS, see the following chapter). However, there is more to it than just a practical, financial reason. There are also ideological reasons for removing these state workers. Streamlining and turn over became well-accepted policy discourses because they contained elements that fit into the agendas of neo-liberal as well as more progressive lines of thought. Both agendas mistrust – or at least disregard - the state worker (cf. Tendler 1997: 2).

Obviously, neo-liberalism does not like state workers. They were to be removed, because there were far too many of them in the inflated Third World bureaucracies or patrimonial states. They abuse their secure positions by displaying shirking or rent-seeking behaviour (for irrigation, see Repetto 1986). Governments therefore should leave as much as possible to the private sector, either through full privatisation or through contracting out parts of their services. Whether it is the supply of electricity, the marketing of an agricultural commodity, the ambulance services to hospitals, or the counselling of the unemployed to find a job, the argument is the same globally: workers who do their job in a private setting do things more efficiently than their colleagues in the public sector (McElligott 2001).

These neo-liberal beliefs have shaped the international policy agenda in irrigation. Full privatisation is not so often pushed for, because a dam and its canal system constitute a natural monopoly so that real competitive markets would have difficulty to develop in irrigation management (Moore 1989). Instead, the focus is on the downsizing of irrigation agencies by contracting out the work to irrigation associations of farmers. These associations might be public, but at least they are non-state. The argument is that they do a better job, as farmers at least have a private interest in getting the job done effectively and cost-efficiently (Vermillion 1991; Small and Carruthers 1991).

More surprisingly perhaps, also more progressive lines of thought do not give state workers much of a future. In the 'putting people first' (Cernea 1985) line of thinking, the trust is in community self-management in which people manage their own affairs. Farmer associations rather than state workers have to take

care of irrigation management (Jopillo and de los Reyes 1988).[1] In 'farmer empowerment' lines of thinking, state workers also tend to drop from the equation. To make the irrigation agencies more accountable or responsive to farmer needs, farmer organisation and user participation is required. In these discussions, state workers are not given much attention. The problem is usually conceptualised primarily as a question of power between engineers and farmers, which are argued to have different class background, interests and/or life-worlds (Ramamurthy 1995; Diemer 1990).

Apparently, the state workers are considered rather irrelevant for the question of control. They simply have to give way to make room for farmers who will make state agencies more accountable. The underlying assumption is that farmers are more inclined or better equipped than fieldworkers to make engineers behave responsibly. The other possibility is that the fieldworkers are considered part of the problem of the non-accountable irrigation agency. Following a Weberian view, they constitute the lowest level of the bureaucratic pyramid, and as such embody state power and represent state interests. In any case, the progressive agenda wants them out of the way as well, be it by default or on purpose.

Let me now return to the analysis presented in this chapter. Conceptually, the starting point is that state workers are no rule-bound automatons. They are people of flesh and blood who possess agency, interests and ideas, and thus do matter in policy implementation (Clay and Schaffer 1984). These state workers transform policy "as they give social meanings to it that were not set out in the original policy statements" (Long 1989: 3).

My analysis also uses Lipsky's (1980) theoretical work on so-called 'street-level-bureaucrats'. To Lipsky, street-level-bureaucrats are people like policemen, judges and welfare workers. They have to work on the outer boundaries of the state, in the sense that they have to implement state policies in direct contact with the state's clients (McElligott 2001: 20). NIA field workers fit this definition. However, I prefer to use the term frontline worker rather than street-level-bureaucrat, as the former term stresses the fact that the frontliners are workers rather than white-collar officials. Moreover, unlike judges, the NIA's fieldmen do not sit in offices waiting for their clients to come to them to be processed.

Lipsky's work is interesting for two reasons. Firstly, he puts emphasis on the working conditions of the frontline workers. He convincingly argues that the peculiar character of their work

structures policy transformation. They are squeezed between the demands of their superiors and those of their clients. This 'boundary-spanning role' is full of tensions.

> It typically involves overwhelming client demands, chronically inadequate resources, complex and changing work rules, high but conflicting public expectations, and often physically dangerous work. (Lipsky 1980)

Hence, they are inclined to transform state policies in such a way that they can cope with these tensions and make their life bearable. Secondly, Lipsky takes as a starting-point that frontline workers are professionals who - at least at the start of their career - are ambitious people committed to serve the state to the best of their abilities. Given the present-day dominance of rather cynical assumptions about people's rent-seeking behaviour, this, to me, seems a refreshing starting-point for research.

This chapter continues as follows. The next section introduces the frontline workers by discussing their responsibilities and exploring their motivation: what drove them in their work. The following two sections look at their tactics in main system management, as well as in the ways in which they give shape to the turn over program. I use detailed case studies of a few fieldworkers. I gave names to the most important actors. In the perilous working environment of Zone 1, the practices and strategies of watermaster Argee as well those of Jo, a ditchtender and acting-gatekeeper, are examined. In the friendlier environment of Zone 2, the focus is on watermaster Alan. Finally, attention is given to the limited room for manoeuvre of Martin, the only institutional development officer working in the District. The chapter ends with conclusions, especially on the policy implications of my findings.

The Concerns of the Frontline Workers

This section looks at the motivations of the frontline workers. Are they indeed the indifferent bureaucrats that neo-liberalism argues them to be? Locally, workers shirking their responsibilities are called '15-30s'. This means that they only report to office on pay-days, the 15th and 30th of each month. According to engineers as well as fieldstaff, many of the workers fitted that image at the start

of the UPRIIS system. However, during 1996-97 only a few of the greatly reduced workforce portrayed such behaviour. On the contrary: the majority was pretty much committed to their work. Before going into this in further detail, I will first explain the tasks, numbers and training of these frontline workers.

The responsibilities of the frontline workers

By 1996-97 - thus respectively 15 and 8 years after the start of the streamlining policies and the IOSP turn over program - the group of fieldworkers in the District consisted of 22 watermasters and 58 gatekeepers and ditchtenders.[2]

The watermasters operated under the command of a Zone Engineer (see figure 2.2). Each watermaster had his own area of responsibility, the so-called division. Due to the streamlining and turn over policies, the size of the divisions has been growing and growing. At the start of UPRIIS, it was limited to around 500 hectares. By 1996-97, its size had more or less doubled (for further detail, see the following chapter).

The responsibilities of the watermaster have grown over time as well. At the start of UPRIIS, they were held responsible only for water management. A separate maintenance section supervised maintenance, and special collectors from the office carried out fee collection. By 1996 however, they had become 'area masters' rather than watermasters. They were *de facto* in charge of most NIA concerns in their division.[3] They were held responsible for water management, canal maintenance, fee collection as well as 'institutional development'.

The last responsibility meant that they were expected to keep the IAs 'alive'. Moreover, they had to check on the performance of these IAs in carrying out the fee collection and/or canal maintenance tasks contracted out to these organisations through the turn over program. The IAs were located within the boundaries of a watermasters' division. As an IA covered around 300-500 hectares, each watermaster had to take care of two to three IAs.

The ditchtenders and gatekeepers worked as assistants to the Zone Engineers as well as the watermasters. They were doing the actual fieldwork, like operating gates, removing or installing checks and cleaning canals. They also assisted in fee collection. Formally, the gatekeepers are under the command of the Zone Engineer or

even the Operational Engineer. Given the limited numbers of fieldworkers left, they were however assisting the watermasters as well. Gatekeepers were often expected to clean a stretch of canal, and to assist a watermaster in water management and fee collection. In short, watermasters thus operated as 'area managers', who were expected to make things work in their division, through the help of one or two fieldworkers (either ditchtenders or gatekeepers) and about two IAs.

In terms of training, the watermasters consisted of three different groups. The first group consisted of the older watermasters, who were hired by the agency before the start of UPRIIS. Usually they did not have a college degree. Though a formal requirement for the position, the agency made an exception for this group. By 1996, they were limited in number, as many were already retired. The second group was well educated and trained. They were hired at the start of UPRIIS. They had a degree in agronomy, passed their civil service examination and received an intensive, one year on-the-job training in water management, maintenance, administration and organising/social skills.

The third group consisted of former ditchtenders, gatekeepers, or office personnel like collectors. As the agency was constantly reducing its staff numbers, it opted to fill vacant watermaster positions by re-assigning or promoting existing staff. To allow this to happen, the agency let go of the educational requirements for the group of fieldworkers, who usually had only passed high school. Due to financial constraints and a government ban on filling vacant positions, they were working in an acting-position. While waiting for promotion, they were still ranked and paid according to their original position.

Concerns of the frontline workers

The majority of the frontliners was service oriented. Despite their difficult working conditions, they still tried to make a difference. Their motivation was partly based on a concern for the well-being of their own neighbourhood. Many of them were born and raised and still lived in one of the villages served by the Irrigation District. Fieldworkers usually preferred to work in their own neighbourhood, as they wanted to help out their *kamag-anak*, i.e. their family and kin. As a watermaster commented:

> My primary concern is to bring water and other NIA services to my own village and those nearby. My own fields are there, and those of my father. I have also many relatives in these villages. I have worked hard to serve them.

Working in their own neighbourhood was also considered to be practical and safe. They did not have to travel to go to work and could save on gasoline expenses. Gasoline allowances were seven liters/week, which did not count for much. Also, it allowed them to combine their NIA work with household matters and home-based activities like backyard pig keeping. Moreover, their frontline work was not a nine to five job. They had to go out when the need arose, which was often at night. It was thus convenient to live close to their area of work. Finally, in this way they were able to operate in the relatively secure environment of their own neighbourhood.

As will be discussed further below, many had lost much of their initial motivation to serve their co-villagers. However, as they worked within their own neighbourhood, they could not easily escape the social pressure put on them to do their work. The District management, who preferred to assign the fieldworkers to their own areas, utilised this fact. Their local knowledge of the farmers and their leaders was seen as an advantage to the office. It facilitated fee collection, and helped to build up good relations between the NIA and the village leadership. However, as a District Chief commented, it also motivated the fieldworkers to do their jobs.

> For me, it is hard to supervise and control them, as they work in far away and sometimes remote places. However, they cannot easily withstand the pressure from their neighbours. If people need water, they go their house. They cannot hide, and are thus forced to respond to the needs of the farmers. (Interview with a UPRIIS District Chief, April 1996)

According to Lipsky (1980), frontliners turn sour towards their clients during the course of their career. As he puts it: "Generations of thoughtful and potentially self-sacrificing people are disarmed in their social purpose by the dynamics inherent in frontline workplaces." As they cannot serve them in the way they want to, they increasingly see their clients as cases, and come to dislike those

that are more difficult to handle, or more defiant in their behaviour. In the end, according to Lipsky, these frontliners give preferential treatment to those they like, which are usually the less problematic and richer clients.

Such cynicism and preferential treatment was not prevalent among the NIA frontline workers. Stereotyping their clients in categories like 'good' or 'bad' payers, 'hard-headed or 'co-operative' was common practice. Some were indeed disappointed in the willingness and/or capacity of the farmers to organise themselves and help out the NIA in managing the system. However, it did not go as far as alienation from part of the NIA's clients.[4] Though they were dissatisfied with the services they could provide to the NIA's clientele, they did not turn away from them.

My explanation is that unlike Lipsky's welfare workers, policemen and lawyers, the NIA's frontliners belonged to the same social group they were trying to serve. Being rice farmers themselves, or at least being part of these rice-farming communities, they could easily identify with the anxieties and requests of their clients.

A second reason why they were motivated to serve the NIA's clients, was based on financial self-interest. As their income depended on fee collection from the farmers, they realised they had to make a difference, to make these farmers willing to pay. To the fieldworkers, the NIA wages were crucially important. Some fieldworkers, mostly watermasters, had other sources of income like farming. However, they would also have a hard time making ends meet, without their government salary. Moreover, they highly valued the security of the NIA's income, as well as the social security provisions for health and pension.

As the District office was to be financially autonomous for its operational budget, low fee collection had a direct effect on the payment of salaries and benefits. This was a real problem to the fieldworkers. Being government employees, they would eventually receive their salaries. However, insufficient income of the District from fee collection frequently delayed salary payment by two to six weeks. Due to these delays, many fieldworkers were forced to take salary loans against hefty interest rates. The payments of the office for health insurance and pensions were delayed for more than a year. Though this posed no immediate threat to their well-being, they were still concerned that it might threaten their security in case of illness or retirement. Hence, there was a widely felt sense of

urgency among the fieldworkers to serve the NIA's clientele in such a way that sufficient fees could be collected to secure a timely payment of salaries and benefits.

Though important, the concern of these fieldworkers with the affairs of the office was not only based on their need to earn a living. Fieldworkers often told me that they worked harder at the start of the UPRIIS system, when the connection between fee collection and salary payments was not yet established. Hence, there was more to it. Their concern with the office was also based on their identification as NIA workers and a sense of belonging to the agency.

This NIA identity was partly based on pride. Especially at the start of UPRIIS, fieldworkers took pride in the fact that they could bring the much-needed water and construction works to their villages. At the time, the NIA was considered a fine agency to work for. It was considered to be an efficient corporation, which played an important role in the modernisation of the Filipino countryside. Operating under the direct control of President Marcos, it built the biggest dam in Asia. At the time, its salaries were relatively high, even if compared to the private sector. Much of this pride was gone by 1997, as the NIA was no longer what it used to be. However, especially some of the ditchtenders and gatekeepers still derived their status in the village from the fact that they enabled farmers to harvest their dry season crop.

To most fieldworkers, the NIA did not just provide a job. It had become an important part of their life. To many, it was their only work experience. They joined the NIA at the start of UPRIIS, or even before that time. Hence they were already working in the District for twenty years or more. Often, colleague front line workers had become part of their barkada. Consequently, their work at NIA became an important part of what Bourdieu called their *habitus*, defined as 'history turned into nature' (Bourdieu 1977: 78).

In line with Lipsky's theory on street-level-bureaucrats, I believe that the frontline character of their job reinforced their identification with the NIA. The character of the work strengthened group feelings. Being a FLW within the NIA is not a boring job. On the contrary. They all experienced a lot of thrilling, stressful and even fearful moments in the 'course of duty'. While guarding gates or collecting fees, they are often criticised, scolded at, and at times threatened. To make their work bearable, they

often go out together. Hence, some of their most anxious experiences were shared experiences. Many friendships emerged out of these experiences.

When ditchtenders or gatekeepers left the house of a watermaster late at night to guard a gate or patrol a canal in times of scarcity, it was like observing a session of a police movie: 'be careful out there'. Among themselves, they frequently gathered to discuss tactics in water distribution, as well as fee collection. In short, their frontline working conditions strengthened their identity as NIA workers, as well as their identification with their co-workers.

Low morale

Nevertheless, work morale had gone down rather dramatically over the years, following the downfall of the NIA from the early 1980s (for further detail, see the following chapter). The general feeling was that NIA had lost much of its attraction, as salaries had become relatively low and often delayed. The glorious days of the start of the UPRIIS system were long gone. They felt that the system was deteriorating due to insufficient maintenance and the lack of sufficient funds for repair works. Also the large reduction in field personnel was considered to be a major cause for the poor performance of the system. As a result, they found it increasingly difficult to carry out their work. As one watermaster commented:

> You might think I am the laziest watermaster of the District. Indeed, I hardly go to the field, but what should I go out for? Even if I worked day and night, like I did before, it still would not make a difference. These farmers would still be without water and their canals would still be silted.

The working morale of the frontliners in Zone 2 was better, mainly because of the doings of the Zone Engineer. As was discussed in the previous chapter, this industrious and ambitious engineer was still able to motivate his workers. Given his access to office resources and the co-operative relations between the villages and his NIA office, they were able to make a difference in the area. Moreover, the work itself was more enjoyable. The engineer did put a lot of time and personal money in to bringing the

fieldworkers and the IA leaders together, during working hours as well as during their informal gatherings after office hours.

The morale of the fieldworkers was also affected by their age. The work had lost much of its attraction after twenty years or more. Cleaning canals is obviously a tedious, and at older age, a very heavy job. Some had been able to be promoted to gatekeeper or watermaster. However, due to government policy and financial problems within the NIA, these vacant posts were not allowed to be filled up. Hence, many carried out the job in a so-called 'acting-position', and thus still received the salary of their original position. The watermasters had no chance to climb the hierarchical ladder at all, as they lacked a degree in agricultural or civil engineering. Worse, many felt that their jobs had lost importance and power. While they used to be in command of several ditchtenders, streamlining left them with one or two workers only.

To summarise this section, the frontline workers were pretty much committed to do their work well. They were motivated by the drive to serve their own neighbourhood, the need to earn an income from fee collection, and a more genuine concern with NIA matters. Morale has gone down over the years, following the perceived decay of the NIA organisation as well as the physical system, and the lack of promotional possibilities. The next sections will explore how these motivations shaped the way they dealt with main system management as well the turn over program. It will be shown that - despite low morale and the difficult working conditions - the majority still tried to make the best of it.

Frontline Workers and Water Management

The work environment was a crucial factor in how the frontline workers engaged in water management. In the NIA friendly environment of Zone 2, the frontliners joined the dominant alliance built around the Zone Engineer. Their work in water management was rather straightforward as it did not require careful manoeuvring. Under his leadership, and in partnership with the IA leaders, they took care of controlling the main gates of the Zone. As we will see in the next section, there was some rivalry between the frontliners and the IA leaders. Generally speaking however, they could carry out their jobs without many difficulties.

In contrast, the more perilous environment of Zone 1 required a more careful approach. As several alliances were competing for scarce water, and as the NIA management did not provide much back up to its fieldworkers, one could easily run into trouble. This section takes a closer look at three different types of strategies employed by the fieldworkers, to be able to operate and survive in this difficult working environment. These strategies are labelled as the evasive, the careful and the bold strategy.

The evasive strategy

Evasive behaviour was mainly found among some of the gatekeepers in charge of the crucial headgates in Zone 1. As much as possible they tried to avoid making a difference. It was their way of coping with the physically dangerous character of their work that - as Lipsky (1980) argues - is one of the typical characteristics of frontline work. Undoubtedly, their work was fearful and dangerous, as was discussed in the previous chapter. These gates were located in remote places, and frequently visited and guarded at night by groups of desperate farmer leaders and local politicians. More often than not, some of these group members were armed, and/or were known to be 'toughguys'. This was to ensure the safety of the group and to show others that they meant business.

During times of scarcity, these gatekeepers were assigned to stay in their field quarters, which were built next to the gate. Their commanding officers instructed them to guard the gate settings, both during day and night. Hence, if such a gatekeeper would stick to his instructions, he would openly challenge groups that visited the gate to change its settings. Such behaviour might infuriate them and might be the cause of physical threats. Gatekeepers were frequently threatened in their work. A gatekeeper who followed a 'bold strategy' was threatened with gunshots while guarding the gate (see further below). Another gatekeeper was indeed killed in the late 1970s. This killing seemed to be related to his role in village politics. However, his colleagues believed that his tragic death was at least partly job related.

One of the main tactics to evade trouble was to be absent during those periods that the tensions over water were getting high. As the visiting groups usually brought their own operating equipment (a handle or turning wheel, or a chain block in case the lifting devices

were damaged), they did not require the assistance of the gatekeeper. However, there were limits to how often this tactic could be employed. As many people would visit the crucial headgates during times of scarcity, complaints about the absence of a gatekeeper would almost certainly reach the commanding officers, i.e. the Zone Engineer or Operational Engineer.

Another tactic was to be present, but to give in to demands made with regard to gate settings. To avoid trouble with their superior officers, gatekeepers would not inform them of all gate operations. Like the gatekeeper of a headgate commented:

> During the night, the gate settings are usually changed. When I wake up in the morning, I will re-set the gates, in line with the instructions of the Operational Engineer. I will then do the daily reading. In this way, it will not show in the readings and he will not be bothered.

The third tactic to evade trouble was to seek the protection of one of the involved politicians in the struggle for water. The advantage to the gatekeeper is that people will not easily harm him, as they know that the politician is protecting him. They were however careful not to support the politician too openly, as they would then lose their 'neutral position' as a NIA worker, and might enrage members of one of the competing alliances.

The careful strategy

The majority of the frontliners opted for what I call the 'careful strategy'. Either because of their own motivations, or because they felt pressured by their co-villagers, they still wanted to make a difference. They felt that they could or should not run away from their responsibilities. However, they tried to carry out their work in a careful way, so as to avoid unnecessary conflict. Or, in the words of Lipsky (1980), "they used their discretion to relieve tensions arising from their boundary-spanning role, i.e. the mediation of state-client relationships." As an example, I will take a closer look at the tactics employed by Argee, a watermaster operating in the tail-end area of Zone 1.

For twenty years, Argee had been operating as a watermaster for the 1-H canal network (see map 4.2). For several years he took care

of water management in his own division, as well as the division of his wife, who was also a NIA watermaster (in return, she took care of most of the administrative duties).[5] All in all, he was thus in charge of an area as large as 2000 hectares.

His area was located at the boundary of the program area. Usually, a part was included while the remaining part would be excluded from the program area. Consequently, crop damage or total crop failure was a recurrent phenomenon in his area. Moreover, the crucial headgates distributing the water between the different tail-end areas of Zone 1 were located within or near his area of supervision. Hence, he had to operate amidst several alliances competing for scarce water.

He had always been very active in water management. Working day and night, together with some trusted colleagues, he was one of the key-players in the area. His primary motivation was to secure water to the fields of his own village, which was located in the upstream division. However, he also cared about the villages of his tail-end division. He pitied the farmers in these areas, as water logging frequently damaged their wet season crop or did not allow them to plant at all. Hence, he liked to help them to secure water for their dry season crop.

In recent years, however, he was no longer at the forefront of water management. Given the deterioration of the system and the loss of his field men, he found it increasingly difficult to take care of his responsibilities. As a result, he had chosen a more careful strategy. Nevertheless, he was still a player to be reckoned with. His carefulness was based on the following key-elements.

Firstly, he operated behind the scenes as much as possible. He hardly left his house, but rather let a few trusted men (one from the NIA, the other one a farmer) go out to gather information or guard the gates. Also, as much as possible he let the different alliances from his areas of supervision struggle for the water. He still made a difference to them by giving them advice and information. They frequently visited his house to discuss tactics. It was only in those cases that the atmosphere was growing tense and he feared for the well-being of his field men that he might decide to go out himself. By doing so, he tried to preserve the image of a 'neutral' NIA employee, rather than being seen as a representative of one of the involved interest groups.

Secondly, he ensured that he was well informed about the water flows in the upstream parts of the system, the water needs of the

different areas, as well as the moves of the various rival alliances operating in the tail-end. He got his information through regular visits to the office, through colleague frontliners and his trusted field men, and through befriended IA- and village leaders visiting his house as they were seeking his advice. Given his long-time experience, he understood the dynamics of this complex game over water well. It allowed him to be effective in his moves. He knew when and how to intervene, and when to lie low. This allowed him to avoid unnecessary conflict due to interventions, which would turn out to be futile anyway.

Thirdly, he was keen on developing and maintaining friendly relations with all key players in the field of water management. For instance, he remarked about one of his biggest rivals, the village captain who was heading the so-called syndicate:

> We fight about the gate settings, but we treat each other with respect. I make it a point that our fights do not become personal. I do for instance attend his birthday parties and give him a present.

Another way of staying on speaking terms with the different people involved, was that he tried to be accommodating with regard to the water needs of other areas. Water flows were negotiated and shared, even though it hampered the flows to his own area. For example, during the 1996-97 season, he allowed a barangay captain from a downstream village to frequently divert water from one of his sub-laterals. He could have stopped this diversion all together, but did not do so, as it might have jeopardised his relation with this particular village leader.

Fourthly, he was careful in making promises about water deliveries. As he realised very well that he lacked control over the system, he avoided making promises that he might not be able to keep. During one instance, for example, he attended a meeting in which the Zone Engineer had set up a concrete schedule for water distribution in the Zone. He however decided not to convey this schedule to the different farmer leaders in his area, because it might harm his reputation.

> So many things can happen that we cannot foresee or control. If I am going to tell about this schedule, these people will have expectations. If we cannot keep our promises, they will blame me, and I will make a fool of myself.

Fifthly, he played by the NIA rules. He followed the NIA's procedures in order to retain his legitimate and neutral position. It meant that he would not openly claim water for areas, which were excluded from the program area. In such a case, he would lie low. He would then limit his actions to advising farmer leaders from these excluded areas on how to make efforts in securing water successfully. However, he did try to play the rules as well, to avoid being cornered altogether. As Lipsky (1980) argues, the "sheer volume of contradictory work rules enables street-level-bureaucrats to exploit 'Zones of relative indifference' to the management, while respecting *de facto* core rules."

This was indeed part of Argee's manoeuvring. For instance, in the dry season of 1996-97, the office was planning to keep his areas out of the program area. He however was able to convince the office to include at least small parts of his areas in the program area. Given these areas, he could legitimately claim that water had to be flowing to his areas. He was well aware that the actually planted areas were much larger, and also made use of these waters. However, he could always claim that this was the unintended consequence of a legitimate effort to serve the program areas.

Another example of bending the rules was found in his reporting to the office. One particular IA in his downstream division was widely known for their efforts to please the NIA office by collecting fees. Based on this sympathy, the area of this IA was usually included in the program area. Argee helped to maintain this image by playing the rules. He was supposed to report all of the planted areas as the basis for the billing of irrigation fees. This rule was however not very clear. At other instances, the office preferred them to submit only those areas for billing, which would have a fair chance of a good harvest. In this way, the office avoided that large areas would have to be classified as exempted from billing later on. They wanted to avoid this as it would be interpreted by the NIA's central office as a sign of poor management. Also, the engineers wanted to maintain a small program area, as it otherwise might face claims for water from local farmer leaders that it might not be able to honour.

Argee cleverly played with these contradictory work rules. He only reported a part of the actually planted area as planted or programmed, but he also stimulated efforts by the IA to collect fees from all of the harvested areas. The collected fees from farmers that were not reported as being planted, were charged to

their back-accounts. Consequently, fee collection efficiency rates seemed surprisingly high, and the image of the 'good IA' was reproduced.

Finally, he was careful not to get squeezed between the field and the interests of the office. In general, the watermasters well understood the subtleties of the socio-political dimensions of the struggles over water, and the positioning of the office in these struggles. They understood the fact that the engineers were playing a game of survival as well. Hence, the office might not back them up in case of conflict, if it would not suit their interests. To avoid being squeezed, the watermasters frequently had informal discussions with each other as well as with befriended engineers or politicians. In such a way they remained up to date, and could adjust their tactics if needed.

A female watermaster who was rather new to the job learned about the relevance of this careful strategy the hard way. Previously she had been working at the office as a collector. Due to the retirement of a watermaster, she was asked to take his position for a division adjacent to those of Argee. As she liked to work in the field, she took the job and ambitiously tried to make the best of it. However, as she lacked the necessary political skills, she badly misjudged the wider politics of her work. Her division covered part of the villages that were the primary targets of Meneses Jr., the mayor's son (see previous chapter). She had a hard time collecting fees from these farmers, as they argued that it was this politician who brought them the water, and not the NIA. As she felt that the office should address this issue, she decided to write a letter to the Operational Engineer. In that letter, she explained the situation, and requested the office to take action. Another reason for writing the letter was to argue that she could not help the low collection in her area.

Her move turned against her. The office let her down. The Operational Engineer used her letter in his subtle struggle with this politician regarding his interventions into the water management of the District. Through one of his trusted men, the Operational Engineer had the letter shown to the mayor's son. The mayor's son was enraged and called her to his house, where he scolded her. Obviously, she felt bad about the situation and lost much of her appetite for the job. She was relieved from her position, as both the office and the watermaster herself felt that she could no longer carry out her job effectively in that area.

The bold strategy

The third strategy described here is the bold strategy, chosen by a few of the fieldworkers. Though a small minority, they were an important minority. These were toughguys, who were willing to live rather dangerously. By standing firm in guarding gates and patrolling canals, they were crucial actors in water management who did make a difference. Being brave is not just a highly valued trait in the macho culture of Central Luzon. It can be turned into a resource as well. There is a job market for these people, as politicians and other power holders like to make use of their services. Hence, people can make a career out of it (Fegan 1994). This was true for Jo, a tough gatekeeper in Zone 1. His toughness made a difference to the water management of the Zone, and at the same time allowed him to develop his own politico-economic project.

Jo was nearly fifty years old, and had served the NIA for over twenty years. He was an uneducated and relatively poor man who owned a small house in one of the tail-end villages along lateral 1-H. For many years, he had served as a ditchtender under Argee. Jo worked hard, not only in cleaning his canal, but also supporting Argee and his wife in securing water for their areas and collecting fees. To secure water for Argee's divisions, a trifurcation gate in the 1-H canal network was crucial. Hence, Jo took also care of guarding this gate.

During the first half of the 1990s guarding this gate was a dangerous practice. The syndicate group around kapitan Tecson controlled this gate, to allow them to serve their clientele along the 1-H canal system. Jo was however known for his bravery, and still went to the gate at night, when the kapitan's men where not around. It resulted in serious animosity between Jo and the syndicate's field men. In three instances during three consecutive dry seasons, shots were fired in the air to scare him away, while he tried to approach or operate the gate. In another instance – when Jo was not around – a bullet was actually fired in the direction of a farmer group guarding the gate. A bullet hole was still to be seen in the concrete structure of the gate. Argee was pleased with this hard-working fieldworker, who dared to go this crucial gate. On the other hand, he was worried that Jo might be harmed.

Jo, however, could not easily be stopped from carrying out his bold strategy. Part of his motivation was based on pride to be a

NIA worker. He was proud that he could make a difference to the many farmers who where depending upon his services. He genuinely felt that it should be the NIA in control of the gates, and not outsiders like the syndicate. He considered it to be his duty to stay firm and not to give in to their threats. He felt that it was their job to serve the farmers, among others because otherwise the NIA had no right to demand irrigation fees.

There was however also a political angle to his doings. He had been a long-time local vote broker for various politicians at village, mayoral and congressional level, and had already served as a barangay councillor. As his village was located downstream of this crucial trifurcation gate, serving these farmers with water would increase his status and popularity in the village. Moreover, during the second half of the 1980s he found himself in a serious conflict with the kapitan of his village, the toughguy who during that time belonged to the irrigation and political alliance of kapitan Tecson and municipal secretary Juatco (see previous chapter).

This conflict started when Jo decided to no longer support the congressional candidate that was supported by this kapitan, but instead to support a rival candidate. The conflict rapidly deepened. The kapitan's group uprooted his watermelon field, tried to frame him for a local theft he did not commit, and Jo even received a note saying that his days were numbered. Hence, the rivalry over water was complemented by a rivalry in village politics.

When the mayor's son started to challenge the syndicate's project during the mid 1990s, he quickly discovered Jo's value. At that time, Jo had become acting-gatekeeper of the trifurcation gate. To the mayor's son, Jo's boldness was a resource he could well use to take over control from the syndicate. Moreover, Jo was willing to work day and night. Also, Jo lived in one of the villages where he was trying to gain electoral support. Hence, the son of the mayor tried to gain his sympathy. Jo liked the interventions of this politician, as it helped him to beat the syndicate's control over his gate.

They joined forces in the 1995-96 dry season. When the son of the mayor learned that shots were fired at Jo while guarding the gate, he took his chance. He provided Jo with an M-16 automatic rifle. It was only after the dry season ended that Jo had to give it back. Jo considered his relation with the politician as a 'tactical alliance', but others then started to see him as a *bata* (a 'pawn' and trusted follower of another person) of this politician.

In the subsequent dry season, Jo was again supporting this politician in securing water for Jo's village as well as the surrounding villages. By patronizing him, the mayor's son was able to further strengthen their relationship. Firstly, the mayor's son gave him a chance to act as the broker for the sale of some his land. Jo had been trying to develop this side-line activity for years. As a NIA worker, he had daily contacts with farmers in a wide area. He figured that he thus had firsthand and early knowledge of farmers who were willing to sell their land. Until that time, he had not been able to make much money out of it. Though this deal eventually did not work out as well, it would have earned Jo a substantive income if it would have pushed through.

Secondly, this politician helped him out when Jo got involved in a shooting incident. One day in 1997, Jo was physically threatened by a group of rivals from his own village. To defend himself, Jo shot one of them. He was imprisoned, but the politician intervened and ensured that he was quickly released. Thirdly, this politician supported Jo's wife in the political campaign as barangay councillor in local elections. Fourthly, the politician backed him to secure one the available vacancies for the position of gatekeeper that became available in 1997.

In summary, this section has described three major strategies applied by the NIA's fieldworkers to cope with their work. Despite the fact they had to work in a difficult work environment, the majority still tried to make a difference. Being frontliners, they used their discretion to cope with the uncertainties and pressures inherent in their daily work. I will now explore another important field of work for these frontline workers: the shaping of their relations with farmers.

Shaping Joint Management

The frontline workers, notably the watermasters, have played a central role in organising farmers. At the start of UPRIIS, they were supposed to organise farmers to stimulate the use of Green Revolution technologies and the application of rotational forms of irrigation. Later on, several attempts were made to organise farmers for the sake of fee collection. During the 1980s, when the participatory approach gained importance within the NIA, the fieldworkers became involved in organising Irrigation Associations.

The NIA also gave them a central role in the organising of farmers for turn over, under the IOSP program (see chapter 2). Though assisted by the Institutional Development Officers, the watermasters were in charge of actually organising the IAs. Also, they were responsible for selecting the Farmer Irrigator Organisers (FIOs) in their areas. These FIOs would help them in organising the farmers. Also, after the IOSP organising process was completed in 1991, sustaining the farmer associations was put in the hands of the watermasters. Moreover, several watermasters from the District acted as trainers of IA leaders in courses on water management, leadership and financial management.

Generally speaking, the frontliners adopted the IOSP program and tried to make the best of it. Initially, the program was resisted by ditchtenders as they feared for their jobs. Later on this resistance vanished as they realised that the pace of turn over was slow, and that the phasing out of their positions remained based on voluntary retirement. Many frontliners were sceptical about the idea of turn over. They could see the negative effect of the reduction of the NIA field personnel, and could only hope that the IAs would be able to make up for it. As they could not stop the streamlining process, they did see the need for organising the farmers to take over the responsibilities no longer taken care of by the NIA. Moreover, the initial IOSP program looked promising.

They particularly liked the fact that the IOSP would not only take care of organising the farmers, but also would ensure that the facilities would be rehabilitated. The promise was that the IAs would only enter into a contract after their canals would be de-silted and the gates would be repaired. These repairs were very much welcomed by the frontliners, as NIA funds had dried up since the early 1980s (for further detail, see the following chapter). In the words of a watermaster:

> All in all, I felt that the IOSP project was a program that I could sell to the farmers. We were not just going to tell them that they should pay their fees, while we were taking out our fieldworkers. We could however also tell them that they would get paid for their activities, and that we would ensure a proper functioning system before turn over.

Much of the initial enthusiasm vanished during the course of the IOSP program. The organising part went ahead quickly, as the

many Institutional Development Officers working under the Institutional Development Department of UPRIIS pushed this. However, the funds for repairs and rehabilitation were delayed, and eventually did not come through at all. It was envisioned that larger funds for repair works would become available in the second phase of the IOSP program, which ran from 1992-95. However, it turned out that only a limited number of national systems would get access to these funds.

The management of the UPRIIS system failed to persuade the national office to select it as one of the 'happy few'. As a result, turn over was taking place without the repair works. Moreover, the incentives to be paid to the IAs for the cleaning of the canals and the collection of the fees were also problematic. Firstly, IA leaders considered the payments for canal cleaning to be too low to cover the costs of cleaning and the payments were usually delayed by at least three months. Secondly, the actual payments of the incentives for fee collection of the NIA to the IAs were usually delayed by a year or more. Hence, the frontliners felt bad about their broken promises to the farmers. Also, they experienced that the IA leaders were hard to motivate, and could not make up for the loss of the fieldworkers.

> One time, I told Bautista [the NIA administrator from 1992-95, JO] during a seminar that the streamlining program had gone wrong. At the start of UPRIIS there were many 15-30's employed by the agency, but it has gone too far. The fieldworkers provided the services to the farmers, not those higher-ups in the offices. When you remove the fieldworkers, you remove the services, and farmers will stop paying their fees. This is what has been happening for over ten years now. We have now reached the point that the NIA has lost all of its credibility towards the farmers (interview with a watermaster, July 1996)

Again, a distinction should be made between the two Zones. Much of the disappointment among the frontliners was to be found in Zone 1. Given the preferential treatment of Zone 2, its historical ties with the NIA office, and the socio-political project of the Zone Engineer, the turn over program gained momentum in that area. I will further explore the dynamics of their efforts in giving shape to the turn over program, by discussing a case in each of the two Zones. The organising efforts of Argee in Zone 1 will

be discussed first. In his case, the policy process and the outcomes showed a remarkable diversity. To account for this diversity, I will discuss the dynamics with regard to two different IAs located in his area. Subsequently, I take a look at the policy shaping activities of a watermaster in Zone 2. This section ends with a discussion of the policy shaping efforts of the Institutional Development Officer who remained operational in the District after the organising process was finished.

Zone 1: Argee replacing his fieldmen

As Argee was operating as a watermaster for two divisions, he was involved in the organising of no less than five different IAs. I explore his relations with one IA in each of the two divisions. The first IA was located in the more upstream division. The IA covered three villages, one of them being his own home village. I will therefore refer to this IA as the 'home village IA'. The other IA is located in the more downstream division, along a river. This will be referred to as the 'riverside IA'

During the IOSP-project, Argee played a crucial role in the organising process of the home village IA. He carefully picked out two Farmer Irrigator Organisers who were going to organise the IA, as well as the farmers who were asked to become the IA leaders (the Board of Directors). Obviously he knew all the people in these villages. The people he selected needed to have proven leadership capability, and had to be good in befriending people and pakikisama. He was careful not to select people with factional inclinations, as he felt that factional politics should stay out of the irrigation organisation. He tried to stay far away from such factional politics, as: "If I would give water only to one of the factions in the village, it would be disastrous. I quickly would have made a lot of enemies, and they won't pay their fees any more."

He did not follow the bottom-up organising process, as prescribed by the IOSP program. He felt that it did not make sense to try to involve all farmers. It would be a time-consuming activity, and farmers would show little interest anyway. Rather, he focussed on the selection of the IA leaders, and called several meetings in the village, as well as in his own house. There, he explained the purpose and details of the organising program, and tried to motivate them to join the IA.

He soon discovered that it was hard to motivate the IA leaders to get involved in irrigation management: "They are only willing to meet during times of crisis. Otherwise, it is very hard to bring them together. If I call for a meeting, I have to go to their houses and collect them there. Otherwise they will not show up."

Their role in irrigation matters was minimal. Despite having a fee collection contract with the NIA, they would do little more than advocating for fee payments during informal discussions with neighbouring farmers. The farmers did usually not recognise the IA leaders as such, nor did the majority of the farmers know about the IA. The IA had entered into a canal cleaning contract for a sub-sub-lateral only. Argee could not persuade them to enter into a canal cleaning contract for the larger and more important sub-lateral running through the IA. They felt it to be too cumbersome to clean this canal monthly, and felt that the NIA payment was too limited to do the job. Argee could understand their feelings.

> They do not get paid to be an IA leader. They are all busy with managing their own affairs, and making a living. I understand that they do not want to do the cleaning of the canal. It is more costly than the contract provides for. Moreover, it is heavily silted, as the office did not desilt it for many years.

He was unhappy with the situation. He felt that the time would come when his own village would suffer from water stress, due to the continuing siltation of the canal, and the lack of co-ordination among the farmers. To make the best of it, he did two things. Firstly, he concentrated his efforts in shaping joint management on two local farmers only. He built a working relationship with them, in which they assisted him in irrigation matters, like guarding gates, organising the cleaning of canals and assisting in fee collection. To put it differently, as he could not succeed in building an IA, the best he could was to at least try to make up for the loss of his field men.

The first farmer he focussed on was an IA leader who turned out to be the only one who was willing to spend his time and effort on irrigation matters. The other one was a neighbouring young farmer, who had become personally attached to Argee. In return for Argee's advice and different kinds of help, he was willing to assist Argee in water management.

Argee did his best to build a working relationship with the IA leader. He called a few times for an IA meeting to re-organise the IA, and to get the IA leader elected as IA President. However, insufficient people showed up to attain a quorum. He then made it happen, by individually visiting the IA leaders and make them sign the necessary papers. Also, he tried to help the newly elected IA President wherever he could.

The main motivation of this IA President to join the IA was to try to persuade the NIA to improve the local NIA road that connected his house to the barangay road. This canal road was in bad shape and badly needed to be rehabilitated. Argee did his best to get the project approved by the NIA. When this only worked out partially, he helped the IA President to hire trucks with the money of the IA, acquired from the ISF collection contract.

Argee was also lenient with regard to his checking of the quality of the canal cleaned under the MTO contract. In this way, the IA president received sufficient funds to at least do some cleaning of the smaller sub-lateral. Moreover, Argee granted the IA President the contract for hauling fees paid in kind to the office, which earned the IA president an extra income. Finally, Argee allowed the IA President to use the IA collection incentive funds to be put as stocks in a local rural bank. As the IA President was one of the bank's board members, this strengthened his position in the bank. Due to this working relation, they became friends. Later on, they also started a joint venture together, in which both invested money to start cultivating a field in the nearby mountains.

After several years of working for the IA, the IA President was fed up with the job. He was unhappy with the fact that the other leaders were not putting any effort in the IA, and felt that the NIA had let him down: "I am instrumental to the NIA. I am cheaper than the field personnel they hired before." He wanted to resign, but felt that he could not let down Argee and his wife: "they have asked me to stay as President until they retire".

The second thing Argee did to make a difference for his area, was to stimulate and support the collective action of farmers whenever he could. Though the IA leaders were not willing to accept the canal cleaning contract, farmers did occasionally feel the urge to clean the canal. This usually happened at the start of the wet and dry season. As tail-end farmers were eager to start their land preparation early, they realised the need to clean the canal to enlarge its capacity, as this would speed up the water use of the

upstream farmers. During such occasions, Argee stepped in to assist them. During the first years, he spent money from his own pocket to buy foods and drinks for the group of farmers cleaning the canal. In latter years, when the IA received incentives from fee collection, he would reimburse the expenses with the IA fund.

In the case of the riverside IA, Argee was more content with the way in which he was able to shape the joint management scheme. He was pleased with the fact that the leadership in that area took good care of irrigation matters, while his own involvement was limited to some well appreciated support. The different outcome seemed to be caused by two reasons. Firstly, as this IA did not cover his own village, he did not feel that responsible. Consequently, he could more easily leave problems unattended, to be picked up by the IA leaders. In the home village IA, the local leaders considered Argee to be primarily responsible.

Secondly, the situation with regard to water control was more problematic in this IA. Water-logging often damaged their wet season crop, or prevented them from planting all together. Hence, these farmers were very eager to have a good harvest in the dry season. As they were located in the very downstream part of Zone 1, they could only do so by being very well organised. Moreover, due to the regular flooding of the roads in the riverside IA, the need for repair works was relatively high. Again, they had much to gain to be well-organised, in order to have good access to the NIA. Their eagerness facilitated Argee's efforts to organise this IA.

As he was relatively new to the area, he used the organising process to get to know the leaders in the area. Assisted by the Farmer Irrigator Organiser, he selected the IA leaders. He also built up relations with some of the barangay leaders, as they were active in irrigation matters already. His main message to them was that - to be able to survive - they should get their act together, because the NIA was taking out their field men because of financial difficulties.

Given their eagerness, the organising process facilitated the emergence of an effective organisation of a number of IA leaders, together with a few village politicians. They took care of their own concerns, without relying on Argee. They were widely known for their effective struggles for water, as well as for their effective ways in courting the office.

With regard to fee collection, this IA was probably the only IA of the District that actually did what the fee collection contract

required them to do. They earned their incentives by taking care of campaigning and collection tasks. The IA President was key to the collection activities. The person who took the position as IA President was an old but relatively rich lady, who wished to secure the water needs of her own fields, and to serve the well-being of her co-villagers. She realised that courting the NIA office with good collection rates was crucial to win their sympathy. She thus put effort in persuading farmers to pay, and in collecting their dues.

Also Argee played an important role in her activities in fee collection. As fee collection involves large amounts of money, the issue at stake was trust. Colleagues did not dare to delegate the collection and billing to the IA leaders, as they were afraid their billing book would get lost, or collections would be pocketed. In the end, the NIA fieldworkers would be held accountable. However, Argee was able to develop a relation of trust with the person involved. Moreover, he granted her the hauling contract, which many of his colleagues preferred to keep to themselves.

Argee hardly visited the area, which allowed him to take care of other matters. Still, the leaders of the IA and the village highly appreciated him. Their appreciation was based on the following reasons. Firstly, as he lived and operated in the more upstream area, his support and advice was crucial to their access of water through the diversion from the main lateral. Secondly, he was instrumental to push for their needs in the NIA, as he was involved in the NIA office. Thirdly, he had come up with some rather ingenious suggestions to improve their access to water. Through his ideas and effort, several re-use structures (and first-use connections, see chapter 3) were built that had a great impact on their access to irrigation water.

To summarise the case of Argee in Zone 3: As his ability to act was diminished by the loss of his field men, he tried to shape the IAs to make up for these losses. In one of the IAs his efforts largely failed, as the turn over program had too little to offer to be interesting to the farmer leaders. In the other IA, he was able to shape the working relation in a way that fitted mutual interests.

Zone 2: Alan's struggle with an IA president

Alan worked as a watermaster in a tail-end division of Zone 2, covering – among other villages – the village of San Anton (see the

previous chapter). His working environment was a very different one. Argee was given a lot of room for manoeuvre by the engineers. As they wanted to stay away from the perilous tail-end of Zone 1, they preferred to leave it to the frontliners. In the case of Alan, his options were far more limited. Given the close ties and socio-political connections between the engineers and his working area, he had little option but to comply with the grand scheme set up by the Zone Engineer.

Alan, however, had little reason to oppose his Zone Engineer's project. On the contrary, he found it advantageous to be part of it. Alan's strategy had always been to stay close to the engineers of the office. He was considered one of the 'yessies' by the more union-oriented group around Argee, who were much more critical of the doings of the engineers. In the past, Alan had held a temporary position as a fee collector. His aim was to get a permanent position as a watermaster. He preferred to work in the field, as this was where the action was. Also, he realised that the office would phase out the collector position. To achieve his aim, Alan did two things. Firstly, he tried to show his capabilities to the engineers, by working very hard and ensuring that he was the top collector of the District. Secondly, he tried to befriend the engineers, and become their kumpare. His tactics were successful, and he indeed was able to become a watermaster holding a permanent position.

Alan helped the Zone Engineer's effort to set-up the alliance of the NIA and IA leaders in the Zone. Though he lived in another municipality, he was always found in the informal gatherings of the alliance. He enjoyed the work, and worked hard in water distribution and fee collection. He had developed a clear interest in fee collection. Ensuring a high collection rate was his way to distinguish himself among his colleagues. It also had become an important side-line. He earned a substantive extra-income from the hauling of fees-paid-in-kind from the farmers to the office. Rumours had it that he made money out of collection, like fiddling with the weighing scales, or replacing high-quality rice paid by farmers with low quality rice, before submitting it to the office.

His efforts to maximise fee collection and maximise his income earned out of the fee collection, shaped the way in which he dealt with turn over and the IAs. 'Pay your obligations' was his main message to the farmers, and he was known to be very persistent in making them pay. The IA Presidents of his area appreciated his efforts in fee collection. It provided them with high collection

efficiencies, and consequently with a high income from the incentives. The IA Presidents used this money at their own discretion. Some used it for irrigation-related expenses like canal cleaning, others used it for private purposes.

Though Alan was enthusiastic about the alliance built up by the Zone Engineer, he felt that the IA Presidents challenged his authority as a watermaster. Tensions built up during 1997. On several occasions, they neglected his ruling with regard to gate settings. However, the real conflict emerged over fee collection. During the previous years, it had become a practice that the IA presidents would give a share of the incentives from fee collection to Alan. The argument was that he conducted all the efforts to collect the fees, while the rewards for his labour went to the Presidents. His share was around 10-25% of the incentives. In 1997, Alan wanted it be formalised, and be set at 25% of the collection incentive. One of the IA Presidents refused to do so. He felt that it was his money, and that Alan had no right to demand such a share. It should be his prerogative to give such a share, in case he felt Alan deserved it.

The conflict over the incentives developed into a more general power struggle between the IA President and the FLW. Alan tried to get the IA President replaced. He however miscalculated his chances. The joint management scheme shaped by the Zone Engineer had already changed the power relations between the frontliners and the IA leaders. It was no longer simply the NIA who controlled the turn over and organising program, in which the frontliners could change IA leaders at their will. Moreover, the IA leader had been acting as a local vote broker for the father of the Zone Engineer as well as the local kapitan. The kapitan backed the IA President. The Zone Engineer then decided that the IA President should stay, and that Alan had no right to demand such monetary claims. To solve the problem, Alan was transferred to another division. Apparently, the Zone Engineer did not want to jeopardise his political project by removing one of his allies in the village.

The case studies of Argee and Alan show that the individual interests and motivations, personal ties as well as the working environment are crucial factors in the shaping of joint management. It also shows that the room for manoeuvre of these frontliners to shape the joint management program can differ. In the case of Zone 1, the office gives much room to the frontliners

to make their own project. In the Zone 2 case however, the frontliners had little option but to comply to the project of the Zone Engineer. Hence, whether frontliners can be local heroes or not, whether they are squeezed or not, are empirical and contextual questions. In other words, their discretion is not simply the a result of having a position at the interface between the NIA and the water users. Given the nature of their work, they exercise some autonomous discretionary powers. However, "the scope and nature of these powers are objects of struggle." (McElligott 2001: 24).

To end this section on frontline workers and the shaping of the turn over program, I explore the room for manoeuvre of another type of FLW: the Institutional Development Officer (IDO). It will be shown that he lacked the backing to turn the turn over program into a more radical project.

The room for manoeuvre of the Institutional Development Officer

Martin was hired by the NIA as one of the five Institutional Development Officers at the start of the IOSP program. After the organisational process was finished in 1991, he was the only Institutional Development Officer that remained in the District. He was not radical in his aims. He did not believe in full turn over, and he put a lot of time and effort to make farmers believe in the need for paying their fees. Still, his project was far-reaching. Being inspired by some of the former Institutional Development Officers and superior officers, he was striving for more transparent, formalised and democratic decision-making in the District. He wanted the IAs to be democratic institutions, in which the leaders were accountable to its members. More importantly, he wanted the engineers to become accountable to the IAs. He was after transparent criteria for decisions on the program area, as well as the areas to be prioritised for maintenance and improvement works. Given the context he was working in, this was an ambitious project.

His room for manoeuvre to carry out his project was limited, as he lacked the necessary back-up. Firstly, he lacked the manpower. He was only given one assistant, who had been considered to be too weak by the NIA management to perform well as a watermaster. Martin's task load was overwhelming. He had to look after the contract and organisational renewal of the 78 IAs and the

federations, he was organising the training given to the IA leaders, and he organised the meetings between NIA management and the IAs. He was thus busy with practical matters, and lacked time to work on his democratisation project at a strategic level.

Secondly, he lacked the back-up from the NIA leadership. Within the District, the engineers supported the institutional development program for as long as it served the interests of the office, i.e. fee collection and farmer participation in irrigation management. They did not support his democratisation project.

For instance, the District Chief did not really care about the fact that the IA presidents were pocketing the money from the fee collections. The Chief felt that this was OK and should be seen as a kind of remuneration for the fact that they were helping the NIA. Also, the engineers did not support Martin in his effort to make the signatures of the IA Presidents an obligatory procedure in the quality control of contracted works. Moreover, they gave little importance to the dialogues between the IA leaders and the office, set up by the Institutional Development Officer in the NIA-IA meetings or during training sessions. Frequently they were invited but simply did not show up.

Also, he did not get much back-up from the UPRIIS leadership. The former head of the Institutional Development Department at UPRIIS had been opposing the more far-reaching organising efforts of the Bagadion group from the very start.

> I did not like their doings and philosophy. They were never able to enter UPRIIS. When I came back from the United States where I did my Ph.D., I found out that they had fielded two of their Institutional Development Officers. I had them kicked out again.

Finally, the Operations Manager of UPRIIS was also very careful not to let the IAs and its federations go out of his control. He had been involved in one of the pilot projects of the participatory approach, in which he had seen what could go wrong. In that pilot project, located outside of UPRIIS, the doings of the Institutional Development Officer resulted in a serious conflict between the farmers, the NIA and a contractor over the quality and finance of physical works in the area. As he told me:

> I have been careful with the IAs and the federations, only going very slowly in involving them in NIA matters. In the beginning I

> was afraid that they might turn against NIA but later I learned that they are very co-operative, and helpful. (interview held in October 1996)

Given his precarious position, Martin had little option but to downscale his expectations and to operate carefully. He managed to gain some support from the relatively small group of fieldworkers who were critical about the way the District was being managed. They provided a platform where he could at least air his frustrations, and discuss his tactics. They also supported him as trainers to the IA leadership. Other than that, he was forced to accept his marginal position. As he formulated it himself: "Who am I against these engineers?"

Conclusions

The findings presented in this chapter give reason to question the mistrust towards state workers that informed the Philippine irrigation reform policies of the 1980s and 1990s. These policies tried to control their assumed rent-seeking and shirking behaviour by either rolling back the state (e.g. streamlining and turn over), or by fixing this behaviour through client control (e.g. farmer federations and fee-for-performance schemes). My findings however, show something else.

Both rent-seeking and shirking behaviour existed, but this was not the most important mode of conduct. There was a lot of commitment and genuine concern among the NIA fieldworkers about the plight of farmers in getting water and the shaping of turn over policies as well as the proper management of the system. 'Making the best of it', rather than rent-seeking informed their doings.

My findings thus coincide with Van der Zaag's analysis of the role of frontline workers in a large-scale Mexican irrigation system (see also Vos 2002). However, there is no reason to assume that frontliners are heroes everywhere and always. It is perfectly imaginable that – given different circumstances – fieldworkers indeed stand in the way of efficient and equitable irrigation management, for instance because they are hired on the basis of favouritism and political patronage. Hence, their practices require explanation and need to be contextualised.

In this case, their commitment arose from a balanced mixture of loyalties and interests. Many combined a particularistic concern for their rice growing kin and home villages, with a concern for the wider interests of the NIA-District. The latter concern was based on peer group solidarity and identification as NIA workers, as well as the felt need to serve farmers in order to earn their own wages from irrigation fees.

The turn over and streamlining policies greatly reduced the number of field workers in the District, and likewise reduced their capacity to make a difference. As shown in the case of Zone 2, IA Presidents effectively challenged the power of NIA fieldworkers in controlling local matters. In Zone 1, watermasters felt it to be increasingly difficult to take charge, as they were left without their labourers, i.e. the ditchtenders. As the IAs and the federations did not become strong organisations and did in most cases not live up to their tasks and responsibilities, the NIA fieldworkers found it increasingly difficult to make a difference.

Nevertheless, this chapter has also shown that some of the remaining fieldworkers were important actors in the District. They played crucial roles in main system management and fee collection, as well as in the shaping and outcomes of the turn over policies. They were not Weberian rule-bound automatons carrying out whatever they were told by their superiors, but instead were people with agency that had room for manoeuvre.

In line with Lipsky (1980) I believe that much of their room for manoeuvre was derived from their 'boundary-spanning role' as frontliners, in which they mediate state-client relationships, and in which they can exploit 'Zones of relative indifference to the management'. This is, I think, especially true for frontliners in large-scale canal systems. They - somewhat like policemen on patrol - operate in the field far away from their superior officers, often outside of office hours. Moreover, they deal with locally specific situations that are difficult to comprehend and thus to control by their bosses.

This observation is important for policy-making. Firstly, it points to the need to provide fieldworkers with discretionary powers when implementing policies. In this respect, the NIA turn over program can serve as an example. The watermasters were given pivotal roles in shaping the IAs, in training their leaders, and in monitoring the IA performance in the implementation of the contracted tasks. Nevertheless, I think that their role should be

further enlarged (see the recommendations in the concluding chapter).

Secondly, it points to the fact that frontline positions like those of watermasters or gatekeepers are positions that will be required in the management of large-scale canal systems, whatever the wider governance set-up. Even if systems are fully controlled by private or farmer-elected bodies, proper system management will have a need for such functions. Moreover, to make them perform well, my findings suggest that such people will require this 'double-bind' described above. They need to be both responsive to local needs, but on the other hand need authority and a degree of autonomy from particularistic interests, to be effective in main system management and fee collection.

This need for fieldworkers questions the wisdom of the NIA's streamlining policies. Undoubtedly, the UPRIIS staffing levels in the original set-up were an example of an inflated bureaucracy. This may have served the clientelistic interests of local politicians as well as the authoritarian interests of President Marcos (see the following chapter), but it over-staffed the UPRIIS system, and thus made it very costly. Hence, streamlining was needed and useful. However, it seems that the need of the NIA to save money has pushed present-day staffing levels below what may be considered healthy. By early 2003, the NIA District employed only 39 fieldworkers that had to make things work in a system of over 20,000 hectares and 10,000 water users. Their number was too low to operate as a group, and to reproduce the described sense of NIA identity needed to face the particularistic claims of local power holders, kin and co-villagers.

A comparison with staffing levels in other countries is revealing. According to Robert Wade (1988), 'the bureaucratic relative supply' is a major factor that explains the successful management of Taiwanese and South Korean systems, and the disorderly situation in Indian systems. The relative bureaucratic supply of irrigation staff per 100 irrigated hectares was of the order of 0.3-0.5 in Indian canals, and around 2.5 in South Korean canals (Wade 1988: 493). In the UPRIIS District, the range in 2003 is only between 0.2-0.3, thus nearly half of the Indian figures, and only around 10% of the staffing levels in the well-managed South Korean systems.[6]

The situation is likely to worsen in the years to come, as the remaining experienced fieldworkers are going to retire. By 2003, all fieldworkers had passed the age of forty and many are already older

than fifty. There is thus a rather urgent need for the NIA to finally develop and implement a workable management scheme. This should be either based on far-reaching turn over schemes, thus withdrawing to for instance the main canal only (which would mean that the farmer organisations will have to hire fieldworkers). Or it should decide to re-strengthen its own workforce, especially at the level of watermasters (for further discussion, see recommendations in the concluding chapter).

Analytically, the findings in this chapter further stress the need for an embedded 'state-in-society' approach in irrigation management studies. The findings go against reified perceptions of an irrigation agency that is sharply bounded from the farmer communities it is supposed to serve. Although it claimed not to do so, Long's 'encounters at the interface' model has, I believe, reinforced such a dichotomous view. During the 1980s and 1990s, this model was used in Wageningen in studies on rural development (e.g. de Vries 1992) as well as irrigation (e.g. Ubels 1989 and van der Zaag 1992). It puts forwards the idea of two different life-worlds – the state vis-à-vis the peasantry -, that meet each other in the field, as a result of government interventions. For instance, in the analysis of a land reform program in Costa Rica, de Vries (1992) talks about the intervention-strategies of the government vis-à-vis intervention-coping strategies of the peasantry.

The frontline workers in the District were indeed operating at the interface between the NIA and the farmer water users. To put it more aptly, they were the embodiment of that interface. They belonged to the NIA domain and the farmer/village domain both at the same time. To a certain extent, they thus acted as the intermediaries between the NIA and farmers. This position at the interface provided them with room for manoeuvre, and – being brokers in between the two domains – allowed them to be effective in their work. Put in these terms, it can be argued that the turn over program strengthened the direct access of farmer leaders to the NIA domain, and thus undermined the 'middle men' position of the NIA frontliners.

However, the metaphor of two different life-worlds – the NIA and the peasantry that encounter each other in the field - is a far too strong one. The idea of two different life-worlds may fit the Costa Rican case, but did certainly not fit the realities in the 4th District, in which both the NIA (earlier Public Works) and farmers

were already working together since the 1930s. There was just one life-world. The NIA 'world' of engineers and fieldworkers and the 'world' of water users and farmer leaders was 'molded' over time, to the extent that it was hard to separate one from the other.

Many of the NIA fieldworkers did not just work in the system; it was also their place of living. They did not leave their private life behind them, and sometimes did not even go to work, as their home served as their 'office'. The water users were not just their clients but could well also be co-villagers, business partners, friends, faction allies or enemies, if not their kin. Obviously, this local embeddedness shaped their outlook on and behaviour in their daily work in irrigation. Moreover, it was shown in this chapter as well as the previous one that NIA engineers and field workers had developed multiple, inter-personal ties with both farmer leaders and local politicians.

Hence, it makes little sense to picture irrigation management in the District as interface encounters between a NIA domain and a farmer domain and less so to discuss it in terms of separate life-worlds. Rather, irrigation management was made up of a number of rival alliances criss-crossing the boundaries between the 'NIA' and 'society' and the 'political' and the 'administrative'. In this complex life-world, NIA frontliners tried to make the best of it, by forging alliances with co-workers, co-villagers, local politicians and IA leaders.

This is not just an academic insight, but it also has practical value. State institutions like the NIA are not big bounded entities, but are made up of different levels and different groups or factions within them, that may be in subordination, co-operation, competition or conflict with each other (Quarles van Ufford 1988; for a general discussion see Mintzberg 1983). Even within the relatively small NIA organisation of the District, different groups existed with different ideas and interests and different relations to farmer leaders and local politicians.

It means that also the prospects for constructive change should not only be seen in the perspective of the irrigation agency vis-à-vis the water users. The NIA is not one group of bogeymen, and neither are the farmer water users the good guys. This chapter showed that there were a fair number of committed fieldworkers within the District's organisation. For reform to be effective, such people should be mobilised and supported in their efforts to build workable alliances and be protected in their struggle against people

who are less committed to change things for the better, whether these are co-workers, superior officers, farmer leaders or local politicians.

Notes

[1] In extremes, it fits the 'Red before Expert' idea of Mao's Cultural Revolution, according to which peasants rather than technical experts should run rural affairs and factories (Moore 1992).

[2] Arguably, Zone Engineers can also be considered fieldworkers or frontliners. However their doings were already discussed in the previous chapter. Moreover, their class position is rather different from those of the watermasters, let alone from that of the gatekeepers and ditchtenders. Being engineers, they usually belong to richer and more powerful families.

[3] Formally their tasks and responsibilities were not very clear. Their job descriptions were not up to date. Due to continuous restructuring programs initiated by the NIA as well as by the national government, both the names and content of their position has been changed several times. In 1996-97, the official term for a watermaster was a 'water resources facilities technician', in short WRFT.

[4] If anything, they carried resentments against those that did not recognise their authority, or refused to cooperate with their procedures. These were found throughout the different social strata. Some richer farmers were not liked because they refused to pay their fees when they did have the capability to do so. These farmers knew that they would get away with it. Frontliners targeted this group as the primary group for receiving demand letters from the office (see next chapter). In the same manner, frontliners talked negatively about poorer, but hard-headed farmers who were not inclined to entertain requests with regard to the operation of their checks.

[5] The fieldwork was a men's world. All gatekeepers and ditchtenders were males, but a few of the watermasters were female college graduates. They entered the NIA as a watermaster, or were transferred to the field coming from an earlier administrative position. Water management was considered to be a male job, requiring physical strength and toughness. Nevertheless, Zone 2 had a *macha* who also joined nightly raids. However, female watermasters were appreciated given their proven capabilities in collecting fees by house-to-house visits of farmer water users. This may be attributed to the fact that in Tagalog rural life, women rather than men are in charge of financial matters (Illo 1988). At the office level, all but one of the engineers in UPRIIS were also males. On the other hand, women outnumbered men in the administrative sections, and had taken up management positions.

[6] For this calculation, I used an average irrigated area in the District of

12,000 hectares in the dry season and 20,000 hectares in the wet season. This gives a relative bureaucratic density of 0.32 in the dry season and 0.2 in the wet season.

6

The NIA's Quest for Money

> For three times already, I made it into the UPRIIS millionaires club. It is a yearly celebration. The UPRIIS operations manager hands out the plaques of appreciation to those who were able to collect more than one million Pesos and gives us small rewards. I was given a mobile phone (interview with a watermaster, January 2003).

To people not familiar with the NIA situation, it may seem to be odd that an irrigation agency is organising competitions like this 'Millionaire's Club' to stimulate watermasters to collect more fees from the farmer water users. For the NIA people it is not odd at all. Becoming viable became one of their major pre-occupations. Outsiders might think of a viable irrigation system as a sustainable one, which allows for good water management and proper maintenance. To the NIA however, viability has a clear and restricted meaning: viability is all about money. To them, a viable Irrigation District is a District that is able to keep its budget in the black.

As was explained in chapter 2, this concern for money started in the beginning of the 1980s. During that period, the NIA became a so-called 'financially autonomous agency'. It means that it lost its access to government subsidies for O&M expenditures, and was thus forced to rely on user fees to finance these costs (Small 1989; Small *et al.* 1989). The NIA decentralised this financial responsibility to the system level. Hence, UPRIIS became a so-called 'responsibility centre', in which each District had to look after its own O&M budget. Since that time, the NIA - and the District in particular - took a series of measures to reduce its expenditures and increase its income.

Being one of the few irrigation agencies that acquired this

financially autonomous position, the NIA became an example for the rest of the world (Svendsen 1993). By the end of the 1980s it became a widespread belief that irrigation agencies around the world should no longer be centrally financed, and follow the NIA example. The rhetoric of financial autonomy is that it liberates the irrigation sector from the fluctuating and often limited subsidies of debt-ridden Third World governments. Moreover, it forces them to become 'downwardly accountable' to the water users. As farmers start to provide the O&M funds of the agency, their position changes from mere recipients or beneficiaries to that of a client of a service. Following the popular reasoning that 'one should not bite the hand that feeds you', financially autonomous agencies supposedly have a keen interest in taking the needs and wishes of the farmers seriously (Small and Carruthers 1991).[1]

Financial autonomy and the financially induced accountability (henceforth financial accountability) were assumed to have very positive effects on the quality of management of large-scale systems. Firstly, the often construction-oriented irrigation agencies would start to take O&M more seriously, as they would wish to increase the farmers' capacity and willingness to pay fees. Secondly, as fees are usually levied on an area basis, the agencies would develop a strong, vested interest in expanding the area receiving adequate irrigation services, and increasing farm incomes (Svendsen 1993).

Thirdly, 'the will to manage' would emerge among irrigation managers. Instead of being upwardly accountable to government for the use of budgets, they would now be held accountable for producing the right outputs by farmers who want to get their money's worth. (Vermillion 1991). Finally, it would create an incentive for cost-effective management as well. The agency's interest is to reduce costs to keep its budget in the black, while the farmers like to keep the fees as low as possible. Hence, this mutual interest was argued to stimulate a greater efficiency in resource use. This would also stimulate the participation of farmers in management, in order to make use of their local knowledge and/or their cheap or flexible labour inputs (Small and Carruthers 1991).

Despite its status as an international example, the actual rather than postulated effects of the NIA's financial autonomy on the management of the systems have hardly been studied. Positive effects have been claimed on system performance as well as farmer participation (Svendsen *et al.* 1990; NIACONSULT 1993).

However, these studies were statistical in nature and used fairly aggregate data sets. Moreover, other studies presented a more critical analysis of the effects of these changes (World Bank 1996; Kikuchi *et al.* 1998; Oorthuizen and Sloot 1993; Oorthuizen and Kloezen 1995).

This chapter tries to clarify the effects of the NIA's financially autonomous position. In the first section, I present a historical account of the NIA's relation to government and its access to funds. In the following section I discus in detail the measures taken by the District to keep its budget in the black . In the third section I examine how the financial needs of the District shaped its managerial practices and its relations to farmers. This examination is used to discuss the major assumptions of what I call the 'financial autonomy advocates'.

This chapter shows that the NIA's financial autonomy had major impacts on the management of the system and the relations between the NIA and water users. However, these effects do not fit the theoretical assumptions of the financial autonomy framework. The relation between the farmers and the District cannot be reduced to a contractual-financial one. Neither did I find very positive effects on the quantity and quality of services of the agency. On the contrary: the District's financial autonomy led to deterioration rather than an improvement of its O&M services, while it aggravated rather than reduced the head-tail problem.

The NIA's Boom and Bust Cycle

From its creation in 1963 the NIA was organised as a public corporation, or what is called in the Philippines, a 'Government Owned and Controlled Corporation'. Having corporate status, it was *de jure* expected to operate relatively independently from central government, and to raise its own income. However, its *de facto* relation to government and its access to governmental funds have changed dramatically over time.

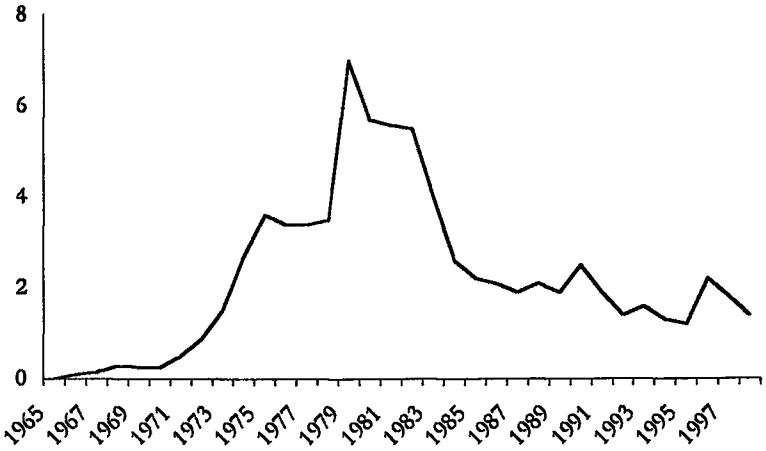
The NIA went through two distinct periods. In the first period, which lasted until 1980, the NIA was a primary recipient of government funds. Its budget as well at its organisation boomed during this period. After 1980, the NIA largely lost its access to government funds. Consequently, it went through a period of steep decline. During this period, it was forced to raise its own income,

and cut its expenditures. I will now take a closer look at these two epochs.

The period of growth: 1964-1979[2]

From its establishment, the NIA was seen as a major vehicle for the government to modernise the Philippine rice sector. At its creation in 1963 by Philippine Congress, the NIA's mandate was: " to make the next 10 to 20 years 'the irrigation Age of the Republic of the Philippines'." (Svendsen *et al.* 1990: 17). However, it was only after the declaration of martial law by President Marcos in 1972 that the NIA budget really took off (see figure 6.1). For the Marcos regime, investing in irrigation was top-priority. It was the single largest item of public expenditures between 1977 and 1984 when it accounted for close to half of agricultural public spending and 20% of total infrastructure budget. (David and Inocencio 2000: 14).

FIGURE 6.1: The NIA's capital expenditures in irrigation (in billions of Pesos, 1985 constant prices)



Source: David and Inocencio 2000: figure 2

To ensure rapid irrigation development, Marcos strengthened the NIA through two revisions of its original mandate. In the original mandate of 1963, the NIA was empowered to construct so-called 'national systems'. Also, it was expected to recover from

the users the fees necessary to finance its operational costs and to reimburse, within a period not less than 25 years, the costs of construction. At the time, the NIA was provided with a limited stock of working capital for construction purposes (up to 300 MP).

By presidential degree in 1974, Marcos issued the first revision, which greatly increased the capacities of the NIA. The main changes for the agency were the following.

- It was no longer expected to repay the working capital infused into the NIA by central government;
- It brought communal irrigation systems under its mandate;
- Its capitalisation was raised to 2 billion Pesos;
- It would receive annual governmental appropriation funds for operation and maintenance, administration as well as for feasibility studies, surveys and planning for new projects;
- It allowed the NIA to incur foreign debt up to a limit of 500 million US dollars for new projects;
- Apart from fees, it was also allowed to add administration charges, equipment rentals, interest earnings and all other forms of income to its operating capital;
- The Administrator of the NIA was made a direct presidential appointee.

Obviously, these terms were favourable to the NIA. It allowed the NIA to receive its operating budget and planning funds from the treasury. Moreover, it allowed the NIA to recover O&M and construction costs from irrigators, while it was relieved from the requirement to repay the government for their contribution to these expenditures (Svendsen *et al.* 1990: 20).

The second revision, issued in 1980, further strengthened the NIA's access to money. Its authorised capital stock was raised to 10 billion Pesos. More importantly though, it authorised NIA to impose a 5% management fee on the total costs of the projects undertaken by the NIA. This income could be added to its operational capital. As the NIA was carrying out projects worth billions of Pesos during the first half of the 1980s, this management fee soon became an important source of income.[3]

It was not only President Marcos who liked to put money in irrigation. The same was true for the international lending

institutions, notably the World Bank and the Asian Development Bank. Their loans for irrigation development in the Philippines peaked at the end of the 1970s. In 1978, loan agreements for irrigation reached a record sum of 250 Million US dollars.[4]

Needless to say, the NIA flourished under these favourable circumstances. In the period 1964-79, the agency was able to more than double the area of agency-managed national systems. Its number of employees rose from less than 3,000 in 1965 to a peak of 43,000 in 1977 (Kikuchi *et al.* 1999: table 1; World Bank 1991: table A.17). The NIA also became a rich agency. By 1981, its corporate fund amounted to no less than P 1.2 billion (Svendsen *et al.* 1990: 76).

The idea of financial autonomy, which was *de jure* imposed on the NIA when it was set up as a public corporation in 1963, did not become reality during this booming period. The NIA was not expected to return the capital expenditures to central government. It was also not expected to raise its own O&M budget. As if it was a line agency, the NIA received its operational budget from the central government and remitted its fee collections to the national treasury. The level of its operational budget was based on the NIA's computations of its needs, and not on the level of remittances collected by the NIA in the field.

In short, the 1964-1980 period was a period of rapid growth of the irrigation sector in the Philippines, and concomitant growth of the NIA. The NIA received large sums of funds for capital investments as well its operational costs. The NIA was *de facto* not a financially autonomous agency.

The period of decline: 1980-1997

Starting in 1980, the NIA's party-time was over. It experienced a dramatic decline in its budget for capital investments in the beginning of the 1980s. This only levelled off by the mid-1990s at a level almost equal to the start of the martial law period (see figure 6.1). The NIA went through harsh times with regard to its O&M budget as well. As capital expenditures dropped, the NIA's income from the management fees nose-dived. More importantly, the government stopped funding the NIA's O&M budget. Though the NIA still received occasional subsidies for its operations, the government became stricter with regard to cost recovery.

This new approach of the government vis-à-vis the NIA was clearly economically motivated. The Philippine economy went through a deep crisis in the 1980s, which was fuelled by the political upheaval before and after the downfall of President Marcos in 1986. This crisis put serious strains on the government treasury. It was thus forced to drastically reduce its expenditures, including its irrigation investments. At the very depth of this crisis in 1985, the government did not release any funds to the NIA.

Also, the government's search for savings and income led it to start to hold the NIA accountable for its financial obligations related to its status as a public corporation. In the first half of the 1980s, it forced the NIA to take formal responsibility for re-paying foreign loans for irrigation investments. In 1987, the NIA did indeed start re-paying one of these loans. When the economy recovered, the NIA was no longer required to do so. However, it was a clear signal from the government to the NIA that "emphasised the importance of financial management and corporate viability." (Svendsen *et al.* 1990: 74).

Economics also made the government stop its operational subsidies to the NIA. In 1976, it was formally agreed that these subsidies would be phased-out in five years. At the time, the NIA might not have expected the government to actually push it through. Nevertheless, given the dramatic financial crisis of the government, the subsidies were indeed stopped in 1981.

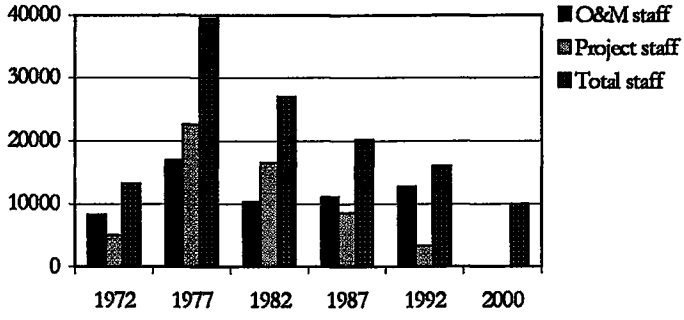
The new treatment of the NIA as a corporate body was also politically motivated. Government Owned and Controlled Corporations (GOCCs) had become publicly known for their mismanagement and widespread corruption. After the downfall of President Marcos in 1986 the bad press around GOCCs worsened. Many of them were seen as part of Marcos's network of cronyism, and thus became subject of intense debate and severe political struggles.[5] Pressured by the IMF and the World Bankl, the Marcos regime, and the subsequent Aquino and Ramos administrations, took several measures to rationalise the corporate sector.

By the end of the 1980s, many of these GOCCs were abolished, merged, divested to the private sector or incorporated into line agencies. As the NIA is involved in constructing and managing public utilities it could retain its corporate status. However, it could not escape the increasingly strict policies and close monitoring of the central government of its efforts to become financially viable and to increase cost recovery (Svendsen *et al.* 1990: 56).

Finally, the NIA's decline has been the result of smaller loans from international lending institutions, especially the World Bank. They reduced their funding to irrigation and moreover shifted their priorities from irrigation development to rehabilitation, O&M and institutional development (Kikuchi *et al.* 1999). By the end of the 1990s, fifty percent of the foreign loans for agriculture and natural resources were still intended for irrigation (David and Inocencio 2000: 21 and table 12a). However, the magnitude of loans had decreased considerably, compared to the end of the 1970s and beginning of the 1980s.[6]

All in all, these changes created serious financial problems for the NIA. By the end of the 1980s, the NIA was no longer a wealthy organisation. To cope with the loss of government funds, it started to use its accumulated corporate fund in 1985 to finance on-going projects. Within a few years, it reached the bottom of its fund. Faced with a shrunken budget for irrigation investments, the loss of its corporate fund and the need to finance its own operational expenses, the NIA was forced to take drastic measures to cut costs and increase its income.

FIGURE 6.2: NIA staffing levels for O&M, projects and total (1972-2000, in three year averages)



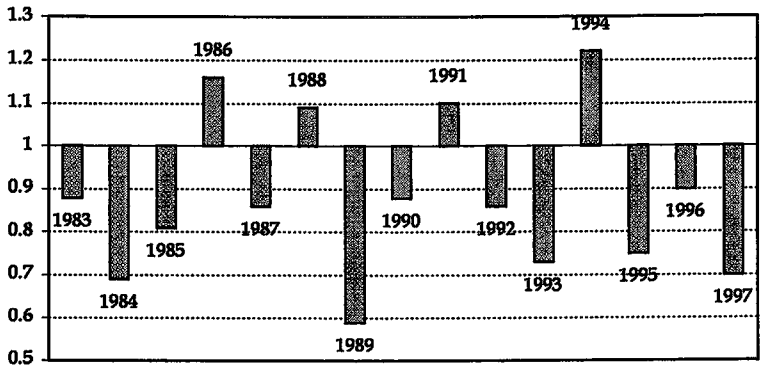
Sources: World Bank 1991: A.17; NIA 1993: 2.14; David and Inocencio 2000: 19)

As the larger part of its expenses concerned personnel, its major measure to cut costs was to radically reduce its staffing levels (see figure 6.2).[7] Downsizing was particularly dramatic for the project staff. As the funds for new projects diminished, the NIA no longer needed the larger part of its project personnel. The project staffing level fell from over 20,000 in the period 1976-78, to a little over 3,000 people in 1991-93. However, also the O&M staff was

reduced considerably. Between 1977 and 1992, the staff number was reduced by 25%, while the service area for national systems expanded by 30%. Salary levels were also targeted for savings. For instance, the salaries and benefits of engineers fell by one-third in real terms, between 1976 and 1995 (Kikuchi *et al.* 1999: figure 1).

In short, this section has shown that a period of prolonged and steep decline in the 1980s and the first half of the 1990s followed the NIA's boom in the 1970s. After 1980, the NIA was held accountable by government for its performance in line with its corporate status. As far as capital investments were concerned, the NIA was – in most of the years – not required to repay these funds. For its O&M budget however, financial viability became a serious policy requirement of the national government. We have seen that the NIA took drastic measures to cut costs. In the next section, we look at the measures taken by the NIA central office or the UPRIIS management to reduce costs and increase income. These will be explored at the level of the 4th District.

FIGURE 6.3: Viability index (ratio of income and expenses) of the O&M budget of the 4th District, 1983-1997[8]



Sources: NIA-UPRIIS 1993; NIA-UPRIIS, 4th District 2002a

The Struggle for Financial Viability in the District

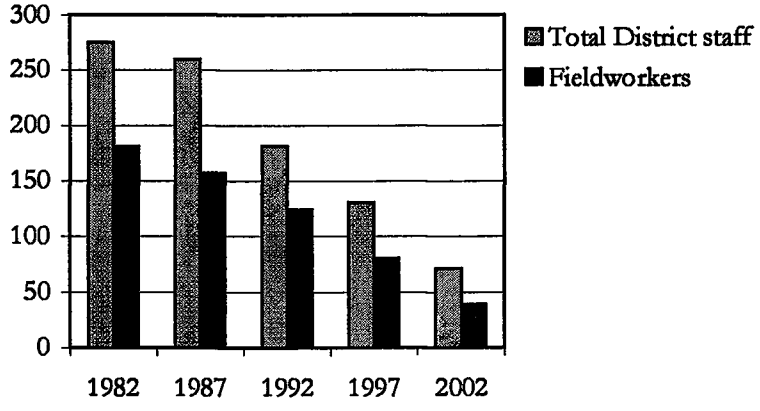
Since 1983, when it was required to become financially autonomous, the 4th District of NIA has been struggling to become financially viable.[9] Despite the efforts, most of the years financial viability was not attained (see figure 6.3). During those years, the

operational expenses thus exceeded the income of the District office. The quest for money shaped the NIA District's relations to the farmers. This section discusses the measures taken by the District to attain financial viability. I first discuss the measures taken to cut costs, followed by the efforts to increase the fee income of the District.

Cost cutting measures

As personnel costs varied between 75 and 90% of the total operational expenditures, staff reduction has been the most important measure of the District to cut costs. The District lost 50% of its total NIA staff as well as field staff between 1982 and 1997. After 1997, the decline continued and at an even faster pace. By the end of 2002, the District office counted only 70 staff members compared to 275 in 1982, of which 39 – from 180 in 1982 - were fieldworkers (see figure 6.4).

FIGURE 6.4: Streamlining of total District staff and fieldworkers



Sources: NIA-UPRIIS 1993; NIA-UPRIIS, 4th District 2002a

To allow for the reductions of the field staff, the NIA streamlined its management set-up several times. The density of fieldworkers – on paper - was reduced from 13 per 1000 hectares in 1977 to only 4.5 in 1997 (see table 6.1). This was made possible by the abolishment of the position of the supervising watermaster, and by doubling the area of responsibility of a watermaster.

TABLE 6.1: Work standards for UPRIIS from 1977 until 1997, and proposed from 1998 onwards
(staff numbers based on these work standards are put between brackets)

	1977	*1982*	*1997*	*Proposed 1998-*
Zone Engineers	8,000 ha (3)	8,000 ha (3)	8,000 ha (3)	12,000 ha (2)
Supervising Watermasters	2,500 ha (10)	2,500 ha (10)	X	X
Watermasters	500 ha (50)	750 ha (33)	1000 ha (24)	1000 ha (24+24)
Gatekeepers	Headgates (17)	Headgates (17)[10]	Headgates (17)	Headgates (17)
Ditchtenders	1.5 km (240)[11]	3.5 km (120)	4.2 km 60)	X
Total number of fieldworkers/1,000 ha	13	7.5	4.5	3

Source: NIA-UPRIIS, 4th District 1996d; NIA-UPRIIS 1997.

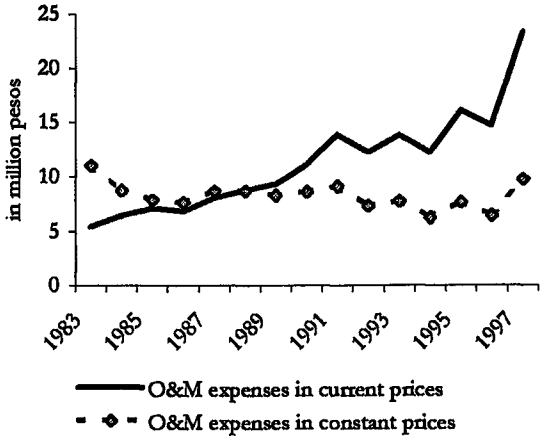
The major cost-cutting measure however, was the phasing out of the ditchtender position. By 1982, their assigned stretch of canal had been (more than) doubled. This thus allowed the District to reduce their number by half. The second measure was to phase out the remaining ditchtenders by contracting out their work to the irrigation associations organised under the IOSP program. Also the latter measure saved money, as the IA was expected to carry out the work at less than 20% of the costs of employing a ditchtender.[12] Moreover, in case the IA was not willing to take over the maintenance work of vacant canal sections, lack of staff made the District management decide to leave the sections unattended. In 1996, this was the case for one third of the 91 ditchtender sections in the District (NIA-UPRIIS 1996a).

The proposed 1998 organisational set-up for UPRIIS – which was still not approved by the NIA central office in January 2003 - office - introduces a new position, the so-called 'Water Resources Facilities Operator Foremen'. They are to assist watermasters in operation, maintenance as well as fee collection. However, the formal organisational set-up – either the existing or the proposed one – determines the maximum number of positions, but not the actual number. In reality, since the end of the 1980s the District employed far less people than the organisational set-up called for.

As either the government or the NIA's central office put a ban on hiring new people, a rapidly increasing number of positions remained vacant. For instance, the *plantilla* (the NIA approved work standard) of the District in 2001 requires 228 staff-members, while the actual staff number was only 78.

The staff reductions could be carried out without forced lay-offs. Firstly, staff numbers fell by attrition because of ageing people who retired or fell ill. Secondly, people were stimulated to leave the agency by means of an early retirement scheme. This scheme provided an attractive bonus for those willing to leave the agency after twenty years of service. Thirdly, as the District did not hire any new people, it could re-assign ditchtenders to other positions which had become vacant due to retirement. Watermasters started to act as Zone Engineers and gatekeepers as watermasters, which allowed ditchtenders to function as 'acting-gatekeepers'. Finally, reduction was made possible by ending the contracts of daily workers.

FIGURE 6.5: Expenses of the UPRIIS 4th District in current and at constant prices, 1983-1997



Sources: NIA-UPRIIS 1993; NIA-UPRIIS, 4th District 2002a

The District also saved money on maintenance, repair and the replacement of equipment and structures. The District – as well as UPRIIS - hardly allocated any funds for these items. In the beginning, project funds were used for these items. As project funds dried up, maintenance was 'deferred', while many of the

irrigation structures as well as equipment (cars but also heavy equipment like bulldozers, trucks and cranes) became inoperable and were not replaced. Finally, cutting the gasoline allowances to the fieldstaff made limited savings on the operational expenses of the District, for instance.

These cost-cutting measures have been successful in financial terms (see figure 6.5). Though the yearly budget still increased, real expenditures showed a slightly declining trend. The declining salary levels (in real terms) discussed in the earlier section have contributed to this trend. Likewise, the increase of the District's expenditures during 1995-97 has also been the result of salary increases during these years.

Income-raising strategies: the struggle for irrigation fees

In the case of fee collection, it is more appropriate to talk about 'strategies', rather than about 'measures taken by management'. The NIA management largely controlled the cost-cutting measures. In the case of fee collection, the management's control was far more limited. It required the consent of both the fieldworkers (to collect) and the farmers (to pay).

To increase its income, the District needed to increase its fee collection, as the other sources of income were minimal. From 1983-87, irrigation service fees (ISF) were the only source of income. Starting in 1988, the District was able to gain income from management fees charged to projects and equipment rental. However, on average this amounted to only 7% of its total income.

During the beginning of the 1980s, the scope for increasing the fee income of the District was enormous. Firstly, the District lost a lot of potential income because it could not send out bills to the whole of its service area. Bills were sent to farmer water users that were included in the program area.[13] In case the water supply was better than expected, the NIA might enlarge its program area during the season. Usually however, the NIA management would not do so, but rather would charge the collections of farmers in the areas outside of the program area to their so-called 'back-account' (outstanding debts).

Farmers that benefited from the water were charged with a fee of 2.5 cavans of palay during the wet season, and 3.5 cavans during the dry season. Or they could pay the money-equivalent in cash.[14]

The actual billing was however only possible if the farmer did indeed benefit from the NIA's services. In practice this was interpreted to mean that they harvested at least 40 sacks (2 tons) per hectare. Hence, farmers who harvested less than this amount due to drought, disease, a typhoon or any other reason, were exempted from fee payment. As the benefited area was on average only 60% of the service area, the District had a lot to gain from enlarging this area.

Secondly, the District had a lot to gain from actually collecting the dues of farmers. The farmers of the benefited areas paid on average only around 50% of their dues. Some did not pay at all, but the majority paid in part. If farmers paid in kind, they would often give only one or two sacks of palay to the District's collector, instead of the full amount. The NIA charged the remaining debt to the back-account of farmers. Given the low fee payments, the total back-account of farmers to the District – that started accounting the debts from 1975 onwards - had ballooned to more than 300 million Pesos in 1992 (NIA-UPRIIS, 4th District 1993) and has increased ever since. This amount equalled 25 times the operational expenses of the District in that year.

To increase its income, the District stepped up its collection efforts. In the early years of UPRIIS, fee collection was carried out only by a handful of collectors. Soon, also the watermasters became responsible for collection, while also the ditchtenders and gatekeepers were authorised as deputy collectors. To these fieldworkers, fee collection became their main time-consuming task. A World Bank study (1996) estimated the time devoted to fee collection by the staff of National Irrigation Systems to be between 10-40%. This seems to be true for the District as well. For a period of around two months during each harvest season, the fieldworkers spent most of their time on fee collection.

Fee collection was a time-consuming activity for several reasons. Firstly, farmers were billed individually. For an average watermaster division, this thus involved over 500 transactions. Secondly, most farmers had to be persuaded to pay the fees. Only a minority of the farmers would drop by at the house of a watermaster or other collector to pay their dues. To make the majority pay, it had become regular practice that the NIA's fieldworkers would visit farmers at their house and even spend some time to convince them to pay.[15] They would do so, just after the farmer harvested his field. In case farmers would pay in kind, the collectors could usually take

the sacks of palay with them, right away. In case of cash-payment however, they were frequently told to come back another time, as the farmer claimed to be lacking cash at that moment.

Thirdly, collection-in-kind was time-consuming. It involved the hauling of the bulky sacks of palay to the NIA office, and its subsequent drying, storing and selling. Fourthly, the NIA still made use of a non-computerised administrative system. This brought a lot of paperwork to the fieldworkers, and necessitated the full-time employment of several so-called 'billing-clerks'.

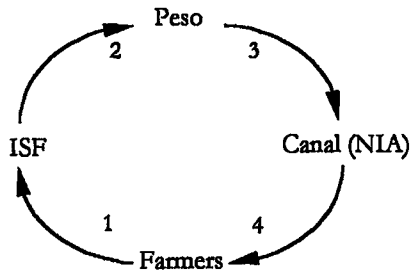
The District management closely monitored the collection process. As has been explained in the previous chapter, the timely payments of the wages and benefits of the District personnel depended on it. Hence, the management could not afford to be sloppy on the collection efforts of the fieldworkers. Collection targets had been set for each watermaster's division, and collection reports were updated weekly. During harvest period, collection performance was the central topic of the biweekly meetings of the District management and the fieldworkers. In these meetings, watermasters were held accountable for the collection results in their divisions. In short, fee collection became a very important concern to the District management as well as the fieldstaff, which equalled the importance of water management and maintenance/repair works.

Next to giving more attention and manpower to collection, the NIA also tried to increase the farmers' willingness to pay their dues. Three strategies were followed. Firstly, a lot of effort was put into legitimising fee payments in the eyes of the farmers. The institutional development program was a primary vehicle to do so. In the training sessions, but also in the IA-meetings in the villages, and the conferences in the District office, the NIA fieldworkers as well as the engineers stressed over and over again the importance of fee payments. A popular message of the NIA staff to the farmers was that 'fees were the life and blood of the agency'. It was argued that the NIA and the farmers were trapped in a vicious cycle: a low NIA budget led to poor services, causing low yields and dissatisfied farmers, which in turn caused low fee payment and thus a low NIA budget.

The key to the solution, according to the NIA, was in the hands of the farmers. To achieve a break-through, they had to change their attitude. Instead of responding to poor services with low fee payments, they should take the first step. The 'virtuous cycle'

would only emerge if the farmers would improve their fee payments (1). Then, the District's budget would rise (2), the services would improve (3) and farmers would be satisfied (4) (see figure 6.6).

FIGURE 6.6: The virtuous – also called ambitious - cycle of fee payments and services



Among the farmer population in the District, few questioned the legitimacy of fee payments as such. As the farmers had been getting used to 'dole-out' programs of especially the Marcos administration (e.g. the *Masagana-99* credit program, see Evangelista 1978), non-payment or partial payment was not considered as a crime. A popular saying among farmers was that "nobody was ever jailed for the non-payment of irrigation service fees". Nevertheless, the majority considered it their obligation to pay the fees. Even if the services were not so good, many would still pay, though only partially. Probably, the institutional development program - which started in the end of the 1980s - strengthened this view. However, 'the obligation to pay' has been in the minds of the farmers for a longer period of time. Fee payments were already a requirement even before the start of UPRIIS in the mid-seventies. According to some of the fieldworkers who worked in the District during the 1960s, also the hacienda owners were paying irrigation fees.

However, the legitimacy of fee payments was questioned by two farmer organisations in the District, called 'AMA' and 'Sandujuan'.[16] Both organisations argued that the irrigation services should be free of fees. Farmer members of these organisations were found throughout the District, but they had significant influence in the villages located in the downstream parts of Zone 2 and 3. In these villages, the resistance to fee payments was high. The NIA tried to deal with this resistance, by using the

organisational and training instruments of the institutional development program.

The NIA strategy in the downstream part of Zone 2 may serve as an example. As the stronghold of these peasant organisations happened to be adjacent to the village of San Anton – the village with the well-developed ties with the NIA - the farmer leaders were well known to the NIA. The NIA carefully picked out the leaders that they felt would be amenable to the NIA's organising program. As a District engineer recalls it:

> We found the brother of one of the local peasant leaders willing to become the IA President. He was also a member of the AMA. We helped him to become what he is now, a respected leader himself. Through our support, he is now the District's president of the IAs, and he even made it as the President of the UCFIA [the UPRIIS based confederation of IAs, JO]. He helped us a great deal in convincing these AMA members to participate with the NIA and to pay their fees. (interview held in October 1996)

The second strategy to make farmers pay was based on coercion. The NIA used a 'carrot and stick' strategy to increase collection of back-accounts of farmers. The 'carrot-part' was that farmers could avail of the so-called 'Amnesty Program'. This program, which started in 1988, offered the farmers a substantial discount for their outstanding back-accounts.[17] However, few farmers settled their back-account, as participation was voluntary. To urge them to pay, the NIA developed a 'stick' as well. Starting in 1995, farmers who were not accepting the attractive deal offered, could be sent demand letters and eventually be sued in court.

The District management was however not very eager to pursue this coercive strategy. It did send out the demand letters, but their number was limited. It had sent out a total of two hundred letters only by 1997, while the vast majority of the farmholders in the District had unsettled arrears to the District. Moreover, it was hesitant to actually sue in court those farmers who had received a demand letter but had refused to settle the matter amicably. The formal argument of the NIA management was that it lacked the financial and administrative capacity to process a larger number of cases. Though true, it could have taken steps to solve these managerial problems. Rather, its lack of capacity was an excuse for not taking a tough stand vis-à-vis its delinquent clients.

The more important reason was that the NIA staff did not to want jeopardise their relations with the farmers. Their considerations strongly limited the target-group for the demand letters. Firstly, fieldworkers and management alike felt it to be inhuman to come down hard on small farmers, who had difficulty in making ends meet. Sending out demand letters was the responsibility of the administrative officer of the District. He was keen on avoiding trouble for poorer farmers, who he thought were around two-thirds of the District's clientele.

> I will not sue these farmers. I understand the difficulties of their lives. If the watermaster does not know the farmers well, I will first visit these farmers before I send out a demand letter. If they are poor, I will not pursue a case against them. (Interview held in July 1996)

Secondly, to play safe, the District office mostly limited the issue of demand letters to farmers in the upstream areas, where it felt certain that services were well provided. The fieldworkers in these areas selected those farmers who were known to be capable of paying, but who –in their view- took the NIA's rightful claim for fees for granted. These were the 'stubborn' or 'arrogant' farmers who refused to pay fees altogether. The third and last filter was a socio-political one. Obviously, there were powerful people among this group of richer and 'arrogant' farmers selected by the fieldworkers. Also, part of this group was connected to one of the District engineers through political, kinship or friendship relations. Hence, part of this group was not considered suitable for receiving a demand letter. Th District managers would do their best to settle the issue amicably rather than pushing for a court case.[18]

In 1997, the District's management started to adopt another coercive strategy, which they considered to be attractive as it was less confrontational in nature than suing farmers in court. This was the so-called 'Annotation Program', developed by the NIA in another region of the country. The threat was that non-payment of the back-accounts would result in the annotation of the outstanding debt on the land title of the landowner. On the NIA's request, the Provincial Register of Deeds would carry this out. This was considered to be an effective strategy as landowners could no longer sell or mortgage land carrying such annotation. In case the land was tenanted, and these tenants were liable for fee payments

to the NIA, it was expected that the landowners would put pressure on these tenants to pay their dues to avoid such annotation.

Finally, coercion – or better, social pressure - was practiced by the District Chief and the other engineers in their day-to-day dealings with IA leaders or barangay captains. They used a 'fee-for-services' strategy. In return for promises to these leaders for works or water, the leaders were expected to deliver fees from the farmers they represented.

The third strategy of the NIA to increase the farmers' willingness to pay was based on 'getting the incentives right'. The IAs were given the opportunity to enter into a fee collection contract with the NIA. In the District, all but two IAs entered into such a contract in the beginning of the 1980s. The contract stipulated that the IA should help the NIA in collecting the fees. The NIA's interest was that the involvement of (cheap) IA labour would save on collection costs. Also, it was expected that the involvement of farmer leaders in collection would help the NIA in legitimising fee payment among the farmer clientele. Moreover, the contract would allow the farmer community to build up their own fund. Hence, the idea was that the contract would develop an interest among the farmers to pay fees. The contractual deal was that the IA would receive a percentage of the collected fees, in return for its help in collection. Moreover, the better the collection, the higher the percentage (see table 2.1).

This 'incentive strategy' worked out differently than intended. Except for one or two cases (one of these cases was discussed in the previous chapter), the involvement of the IA leadership was minimal. One of the main reasons was that the NIA collectors remained accountable for the collected fees and the receipts. In case money, sacks of palay or receipts were lost, they would have to face administrative or even legal measures by the Commission on Audit. This was a real threat as such cases had indeed emerged in UPRIIS. Retiring fieldworkers were not cleared for their pension payments, or had to face a deduction from their pension equal to the outstanding 'debt'. Hence, the collectors were careful not to run into trouble by involving IA leaders.

Another major reason was that the incentive structure 'did not become right', in the way intended by the contract. The IA leaders were not inclined to do this labour-intensive and cumbersome job, which would not make them very popular either. They also quickly

realised that the fieldworkers would not stop collecting without their support, as the NIA District badly needed the money. Hence, without doing anything substantial themselves, they would still be entitled to the incentives.

Formally, such behaviour on the side of the IA would allow the NIA to break the contract. However, the District's engineers did not do so. The collection incentives were given another meaning. Rather than being seen as a payment to the IA fund for collection work done, it came to be seen as the personal allowance of the IA President, in return for his or her support to the NIA. He or she could use the money to shoulder his costs incurred in irrigation-related matters (like travel expenses, or costs related to canal cleaning), and was even allowed to use the money for personal expenses. The ISF collection contract thus may have helped the NIA to maintain good relations with the IA President, but was not a very effective tool to increase collection efficiencies.

The impact of the District's efforts and strategies to increase fee income are shown in figure 6.7. The figure shows that the collection efficiencies increased during the 1990s. Also the fee income in real terms increased – due to several increases in the fee charges per hectare - but the collection in constant prices has declined slightly over the years. Given all the energy put into collection, it might be argued that it had little impact. However, given the negative impact of the cost-cutting measures on the NIA's services, it may be the case that maintaining fee collection efficiencies at levels almost equal to the early 1980s is an achievement in itself.

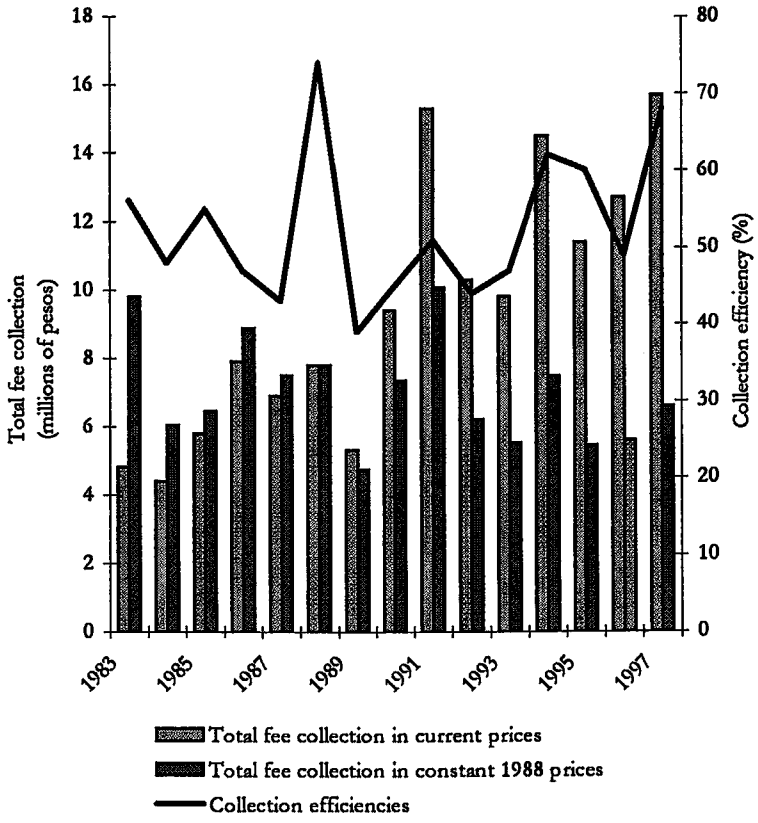
So far, I have shown that the NIA greatly increased its efforts to increase fee collection in the District, and implemented various strategies to increase the willingness of farmers to pay their fees. The focus on fee collection has affected the institutional relations in the District, for a part in ways different than planned. I will therefore end this section on the District's income raising strategies by discussing some of these – unintended – dynamics.

Fee-induced institutional dynamics

As was already shown in the previous chapter, fee collection shaped the relations between the watermasters and the IA Presidents. As the case studies showed, it gave rise to harmonious

relations between the watermasters and the IA Presidents, as well as more conflictive ones. The issue at stake was the distribution of the workload as well as the remuneration for this work. As discussed earlier in this chapter, fee collection involves a lot of hard work, while on the other hand, it also gives access to money, derived from the hauling contracts and the fee collection incentives given to the IAs.

FIGURE 6.7: Total fee collection and collection efficiency (UPRIIS, 4th District, 1983-1997)[19]



Sources: NIA-UPRIIS 1993; NIA-UPRIIS, 4th District 2002a

The collection incentives were supposed to trigger the emergence of strong farmer irrigation associations that were remunerated by the NIA in return for the efforts of their leaders in campaign and collection work. As shown, it gave rise to a rather

different institutional arrangement. As the IA leaders neither campaigned nor collected, the fieldworkers were still doing the job and thus claimed part of the collection incentives. This was mostly settled amicably between the two actors, but in one of the discussed cases it gave rise to a serious conflict.

In the first District of UPRIIS, the distribution of the incentives between the IA leaders and the fieldworkers had reached a further stage of institutionalisation. Due to the good access to water of the larger part of that District and the relatively large size of the IAs, collection incentives were relatively high, and were attained almost every season. In that District, the IA-incentives were regularly shared between the fieldworkers, the Zone Engineer and even some of the administrative staff. These shares varied between 1-10% of the incentives.

Fees and fee collection activities also triggered the institutional relations between the fieldworkers and the management of the 4th District. Firstly, it turned into a source of patronage for the District managers. It was within their power to distribute the fee hauling contracts among the fieldworkers. These contracts were considered lucrative, especially if these concerned well-accessible areas or areas where farmers were paying willingly. Usually, hauling contracts were given to the watermaster of a certain area, but this was not necessarily the case. Hence, 'being close' to the Chief or the Zone Engineer helped in getting these contracts.

The Chief also derived patronage from the distribution of so-called 'palay loans' to his staff. As salaries and benefits often came late, the Chief showed his good will to the rank and file by using part of the rice collection as advancement for their salaries. The willingness of the Chief to provide these loans, and his strictness in the time-schedule for its repayment, opened new ways for dispensing favouritism.

Secondly, the benefits of fee money became the subject of a class-like struggle between the UPRIIS and District leadership and the fieldworkers during 1996. The issue at stake concerned the losses incurred in the collection of fee payments in kind. In the 1980s, the UPRIIS operational manager had decided that collectors would be allowed a loss of 2 kilos of rice for each sack of palay collected. This allowance recognised the claim of these collectors that the collected sacks of palay lost weight between the time of collection and weighing in the field, and the weighing in the office. The collectors had a point in demanding for such an allowance. As

farmers often gave wet palay, and as collectors would often keep the sacks of palay stored at their houses overnight before bringing it to the office, loss of weight did indeed occur.[20]

In 1996, the Commission on Audit (the COA) claimed that it had not agreed to this allowance for losses, and considered it illegal. This enraged the fieldworkers in the District. Not only would collection in kind lose part of its financial attraction, it also put them into financial trouble. The COA considered the allowances as outstanding debts, to be repaid by the fieldworkers. As a last measure, the COA would withhold the payments of their pensions in case of retirement, or would deduct from it the 'outstanding debt'. For some fieldworkers who mainly collected in kind, these debts amounted to several times their monthly salary.

The District and UPRIIS employees association picked up the issue. They felt that the UPRIIS management took the issue too lightly and did not properly defend the interests of the rank and file. By 1997, it had developed into a sharp conflict. As a sign of protest, the associated fieldworkers decided to stop collecting-in-kind during the 1997 wet season. At the end of the field research, by the end of 1997, the issue had reached the level of the NIA's administrator, but was still unresolved.

To conclude, the District has implemented substantive measures and strategies to attain financial viability. Money-saving and moneymaking efforts became central to the NIA's doings. These efforts have re-shaped relations between the NIA and the water users. This will be further explored in the following section.

Financial Accountability: a Critique

This section discusses the relation between financial autonomy and accountability: did the District's need for financial viability empower the farmers vis-à-vis the agency? The data will be presented in a critical dialogue with the main assumptions of the advocates of financial autonomy.

First assumption: the only way is up

According to the advocates, irrigation agencies confronted with financial autonomy have only one option: to improve the quality of

their services. According to Svendsen (1993) these agencies can be expected to increase the amount of effort put into O&M, as they wish to increase the farmers' capacity and willingness to pay fees. Vermillion (1991) argues that financial autonomy stimulates agencies to adopt a more flexible and responsive approach towards irrigation management.

Small and Carruthers (1991) add that such an agency will be inclined to reduce costs to keep its budget in the black, while farmers would like to keep fees as low as possible. However, they do not see the cost reduction as problematic, as they claim it will lead to cost-effective management. The mutual interest of the agency and the farmers to limit expenditures will stimulate a greater efficiency in resource use and an economically rational division of tasks. The usually high maintenance standards of engineers will be counteracted by farmers' wishes for more appropriate maintenance practices. Given their low labour costs, farmers will be inclined to take care of canal cleaning, while engineers will limit their involvement to overall water control and repairs. The challenge is to try to find, for any given irrigation system at any particular point in time, the types and timing of tasks that are best suited for both parties. Financial autonomy stimulates such a balancing of pro's and cons. (Small and Carruthers 1991)

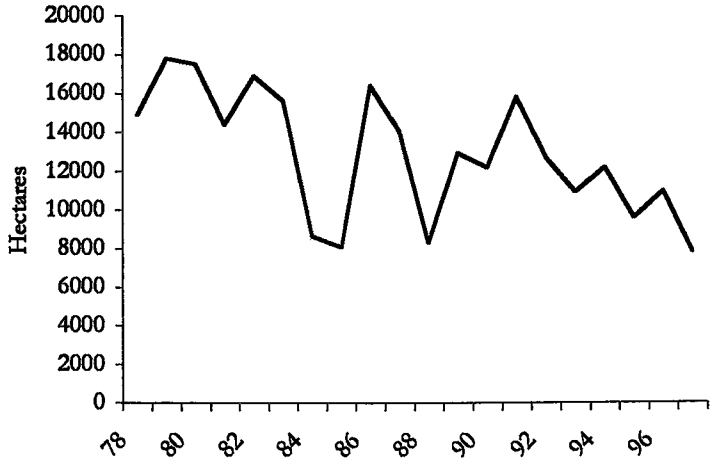
My findings question these assumptions. Improving services and farmers' satisfaction was not the only logical option open for the District to deal with its status of financial autonomy. As I have shown, its response was to decrease rather than increase the amount of effort put into O&M. Its main strategy to put its budget in the black was by drastically cutting its expenditures, rather than by improving its services to farmers. Its efforts to increase fee income were also not based on a strategy to improve its services. Rather, as I have shown, it increased its collection efforts, and implemented various strategies to make farmers pay.

Did the NIA's cost-cutting result in more cost-effective management? In other words, did it save money without negatively affecting the quality of its services? My findings suggest otherwise. It is probably true that part of the cost cutting was indeed trimming the fat. It is for instance hard to imagine that the District indeed needed the nearly 300 staff members employed in the beginning of the 1980s. However, my findings suggest that the cost cutting was out of proportion, and has led to the deterioration of the District's services.

The major findings are:

- The benefited area – defined as the areas that were programmed by the NIA, served with sufficient water and able to harvest more than 2 tons/hectare - during the dry season has declined over the years (see figure 6.8). The decline in the dry season program area (see figure 3.5) as well as the increase in the exempted areas over the years (see figure 3.6) point in the same direction.[21]
- Canal sections in especially the downstream parts of the system were heavily silted and not regularly cleaned, causing a reduction of the cross-sectional areas and reduced flow velocities (Wensley 1989: 173)
- The heavy equipment of UPRIIS deteriorated over the years and was not replaced. In 1997, only a few of these machines were still operating;
- Due to staff reductions, and the unwillingness of IAs to take over, one third of the canal sections in the District were left unattended in 1996.[22]

FIGURE 6.8: Benefited area in the dry season
(UPRIIS 4th District during 1978-97)



Sources: NIA-UPRIIS 1993; NIA-UPRIIS, 4th District 2002a

In short, my findings contradict the assumption that agencies confronted with a change towards financial autonomy will become

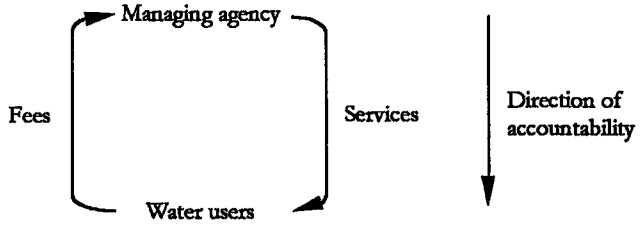
more accountable towards users and thus will be inclined to improve their services. The NIA responded differently. It responded by cutting costs to the extent that its capacity to take care of O&M in the District reduced. Hence, going up (improving services) is not the only way: the alternative way is to go down.

Second assumption: (only) money talks

A second major assumption of the financial autonomy advocates is that the accountability relation between the agency and the water users is based on money payments only, or at least that fee payments are the most powerful mechanism in place. Fee payments are supposed to operate as a 'quasi-market incentive' (Rosegrant and Binswanger 1993). Following this market metaphor, the irrigation arena becomes a market where the salesmen (the managers) do their utmost best to satisfy their buyers (the water users). The difference between an irrigation system and a real market is that dissatisfied water users cannot do their shopping somewhere else, but the ability of the water users to withhold fee payments provides a strong leverage to condition the behaviour of service-providers as well. In short, money talks in the relation between an irrigation agency and the water users.

The most concrete contribution to this theory has been put forward by Small and Carruthers (1991). They argued that centrally financed irrigation agencies are upwardly accountable to central government, as the latter provide their funds. Hence, they do not take farmers' wishes or complaints very seriously. Likewise, financially autonomous irrigation agencies are accountable downward to the water users, as their budgets then depend on the fees from the farmers (see figure 6.9).

FIGURE 6.9: The assumed relationship between finance and accountability



Source: Small and Carruthers 1991

This theoretical model may be attractive for its neatness and simplicity, but it is too simple. Fees shape accountability of the NIA's District towards the water users. However, as I have shown in the previous chapters, so do relations of kinship and friendship as well as economic and political relations. Moreover, accountability is shaped by the physical layout of the system. Villages located in the downstream part of the system may be willing to pay the full 100% of the fees required by the NIA, but its far-away position may still jeopardise the emergence of accountability, as the NIA lacks the control over the water to deliver it.

Among the multiple relations determining accountability, the financial relation did not seem to be the most important one. If it would be so, there would have been an explicit and publicly known strategy of the NIA's District in relation to fee payments. The District would have used the collection records of the different areas to determine its program area, and the allocation of its works budget. One would have seen the District making deals to win over poor-paying IAs or villages: i.e. we will give you these services, provided you ensure us a certain collection efficiency.

However, such explicit fee-based strategies were not observed. The engineers would use such 'services-for-fees' arguments on an *ad hoc* basis only. Allocations of the program area as well as the works were shaped by physical and socio-political relations, rather than by financial ones. Money talked, but its voice did not carry very far. High or low fee payments were the effect of good or poor accountability relations between the NIA and villages, rather than their cause.

To validate these arguments, I will discuss the bases of accountability relations between the NIA's District and three IAs. Table 6.2 shows the fee collection efficiencies attained in the areas covered by these IAs, as well as the quality of the NIA services provided to these areas. As the table shows, two out of the three IAs do not fit the theory. The IA-2 paid well, but did not get good services. IA-3 did get good services, despite the fact that its payments were low. Only IA-1 seems to fit the theory of financial accountability, as it suggests that its high payments be rewarded with a high level of services. However, also this case can only be understood when looking at the wider socio-political relations between the NIA District and the farmer water users of the area.

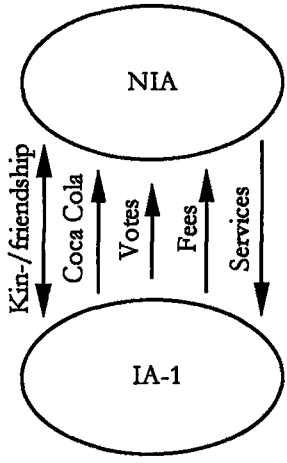
TABLE 6.2: Relation between fee payments and services for three IAs

	Fee collection efficiency (1991-1998 average)	*Services received*
IA-1	High (76%)	Good
IA-2	High (82%)	Poor
IA-3	Low (57%)	Good

Source: NIA-UPRIIS, 4th District 2002b

The IA-1 is located in the village of San Anton, in the mid-stream of Zone 2. The NIA was very accountable to this IA and provided good services in terms of water and canal and road maintenance. However, the high level of fee payments did not cause this accountability. Both the accountability and the fee payments were the product of intimate socio-political relations between this village and the NIA, which had developed since the end of the 1970s. This has already been explained in detail in chapter 4. To summarise, a disproportionate number of the District engineers and fieldstaff originated from this village. Hence, friendship and kinship relations between the village and the NIA were numerous. Moreover, the village was the bailiwick of the Zone Engineer's political family. Finally, the Zone Engineer has developed a clear economic interest in the well-being of this tail-end village.

FIGURE 6.10: Multiple accountability relations between the NIA and an IA



In this NIA-friendly environment, high fee payments and high service levels went together. For multiple reasons, the NIA was inclined to take care of the needs of this village (see figure 6.10). In return, farmers were satisfied and willing to pay.[23] Moreover, given the high number of familial relations in the village, most villagers knew about the precarious financial situation of the District, and the needs of the NIA staff to collect fees to pay for their salaries.

For the NIA engineers, the high fee collection efficiencies attained from this IA became an argument for providing good services, if only to legitimate its favoured treatment. The financial relation may have become a contributing factor to the accountability of the NIA towards this IA. However, it did not cause the emergence of friendly, accountable relations between the two parties.

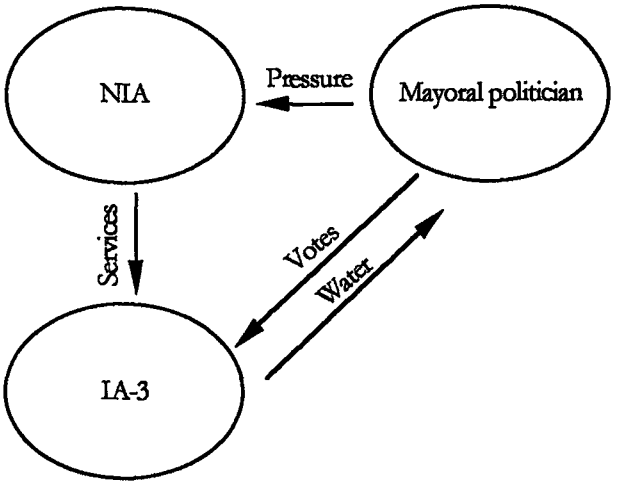
The IA-2 did also pay well, but did not get good services in return. This peculiar combination can only be understood by looking at the wider socio-political relations between the NIA and this particular IA. This IA is one of Argee's, located in the mid-stream part of Zone 1 (see chapter 5). It was located in the downstream municipality of Zaragosa in Bulacan province. As explained in chapter 4, it lacked the political clout of the upstream municipal politicians of Victoria, and the provincial politicians of Nueva Ecija, in which most of the UPRIIS as well as the District area was located. Consequently, it was frequently not included in the program area, as the engineers were inclined to give in to pressures of politicians from the upstream municipality and/or province. For the same reason, the IA had a hard time in getting the support of the District to maintain or repair its structures and roads.

The high level of fee payments was a result of its precarious situation. In contrast to IA-1, farmers did not pay because of satisfaction with services rendered. In this case, payments were rather made out of need. Realising the precarious situation vis-à-vis the NIA office, they were inclined to pay in order not to further impair their situation. Also, they paid because they realised the importance of the support of the fieldworkers in securing water to their area. During the early 1990s, the water users in the IA-2 paid two types of fees. Some would pay to the NIA and others to the syndicate, and some farmers even paid to both parties. Being in real need of water, the farmers were inclined to use payments to please those able to supply the water.

Finally, IA-3 combined good services with low fee payments. Again, this combination needs to be understood by looking at the wider socio-political context. The villages of this IA-3, located in the mid-stream of Zone 1, were the key-targets of rival political alliances struggling in the municipal politics of Victoria (for further detail, see chapter 4).

The water users in this IA were able to get water through the direct interventions of these local politicians, while the pressure of these politicians on the NIA engineers gave them access to maintenance and repair works. Payments to the NIA were low, as the farmers argued that it was the politician and not the irrigation agency who provided the services. Put differently, unlike the farmers of the second IA, these farmers felt confident enough to ignore the NIA demand for service fees. Being backed by powerful politicians, they did not feel the need to please the NIA office (see figure 6.11).

FIGURE 6.11: Political accountability of the NIA towards an IA



In short, the second assumption of the financial accountability theory seems to be flawed as well. The need to collect fees certainly shaped relations between NIA and water users, but it was only one and not even the major factor. Hence, money talked in the distribution of NIA services, but so did politics, economic interests and kinship and friendship relations.

Assumption three: Financial autonomy improves equity

Svendsen (*et al.* 1990, 1993) have put forward the thesis that financially autonomous agencies are inclined to increase their services to downstream areas in order to increase fee collection. Hence, these agencies try to improve equitable water distribution in agency-managed systems. Svendsen's study is based on secondary, long-term data of five sample systems in the Philippines (including UPRIIS). His empirical findings supported his thesis. The NIA redistributed water from the better-watered areas to fringe areas which otherwise would not have received irrigation water. The redistribution was argued to be a direct response to the changes in NIA's priorities following its loss of operational subsidies around 1981. Though the findings were not conclusive, such findings were exactly the type that would be expected to follow from an emphasis on increased farmer satisfaction and co-operation and increased revenues. Because the fee schedule is tied to benefited area, the only ways NIA can increase its revenue from that source are to expand benefited area and to increase collection efficiencies (Svendsen *et al.* 1990: 191).

Hypothetically, Svendsen's thesis is possible, but in practice it is not a very likely scenario. The NIA became financially autonomous because it lost its access to government subsidies due to fiscal austerity programs. Hence, the NIA – as well as the District – landed in serious financial trouble. In such a financially difficult situation, it is not very likely that the NIA - or any other agency operating under such conditions - would find the means to either increase its revenue by expanding the benefited area, or to improve service to its existing clientele, and thus to raise collection efficiencies. Svendsen even seems to argue that the NIA could follow both ways at the same time: to expand benefited area and to increase collection efficiencies. This, to me, is even more unlikely to happen. As I showed above, the NIA's main response was to cut costs and to contract its services, rather than to improve them.

Another weakness in Svendsen's thesis is that he assumes that financially autonomous agencies need to improve services and farmer satisfaction to increase their income. However, the NIA's doings show that income generation can also be achieved in another manner. As was discussed in detail earlier in this chapter, the NIA responded to its loss of operational subsidies by engineering and implementing a whole set of measures to increase

its collection capacity and to make farmers pay. Hence, instead of choosing an indirect approach to increasing its income - providing better services and thus hoping for more farmer payments - the NIA followed a more direct collection approach to generate income.

My findings also contradict those of Svendsen with regard to the effect of financial autonomy on equity. My findings indicate that inequity between the head-end and the tail-end areas has increased over the years. This, I believe, has at least been partly caused by the measures and policies implemented following the District's change to a financial autonomous organisation. The District focussed its services on the upstream areas, at the expense of the tail-end areas.

The empirical evidence for this argument is based on two phenomena. Firstly, the effect of the shrinking dry season program area (see figure 3.5) and benefited area (see figure 6.8) was fully at the expense of the tail-end areas. The District has consistently favoured the upstream and mid-stream areas. It thus stopped its water provision during the dry season to an increasingly large tail-end area. The reductions in the program area were mostly carried out in the tail-ends of the larger Zone 1 and 3, while the program area for the smaller Zone 2 remained largely the same.

Secondly, the reduction in field personnel caused by the streamlining policies of the District was mainly felt in the tail-end areas as well. Positions becoming vacant in the upstream areas due to retirement of fieldworkers were filled-up by re-assigning fieldworkers from the downstream areas. As a result, by 1996 the density of fieldworkers in the upstream areas was more than double of that of the downstream areas (see table 6.3).

TABLE 6.3: Head-tail distribution of field personnel and abandoned/assigned canal sections

		Field personnel (per '000 ha, in 1996)	*Abandoned canal sections (assigned % in brackets) (in % of total km of larger canals, in 1996)*
Zone 1	Upstream	5.4	15 (85)
	Downstream	1.7	60 (40)
Zone 2	Upstream	5.0	0 (100)
	Downstream	2.4	42 (58)

Source: NIA-UPRIIS, 4th District 1996d

Also, due to streamlining canal sections were abandoned. It meant that the District no longer assigned a ditchtender to a certain canal, while the IA in place refused to take up canal cleaning under a Maintenance Turn over (MTO) Contract. Often they refused to do so because the IA leaders felt that the canal condition was too bad to handle and/or because the remuneration for canal clearing provided by the NIA was considered to be too low. Canals were abandoned mainly in the tail-end areas. In the tail-end of Zone 1, no less than 60% of the total canal length was left unattended in 1996 (see table 6.3).

Hence, the NIA's response in the District to the needs of financial autonomy has been to concentrate its services and collection efforts in the upstream areas. Increased inequity between the upstream and downstream has been the result. From the viewpoint of the NIA managers of the District, this was the logical thing to do. Faced with a shrinking workforce and a deteriorating system, they could no longer serve the total service area. Over the years, this problem only became worse. To deal with it, they took the easy way out. For both physical and socio-political reasons, the easy way out was to focus the services and fee collection efforts on the upstream areas.

Given physical circumstances, the areas that are easy to irrigate are located in the head-end areas of Zone 1 (and 3), as well as the larger part of Zone 2. Moreover, the head-end areas are conveniently close to the District office. Canal cleaning is also easier in the upstream areas, as river silt tends to concentrate in the smaller canals in the tail-end, where flow velocities are lower (Wensley 1989: 170)

In addition, it makes sense to focus on maintaining the conditions of the larger head-end canals, as these serve as feeder canals to the tail-end areas. It can even be argued that maintaining sub-sub-laterals in the head-end is beneficial to the tail-end areas.

> These canal conditions are crucial. The longer it takes to irrigate the rice fields along the head-end sub-laterals, the longer tail-end areas need to wait for the water to arrive in their areas. (remark of the Operational Engineer, February 1997).

However, the physical conditions alone cannot fully explain the choices of the District management. If only physics would count, other choices could have been made. For instance, they could have

abandoned the tail-end areas of all laterals and sub-laterals, including the tail-ends of the upstream laterals. By doing so, they would have been able to improve water deliveries to the upstream parts of the downstream laterals. Or, they could have chosen to abandon one of the three Zones all together, and focus their efforts on two Zones only. Hence, their choices were also informed by socio-political circumstances.

Socio-politically, the management choices had the following logic. The management concentrated the NIA's services on the areas which were not only easy to irrigate, but also 'easy to get away with'. To put it differently, they would have a very hard time if they had chosen otherwise. The concentration of the NIA's services followed provincial as well as municipal boundaries. Services were concentrated on the two politically most powerful municipalities, located upstream in the District. The municipalities located outside of the provincial boundaries were at a loss. The only exception was a municipality located in the very downstream of Zone 3. This municipality was located within the provincial boundaries of Nueva Ecija and as such politically well represented. However, due to its very tail-end location, and due to the interventions of farmers and politicians manipulating gates, this municipality remained largely out of the scope of the District's managerial efforts.

Svendsen has argued that a financially autonomous agency like the NIA has good financial reasons to increase equity: it allows for an increase of fee-paying farmers. However, my findings show otherwise. The District concentrated collection in the upstream areas. Zone 1 may serve as an example. The four most upstream watermaster divisions in this Zone (out of a total of eleven divisions) only covered one third of the Zone's area, but on average provided nearly 80% of the dry season fee collection in that Zone during the 1990-97 period. In other words, the tail-end and even mid-stream parts of the Zone hardly contributed to the District's income.

In addition, fee collection in these upstream areas had not yet reached the maximum. Collection efficiencies in the upstream area of Zone 1 during the 1990-97 period were a little over 50% and thus equalled the efficiencies in the rest of the District. Hence, the District had still much to gain from improving its collection efforts in these upstream areas, before it would be forced to expand the benefited area. In short, the District had also no compelling financial reason to serve the tail-end areas.

To conclude this section, the major assumptions of the financial autonomy advocates are flawed. Firstly, the assumed positive effects of financial autonomy on the quantity and quality of services of the agency towards the water users seem to be based on wishful thinking. My case study does not fit into these assumptions. The District's financial autonomy led to the deterioration rather than an improvement of its O&M services, while it aggravated rather than reduced the head-tail problem. The financial autonomy advocates apparently assume that irrigation agencies collect a 100% collection efficiency in irrigated areas. If this would be the case, than agencies indeed have no option but to expand irrigated areas in order to increase their fee income. However, this is not the case. They apparently overlooked the fact that agencies can also increase income by filling the collection gap in the upstream and mid-stream irrigated areas. Likewise, the advocates overlooked the fact that financially autonomous agencies can also put their budget in the blue by cutting costs, rather than by increasing their income through the improvement of services to farmers.

Secondly, it has been shown that the accountability relations between the NIA's District and the water users cannot be reduced to a contractual-financial one. Fee payments were embedded in wider socio-political relations.

Conclusions

A first conclusion of this chapter is that money matters in irrigation management. This may seem to be somewhat obvious, but I do not think it is. Much of the policy discourse as well as research on irrigation management focuses on water and maintenance and on managerial reforms like turn over. There is less emphasis on financial matters, though the discussions on user fees, financial autonomy and water markets did put money on the agenda.

This chapter has shown that the management of money was crucial to the affairs of the District. The financial reforms and savings had a profound impact on the way the system was being managed as well as on the relations between the NIA and the water users. The impact of these financial reforms was far greater than that of turn over. As more irrigation agencies have been – and still are – going through austerity programs, cuts in staffing levels and financial reforms (cf. Kikuchi *et al.* 1999), money clearly matters

and thus deserve due attention in policy discourse as well as research.

Secondly, the chapter sheds light on the analysis of accountability relations. It points to the need to look at accountability from a historical perspective as well as from a perspective that goes beyond the boundaries of an irrigation system. The first sections of this chapter showed that the NIA went through a steep 'boom and bust cycle' that fundamentally shaped and re-shaped relations between the NIA District staff and the water users. The NIA as well as UPRIIS were key instruments for President Marcos – after he declared martial law - to built mass support, to stem rural unrest and to attain rice self-sufficiency.

During the 1980s, political turmoil, fiscal crisis and the decline of donor support caused the NIA to fall down as fast as it had risen during the 1970s. Likewise, the farmer water users of UPRIIS were no longer treated favourably by the Philippine government. For reasons that still require further study, government spending on irrigation during the 1980s and 1990s was low relative to that of other types of government expenditures in the peasant sector. Hence, the accountability of the NIA as well as the Philippine government in general towards the UPRIIS water users needs to be examined against the background of the wider relations of the Philippine political economy.

Thirdly, this chapter has shown that the theory of financial accountability is flawed. According to the theory, financial autonomy induces downward accountability of an irrigation agency to its clients and therefore stimulates cost-effective management as well as an enlargement of the irrigated area. However, my findings prove otherwise. Instead of an improvement of services the District contracted its services as an effect of the cost cutting and streamlining policies. This mostly affected the tail-end areas.

The shortcomings of financial accountability theory can be traced back to its underlying premises. It shares the premises of the nowadays dominant theoretical approach in political science, i.e. new institutionalism, also called rational choice theory. The main problem with this type of theories is the very narrow conceptualisation of human agency, which is reduced to individuals rationally seeking material self-interest. The preferences of actors, their driving forces, are thus treated as given, and do not require explanation (Mollinga 2001: 739-743).

This approach has become dominant in the world of policy

making of international development organisations because of the neat models it produces for explaining complex phenomenon (cf. Moore 1990). Its heavily edited version of reality is helpful for its clarity and for the efficiency with which it simplifies what otherwise threatens to overwhelm us (Espeland 1998). Also the international policy world of the irrigation sector has a strong preference for large scale standardised policy initiatives.

> [It has] (...) a strong predilection for what Ostrom has called "design principles" for building viable institutions: universally valid sets of factors, conditions or principles that can be applied to engineer a particular institutional transformation. The paradigm suggests the possibility of applying instrumental rationality to institutional problems, and proposes a relatively limited set of design criteria for the purpose. (Mollinga 2001: 743)

This attraction is true for the financial accountability theory as well. It allows the policy-world to design these universally true policy prescriptions. Douglas Merrey, a researcher at the International Water Management Institute, indeed used the model to explain the world-wide performance and accountability of irrigation agencies. By using two dimensions only (presence/absence of financial autonomy and single vs. multiple systems) it allowed him to explain 'good' or 'bad', and to come up with some compelling design principles as prescriptions for crafting institutional change (Merrey 1996).

The strength of these neat models is of course at the same time their weakness. They produce "propositions that are partly true in relation to each of a diverse range of specific situations, rather than generating in-depth understanding of specific situations." (Moore 1990: 16). To put it more strongly, this financial accountability model may be a bit true, but is untrue for the larger part. The need for fees indeed somehow tunes the preferences of irrigation managers to farmers' wishes. So far for the true bit. The untrue part, as I have shown, is that it leads to various 'good' things like increased O&M efforts, improved services and an increased effort to serve the tail-end part of the system.

One of the main theoretical flaws of the financial accountability model is that it uses undifferentiated categorisations of 'the farmer' and 'the agency', which relate to each other only on the basis of maximising self-interest for respectively services and fees. Reality

however, is more complex. Instead of a bunch of individual farmers and NIA actors, I found alliances of groups of people and villages, which had developed multiple socio-political relations. Moreover, these relations were structured by the physical layout of the system. Hence, both history and ecology structured NIA-farmer relations. Fee payments as well as services provided were embedded in these wider relations.

The impact of financial autonomy on this complex reality was that it increased the inequitable distribution of resources in the District. The tail-ends of the system, represented by politically less powerful villages, lost out. As cost cutting confronted the NIA District with scarcer resources, it had to make a choice: to distribute the scarcity evenly over the system, or to focus on a smaller group. It chose the latter option. The farmer villages that were –for a combination of physical and socio-political reasons – 'closer' to the NIA's District, were satisfied and paid their fees. The more 'distant' villages slowly disappeared out of sight.

The fact that the NIA – and the District in particular – cut costs and contracted its services in response to its loss of operational subsidies is neither unique nor strange. According to Rondinelli (1982), it is a case of perfectly understandable bureaucratic behaviour. He argues that managers in bureaucracies tend to focus on measures that are within their direct realm of control. Third World bureaucrats often operate in highly uncertain and volatile environments. Hence, they tend to hold on to the more certain and controllable parts of their working environment. In the NIA case, cost cutting was the safe way out. The NIA managers could largely control expenditures, like staffing numbers and operational expenses. Trying to increase fee income through improved services is a much more uncertain, and thus more unlikely strategy.

This is not only true for the behaviour of Third World public managers, but for those in the richer countries as well. A World Bank study on public reform in OECD countries concluded that the first and main response to fiscal constraints in these countries during the 1980s was: "cutback management, consisting of measures to curb public spending and civil service staffing" (Nunberg 1995: 11).

The study, which was carried out to draw lessons for public reform in developing countries, also shows that the OECD countries quickly discovered the limits of cutback management, especially as it did not give scope for efficiency improvements

(*ibid.*: 11). Similarly, World Bank-supported downsizing programs in developing countries were criticised for being "one-shot employment cuts, rather than longer-term sustainable rightsizing and performance improvements" (Nunberg 1996: 6). Judith Tendler (1997: 170) makes a similar point. She argues that downsizing programs that were implemented without complementary measures had negative effects on the performance capacity of public agencies.

Of course, the NIA's downsizing and cost cutting was implemented with complementary measures, the major one being the turn over programs. The contracts to the farmer water users were to assure that the O&M performance remained at the same level. However, as I have shown, the IAs did not live up to this expectation. This has become painfully clear with regard to canal cleaning. As the NIA District sent away its ditchtenders and the IAs refused to take over the task, one third of the canal sections remained unattended in the system in 1996.

The relevant policy question obviously is: how to remedy the situation in the UPRIIS system and how to avoid this from happening in other countries where governments may also wish to stop subsidising O&M expenditures and make their agencies dependent on user fees? What kind of complementary measures are needed to avoid that such agencies follow the path of cutback management to the extent that their savings become harmful to the irrigation economies they are supposed to keep alive?

I have the following suggestions. Firstly, the NIA Irrigation Districts need to be given more autonomy to run their own affairs. As things stand now, the NIA 'responsibility centres' have to 'surrender' all income to the NIA's central office that is not required to cover its O&M expenditures. If they would be allowed to keep such income, this would allow them to re-strengthen their maintenance capacity, for instance by buying new equipment. Likewise, the Districts should be allowed to hire or contract extra people without being stopped to do so by central government. Obviously, they can only do so if they can afford it. Such measures will honour well-managed systems, while poorly led systems will be more exposed. A starting fund should be made available by the NIA for each District, so that the perennial problem of delayed salaries and delayed payments of IAs is solved.

Secondly, the narrow definition of financial viability needs to be replaced with a more encompassing one that ensures an

economically viable and sustainable system. At least, this should include significant funds that allow for sufficient canal and road maintenance in the systems. This would also require that the depreciation of the heavy equipment is included in the accounting system of an economically viable system.

Thirdly, the performance criteria of the system as well as the NIA managers should be more oriented towards the productivity in the system, and especially the size of the benefited area. This will help the reorientation of the NIA District engineers towards optimising the economic benefits of scarce resources like water and well-maintained canals, rather than a narrow focus on fee income, cost reduction and the wages of the NIA staff.

Fourthly, the NIA central office should strengthen its monitoring and control role. It should become much more strict and tough on the evaluation of the performance of the Districts and other systems, and replace the NIA system managers when results are not satisfactory. Given the political mechanisms of promotions and transfer, such a change is not easy to establish (see the following chapter). Nevertheless, it is a necessary one (for further discussion see the concluding chapter).

Notes

[1] Such a 'pay-for-performance' scheme is one of the key neo-liberal measures propagated by bilateral and multi-lateral donor institutions and Western governments in the Third World that are "directed at limiting the "damage" the public sector can do in developing countries." (Tendler, 1997: 1). In the Philippines, these pay-for-performance schemes were part of the conditionalities set by the IMF and World Bank in the Structural Adjustment loans of the 1980s (Ofreneo 1987). In OECD countries, pay-for-performance schemes are part of sophisticated and encompassing public sector reforms that belong to the school of 'New Public Management' (NPM). For a discussion on NPM, see for instance Hood (1991) and on NPM in a Third World context, see Minogue *et al.* (1998) or Manning (2001)

[2] This sub-section (and to a lesser extent the following sub-section as well), leans heavily on data provided by the study of Svendsen, Adriano and Martin, published in 1990. Though I disagree with their conclusions on the effects of financial autonomy on the NIA's management of its systems, they provide a rich account of the historical relations between government and the NIA.

[3] For the period 1982-86, the management fee provided for almost 20% of the NIA's total operational income. (Svendsen *et al.* 1990: table 41).

[4] The reasons for Marcos and international donors to finance irrigation development fall outside the scope of this thesis. For explanations from a neo-classical perspective (mostly pointing to rice prices and rates of return on irrigation investments), see for instance Azarcon (1990) and Levine and Barker *et al.* (1988). For irrigation investments as the key answer to the Club of Rome induced scare during the 1960s of impending food grain shortages in Asia, see Colombo *et al.*, (1978), writing for the Trilateral Commission. As far as I know, so far there are no contributions from a more political or political-economic perspective that directly discuss irrigation investments. For more general discussions on the agricultural policies of Marcos, see Kerkvliet (1979), Wurfel (1983) and Putzel (1992). They point to the need for Marcos to stem rural unrest in especially the Central Luzon rice plain, and gain popular legitimisation through ensuring cheap rice production. Others have examined how Marcos built his network of cronies through the channelling of public money through government corporations used for private pockets (see for instance Manapat 1991). For a left-wing conspiracy theory arguing that the green revolution and irrigation was all an US-orchestrated anti-Communist plot to extend capitalist agriculture and impoverish the peasantry, see Feder (1983).

[5] During the martial law period, the number of GOCCs ballooned from around a hundred in 1972 up to over 300 in 1984 (Briones 1986).

[6] This thesis does not dig deeper into the politico-economic rationale for the shrinking irrigation investments in the 1980s and 1990s. Neo-classical contributions point to the low price-regime of international food markets in the 1980s, which caused both donors as well as government to reduce their expenditures in irrigation (see for instance Azarcon 1990). Kikuchi *et al.* (1999) argue that it was related to the inability of the NIA - as was the case for other Asian irrigation agencies – to attain high rates of return in maintaining and rehabilitating existing irrigation schemes. Explanation of political economists point to the adoption of neo-liberal policies by the Philippine government in the 1980s that cut public spending in general, and the agricultural food sector in particular (Ofreneo 1987).

Intriguing but rather puzzling data have been put forward by David and Inocencio (2000). They show that agricultural spending in general fell in the 1980s, as was the case for irrigation investments. However, irrigation was relatively hard-hit, and did not recover at all in subsequent years, unlike other agrarian related expenditures in the food sector. Irrigation did poorly, as compared to agrarian reform, natural resource management, and credit and input supplies. This thus suggests that the government did not shift away so much from the peasant sector, but rather that irrigation lost its attraction for subsequent government administrations as compared to other agricultural investments (David and Inocencio 2000: 14).

[7] Cutting staff levels was also enforced by the national government. It promulgated the Attrition Law that prohibited the filling of vacant positions in government office unless approved by the Civil Service Commission. The law was lifted in 1997 (Kikuchi *et al.* 1999: 6).

[8] This viability index does not yet include a yearly 25% income deduction of the District's income that is used to cover the O&M expenses of the office of the Operations Manager of UPRIIS as well as the Dam and Reservoir Division. Hence, the actual financial viability of the District is more problematic than suggested by the presented figures.

[9] The viability index is the ratio of the District's income and O&M expenses. The income is derived from fee collection, equipment rental and management fees (most of the equipment rental and the management fees are earned in NIA-funded construction and rehabilitation works in UPRIIS and thus are not real 'income'). The O&M expenses cover both personnel services as well as so-called 'Maintenance and Other Operating Expenses' (MOEE). The personnel services account for over 80% of the total O&M expenses, while the MOEE budget also mostly covers operational expenses. Hence, the maintenance budget is minimal, and expenditures for maintenance and repairs are covered by the yearly works budgets that are allocated to UPRIIS. The latter budgets are subsidies, and thus do not have to be recovered through user fees.

[10] From 1982 onwards, the gatekeepers had to do canal cleaning as well. The average length of canal stretch assigned to them in 1982 and 1997 was respectively 1.5 and 2.2 kilometres.

[11] The real number of staff hired under this item was much lower, around 110 people only. I lack the available data to explain this. My assumption is that the available ditchtenders may have been expected to clean larger stretches of canals. Moreover, probably also staff hired under another (cheaper) post (for instance 'labourer') may have been required to clean canals.

[12] In 1997, the monthly salaries and benefits of a ditchtender amounted to P8659 (NIA-UPRIIS 1997), while an IA only received a monthly remuneration of P1400/3.5 km. The IA costs thus comprised only 16% of the cost of a ditchtender.

[13] In case the water user was tilling land owned by a landowner, bills were given to one of the two parties, depending on their contractual agreement.

[14] By fixing the fee amount in kind instead of in cash, the NIA's fee income was more or less safeguarded against deflation. The cash-equivalent of the value of the sacks of palay was calculated against the government support price for palay. This support price was regularly adjusted (raised) to (inter-) national rice prices. (Svendsen *et al.* 1990) As the hauling, drying, storing and selling of palay was a cumbersome and costly matter, the NIA preferred farmers to pay in cash. To stimulate cash-payments, farmers doing so – on time - received a 10% discount.

[15] Formally, multiple visits were needed. A fieldworker was expected to

hand-over a notice to the farmer before harvest, which indicated his/her dues. In case of payment-in-kind, the collector could formally not give the official receipt of payment to the farmers straight away. He should first have the sacks weighed at the NIA's office. Hence, the collector was thus expected to re-visit these farmers to give them their receipts after weighing. In practice though, they often did not distribute the notice of payment at all and/or would only give the official receipt of payment to the farmer during the next round of collections.

[16] AMA was the legal front of MASAKA during the martial law period, an organisation that was affiliated with the old communist party, the PKP. Until the end of the 1980s, MASAKA was well-organised in especially the downstream municipalities of Zone 3. They were known for organising farm strikes by the *katulong* ('helpers', tenant-labourers) and mass-actions during harvest time, in which the harvest would be 'stolen' from landowners or tenants who were considered to be exploitative. *Sandujuan* (meaning 'one blood') was an issue-based peasant organisation in Central Luzon that rose during the 1980s and weakened in the beginning of the 1990s. It was a so-called 'soc-dem' organisation, meaning that it was not related to the Communist Party. It focused on the issue of (lack of) government support to maintain the price of palay through the buying stations of the NFA, the National Food Authority. It was able to mobilise thousands of farmers in rallies, forming 'human blockades' in Central Luzon as well as Manila (personal communication with Mr. Esquejo, director of 'Empowerment', a peasant organisation based in Cabanatuan City, Nueva Ecija). For a historical discussion of peasant organisations in the area, see Fegan (1982).

[17] Under the normal accounting procedures, the back-accounts of farmers were re-valued every time the government support price for palay – the basis of calculating fees – changed. As this government support price more or less followed the inflation rate, the debts of farmers increased rapidly over time. Moreover, an annual interest penalty of 1% was charged to the back-account. Under the Amnesty program, both these re-valuations as and the penalties were skipped. This discount formula reduced the debt by as much as two thirds of the original amount.

[18] Another reason was that the engineers realised that these well-connected people could not be scared so easily. It was considered to be difficult to actually win a court case against well-endowed farmers. Their political connections and their financial capacity to hire a lawyer would allow them to at least drag such a case for several years. Also, as the administration of the back-accounts left much to be desired, a good lawyer would have little difficulty in proving at least part of the NIA's claims to be flawed.

[19] The total ISF collection is the sum of the collection of farmer fees for a current season (current account) as well as back-accounts. The collection efficiency is the ratio of the total collected amount of fees and the ISF

collectibles. The collectibles are based on the benefited area of a wet and the dry season, multiplied by the going ISF rates for these two seasons.

[20] Moreover, the NIA did recognise these shrinkage losses in the fees charged to farmers paying in kind. It made these farmers pay an extra 12% who thus were charged with 56 kilos of palay for each sack instead of 50 kilos. This was charged to make up for shrinkage losses as well as for the costs incurred for hauling, drying and selling of the palay.

[21] Change of rainfall patterns or changes in the inflow of water were not part of my study. Hence, it might be that the declining trend was at least partly caused by agro-ecological factors. The data on the monthly flow of water in the river as well as the inflow of reservoir water into the system from 1983-1997 do not show a significant decline. However, more detailed data analysis – based on weekly averages and including rainfall – would be required to get a more accurate picture. Moreover, the program and benefited area has risen again during the 1999-2002 period, which was partly caused –according to the NIA engineers - due to more favourable agro-ecological circumstances. Nevertheless, it still seems plausible – and that was also the general feeling of the NIA staff – that the declining trend was at least partly caused by the shrinking capacity of the NIA in delivering O&M services.

[22] Other studies support these findings. For instance, the World Bank pointed to low levels of O&M funding as a major cause of poor system performance in the Philippines (1996: annex 2, p.4). Others argued that the cuts in staffing and salary levels had a negative effect on the NIA's services (Kikuchi *et al.* 1999). Finally, Kikuchi's case study of a system in Southern Luzon – located in an area which he has been closely observing over the last three decades (see Hayami and Kikuchi 2000) - also points to the same direction. The title of his contribution is revealing: "State and community in the deterioration of a National Irrigation System" (Kikuchi *et al.* 1998).

[23] The statements on the farmers' reasons for payment in this section are derived from qualitative interviews. The number of farmers and farmer leaders interviewed on the subject of fee payments and relations to the NIA in the three IAs were respectively 20, 35 and 15 for the first, second and third IA. This constitutes between 5-10% of the total number of farmers.

7

The Politics of Works and Work

> My position was very, very difficult. It is a money agency. Everybody is after the money; there are syndicated activities, up to the level of assistant-administrator. I had so many responsibilities. I had to solve problems leftover from my predecessors, like bids that were stopped. People can easily trick you, like making you sign for certain anomalies and then report it to the COA [Commission on Audit, JO] or the Ombudsman. Hence, you always feel the hot breath of these two institutions on your neck. Then there were the politicians who were pushing for certain projects, and who kept on calling me up. I was even threatened physically, by people claiming to be connected with the A.B.B. [a Marxist urban guerrilla group operating in Metro Manila, JO]. They did this to test me, to see how I would respond, and how far they could go.

The quotation comes from the highest-ranking official of the NIA, the administrator. I interviewed him in October 1997, a few months after he was released from the position. I pitied him. He lasted only a year in the position. As the rumour goes, he was put in the position by President Ramos based on the recommendation of a powerful Senator, who happened to be close to the administrator's wife. Previously he was a manager of an Agricultural University, located in an UPRIIS-based town. President Ramos replaced him because, as a congressman euphemistically phrased it: "he was a weak manager". To put it more aptly, I would say that they 'fried' him in Manila. He apparently lacked the skills and network to survive in this arena of politics, dirty tricks and money.[1]

As the outcry of the NIA administrator clearly suggests, the domain of physical works is full of politics. I distinguish between

and discuss three kinds of politics in this chapter: the politics of contracting, the politics of the allocation of works and the politics of quality control.

This chapter first takes a look at the politics of contracting of works. Robert Wade's work on this issue in an Indian canal irrigation system has shown that it can be an important field of inquiry (Wade 1982). He found that the contracting of works was embedded in an institutionalised set of corrupt practices. It allowed the higher-level irrigation engineers to raise vast amounts of illicit revenue, up to thirty times their salary. As a result, Wade argued, these engineers were preoccupied with rent-seeking[2] rather than with proper management of the system.

Wade moreover showed that these rent-seeking practices were crucially important for the positions of the higher-level engineers as well. State-level politicians demanded a part of the rents generated by these engineers. They could do so through their control over the transfer of these engineers. Engineers were transferred at fixed intervals to another post. Each desirable post had a high price, to be paid to the politician in charge. Engineers who were not willing to pay-off these politicians would find themselves transferred to a remote area and/or to an area where the possibilities for rent-seeking were limited. Hence, in this Indian case, the politics of works and work were interconnected.

My findings show similarities to those of Wade. Contracting in UPRIIS also involved institutionalised forms of rent-seeking. High-level politicians were involved, as they sought control over physical works for financial as well political reasons. As we will see, their power was based on their influence over the promotions and transfer of the UPRIIS leadership. Hence, also this case shows interconnections between the politics of works and work (jobs).

The second kind of politics of works discussed in this chapter concerns the allocation of works. The works budget of the 4th UPRIIS is limited, and so is the maintenance equipment. These are insufficient to keep all irrigation facilities in good condition. Hence, people struggle over the prioritisation of the stretches of canals, canal roads and/or irrigation structures to be maintained or repaired. As we will see, the District Chief controls the allocation of works. His decisions are influenced by a number of factors. As in the case of water distribution, these decisions are embedded in the wider socio-political relations between the NIA office and farmers.

Finally, this chapter analyses the politics of the quality of works. In a rent-seeking environment, sub-standard quality of work may be the rule rather than the exception: "EEs and AEs (the Indian irrigation engineers) make poor quality controllers, because they benefit from sub-standard work" (Wade 1982: 316). I examine who is involved in quality control, and how well they are doing their job. In UPRIIS, the IAs are given a formal say in quality control. The IA president is supposed to sign for work done in his area. This section looks at the relevance of this formal change in quality control.

Much of the chapter is devoted to the politics of contracting. It starts with an examination of the rent-seeking practices of the NIA engineers in the contracting of these works. It is then followed by a discussion of the involvement of congressmen in this arena, and the interconnections with the politics of promotion and transfer. Subsequently, the politics of allocation and quality control are discussed, including the roles played by the IAs that were organised as part of the turn over program. The conclusions takes a detailed look at of the effects of the politics of works and work on the District's performance, and discusses some of the possibilities to change these politics for the better.

Rent-Seeking

The NIA engineers at District, UPRIIS and even national level make money out of the works contracts to contractors. They can do so because of their discretionary powers over the allocation of contracts, over quality control and releases of payments for works done. They capture for themselves a portion of the value of what they allocate. To be able to understand the specific ways in which rent-seeking takes place, I will first explain the formal set-up of these discretionary powers.

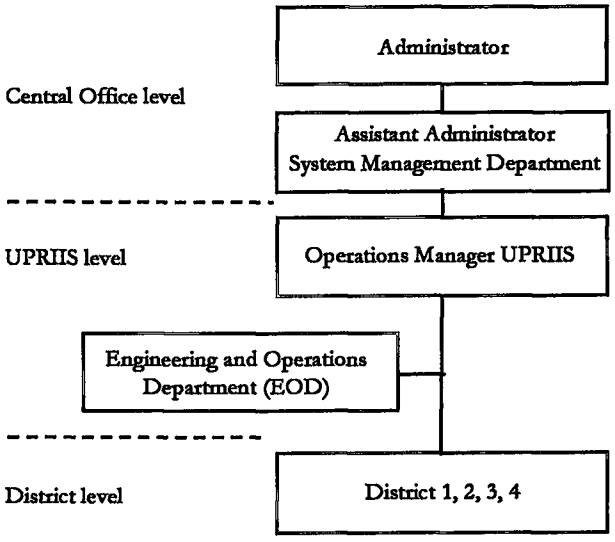
Formal procedures in the allocation of works

Funds for works in the UPRIIS system come from the national treasury. Every year, the NIA is allotted a works budget by Congress, and approved by the President, through the so-called 'general appropriations act'. The NIA's works budget is also based

on special funds, like World Bank loans or special acts approved by Congress to speed up irrigation development.

To get access to these funds for works, each Irrigation District of UPRIIS prepares a so-called Program of Works (POWs). These POWs are detailed estimates of works needed in the District in the year to come, and the funds required for getting these works done. The Districts submit these POWs for approval to the Engineering and Operation Department (EOD) of UPRIIS. After the POW is approved by the head of the EOD and finally the Operations Manager of UPRIIS, it is sent to the System Management Department of the NIA's central office (see figure 7.1).

FIGURE 7.1: Hierarchical control in the approval of POWs



Source: Personal communication NIA COA auditor, August 1997

The SMD supposedly scrutinises each submitted POW and decides whether it will be funded. In reality, the procedures followed are more pragmatic. Usually, the SMD will tell UPRIIS beforehand the amount of funds available in the next year, as well as the types of works to be done. The Districts will submit the POWs in line with these instructions. Usually these POWs are indeed approved. Often however, fund releases are delayed due to financial problems in the central government. An approved POW may thus be funded up to three years after it was submitted.

Works can be carried out by UPRIIS itself. These are called force account works. In that case the NIA uses its own staff and equipment. The advantage of force account works for UPRIIS is that it allows the agency to charge a 5-10% management fee to these projects. This income is added to its operational budget. Also, renting out equipment to these projects generates income. However, force account works are limited, as the UPRIIS equipment is in poor running condition.

Private contractors thus carry out most works. When a POW is approved by the SMD, the NIA will start a bidding process. The bidding is announced publicly. A pre-bidding session is held in which interested contractors are informed of the details of the works to be done. As this is supposed to be an informative meeting only, the presence of the Commission on Audit (the COA, a controlling body of the central government) is not required. Due to the high amounts of money involved in the works budget of the NIA, the COA has placed a permanent auditor at the UPRIIS level, as well as in all of the four Districts.

After the pre-bidding session the actual bidding will take place. Interested contractors supposedly submit their sealed bids to the NIA. The lowest bidder will get the project, provided requirements are met. For instance, only licensed contractors are allowed to join the bidding. Also, contractors belong to certain classes, which set a maximum to the type and magnitude of the works that they may undertake. Lower class contractors can carry out only relatively small works, while the highest class contractors are large and often internationally operating contracting firms with a proven capability to carry out multi-million projects.

The Committee on Bids and Awards of the NIA is in charge of the bidding process, and awards the projects to the winning bidder. Such a committee is found at the UPRIIS level, as well as within each District. At the time of the research a District committee handled small projects up to P250,000, while bigger projects were dealt with at the UPRIIS level. Table 7.1 shows the composition of both committees.

Most projects involve more than P250,000, and are thus handled by the UPRIIS committee. However, the District is still involved. After the bidding, the contractor will implement the work. The District in which the project is carried out does monitoring of progress and the preparation of vouchers for payment to a contractor. The actual payment is done at UPRIIS level. Also,

formal evaluation of the work is conducted by the UPRIIS office, through an evaluation committee headed by the EOD Chief.

TABLE 7.1: Composition of Bids and Award Committees at UPRIIS and District level during 1996-97

	UPRIIS committee	*District committees*
Chairman	Chief EOD	Operational Engineer
Members	District Chiefs	Maintenance Engineer
	Administrative Officer	Administrative Officer
	Chief IDD	Staff member
Approved by	Operations Manager	District Chief
Witness	COA auditor	COA auditor

Source: personal communication NIA-COA auditor, August 1997

Making money: connivance between the NIA and contractors

The above-described formal procedures differed sharply from the actual practices. During 1996-97, rent-seeking by the contractors and the NIA engineers was an institutionalised practice. It started during the bidding process. These were usually negotiated bids instead of so-called 'sealed bids'. Instead of competing against each other the contractors distributed the contracts among them, and ensured they would get the highest budget possible. An auditor of the Commission on Audit explains how it worked.

> If there are 4 packages of projects, the five contractors present during the pre-bid will divide these packages. The fifth contractor will get a percentage from the other four. Usually this is around 3% of the total budget. They can do so, because they are all local contractors. They are organised in the Nueva Ecija association of contractors. This association operates like a syndicate. Contractors outside of Nueva Ecija are not invited. Even if they would be invited, they would not show up, knowing it is not for them.[3]

The deals were made in the pre-bidding session, where the COA representative was not present: "the secret part is done in the pre-bidding session. The contractors will then just make a showcase in the subsequent bidding session, to make it appear as if it is not a forceful bidding. Sometimes they even invite local media." (Remark of a COA auditor)

The higher-level NIA engineers were involved in these rent-seeking practices. The going rate was that they took 10-15% of the budget of all projects of winning contractors. This was called an S.O.P., a Standard Operating Procedure. It was hardly considered illegal. As one of the involved contractors told me: "Actually it is illegal, it is a payment under the table. But it is such a common practice, that we consider it to be legal".[4]

According to a District Chief, there is a history to the SOP slices. During the first years of the UPRIIS system such high rents were not common.

> During those days, central office would scrutinise the submitted Program of Works more carefully. Overpricing was then not so easy. UPRIIS then also deducted around 10% S.O.P. But that was legal. It was going to the operational budget, as savings on the projects. For instance, if a project was P100,000, bids of only P90,000 would be awarded. The rest were savings for UPRIIS. However, nowadays it is pocketed.

The chairman of the Committee of Bids and Awards was said to be collecting these SOPs (also called 'give-aways' or 'kick-backs'). As most projects were too large for the Districts to handle, the deals were made at the UPRIIS office. The chairman was responsible for sharing it with the other committee members. Also the Operations Manager received his share, as he finally approved the contract to a certain contractor.

During implementation, the contractor usually also gives 'grease money' to the NIA staff of the District in which the project is implemented. Also drinks are supplied. For instance, I observed that a local contractor provided two boxes of Johnny Walker bottles to one of the District offices of UPRIIS, to celebrate that he was able to get a contract. In this way, the contractor tried to avoid problems like the deadline to be kept, checking on the quality of the work, or the speediness of vouchers to be signed. Usually, this grease money was given to the District Chief. He might share it (the local term is 'chop-chop') with the Maintenance Engineer, the administrative officer, and sometimes the Operational Engineer. Finally, the COA auditor was given his share.

> I get only a little bit. Usually it is 0.5% out of the SOP given to the NIA. I do not demand anything; it is just given to me. I could have

> been rich by now, if I wanted to. However, I have not been given anything recently. The contractors know that I am going to be reshuffled soon, so they now take me for granted. (interview with a UPRIIS-based COA auditor)

In return for the SOPs, the contractors were allowed to spend only part of their approved works budget. There was not much scope for overpricing, as most of the works to be done had to follow standard unit costs. Each meter of road re-gravelling, or each length of canal to be de-silted had a standard price. Hence, most of the savings were found in savings on construction costs. These works were conducted in sub-standard manners (see further below).

According to a COA auditor, contractors only used around 50% of the budget to cover the actual construction costs. A Maintenance Engineer, however, qualified this statement. He made it clear that there were many factors involved, mostly related to the risk of being caught.

1. Small versus big projects

Usually, not much money was made on small contracts. As the potential profits were low anyway, the risk was considered too high: "these small projects might become a giant problem, when somebody makes it into an issue." Hence, big money was usually made in the bigger projects, amounting to several millions of pesos.

2. Concreting works versus de-silting or resurfacing works

Not much money could be made in concreting works, like road pavements or the rehabilitation of check gates. It was difficult to cheat on these works. However, it was not uncommon to spend only 30% of the works budget on re-gravelling of canal roads or de-silting of canals. As a contractor-politician commented on the doings of one of his colleagues, who got a P6 Million contract for de-silting lateral canals:

> He may have spent less than a Million. He did not do much more than to remove the water lilies. As he finished the work just before the rainy season, he can easily get away with an investigation. He can always claim that silt from the river and canal banks has again clogged-up the canals.

3. Political motivations versus economic need

Politicians, who wanted a good job to be done to please the voting population, backed some projects. Hence, main roads connecting villages to towns usually are done relatively well. On the other hand, remote and/or end-sections of canal roads are usually done very poorly. The latter have hardly any political significance.

The control over contracts was centralised in the mid-nineties. Before that period, bids were regularly done at the District level. Works were contracted into smaller packages. An Operational Engineer explained its advantage: "I prefer to work with smaller packages. If the contracts are larger, only high-class contractors can attend the bidding. These are often politicians, or at least rich and well connected people. It is very hard to deal with them." Though officially not allowed, the Districts often organised the bidding for larger contracts.

It was centralised to the UPRIIS level because this allowed an assistant administrator of the NIA central office in Manila to claim a rent from the contracts as well. Nation-wide, he demanded 1% of the gross works budget be given to the different regions of the NIA. UPRIIS was forced to comply with that demand as well.

> Budget releases to UPRIIS of approved POWs were very slow last year. The reason was that we did not yet give the 1%. The Operations Manager then made the agreement with the assistant-administrator. Since that time, bids were done in the UPRIIS office. The 1% is brought to the assistant administrator in Manila by one of the engineers of the UPRIIS office and a cashier. (comments of a District Chief)

TABLE 7.2: Example of rents taken from contracted works

Function	*Percentage to be received*
Operations Manager (UPRIIS)	1,25%
Chief EOD (UPRIIS)	0,75%
Cashier (UPRIIS)	0,40%
Regional Manager	0,75%
Assistant Administrator	0,75%

I indeed found proof of this allegation. Another District Chief was angry about the way in which the bidding process of a package of contracts, worth P40 Million, was handled. He took a small

piece of paper from his wallet, on which the 'chop-chop' arrangement for these works was written, and showed it to me. He got it from one of the awarded contractors (see table 7.2).

Rent-seeking in the implementation of works by force-account was also said to be a common practice. Money was made on the gasoline and oil bills of the heavy equipment. The amounts involved were however limited. The poor running condition of the NIA equipment did not allow large works to be carried out through force account. Rent-seeking involved some of the engineers, and was shared with the field staff (operators and maintenance crew).

The rents taken from the works budget was more than just a 'side-line' activity. The UPRIIS works budget for 1992-97 was on average around P100M yearly (UPRIIS annual reports 1992-97). Assuming that 10% of this budget was taken as rents, it means that P10 M was distributed yearly. Again assuming that this amount was equally distributed over ten people, it means that each top-level manager in UPRIIS received 1MP yearly. This was around 6-8 times their yearly salary during 1996-97.

It must be noted however, that there seemed to be large differences between the rent-seeking orientation of the engineers involved. Two of the four District Chiefs admitted to take rents, but they were not pre-occupied with it. On the other hand, seeking rents seemed to be the main concern of some of the leading engineers in the UPRIIS office: "These guys are busy with their 'side-lines'. They do not spend much time on their actual work" (comment of a former assistant administrator of the NIA). One of these engineers was argued to have become very rich in a short time-span: "When he came to UPRIIS ten years ago, he was not rich at all. Nowadays he owns fancy apartments in Manila, a cattle ranch, a night-club, and a lending institution." (comment of a contractor regularly taking contracts from UPRIIS).

In short, rent-seeking was an institutionalised practice in the contracting of works. Making money through works seemed to be a rewarding strategy for at least a part of the NIA management in the Districts and the UPRIIS office. However, it was not only money that preoccupied the irrigation managers with the works domain. As will be shown below, their survival also critically depended on their doings in the works arena.

Congressional Insertions

The contracting arena was not as straightforward as it perhaps seems to be so far. The reason is that big-time politicians, especially congressmen, played a dominant role in this arena as well. This made life for the engineers far more complicated. Their positions within the NIA hierarchy were at stake. If they played the games in the works arena well, they might be promoted. If not, they might be transferred out of the area.

Congressmen in the Philippines seek control over programs of implementing agencies in their congressional District, in search of money and votes. They need high amounts of money to finance their re-election campaign. The required investment in my research area for a congressman to get re-elected in the 1995 elections was around P20 Million. Among other purposes, this money is used for buying blocks of votes from powerful political families. For instance, it was a public secret that the mayor of an important municipality in my research area received as much as 6MP to put his political weight behind the re-election of a particular congressman in the 1995 elections. Funds are also needed to satisfy a continuous flow of daily requests from local citizens for financial support (Parreño 1998).

Congressmen also seek control over government projects to win the popularity of the voting population in a more direct way. Formally, they are elected to legislate at the national level. The District system is designed to ensure that all areas of the Philippines are represented in the legislative process. In practice though, congressmen are judged by the voting population for their capacity in bringing government funds and projects to their congressional District. Bringing 'home' projects puts them in the good graces of their constituents and earns them a place in the ballots come election time (Estella 1997). Gaining control over the NIA funds, or at least influencing the prioritisation of projects to be carried out, is one way of doing that.

The possibilities for congressmen to gain control over the funds of implementing agencies like the NIA are derived from their discretionary power. Firstly, Congress is vested with the formal power to approve the proposed budgets for the executive branches of government for the year to come. The budget proposal comes from the President. It lists the proposed appropriations of the various agencies, along with the programs and projects these

agencies are supposed to undertake. Congress takes a close look at these appropriations and organises a number of hearings. The heads of government agencies are summoned to these hearings and made to explain and justify their proposed budget (Estella 1997: 106)

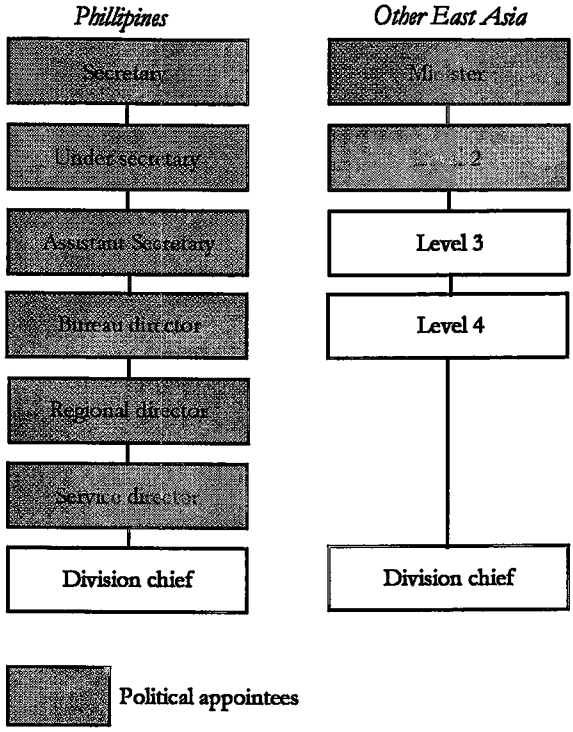
The Committee on Appropriations is the largest committee of the Lower House. Congressmen struggle to be on the committee (and its subcommittees). As the committee members hold the power of the purse, they can strike a deal with the heads of these agencies. In exchange for approval (or not making trouble), congressmen demand certain projects to be implemented in their respective area.

Secondly, congressmen also may use their formal power to call for an inquiry. Though this power is given to them in 'aid of legislation', in practice they can demand an investigation into practically anything. Usually, these investigations take again the form of hearings. High-level officials of agencies may be called to Congress, to answer questions with regard to suspected malpractices. Often, these involve allegations of corruption. As heads of agencies prefer not to be questioned in such hearings, it again gives congressmen room for manoeuvre (Estella 1997).

Finally, congressmen are also vested with the power to scrutinise and approve the nominations made by the President for positions in government. The powerful Congressional Commission on Appointments does this. High-ranking officials of government agencies thus seek support for their candidacy with congressmen on this committee, or people who are close to them. This control over appointments gives congressmen an opportunity to get a hold over government projects of agencies, whose leadership is seeking endorsement for a promotion. Appointments in the Philippines are politicised. Political influence over appointments, transfers and promotions go deep down into the bureaucracy (Corpuz 1986; Varela 1996, see also figure 7.2).

I will show the importance of congressmen in the works arena by means of a case study in the 4th District of UPRIIS. This case study also shows that the politics of works and work (transfer or promotion) are closely interrelated.

FIGURE 7.2: Depth of political appointees in the Philippine civil service compared to other East Asian countries, 1984-88



Source: Nunberg 1995, in: World Bank 1997: 93

A case study of works

The story of this case study starts in October 1996. At that time the NIA was organising a bidding process for drainage de-silting works to be carried out in the 4th District, with a total budget of 13 Million Pesos. The bidding would take place at UPRIIS level. In the pre-bidding session it was discussed which contractors would get the contracts, and for what price. The contracts would be given to contractors from the Nueva Ecija association of contractors. Many of them were residing in the area of the 4th Irrigation District. Some of these contractors had clear political backing. One contractor was a son of the vice-governor, while another was a son

of mayor Meneses, a brother of "Meneses Jr.', who was so active in irrigation water management (for further detail, see chapter 4). Most of these contractors were affiliated with political rivals of congressman Lopez of a congressional District of Nueva Ecija. Only one package was given to a contractor who was close to this congressman.

Just before the actual bidding would take place, congressman Lopez called for a meeting with the NIA engineers. He summoned the Operations Manager and the Chiefs of the Irrigation Districts 3 and 4 to his house. Sizeable parts of both the Irrigation Districts were located within the boundaries of his congressional District. He wanted to discuss with them the Programs of Works to be submitted to the Central Office for the coming year. A few days later, he learned about the bidding. He was infuriated that he was not informed about it, and decided to intervene.

Congressman Lopez made an unusually bold move. He called the NIA managers and told them to stop the bidding process and to organise a re-bidding. If the NIA would not comply with that wish, he threatened to call for an investigation into the bidding process, and to closely monitor the implementation of the awarded works. Given the sensitivity of the matter, the UPRIIS engineers brought the matter to the attention of the highest NIA official, the NIA administrator in the central office.

Only a few days later, a delegation of the UPRIIS management met the administrator in Manila. The UPRIIS delegation consisted of the Operations manager, the Chief of the Engineering and Operations Division, the Chiefs of District 3 and 4, and the Maintenance Engineer of District 4. At that time they still thought they could settle the matter, by striking a deal with the congressman. He had demanded funds for the construction of a re-use dam in one of the towns of his District (located in District 3 of the UPRIIS system). The NIA administrator decided to make 6MP available for this re-use dam, to be carried out by the construction firm of a close relative. This project was indeed accepted by him, and construction started in the following months. However, the congressman still persisted in his demand that the bidding for the drainage projects should be re-opened.

The administrator decided to indeed stop the bidding process. In the following months all bids for District 3 and 4 were postponed. Several meetings took place between the UPRIIS management, the administrator and the congressman, to settle the

issue. The administrator felt that he had to comply with the congressman, because of his power in Congress over the budget allocations to the NIA.

> He is particularly powerful. He does not sit in the Committee on Appropriations, but the hearings are open for all congressmen. He is very talkative in these hearings and can make my life very difficult. It is their way of trying to ensure that certain projects are put into the budget. Moreover, he has a point. The bidding was a wrecked one. He says that two of the UPRIIS engineers are involved in contracting themselves, and would carry out a few of the projects, through a front. I believe these allegations to be true.

The congressman himself was indeed aware of these powers.

> I have an important say over the NIA budget. I do not have voting power in the appropriations committee, but I can still ask questions in the deliberations. We can delay the budget approval, by asking questions on the floor. As there is usually no quorum, asking difficult questions can delay the approval. However, I am not like that; I would rather settle the issue in private.

A year after the incident took place, the congressman recalled that he did not intervene because of the manipulated bidding, but rather because he felt that the drainage de-silting projects were not very useful. He believed that the NIA should put its money into re-use dams and road concreting projects.

> I do not care about these fishy things. I understand the need for money of these contractors, but I at least want projects that are sensible. De-silting such drains is useless. They only remove the water lilies, or only clean the upstream parts. Re-use dams are much more useful. I am happy that the new administrator can see the need for these dams.

Others, however, pointed to his political interests. They argued that he wanted to get a hold of these projects because he was gearing up for the 1998 elections. A contractor close to the congressman argued that he wanted to control these projects to boost his popularity. He put a lot of effort into bringing works to specific areas of his District, where most of the votes had gone to his opponent in the 1995 elections. A NIA engineer stated:

> He likes road concreting projects rather than drainage projects, because roads are useful for all of the voters. Some of the check gates that he wants to be constructed have no real re-use purpose. Their main purpose is road-crossings.

It was also argued that he wanted control over the projects to patronise contractors. A contractor gave the example of the rehabilitation of a provincial road, which was carried out by the Department of Public Works and Highways, under his control.

> We are all given one kilometre. In this way he tries to please as many contractors as possible. He favours contractors who supported him during the last election. He gives more projects to two colleagues of mine, because he tries to bring them to his side. Last election they joined forces with a rival candidate.

His political agenda also made him involve the IA leaders. At the end of October 1996, he invited the IA Presidents, barangay kapitans, and his political representatives in the villages of the 4th Irrigation District to his house. In that meeting, he explained his motivations of intervening in the bidding process. He claimed that he only wanted to protect the interests of the farmers, by carefully scrutinising the NIA's doings. He called upon these leaders to come up with requests for works to be done. He promised to do his best to follow up on these requests within the District and in Manila.

The meeting was well attended, and brought new dynamics to the ways in which works were allocated. Some of these leaders were unhappy about it, and felt that he should not interfere with NIA matters. Some others were more pragmatic, and tried to secure projects in their area, through the support of this congressional representative.

Politically, the act of the congressman was a courageous one. Obviously, his move to halt the bidding process infuriated the contractors of the Nueva Ecija contractors association. They had several meetings among themselves and with the NIA engineers. They threatened to sue the congressman in court. However, this threat was not taken very seriously. As he was well informed about the illicit deals being made, nobody would wish to have matters discussed in court. The bigger threat was a political one. They threatened to join forces and campaign against him during the

coming 1998 elections. He was however able to overcome these threats through a careful give and take strategy. Some of these contractors remained political rivals, while others were pacified through his patronage over works contracts.

In the end, the interventions of congressman Lopez turned out to be beneficial on his part. The larger part of the budget for the drainage works was re-allocated for re-use checks. It was re-tendered in June 1997. Also another project was re-allocated due to his intervention. This project, worth several millions of Pesos, was initially intended for re-gravelling of canal roads. It was changed into road concreting works. The political gain to the congressman is that he could claim that it was because of his doings, that these projects were implemented in the District.

By mid-1997, NIA engineers felt that he had gained full control over the NIA works budgets and programs in Irrigation Districts 3 and 4. The NIA administrator, the UPRIIS Operation Manager, and the Chiefs of both Districts all frequently visited him in his house, or in Manila. Before the POWs were submitted for approval in the Central Office, he would first take a look at them.

A new type of alliance had been created, which in a way was also beneficial to UPRIIS. The NIA engineers would come up with the POW proposals, while he would follow up on these proposals in Manila. As he had a clear leverage over the NIA administrator and was close to some powerful politicians in Manila, he was argued to be rather successful in his doings. Not all NIA engineers were however happy with the new situation. One of the engineers cynically remarked: "We have to submit all POWs to the honourable representative of Congress. This is quite humiliating."

According to some of the involved NIA engineers, his control over the projects in 1997 did also benefit him in an economic way. As one of them commented:

> He is frequently using the license of other contractors as a front. These contractors are paid off with around 3% of the value of the contracted works. In some cases these contractors are actually implementing these projects, but he is financing it and gets the profits. In other cases, the projects are implemented through the contracting firm of his relative.

The congressman did not only focus upon the NIA. It was said that he also had gained control over the projects in his District of

the Department of Public Works and Highways (DPWH) as well as the Department of Education and Community Services (DECS). I did not study the importance of these controls in terms of the 1998 election, but he was able to win these elections. In the 2001 elections, because of the constitutional limit of two consecutive terms he had a close relative run, who was also able to win. Rumours in early 2003 had it that this relative will run again as congressman in 2004, while he might try to unseat the Joson family by running for governor of Nueva Ecija in the 2004 elections (for further details, see chapter 2).

A case study of work

This case study of works cannot be understood without including the politics around high-level managerial positions within UPRIIS. What was at stake? In the beginning of 1996 it became clear that the position of Operations Manager (OM) would become available. The sitting OM would be promoted to Regional Director. As one of the District Chiefs would have a good chance of getting the position, it also meant that a position of District Chief would become available, and subsequently the position of Operational Engineer or Maintenance Engineer, and so on. The above described struggle over the works became closely related to the struggle over the position of the OM and the lower positions of District Chief and Operational Engineer.

Formally, the NIA administrator has the power to appoint people for the positions of Operations Manager and District Chief.[5] A committee on appointments of the NIA's central office reviews the credentials of qualified and interested candidates. The review is mainly based on a performance assessment. Each year, such a performance assessment is carried out. A District Chief is assessed on the basis of criteria like the water use efficiency in the District, irrigated and benefited area, fee collection and the number of IAs organised. Each year, the results of this performance assessment are published. The Chiefs are ranked on the basis of these assessments.[6]

In reality, politics comes in. For the OM position six candidates were considered as serious contenders. These were the Chiefs of District 1, 3 and 4, the Chief of the EOD department in UPRIIS, and two 'outsiders'. One of the outsiders was a manager of another

irrigation system, while the other one had a position at Central Office. All of these candidates were mobilising padrinos. Perhaps the best way to explain this point is to quote one of the contenders for the position, one of the District Chiefs. It shows that the candidates were actively mobilising their networks, seeking backing from different sources. They approached politicians, like mayors, governors, congressmen and Senators, but also high-ranking NIA officials. I have left out the names for reasons of privacy.

> I don't like seeking support from politicians, but *puta*, engineer A [a rival candidate, JO] started doing so, so now I am forced to do it also. I have approached the vice-governor of province W to approach senator B. He is close to B. I also asked some of my friends to approach Mr. C (a powerful staff-member, close to the President). They helped him during the years of martial law. Mr. C already backs up engineer A, but I do not worry too much about it. Because in this case it is senator B who counts, because he was the one who got the administrator the position in the first place. Also the mayor of town X and Y (both located within the boundaries of the UPRIIS irrigation system) offered to help me. One even dropped by at the central office, to talk to Mr. D [a ranking NIA official, JO]. I don't think that engineer E [another rival candidate, JO] will stand a good chance. He is not on speaking terms with the mayor of town Z, and this mayor is close to the administrator. (Interview held in July 1996).

The District Chiefs also mobilised the leaders of the IA federations. As the hometown of the administrator was located in Nueva Ecija, they would visit him at his house during the weekends. Each of the three District Chiefs had a delegation of these leaders visit the administrator to promote their candidacy. The reason for IA federation leaders to do so was that they expected preferential treatment for the District, in case their candidate would be elected. As the Chief of the 4th District told me: "I promised them that if I would be the OM, I would ensure that water from Pantabangan would actually arrive in the District".

In July 1996, the Chief of the 4th District thought that his chances of getting the position were pretty high. He believed that the administrator would select one of the UPRIIS engineers rather than an outsider. This belief was based on the idea that the administrator could not withstand the pressure of politicians from his home-province backing these Chiefs. The administrator also

resided in Nueva Ecija. Among the UPRIIS candidates, he thought he had the best chances. His most serious contender was another District Chief, because of strong backing from the sitting OM, a number of mayors and especially a congressman of Nueva Ecija.[7] This congressman was widely considered powerful, as he was the provincial party leader of the ruling party at the time. However, through one of his informants the Chief had learned that the administrator did not want to support this particular Chief. The reason being that he considered this Chief part of the UPRIIS 'syndicate'. This 'syndicate' referred to the engineers involved in the alleged rent-seeking activities around the works budget and other 'sidelines'.

By the end of 1996 however, his chances of getting the OM position had become slim. The reason was that he had entered into a conflict with the congressman over the works issue. When the conflict over the works contracting started in October 1996 the congressman had still not made up his mind whom to support for the OM position. It was clear though that he would support one of the two Chiefs from District 3 or 4. The reason is that he already had developed close contacts with these two candidates, as these two Irrigation Districts were located within the boundaries of his congressional District. By the end of 1996, he had made up his mind. He would support the Chief of District 3. The District 4 Chief had fallen in disgrace.

His choice was based on their different attitude towards congressman Lopez. The Chief of the 4th District refused to bow to his demands. The Chief felt that the congressman had no right to intervene in NIA matters. He wanted to keep the arena of works 'manageable', and free from the influence of powerful politicians. Moreover, he was a good friend with one of the contractors belonging to the contractors association.

Also on a personal level this Chief and the congressman did not match. The congressman has an elite background. The Chief did not, and also did not try to mingle too much in elite circles. His barkada consisted of people without much power. All in all, his position infuriated the congressman: "I keep on inviting him to my house, but he does not show up. Moreover, if he does, he tells me not to interfere and refuses to listen to me."

The re-bidding for the works in the 4th District was organised in April 1997. The Chief made it a point that the bidding would be organised in his office. He ensured that it was an open bidding,

because, as he put it: "to avoid that only the bata of the congressman will get the projects."

The Chief of District 3 took his chances. This man's outlook was a different one. He was widely considered to be a *cow-boy*, which is the local term for somebody who is 'easy-going' and 'good in befriending different kinds of people'. Also, he mingled in the elite circles of Nueva Ecija. He frequently visited the congressman and ensured that the congressman got what he wanted.

In June 1997 the administrator decided on the matter. Though the performance of the District 3 Chief was assessed to be lower than that of the District 4 Chief, he still won the position. He was promoted as Operations Manager (officer in charge, pending formal approval). The District 4 Chief was transferred to another Irrigation District, outside of the congressional District of the congressman. As the administrator put it: "The District 4 Chief lacks P.R." However, he admitted that the congressman also pressured him. The backing of the congressman as well as the earlier mentioned congressional party leader in the province, gave the administrator little option but to comply.

The transfer of the District Chief was followed by a struggle over the vacant positions within the District. It gave the congressman further control over the works in the District. As he now was close to the newly appointed OM, it was clear that his endorsement would be crucial for these positions. The Operational Engineer wanted to be promoted as District Chief. He ensured that he did not fall in disgrace with the congressman. He frequently visited the congressman in his house to discuss the POWs and the on-going projects. He was indeed awarded the position.

A struggle followed for the now vacant position of Operational Engineer. The most senior candidate was the Maintenance Engineer. However, the position was given to one of the Zone Engineers. The reason was that the Maintenance Engineer, though being a godchild of the congressman, had taken sides with the transferred District Chief. He had become a close friend to this Chief, and felt bad about the way his friend had been treated. He refused to visit the congressman, being afraid that "I cannot control myself". The Zone Engineer who got the position was close to the recently promoted Operational Engineer. Moreover, he was realistic enough to seek the endorsement of the congressman. After he got the position, he also frequently visited the congressman to discuss the works in the District.

In short, this detailed account of an 'instructive event' has shown that the works domain is a complex arena, because of strong political involvement, especially of congressmen. As these politicians seek control over works by trying to control the higher-level positions in the NIA hierarchy, the jobs of these engineers are at stake. Hence, the manoeuvring of these engineers in the works domain is crucial for their possibilities for accumulation of wealth as well as for their career.

Congressmen as Local Service Providers

The involvement of the congressman in the works program of District 4 was unprecedented. There was nothing new about a politician seeking control over works for financial reasons or to control contractors. However, these politicians were hitherto not involved in the decision making over the types of projects to be carried out, or their locations. Mayors did often show an interest, but the NIA District discussing the details of a POW with a congressional representative was a new phenomenon. However, there is logic to it. It was the result of a national trend in which congressmen got an increasingly important role in provision of local services.

Champions of pork

One important characteristic of Philippine politics is the on-going power struggle between local interest groups and the powers of central government (Doronila 1992). The Philippine polity being modelled after the American one, the President represents the central power. Vested with enormous powers, including the control over the executive branches of the government, the President rules the country and implements national policies. On the other hand, there is Congress. Though elected as national legislators, the members of the Lower House represent local interests. Elite political families usually operate extensive economic enterprises in their different localities (Gutierrez 1994). They risk large investments in the contest each three years to capture a congressional seat. They do so to control local affairs, to get access to government funds, and to defend their business interests in the

national arena (McCoy 1994).

This power struggle is manifested in the allocation of the so-called 'pork barrel funds'. These are government funds distributed among the congressmen to be spent at their discretion.[8] Lacking a culture of party loyalty, allocating pork is an important way for the President to seek support from these legislators to pass his legislative program, approve his appointments, approve his budget, or implement policies. The congressmen are inclined to strike a deal, given the importance of these pork barrel funds, and switch to the party of the president after their election. As explained above, voters judge congressmen basically on their ability to bring home government funds and projects. It are the 'champions of pork' who are usually re-elected.

As outlined above, congressmen need large funds to finance their re-election campaign. One of the experienced Senators in the Philippines estimated for instance that the administration would need P5-10 billion to finance its campaign for national and local candidates (Rocamora 1998: 22). Pork is an ideal instrument for providing these funds. In 1998, the budget secretary under President Ramos estimated that the legislators pocketed as much as 45 percent of the pork barrel funds. He said that the kickbacks to congressmen from public works projects were on average around 30 % of total project costs (Parreño 1998: 35).

The pork barrel funds have become bigger and bigger in recent years. Under martial law, which started in 1972 and lasted until 1986, Marcos ended the pork barrel allocations, just as he had in 1972 abolished Congress altogether though he instituted a controlled National Assembly in 1980. Overt porkbarrel funding was re-established in the Eight Congress in 1990, which assumed office after Marcos's fall in 1986. Each legislator was given an annual allotment of P12.5M. This became known as the Countrywide Development Fund. They could use it at their own discretion for projects on infrastructure, schools or whatever else they considered necessary. Each congressman had their own congressional District Office (CDO) established. These CDO's were actually controlling the use of these funds.

From 1992 onwards, the legislators really got a feel for pork barrel funds. Under the Ninth and Tenth Congress (from 1992-1995 and 1995-1998 respectively) the annual pork barrel to each representative was increased to at least P50M. Part of the pork was to be distributed in a different way. It could no longer be spent

under the discretion of the CDO office of the legislators. They would be given a budget, but these were to be 'inserted' into the budgets of the line agencies. Hence, these congressional Insertions allowed congressmen to direct how, where and when these particular appropriations would be disbursed for projects to agencies like the NIA (cf. Parreño 1998: 36-37). Money-wise, pork was still growing. It reached 65MP annually under the Eleventh Congress, from 1998-2001.

The high amount of pork, and the condition to channel this money through government agencies, had an important effect on the relation between the legislators and the NIA. As one of the District Chiefs commented:

> In the past, congressmen would visit the administrator, seeking favours. Nowadays it is the other way around. Our money-thirsty agency forces us to make courtesy calls to these congressmen, begging for money. This is happening to us, although we are a government corporation. It is even worse for line agencies, which fully depend on government funds.

Because of the congressional insertions and the many projects funded through the pork barrel, congressmen increased their role in local service provision. In the 4th District of UPRIIS, there were indeed many signboards indicating that the congressman enabled this or that project. By 1998, the congressman had one grader continuously running through his District, to maintain canal as well as village roads. Given these funds and the possibility of insertions, it became perfectly legitimate for the congressman to sit together with NIA staff to discuss a POW to be submitted. The congressman may want to support of one of the proposed projects, while the NIA might seek funding.

Finally, the fuzziness over the different sources of funds allowed the congressman to claim projects which were actually not his.

> He tells the farmers that he has organised the funds for the check gates and concreting of canal roads, but it is actually not true. The Program of Works were already approved and the funds allocated before he even heard about these projects.

Looked at from the positive side, the pork barrel opened up a new avenue for local leaders to look for projects. One of the IA

leaders for instance was enthusiastic about the meeting held in the house of the congressman.

> I went back two days later, and submitted my request to one of his staff members. I have asked the NIA for a long time to maintain the canal road. It is simply not passable. I have good hopes that he will grant my request.

In conclusion, the role of congressmen in the provision of works in the countryside has increased in the post-Marcos years. The reason is that congressmen received increasing amounts of funds to be used at their discretion. As they were required to insert part of these pork barrel funds into the work programs of agencies like the NIA, an opportunity was created to increase their influence over the allocation of works by these agencies. We will now take a closer look at the allocation of works in the 4th Irrigation District.

The Allocation of Works

As we have seen above, the congressional representative started to play a role in the allocation of works in the 4th Irrigation District in 1996. However, this section discusses the 'normal' ways in which works were allocated in the District before this practice started.

The 'who-decides' question is easy to answer. It was the District Chief, together with the Maintenance Engineer, who allocated the works in the 4th District. Formally, the Operations Engineer has a large role to play. Based on requests from his operational staff (water masters and Zone Engineers), he should prioritise. However, the District Chief overruled the Operational Engineer and kept to himself the power to make decisions. As the engineer in charge of preparing POWs commented:

> Yeah, it should be him [(meaning the operations engineer, JO], but everybody knows that if you want something to be done, you go directly to the Chief. That is why you always see barangay captains and IA leaders waiting in front of his office.

Also the IA or federation leaders did not have much to say about allocation. Formally, they had not much to say anyway. Their formal influence was limited to consultation. They could provide

feedback to the NIA about needs and priorities, but decision-making was still the prerogative of the NIA. The institutional development officer of the District organised three conferences per year for each Zone, in which all IA Presidents were invited. Works were a standard item on these meetings.

In those meetings, the Maintenance Engineer would inform the IA leaders about the decisions made with regard to the allocation of works, and the schedule of implementation. These meetings were thus not used for a serious, open discussion on priorities for allocation. It was however a venue in which the IA leaders could air their concerns and criticisms with regard to the allocations already made by the office. In those instances where the IA leaders had a common concern, these meetings had an effect on decision-making. This was usually the case when there was an urgent need for repair of a structure or canal dike affecting the majority of the leaders present.

However, the IA leaders had too little formal power and insight to actually hold the Maintenance Engineer accountable for the decisions of the office. The Maintenance Engineer could disregard their wishes, and get away with it. For instance, in one of these conferences he simply chose not to show up, to the frustration of the institutional development officer.

> He is absent because he knows these farmers are critical of the office. Some of them have had requests for a long time, but these were not granted. Others are critical of the quality of the work done, but what can I do about it. I can report it to the Chief and than he may be scolded, but next time he might do it again.

Having established that the District Chief and the Maintenance Engineer decided on the prioritisation of areas for works, the next question would be: what were their criteria? This is a far more difficult question to answer. They did not have a clear policy. In the case of water distribution, the office had a formal, publicly announced policy with regard to the program area, the cropping calendar and the order of water allocation in case of scarcity. As I showed in chapters 3 and 4, it did not work out that way in practice, but at least a policy existed. In the case of maintenance, however, one could only guess.

Since much is left to the discretion of the District Chief and Maintenance Engineer, their prioritisation is partly based on

personal favouritism. People seeking works to be carried out in their area realise this, and thus try to be one of the favoured ones.

> I get projects for my area, by often going to the office, and insisting on my needs. If needed, I will ask them more then 10 times to help me out. Also, I made sure that I became close to the engineer who is preparing the Program of Works. The office does not really care where the works are being done. If they would, they would go out, and look for the areas that really needed it. They allocate just based on the kind of people requesting for certain works. (Interview with a watermaster who was rather successful in getting projects to his area).

Also, some of the IA leaders had developed creative strategies to lure the District Chief and the Maintenance Engineer to prioritise their area. For instance, one of the IAs regularly invited the District Chief to their area. A seventy-year-old lady, who knew how to court the Chief, led this IA.

> I invite him to my house and I make quite a celebration out of it. I organise a lavish lunch, and prepare his favourite foods. In return, he will have a hard time not entertaining my requests. I then follow it up in the office.

Part of the Chief's prioritisation is based on maintaining good relations with politicians. He is frequently visited by a barangay captain for a request, or gets a phone call from a town (vice-) mayor. He makes it a point to accommodate these requests as much as possible, out of a kind of 'tit-for-tat' strategy.

> This is the Philippines. It is better to keep friendly good relations with them. With the big politicians, I simply have to comply. Several pieces of my equipment are worn out, because of its use by them. Or they 'borrow' it, and then it is returned only years later. I also help out the barangay leaders as much as possible. A good relation with the barangay captains helps us in collecting fees, or to operate safely in their areas.

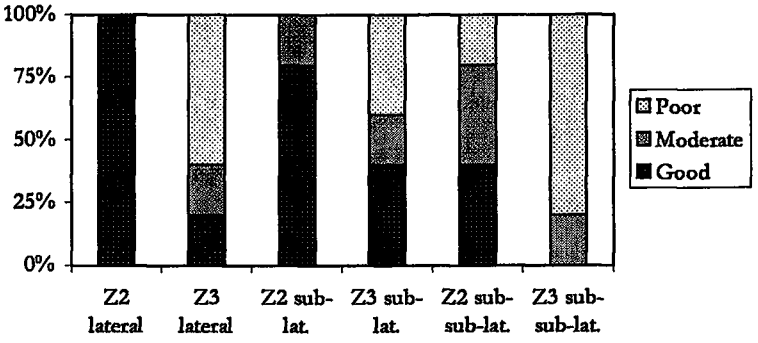
Sheer pragmatism is another basis for prioritisation. According to some NIA fieldworkers, the office prefers to maintain those areas that are relatively easy to maintain. Hence, the same canals

and roads are chosen for maintenance every year. In the case of resurfacing canal roads, for instance:

> Only a little bit of gravel is needed in case the road is re-gravelled regularly. This allows you to pass inspection easily. However, for roads that have not been maintained well, even a foot of gravel would not be enough. The gravel sinks in the mud, and you cannot see it anymore.

Fee collection also plays a role in the Chief's allocation practices. At least that is what he wants IA- and village leaders to believe. Whenever he is requested for support for maintenance or rehabilitation, he makes it a point to ask for higher fee collection in return. The involved engineers often say that well-paying areas are in return the best served areas in terms of works. However, as was explained in the case of water, a record of high fee payments is the result of good relations with the office, rather than an explanatory factor in itself.

FIGURE 7.3: Comparison of canal road qualities between Zone 2 and 3



A comparison between the quality of maintenance in Zone 1 and Zone 2 illustrates this point. It was widely believed by farmers and IA leaders that Zone 2 got preferential treatment by the office, in terms of works. The IA leaders as well as some of the involved engineers argued that this was only right, given the high collection payments of Zone 2. To verify the quality of maintenance, I made a comparison of the condition of the canal roads in both Zones. For each level (lateral, sub-lateral and sub-sub-lateral) I took a random sample of five stretches of 200 meters, which I visually inspected

by motorbike. The results are shown in figure 7.3. It shows that the canal roads in Zone 2 are indeed better maintained.[9]

I do not believe however, that higher fee payments in Zone 2 explain this difference. As was the case for water distribution (see chapter 4), particularly close socio-political relations between the NIA office and Zone 2 offer a more probable explanation. Also the political and economic interests of the engineer of Zone 2 again play an important role (see chapter 4). He put a lot of effort into following up on the maintenance needs of the Zone in the office. Also, he ensured that the well-organised and active IA leaders in this Zone would do the same.

A rather sad case study of the maintenance problem of a Zone 1 IA might further prove this point. This IA is located in the mid-stream part of Zone 1, just outside the boundaries of the Province of Nueva Ecija. Hence, it did not get any political back up from the powerful mayor of the town in which also the NIA District office was located. Consequently, this IA was 'on its own'. The President of this IA put a lot of effort into water management, fee collection, and getting works to the area. His personal interest was, apart from water, mainly to get a canal road along a sub-sub-lateral in his area fixed.

This canal road was hardly passable, but vital to many people. Over the years, a *sitio* (part of a village) had emerged along this canal road. It was vital to this sitio, as it was the only road that connected their houses to the larger barangay road. Due to the poor condition of this road, they had to pay high fees to the labourers hauling harvested rice to their house or to the market. Also, school fees were higher, as tri-cycle drivers demanded higher payments for traversing this road.

As the house of the IA President was located along this road, he badly wanted it to be fixed. Actually, it was his main reason to become IA President. The request to maintain this road was already put forward by the watermaster since the beginning of the 1990s. When the IA President took his position in 1994, he did not at first dare to approach the Chief: "I felt I had no reason to approach him. I didn't do anything for the NIA yet". After three cropping seasons, he felt the time had come. He had done his very best, and fee collection in his IA reached a high 70-80% of the collectible. Unfortunately, his requests to the Chief resulted in vague promises only.

Then, the good news came: the NIA would take care of the road. It would be done through the force-account. As the NIA lacked funds, the IA was requested to shoulder the costs of gasoline and the food of the driver. Unfortunately, only a part of the canal was repaired. The road was in such a bad shape that the dump trucks could not pass it. After almost a decade, and despite good ISF payments, the canal road was still in a bad shape. At the end of 1997, the morale of the IA President had become very low. He was about to resign.

In short, the Chief normally controls the allocation of works in the District. The role of the IAs are limited. The Chief's decisions are based on a number of considerations. One of them is that works are an important instrument for the Chief to establish friendly relations with political leaders in the area. Moreover, the areas with the strongest socio-political clout towards the office are prioritised. I will now turn to the third type of politics of works to be discussed in this chapter, i.e. the politics of quality control.

Quality Control

The quality of the works carried out was affected by the rent-seeking practices discussed earlier. Sub-standard work was the rule rather than the exception, though there were big differences in the degree to which the works fail to meet standards. As was explained above, highly visible and/or politically motivated works were done relatively well. Works carried out primarily for maximising rents (usually in remote parts of the system) were done poorly.

Consequently, the beneficiaries of these works were full of negative sentiments on the quality of these works. On the one hand the NIA field personnel, the barangay kapitans and/or the IA Presidents were satisfied with the fact their area was prioritised for works to be executed. On the other hand, they believed that something 'fishy' was going on, resulting in poor construction or maintenance.

During the time of my fieldwork, works were carried out on de-silting, road re-gravelling and rehabilitation of check-gates. Most of the complaints were about road resurfacing. IA Presidents and barangay kapitans complained that the gravel put was too thinly spread. The quality of the other works was not necessarily better, but road re-gravelling is easily monitored. People count the number

of dump trucks loaded with gravel that are delivered to the area. Moreover, the consequences of poor road re-gravelling is directly felt, unlike for instance canal de-silting works.

The primary actor for quality control was – and still is - the NIA. The District Office supposedly checked the progress of the works done, before they sign a voucher for payment to the contractor. Moreover, the quality of implemented works was supposedly checked by a delegation of the EOD department of UPRIIS, before full payments were released. In reality though, the quality was not strictly controlled, nor followed by harsh sanctions in case of poor performance. Rent-seeking and connivance between the engineers and contractors stop these controls from being tight.

The role of the IAs in quality control was limited, and was moreover still under negotiation. The institutional development department of UPRIIS wanted the IAs to be given a formal role in quality control. The signature of the IA President for a job well done was to become mandatory. Without it, contractors would not be paid. However, it was not formalised. The signature of the IA president was not a legal requirement of the Commission on Audit. The Institutional Development Department of UPRIIS also wanted the IAs to be provided with a copy of the POWs, as well as with a copy of the contract with the contractor. In that way, they would at least be informed about what was supposed to happen.

Some of the NIA engineers were in favour of formally involving the IAs in quality control. One of the arguments was that this measure would lessen complaints, as they would better understand the limitations of the works to be done. The engineer in charge of preparing POWs gave the following example.

> We got complaints of two IA Presidents about the re-gravelling works. I can understand these complaints, but they are not valid. Before, the standard used for re-gravelling was 2 to 3 inches. The recent contracts stipulate that it only should be one inch. Moreover, we have allowed the contractors to deliver fewer trucks to areas far away from the H-way. Instead of 18 trucks/km, only 15 truckloads are required. Otherwise they will lose money. Farmers do not know about these details, that is why they complain.

Both the Maintenance Engineer and the District Chief however, felt that the IA's role in quality control should remain limited. They

did not like the idea of making the signature of the IA President mandatory. The District Chief argued that he cannot command an IA President to do the checking, as he has no hierarchical control over them: "they are farmers, they are not always present. I cannot expect them to check on the delivery of trucks for a whole day. I can however tell my water masters to do so." The Maintenance Engineer had a similar line of reasoning, though he was bolder about it.

> I have experimented with these countersignatures, but I am not so happy about it. The contractors complain about it, as they feel they have a contract with the NIA, which is legally true. Why do we need this in the first place? What is wrong with my men checking the works done? Can we not trust the water masters and the Zone Engineer?

In practice, the IAs did not have a large say in quality control. A few particularly outspoken IA Presidents or barangay captains were able to seize the opportunity of signing for deliveries to raise their voice. In general however, the IA leaders were still taken for granted. Given the fact that the works arena is about rent-seeking and involves high-level struggles between politicians, contractors and the NIA leadership, it is hard to imagine the IA leaders really making a difference.

Conclusions

This section mainly concludes on the politics of contracting and the related politics of promotion and transfer. It tries to carefully outline the extent to which the domain of works and work have become politicised and the subject of rent-seeking. It is compared with the findings of Wade (1982) on an Indian system. I do so, because the detail of his analysis allows for such comparison. Also, his article is well known within the international irrigation 'community'.

This concluding section starts by pointing out the various ways in which the politics of the works domain negatively affect the irrigation management of the 4th District of the UPRIIS system. It continues by showing why the situation in UPRIIS is far less 'bad'

than the Indian case analysed by Wade, and I then sketch a few possibilities for positive change.

My analysis of the works domain in UPRIIS shows similarities to that of Wade. Like in his case, rent-seeking is an institutionalised phenomenon in the contracting of works in UPRIIS. It allows the higher-level engineers to raise illicit incomes from these rents that may be several times higher than their salaries. In line with Wade, I found that higher-level politicians (especially congressmen) play important roles. They seek control over works for financial reasons (rents) as well as political reasons (source of patronage, and controlling contractors). Finally, as is the case in Wade's study on India, I found that these politicians can control works through their power over the appointments (promotion and transfer) of high-level NIA engineers. The politics of works and work are interconnected.

It is however important to draw the conclusions in a careful way. Wade's study – and later on the rent-seeking analysis of Repetto (1986) – have contributed to the mistrust in international policy discourse towards irrigation officials and irrigation agencies in general (cf. Tendler 1997). Too easily to my liking, Third World irrigation agencies are branded as nothing but corrupt. A small anecdote may stress this point. One day, I was in UPRIIS amongst a number of NIA fieldworkers and engineers who were busy with bringing scarce water to tail-end areas. Some of them had been working several nights in a row, using their own vehicles due to the lack of NIA funds. I then had a phone call from a foreign irrigation expert, living in Manila. On the phone he casually commented: "yeah, UPRIIS is all about SOP".

This anecdote shows that such cynical lines of reasoning are incorrect. UPRIIS irrigation management is not 'all about' using public office for private gains. There are a lot of NIA workers and engineers in UPRIIS – earning less in a year than international irrigation experts make in a couple of weeks – who are struggling to make the best of it. The analysis is of course important for policy making. If the situation would indeed be 'all about' rent-seeking, the situation would be totally hopeless (and if believed to be true, it makes you wonder why international agencies like the ADB and the WB keep on funding the NIA). My analysis is that the situation is pretty serious, but not beyond hope.

The negative consequences of the politics of work(s) on irrigation management

The first negative consequence is that maintenance and repair works suffer. Money channelled to private or political pockets cannot be put to productive use in the form of diesel-oil, concrete or steel. Moreover, the engineers make poor quality controllers because they benefit from sub-standard work. This, in turn negatively affects the productivity of the scheme, and – as silted canals mostly hamper tail-end areas – also the equitable distribution of water. It is likely that it also affects the amount of fee collection. One of the arguments used by farmers to pay only a part of their dues, is that they are only partly satisfied with the NIA's services. As only a part of the required gravel is put on the roads, and only a part of the silt is removed from the canals, this argument is a legitimate one, and thus not easily countered by the NIA collectors.

Secondly, the politics of works and work take up time, energy and money from the involved actors that cannot be put to productive use in the management of the system. This is what political economists call the 'Directly Unproductive, Profit-seeking' (DUP) activities (Bhagwati 1982). They are unproductive because: "these activities do not produce goods or services and – as they actually use resources – they result in a contraction of the availability set open to the economy." (*ibid.*: 989). I did not quantify the resources put to use, but I believe them to be significant.

What do these DUP activities – or DUPE activities as Bhagwati ironically calls them - involve? Frequently one could find a NIA office window closed with curtains because of a secretive meeting with a visitor – mostly a contractor. Engineers were active members in brotherhoods that were considered conducive for networking. People were regularly throwing parties to entertain superior officers, discuss tactics and court high-level politicians. They had to attend the parties of others, giving expensive presents in case the celebrant was potentially important to them.

Finally, there is the unproductive energy put in reproducing a system that on the one hand ensures that people are accountable for the rent-seeking deals being made, while on the other hand it should ensure that secrets do remain secrets. This requires complex accounting procedures as well as complex and time-consuming tactics of courting and threatening allies and enemies.[10]

A third important negative consequence of rent- and position seeking is that it partly undermines the upward accountability of NIA engineers towards superior officers. To put it more precisely, the upward accountability criteria partly depart from those needed for a good operation of the irrigation system. Performance is measured in terms of somebody's capabilities to acquire rents, to befriend politicians and to keep one's mouth shut, next to – or instead of - areas irrigated, fees collected or the number of IAs being organised. As the District and UPRIIS engineers are tied to political backers and higher-ups that seek rents rather than irrigation performance, it thus undermines a proper orientation of the engineers involved and the merit system to function.

In addition, this also weakens the possibilities of farmer leaders and NIA workers to make the engineers accountable for their doings. Being allied to high-level politicians or higher-ups in the NIA hierarchy, such engineers will for instance not easily be threatened by complaints of fieldworkers or farmer leaders about their poor performance evaluation reaching the NIA's central office.

A fourth, and perhaps the most important negative consequence is that these rent- and position-seeking activities undermined the commitment of the NIA work force. Though not always aware of – or interested in - the details of these activities, they most certainly were aware of the general mechanisms at work. They felt being left alone in the field, as their leaders were busy with the DUP activities. They wondered why they should suffer the hardships of their work, as their superiors were involved in 'fishy things' and getting richer in the mean time.

Also, it increased the opportunities for shirking behaviour, as their superiors were not all and not always 'on top of them', trying to manage the system in the best way possible. Finally, it hampered the moral claim that these leaders could put on the rank and file to work harder, as the morality of their own activities was being questioned. In short, the DUP activities stood in the way of effective leadership and the reproduction of high levels of work morale and 'esprit de corps' among the NIA work force. To a lesser extent, the same is true for the extent to which IA leaders were inspired to carry out their largely voluntary work.

A fifth and final consequence is that it hampered the emergence of transparency in the allocation of works throughout the District, and the involvement of the IAs in the control of the quality. If it

would be transparent, NIA workers and farmer leaders would feel entitled to certain allotted works and would thus be strict on its quality. The examined mode of conduct avoided such strictness. As work allocations were a favour of the District Chief rather than an established right, one might jeopardise future allotments by pushing too hard for good quality works. As shown in the chapter, transparency and quality were embedded in wider socio-political relations between the NIA and the different irrigated areas. Hence, the extent to which one expected and could demand good quality differed between the different municipalities and villages of the District.

All in all, these five points show that the negative consequences of the politics of work(s) on the quality of irrigation management are indeed pretty serious. These are of course also not easily solved. Nevertheless, the situation is not hopeless and certainly not as bad as the situation described by Wade (1982).

A comparison to Wade's findings and starting-points for change

The institutionalised patterns of rent-seeking described by Wade are more serious than those operational in the case of UPRIIS. Firstly, illicit rent-taking was standardised in Wade's case. Engineers were entitled to an automatic 1, 2 or even 5% slice of budgets, while this was not the regular practice in UPRIIS.

Secondly, another difference is the extent to which rent-taking involves the lower levels of the bureaucracy. Wade shows that rent-seeking interconnects the higher and lower levels of the Indian irrigation bureaucracy. The Indian 'supervisors' – who are at a level equal to that of a UPRIIS Zone Engineer or watermaster – are active 'partners in crime'. In the UPRIIS case, rent-seeking involved a relatively small group of people, the lowest level being the Maintenance Engineers in the Districts.

Although not easy to do as the people involved are the people in power, the small size of the group involved makes it a situation that is amenable to disciplinary measures from the NIA's central office (see the epilogue for an example). In the Indian case discussed by Wade, the level of institutionalisation would make such measures far more difficult to enforce, and if implemented, would probably not change very much.

Moreover, it was shown that there were differences in attitude among the people involved in rent-taking as well. While some indeed seemed to be pre-occupied with money making, other engineers found other things in their professional life to be more important. I have given several examples of ranking engineers who did care about the quality of the NIA's services. The Chief of the 4th District chose to fight the political intrusion. If he had gone along it would have brought him an extra share of the works budget. He was not promoted and even transferred, but still he was willing to fight. There were different factions within the UPRIIS leadership. One of the important dimensions of these factions was the extent to which rent-seeking and political backing should be allowed to guide their behaviour.

In addition, the willingness to seek rents and connive with high-level politicians is not sufficient to make a career as a UPRIIS manager. One should be a qualified and a capable manager as well (cf. Varela 1996). This is partly because the merit system of promotions may be seriously undermined, but has not lost all of its importance. Ranking high on the performance-rating list did matter in the struggle for the position of Operations Manager. Moreover, the jobs of District Chiefs or an Operations Manager are demanding jobs. People who lack well-developed management capabilities would have a hard time to survive in the position (and would thus also not be very good rent-seeking allies of colleagues or politicians). It even seems to be plausible to assume that rent-seeking environments demand better skilled managers, as it makes management (e.g. the management of accounting) a far more complicated activity.

A third important difference is the extent to which rent-seeking was at work in the different aspects of irrigation management. In Wade's case, rent-seeking interconnected the domains of physical works, water management and fee collection. He found that payments of bribes and extortion of water users strongly structured water management. Moreover, this money contributed to the illicit funds taken from physical works, and were both used to finance the pay off of high-level politicians demanding such money in return for transfer or promotion to lucrative rent-seeking position (though it must be said that this was not really confirmed by subsequent research, see for instance Mollinga 1998).

In the UPRIIS case, rent-seeking was largely limited to the works domain. Rather innocent, petty types of corruption were

present in fee collection as well as water management. However, these were neither related to the rent-taking in the contracting out of works to contractors, nor to the mechanisms of transfer and promotion. In other words, there were two kinds of 'worlds' in irrigation management. On the one hand, there was the 'covert', back room and 'business-like' world of powerful men and politicians struggling for works contracts and engineering positions. On the other hand, there was the 'open', and if you like more sympathetic world of farmers, NIA workers and local politicians struggling for water, fees and salaries.

Above, I discussed how the particularities of this closed world negatively affected the other domains of irrigation management. However, the argument does of course go two ways. The District and UPRIIS managers had more on their minds than just managing the works domain. If they want to survive in office, they need to address water management problems. If they do not, they have to face the anger of farmers (or their political representatives) in need of water. Similarly, they need to ensure that the office collects sufficient irrigation fees to satisfy the salary demands of their personnel. Hence, there are pressing issues to attend to, in addition to looking for rents in the works domain.

These pressures also limit the extent to which rents can be raised. As discussed, sub-standard works are accepted only up to a certain level. Going beyond this level enrages farmers, and might lead to exposure and charges and/or low levels of fee payment. This in turn would create turmoil among the rank and file. Hence, as the NIA workers as well as the farmer leaders do not benefit from the rent-seeking practices but do experience the negative consequences, they put a check on the extent to which rent-seeking can jeopardise field operations.

What are the possible ways for improvement of the situation? One way would be that enlightened leadership at the NIA central office investigates existing practices, pinpoints the main culprits and takes disciplinary action. The epilogue shows that something along these lines indeed happened in UPRIIS in recent years. Employees unions might be another force for positive change. Union struggle was responsible for the ousting of a number of particularly corrupt managers in the NIA central office during the term of President Aquino (Gaffud 1994). Also at the District level, the NIA-AES (employees union) did put a check on the possibilities for favouritism in promoting workers by the engineers.

However, they neither looked into the issue of contracting, nor did they show sufficient unity to strongly push for a performance-oriented candidate during the election of the Operations Manager.

A third identifiable force pushing for change might be the federations of farmers demanding better services. However, this will not happen easily. I think it would require changes within the NIA to allow such change to happen, or the intervention of a third actor (for instance an NGO or PO organising farmer leaders). As things stand now, farmer leaders were tied to the particularistic interests of their villages, rather than to the interests of the performance in the District at large.

Let me end this chapter with a rather depressing conclusion: the wider Philippine socio-political context has been moving in a direction that makes positive change in UPRIIS increasingly difficult. As explored in this chapter, people do not search for rents, contracts and engineering positions simply because they like to get rich: it ties into the very heart of the Philippine political system. These rents fund the re-election campaigns of congressmen, and their control over contracts give them the necessary tools for patronage over contractors and farmer leaders in return for vote support.

During the 1980s and 1990s, the costs of election campaigns increased sharply, mainly due to massive vote buying. Hence, it increased the need for high-level politicians for control over money dispersing agencies like the NIA, in order to earn back their election costs and to finance a new campaign. In addition, congressmen have been able to squeeze ever-increasing pork barrel funds from the national budget, and use it as means of political patronage in their Districts. As this went along with a decline in the budget of agencies like the NIA, this has increased the hold of these politicians over public works projects in their areas.

As a result, the allocation of NIA works in the irrigated areas became further politicised as farmer- and IA leaders started to visit the local congressman rather than the NIA engineers to get their road or canal fixed. Moreover, it increased the hold of these high-level politicians over the promotion and transfer of the NIA engineers. An increase in NIA budget and a decrease in pork-barrel funds would be the start of a process that could turn things around. However, as this requires legislation of people that are directly benefiting from the present modes of conduct, it is difficult to see who will press for such change, and in what forum.

Notes

[1] A retired general replaced the administrator. This general was close to the President himself, and his rule promised to be a very different one. He was certainly not taken for granted. Only a few months after he took office, he already decided to reshuffle as much as a third of the NIA leadership in the country. Using retired colonels as 'consultants' in the evaluation of programs and projects of UPRIIS, he quickly made it clear that he was to be taken seriously. Unfortunately, his appointment coincided with the end of my fieldwork. Hence, I was not able to see the dynamics created by this 'tough' ruler. See the epilogue for some general insights into the large impact of his doings.

[2] Rent-seeking is defined here as the search for illegitimate 'rents' on the part of actors like politicians, public officials and contractors. I prefer the concept of rent-seeking above a concept like 'corruption'. Corruption has a negative connotation to it, while rent-seeking is a more analytical and neutral term. More importantly, 'rent-seeking' is a verb, and points to practices and strategies. Corruption, as a passive noun, seems to be simply there. People are corrupt or whole cultures are branded to be 'corrupt'. Rent-seeking, on the other hand, suggests that it is reproduced by people's doings and thus fits more into an actor-oriented approach.
The term 'rent' is derived from economics and refers to the "difference between the actual return obtained from bringing a resource into productive use and the minimum return at which the owner would bring the resource into use of that resource were in larger supply (Moore 1989: 1744). It concerns circumstances in which market supplies are deliberately held to be limited by human action like in this case the existence of negotiated instead of open bidding procedures for the distribution of UPRIIS work contracts among contractors (see further below).

[3] This chapter presents a high number of quotations of UPRIIS actors interviewed during the 1996-97 fieldwork period. For reasons of readability, the exact months of the interviews will not be mentioned.

[4] NIA, like every bureaucracy, has a number of legal standard operating procedures that staff is required to carry out in defined situations. Hence, calling an illegal activity a SOP refers in a cynical way to what officials actually do, in relation to what they are supposed to do according to bureaucratic rules and regulations. Taking SOPs is a common term outside the NIA as well. For instance, it is a public secret that mayors are being paid a 10% SOP for projects funded through local government funds. The mayor is to share this 10% with barangay captains. For other examples on SOPs see the different cases studies in Coronel (1998).

[5] Lower positions come under the jurisdiction of the regional manager, though the administrator may still intervene. The administrator and assistant-administrator of the NIA are to be appointed by the executive secretary and the President, but to be approved by Congress.

[6] The same procedure is applied to all positions, from the Operations Engineer down to the level of the ditchtender. The names of top ranking NIA employees are published in the UPRIIS yearly reports.

[7] Readers who are familiar with Nueva Ecija might wonder why governor Joson was not one of the key backers. Important positions in the province usually need the blessing of the Joson family. The position of Operations Manager – given the access to the large works budget - was undoubtedly one of the most important administrative positions in the province to be controlled by the governor. However, these were unusual times. President Ramos had his political rival governor Tommy Joson put behind bars in Manila, for the cold-blooded killing of mayor Peres of Cabanatuan City in April 1995. Although one of the brothers of Tommy had become the governor, this had weakened the political power of the Joson family. As President Ramos would have to endorse the OM position, having the Josons as your backers during those days was considered a liability rather than an asset.

[8] The derogatory term 'pork barrel' is generally used to indicate that these funds are like magnets of greed. The term is derived from: "a practice during the pre-Civil War days in the United States when, in periodic fits of generosity, masters would give their black slaves salted pork in barrels. (...) Being hungry, oftentimes slaves would rush upon the pork barrel, in which each would strive to grab as much as possible for himself (...). Members of Congress, in their rush to get their local appropriation items... behaved so much like Negro slaves rushing to the pork barrel." (Parreño 1998: 34).

[9] Using data of the NIA District office on the Works conducted in both Zones over a number of years could have made a more reliable comparison. However, works was a sensitive issue. I therefore did not push too much to get these data. Moreover, it turned out that these data were not well filed by the NIA. The Programs of Works were filed, but these do not always stipulate the locations of the works to be executed (only the length of canals and unit costs). I therefore decided to make a visual inspection of the canal roads.

[10] For a beautiful example of the complexity of book keeping under such circumstances, see the final report of the Dutch Parliamentary inquiry committee into the highly institutionalised rent-seeking practices of Dutch contracting firms during the 1990s (Dutch Parliament 2002)

8

Conclusions

"Do you want the real McCoy?" Regularly, this was the rhetorical question of one of the engineers of the 4th District of the Upper Pampanga River Integrated Irrigation System (UPRIIS) in Central Luzon, the Philippines. He meant that things were not so easily explained. We would sit down, take a cup of coffee, and he would then start to unravel the nuances of a certain issue. Another key informant would now and then make me clarify how (well) I already understood a certain issue. He might then say something like: "well done, you now understand 60% of it. You better talk to Mr. X and Y, so you might reach 80%".

With the help of such informants, this book shows the real McCoy of irrigation management in a large-scale canal system, managed by the National Irrigation Administration (NIA). It may not reach a 100% level of understanding, but 18 months of intensive fieldwork allowed me to understand a good part of it. It unravels the real problems of real people and takes a close look at how people organise themselves, how they manage an irrigation system and deal with reform, and why they choose to do so. Moreover, it examines how these practices are embedded in wider state-society relations.

This concluding chapter starts with drawing together the conceptual insights and empirical findings of this book. The first section does do so by discussing the need for an integrated perspective on irrigation management. It is followed by a more straightforward discussion of the central research question of this book: how did managerial reforms like turn over, downsizing and financial autonomy affect the everyday politics of irrigation management in the District studied. I then discuss why my findings deviate substantially from the progressive global image of

Philippine irrigation management reforms. The chapter ends with a number of recommendations on how to improve the management of Philippine large-scale canal systems.

An Integrated Perspective on Irrigation Management

This book shows the need for an inclusive or integrated perspective on irrigation management. It goes beyond conventional analyses that make use of simpler and more exclusive models. Three types of integration are shown. Firstly, irrigation management is about other resources than water alone. Fee collection and the allocation and contracting of physical works also shaped the dynamics of the District. Secondly, the book shows the need to analyse irrigation management as embedded in state-society relationships. Thirdly, irrigation management should be understood as a combined sociotechnical phenomenon. More specifically, this book shows how the interconnections of the physical layout of the irrigation system with political-administrative boundaries shaped District dynamics of water distribution. Before going into further detail, I will first discuss the overall perspective on irrigation management in this book: the focus on 'everyday politics'.

Irrigation management as everyday politics

This book shows the relevance of understanding irrigation management (reform) from a perspective of 'everyday politics'. The stakes in the District were high. Water, physical works and irrigation fees were valuable, scarce and contested resources, involving NIA actors, farmer leaders, local politicians and other influentials. These resources were the subject of power struggles, even involving the threat of force. Frameworks that conceptualise management processes in more neutral, 'powerless' terms (e.g. decision-making, see Nijman 1993) cannot cope with those harsher aspects of reality.

Despite the usefulness of this everyday politics perspective, there still is a need for a richer vocabulary. The risk is that this perspective over-emphasises the struggles and clashes, and the tactical or dirty power games. That image does not do justice to the fact that many of the interactions in irrigation management were

co-operative in nature, based on mutual respect and a constructive if not altruistic attitude.

The point is that both conflictive and co-operative forms of interaction were present in the management of the District. There was a fascinating mixture of conflict and co-operation, of violence and friendship. Apparently, irrigation management divides as well as unites people. These different forms of interactions are interrelated. For instance, fieldworkers and farmer leaders operated diplomatically and carefully, and spent time and energy to create or maintain friendly relations. They did so also because they realised that conflicts over scarce water might otherwise develop into overt struggle or even violent clashes.

Integration no. 1: the management of water, works and wages

Irrigation management is often equated with water management. Water thus ties an irrigation agency – as water provider - and farmers – as water users – together. Consequently, studies exploring such dynamics usually focus on water distribution in the field. This book shows the need to broaden this perspective. The dynamics of irrigation management – and the relations between the key actors – were given shape in several, interrelated domains of interaction. Each of these management domains involved the struggle and co-operation over vital resources. This book explores three such domains: the domain of water management, the domain of physical works and the domain of fee collection. To prove that there is a need to look at other domains than water alone, I discuss the ways in which relationships between the NIA and farmers were shaped in the domains of physical works and fee collection.

The management of physical works involved two major issues: the allocation of physical works throughout the District and the contracting of works to contractors. The dynamics around both these issues formed NIA-farmer relationships. Let me start with the allocation of works.

For the NIA managers, the allocation of works was an important way of satisfying demands of targeted farmer groups. Unlike the distribution of water, they did to a large extent control which canals and roads would and would not be maintained in a given year. Hence, the allocation of works was both a cause and a reflection of close – and distant – relations between the NIA

management and the different farmer communities. Farmer leaders and local politicians did not just lobby for water, but for getting the canals or roads in their areas fixed as well. To the District Chief, works allocation was a means of patronage. By prioritising a certain area for maintenance – or by sending his equipment to construct for instance a fish pond of a local farmer leader or politician – he could develop friendly relations with local leaders and/or increase the willingness of farmers to pay their dues (for further detail, see chapters 4 and 6).

To farmers, works were important to satisfy their demands as water users. Canal siltation seriously hampered water flows in especially the tail-end areas of the District (see chapter 3). Hence, whether farmers would or would not experience water stress, crucially depended upon the NIA's prioritisation of the canal stretches to be de-silted. In some areas, canals were properly maintained while other areas were neglected. This affected the distribution of scarcity throughout the District.

However, the interests of farmers in the allocation of NIA works were not limited to water. Next to water users they were road users as well. In especially the remote parts of villages, NIA canal roads were often the only roads available. For the people living in these areas, proper road maintenance may be more important than the maintenance of local canals. It greatly determined the costs of hauling farm products like palay or fish to local markets. More importantly, it determined the daily commuting costs – and hassle - of children going to school. In some areas, roads were well maintained. In others, roads were hardly passable. Hence, whether the NIA was doing good or bad in the eyes of the farmers was significantly related to its performance with regard to canal and road maintenance.

The issue of contracting – and the related issue of quality control - shaped relations between the NIA and the farmers in an indirect way. The domain of contracting and quality control was a back-room world involving big money and big-time politicians-*cum*-contractors. The stakes in this domain were high. It determined people's possibilities for lucrative contracts as well as high levels of illicit rents. In addition, also the career possibilities of the NIA engineers were at stake. Whether an engineer would stay in his post, would be transferred or promoted was to a large degree determined in the struggles of this domain of rent- and position-seeking (for further detail, see chapter 7).

Farmer leaders as well as the NIA fieldworkers had little to do with this domain, and many were unaware of its dynamics. Still, it affected their relations with the NIA engineers. The more tangible effect was that the NIA leadership would at times pay little attention to the needs of these farmer leaders and the NIA workers, as they were experiencing great anxieties in their back-room affairs. To acquire rents and/or to survive in the position required skilful manoeuvring and networking, and thus took much of their time and energy.

It also limited the possibilities of farmers and NIA workers to hold the NIA leaders accountable for their doings, as rewarding or sanctioning these leaders was at least partly beyond their reach. It bounded the extent to which the fieldworkers would trust or could rely on their superior officers. They felt left alone in the field, as their bosses were involved in other matters. Finally, it disturbed efforts to make the quality control of works implemented in the District subject to a transparent decision-making process involving the farmer leaders of the IAs, the Irrigation Associations and their federations. (for further detail, see chapter 7).

Also the domain of fee collection shaped NIA-farmer relations. Since the early 1980s, the NIA personnel had to earn their own wages through the collection of irrigation service fees (ISF) from the farmers. This greatly affected their outlook and practices. Collecting sufficient amounts of money to finance the wages and other operational expenses became a major concern. During staff meetings in the NIA office, collection was the key issue. During a period of two months at the end of both cropping seasons, so-called watermasters, gatekeepers and ditchtenders were operational as full-time fee collectors. A good farmer was no longer one who co-operated with NIA rules regarding water management and helped cleaning canals, but also – and perhaps foremost – a well-paying farmer.

The NIA District applied and adopted different strategies to collect more fees from farmers and to cut costs. This financial concern shaped its efforts towards the organisation of farmers into the IAs and federations as well as the turn over of different management tasks towards these farmer organisations. The quest for money molded the relations between the NIA engineers, workers and IA leaders. The remuneration for canal cleaning and the sharing of fee collection incentives became important issues in the relations between these three actors (see chapters 5 and 6).

In short, in order to be able to understand the everyday politics of irrigation management in the UPRIIS District, this book shows that it was necessary to look into other issues than water management. In this case, it turned out that the real McCoy of irrigation management had to be understood by looking into three interrelated management domains: those dealing with water, works and wages (fees).

The methodological consequence of this insight is that analysis needs to unravel the complexities of the overall management unit of an irrigation system, i.e. in this case the NIA District office. Following the actors (Long 1989) in this case means that key actors active in the field were also frequently found at the NIA office. In the office, they were lobbying for water or equipment to be brought to their area or reporting on their weekly fee collections. Other actors were seldom found in the field, but still created much of the field dynamics. They included and excluded canals and roads in the Program of Works submitted for approval to the NIA's central office. Or they plotted a tactical move in a downtown lunch meeting to outsmart rivals in the struggle for contracting works and engineering positions.

Hence, studying how water user organisations of farmers at village or lateral level deal with management reforms remains an important research issue. However, the dynamics of such organisations are only well understood when their counterparts – the state irrigation management bodies – are fully brought into the analysis.

Integration no. 2: state-society embeddedness

Policy models in irrigation usually picture irrigation management in terms of the agency and the user, related to each other through formal rules and/or fee-for-performance contracts (e.g. Vermillion 1991; Small and Carruthers 1991). Such models are derived from conventional management models that view management essentially as an administrative matter and define socio-political or cultural relations as context (Jurriëns and de Jong 1989; Small and Svendsen 1992). Such models have practical value. They may picture the ideal-type goal of certain policy interventions. For instance, in the case of the studied District, I believe that future reform should be geared towards attaining a situation that is less

political and more administrative (see the recommendations further below).

However, the danger of such models is that people start to believe that they actually picture reality. Or, that such a reality is easily attained by for instance implementing a program to organise farmers and train them in irrigation management issues. If this is indeed believed to be true, evaluation studies will find out that the impact of reform was only a partial success, or that many of the committees became empty shells existing only on paper. As such evaluation studies adopt a particular mode of policy analysis, they cannot tell why and how reform did or did not succeed in bringing the planned changes.

This book shows that such bi-polar agency – IA/user models are inadequate to come to grips with reality. They are reductionist to the point that they obscure rather than illuminate what irrigation management (reform) is all about. The analysis in this book breaks out of the two-party agency-user dyad in several ways. Firstly, it dissolves each of the two parties. It shows that there are conflicts of policy and interest within the NIA and between levels in NIA. Similarly, on the user side, there are upstream-downstream and other spatially induced conflicts.

Secondly, it is shown that the IAs are only one of the forms in which people organise themselves. The IAs were pre-and post-dated by groupings formed around the logic of the layout of the canals and the rise of local political leaders taking advantage of their position in the system. Thirdly, it was shown that there was a wider context involving local and national politicians, armed men and contractors. All of them had their own interests to push through alliances with each other and with NIA officials and water users, and some of them have successfully penetrated the NIA bureaucracy.

To come to terms with reality, it is thus required to integrate the socio-political 'context' into the analysis of irrigation management. The 'context' does not stop at the borders of a system, but fundamentally shapes irrigation management practices. To explore this embeddedness in the District studied, I make use in the book of the 'state-in-society' approach developed by Joel Migdal (2001).

This approach has proven to be fruitful. Firstly, it helped me to see the important – if not pivotal – role of a third actor (next to the water user and the irrigation agency) in irrigation management: the politician. Elected officials at the village and municipal level turned

out to be crucial actors in the allocation and distribution of water in the main system. Moreover, higher level politicians were deeply involved in the contracting of works for the District, as well as the promotion and transfer of the NIA engineers.

Secondly, it allowed me to see that the irrigation bureaucracy is part of society. The NIA staff cannot be understood as a kind of Weberian state agents 'above' or 'outside' of the society they are supposed to serve. They are very much part of it. Perhaps somewhat self-evident, this was true for the NIA fieldworkers. The majority were locals, who were raised and lived in the villages where they work. The boundaries between their public and private life were 'blurred' to the extent that it is hard to separate one from the other. Their home often served as their field office. The water users were not just their clients but could well also be co-villagers, business partners, friends, faction allies or enemies, if not their kin. Obviously, this local embeddedness shaped their outlook on and behaviour in their daily work in irrigation. These people did not just operate at the interface of state and society; they were the embodiment of that interface.

Also the NIA engineers in charge of District management were 'locals', enmeshed in the political economy of the areas they were supposed to serve. To see them as merely 'engineers', 'technocrats' or 'career bureaucrats' is to miss the point. They were locals, as the majority were born or married into a family of one of the municipalities covered by the irrigation system. Over the years, these engineers developed an extensive network of friendly relations in their areas of work, often cemented in real and ritual kin relations. Many of the engineers belonged to the local elite, as they were part of more or less powerful families. Some of the engineers had developed business interests in the area, while others were involved in electoral struggles. Hence, to the engineers the irrigated areas were not just a place of work. It was a place of living and leisure, as well as a place to make a living, both politically and economically.

Thirdly, the state-in-society perspective made it possible to explain local relations in terms of wider state-society structures. The Philippine State has been labelled as the weakest state in Asia that faces a strong society (Cammack *et al.* 1993; cf. Kerkvliet 1998). Most of the public officials in the countryside are elected rather than appointed, which makes public resource management a highly politicised matter (Fegan 1994). Moreover, local and national

political families have captured much of the state's resources and powers. Consequently, the NIA managers are in a weak position vis-à-vis local power holders.

These specific Philippine state-society characteristics had great impact on the ways in which people organised themselves in irrigation management. The management of water in the District is a case in point. It was a matter of struggle and accommodation between NIA engineers, local politicians and farmer leaders representing the interests of the different areas in the District. As none of these actors had the permanent upper hand, alliances were the result. A number of such rival, spatially organised alliances competed for scarce water. The composition and the power of these alliances changed over time, mainly following changes in the political arena of electoral struggles.

The binding forces of these alliances and the rules of the water management game were partly shaped by formal NIA rules and regulations and the financial-contractual relations between the NIA and the IAs. However, other binding forces were as important. To a large extent these alliances were bound together by interpersonal relations between NIA officials, local politicians and farmer leaders, on the basis of political patronage and brokerage, friendship and kinship. Finally, the threat of force, employed by politicians and toughguys structured the ways in water was being managed. (for further detail, see chapter 4).

This embedded state-in-society perspective is not just needed for academic purposes, but has practical value as well. It allowed me to see that the mainstream problem analysis that is behind management reform policies like turn over and financial autonomy does not fit the Philippine setting. A core assumption of mainstream analysis is that many of the problems in the management of canal systems are caused by a lack of 'downward accountability' of the irrigation agency towards the farmers (Small and Carruthers 1991). It is argued that the actors in these agencies are busy with pleasing central government or with filling their own pockets. They lack a concern for the well-being of their clients, and thus do not provide good services. Management turn over and the creation of user-fee dependent agencies are supposed to rectify this situation.

This might well be true for other countries, or perhaps other parts of the Philippines. However, my reading of the accountability relations in the District do not match these mainstream ideas. The

NIA staff (both workers and engineers) was deeply embedded in the local society and was accountable towards farmers in multiple ways. As shown, this embeddedness gave some of the engineers the capacity to make the NIA turn over policies a success (see further chapter 4). On the other hand, this embeddedness did seriously constrain the NIA's capacity to enforce its policies and regulations. The NIA's weakness vis-à-vis local power holders forced it to accommodate its policies to the interests and ideas of the latter group. Moreover, their superior officers in the NIA central office in case of local conflict did not back up these local engineers, nor did these officers enforce local engineers to comply with NIA rules and regulations.

These findings thus question the idea that non-accountable irrigation agencies are to be labelled as the main or sole culprit of problems in canal irrigation. If I were to select a winner in a 'non-accountability' contest, there would be good reasons to choose the farmers in the District rather than the NIA. Water management in the main system again serves as an example. Long before 'turn over' was introduced in the area, farmers and their political representatives were actively 'messing up' the management of the main system. They disregarded the NIA rules and regulations, guarded or destroyed main gates, diverted water to non-programmed areas, and even managed to re-design the layout of the system.

The least one can conclude is that the management of the District is the joint product of a state-in-society, and not that of the state alone. The managerial problems in the District are produced in a complex socio-political arena, in which the NIA engineers and workers are main actors, but together with farmer leaders and politicians.

Finally, this wider state-in-society perspective is helpful to compare cases of irrigation management in different socio-political settings. For instance, the highly different socio-political contexts of irrigation management in the case of Taiwan and the Philippines may shed light on the different findings on these two (South) East Asian countries. Taiwan's efficient organisation of canal systems has been well documented.

Central to this efficiency in Taiwan is a state-society set-up that is based on a tri-party relation between the water users, farmer-controlled but highly bureaucratic para-statal managing organisations (called IAs) and central government. In this set-up,

accountability of these IAs towards the farmers is ensured through the responsiveness of central government to the grievances and needs of the water users. The powerful Taiwanese central government thus ensures the service orientation of the managing bureaucracy towards the users. At the same time, it does empower these IAs to take charge of local managerial affairs (Moore 1989; Lam 1996).

In short, this differences in the wider state-society relations explain why a country like Taiwan has efficiently managed canal systems, and why inefficiency and a contested order is found on the canal banks of the Philippines.

Integration no. 3: irrigation management as a spatial, sociotechnical phenomenon

Irrigation management should be understood from an interdisciplinary sociotechnical perspective (Vincent 2001). It is not just about people, institutions and power, because the kind of irrigation technologies used, and the specific designs of systems also shape it. This is a relevant point for social scientists as well as engineers. Both groups tend to treat technologies as socially neutral. They thus overlook important connections between irrigation designs and managerial questions.

One of the important ways in which irrigation systems shape irrigation management is through its spatial layout. The layout of the system structures farmers' access to water as well as the organisational processes in water management. The length and location of canals and the location of water division devices determine to a large extent which farmers and villages have good access to water, and which do not. The 'head-tail' problem in canal irrigation seems to be unavoidable. Volumes of water are bigger in the head-ends of systems, and for head-enders it is relatively easy to take water from the canals in quantities and at times that go beyond their allotted volume or time-slot. As has been shown in the case of the District, fierce struggles over water between head and tail-enders can often be observed in canal systems. Hence, much of irrigation management is about trying to deal with the spatial characteristics of the system.

The spatial layout of canal systems is not just relevant for questions of management. In the case of Sri Lankan settlement

schemes, rapid processes of socio-economic differentiation emerged between head-end and tail-end settlers. This happened not only because of unequal access to water. Contributing factors to these processes were that the systems were first developed and used in the head-ends, and that municipalities, government resources and support to farmers were all concentrated in the head reaches of systems (Moore *et al.* 1982).

Similar processes were found in settler schemes in India. In that case, it was shown that farmers do not simply accept their spatial position in the system. Those who had the resources bought land in more favourable positions in the head of the system. Hence, over time, the wealthier farmers concentrated in the head-ends of the system, while the poorer farmers remained and/or moved towards the tail-ends (Mollinga 1998: 89-117).

This book has two points to add to the insights on the spatial dimensions of irrigation management. The first point is that the spatial set-up of the canal system is not necessarily a fixed 'given'. To get better access to water, one does not necessarily have to buy land upstream, buy a pump, or fight harder in the struggle for water. As was shown in chapter 3, the canal layout itself changed over time. It had become an important issue of struggle between tail-end and mid-stream villages. By connecting re-use drains to upstream irrigation canals, tail-enders –often supported by NIA workers or even engineers - found ingenious ways to get around their tail-end position. Hence, by re-designing the layout, they managed to make a 'virtual move in space', to a more upstream position.

It is my hypothesis that this re-engineering of the layout is happening in more systems in the world. Many systems do have more or less elaborated re-use schemes. These are moreover being developed rapidly, as it is nowadays strongly pushed by donors and governments. It makes good sense – from a managerial point of view - to supplement re-use systems with irrigation water in times of scarcity. Hence, it is likely that re-use systems have become integrated into the management of the original irrigation system. It is thus also likely that the re-engineering of the layout in these systems has become part of the struggle for scarce water.

My second contribution is that the spatial dimension of irrigation management is not just a physical matter. Much of the dynamics in the management of the District were shaped by political-administrative layout of the area covered by the system:

the boundaries between the villages, municipalities, Congressional Districts and the provinces. More precisely, the dynamics were shaped by the ways in which the physical layout intersected with the political layout. Space in irrigation thus has a combined sociotechnical, or more specifically a physical-political dimension.

A straightforward example of this interconnection between physical and political space was the struggle over water within Zone 1. The position of the downstream farmers in that Zone was highly problematic. They found themselves in a disadvantaged position in a physical sense, i.e. at the tail-end of the lateral system. In addition, they were also at a distance in socio-political terms. They happened to be citizens of a municipality that carried relatively little political clout in irrigation. Their political leaders did not care too much about the irrigation water as it only served a relatively minor part of its populace. Moreover, the NIA District office as well as the residences of most of the engineers happened to be located in the upstream municipality. Hence, their disadvantaged spatial position in physical terms was reinforced by the spatial configuration of political boundaries.

These physical-political interconnections can be more complicated, as was shown in the discussion of the so-called 'syndicate'. This was an informal organisation headed by the political leader of a village. This organisation was remarkably powerful, as it managed to control water supply to a large part of the tail-end of that Zone. Its power can only be understood by understanding the peculiar ways in which the system's layout intersected with political boundaries. A concentration of large headgates controlling water for the larger part of the tail-end, happened to be located within the boundaries of that village. This fact does not yet explain why this village leader could gain so much power. His village also happened to be located on the upstream side of a municipal and even provincial boundary. Being a political outsider, it allowed him to control water in the downstream municipalities. The farmer leaders of these downstream units could not easily get a hold over his doings; hence they had to strike a deal with him.

These insights on the physical-political dimensions of space further challenge models that conceptualise accountability relations in irrigation management primarily in terms of an agency-user dyad (Small and Carruthers 1991; Malano and Hofwegen 1999). The farmers in an irrigation system cannot be seen as one single group,

but are spatially differentiated in their access to the NIA. Hence, for questions of accountability, the distribution of physical and political space is highly relevant. The NIA was very accountable to some parts of the system and some villages, but less so to other areas.

Generally speaking, accountability was inversely related to distance: the further down the system, the weaker the (state-in-society) ties between the NIA and the villages. This was partly caused by the problematic supply of water to tail-end areas. As the NIA had little to offer to these areas, close relations between the two parties did not easily emerge. Moreover, it was –as outlined above – related to the socio-political clout and proximity of the farmers and politicians of upstream municipalities towards the NIA staff.

It should be stressed, however, that there were exceptions to this general picture as well. Specific configurations made up of local socio-political as well as physical circumstances created diversity in the relations between the NIA and the villages in the system. As explored in chapters 4 and 6, the NIA's favoured area was a village in the mid-stream part of Zone 2. For specific historical reasons, a good part of the NIA's engineers and fieldworkers had developed strong ties of kinship and friendship as well as political relations with farmers and leaders of this area. These close ties had a positive effect on NIA-farmer relation in the larger part of that Zone.

This example thus shows the complexity of the matter. Accountability relations between the NIA and water users had a strong spatial dimension. However, there were several reasons – both socio-political and physical – that accounted for the differences in the NIA-farmer relations throughout the system. Notwithstanding its complexity, it shows the need for an analysis of irrigation management in canal systems that takes into account the physical-political dimensions of spatially shaped relationships.

The Impact of the Irrigation Management Reforms

The above has already revealed the larger part of the findings and insights of this book. Nevertheless, this section gives a more straightforward answer to the main research question that guides this book.

How did local actors integrate irrigation reform policies (turn over, financial autonomy and streamlining) into the everyday politics of the irrigation management of a UPRIIS Irrigation District during the mid-nineties?

The answer to this question reads as follows.

The streamlining policies as well as the policies following the NIA's financial autonomous status have undermined the capacity of the NIA to deliver its services. As a result of the financial crisis of the government and the adoption of structural adjustment programs, the NIA went through a period of steep decline. This started in the early 1980s, and continued to the end of the 1990s. Reducing costs became the overriding agency objective. Both nationally and in the District, large reductions of field personnel in particular were the result.

Theory informed by neo-institutionalism predicted that the NIA's status of financial autonomy would improve its services to the farmers. More concretely, it would try to enlarge its income by maximising the number of satisfied farmers. This was expected to increase the actually irrigated area, and thus improve the equitable distribution of resources in the District (Svendsen *et al.* 1990). However, this did not happen.

Saving money rather than increasing income became the *leitmotiv* of the NIA leadership in the District. Increased inequity rather than a decrease was the result. The District concentrated its reduced capacity on the upstream areas. Services in the downstream declined and a decrease in the irrigated area was the result. The financial autonomy and streamlining policies were adopted in a way that led to spatial differentiation in the District, favouring the more upstream areas.

The management turn over policies were given shape by two contrasting sets of ideas. On the one hand, it was a genuine and serious effort of institutional development officers, fieldworkers and a part of the engineers to involve farmers in irrigation management and to give them a say in decision-making. On the other hand, it was given shape in the context of saving money on service provision. The latter negatively affected the former effort. The remuneration of IAs for canal cleaning and fee collection were too low, while payments were delayed for months. More importantly, the loss of fieldworkers and the lack of funds for services negatively effected the willingness of farmer leaders to join

and/or stay with the NIA program. In short, the turn over program became a tool to solve the NIA's financial problems, rather than to re-organise the management set-up of the District.

This is not to say that the turn over program failed altogether. In the District it resulted in a failed case as well as a success story. The successful case brought forward an effective partnership between the NIA and IA leaders in the management of one of the Zones of the District. It is a case that fits all *en vogue* terms like a case of successful co-production (Ostrom 1996), of trust between two parties as it creates synergy crossing the private-public divide (Evans 1996), and that of 'thickened social capital' (Fox 1996). The success and failure case are not unrelated. In a context of scarce resources and the need to save money, one cannot please all. Hence, the resources allocated to create and sustain the successful partnership decreased the chances of the other area to become a success as well. There are heads and tails in management reform too.

It was shown also that both success and failure were not so much the result of appropriate or inappropriate formal interventions (like the content of training or the size of IAs). As was outlined above, success and failure were both strongly informed by the socio-political embeddedness of each of the two areas. In both cases, local politicians were key to the results of the turn over programs.

All in all, the effects of the three policy programs on the management of the system point in different directions. On the positive side, the turn over program brought decision-making closer to farmer representatives. Frequent meetings at the NIA office of these leaders improved communication and may have induced more transparency. In the successful Zone, the policy programs indeed led to the emergence of an effective trust-based alliance between NIA workers and farmer leaders. The policies moreover allowed the NIA to survive a period of prolonged and steep decline of funds. The training and turn over program allowed the NIA to seek and to a certain extent find legitimacy on the side of its clientele for its difficult financial position. Moreover, it rationalised fee collection efforts, and made farmers more accountable to the NIA as far as their financial obligations were concerned.

On the negative side, the loss of fieldworkers was clearly felt. The remaining NIA staff had great difficulty in remaining

motivated for their work. Apart from the success case, water management largely remained a time-consuming, politicised, messy and at times scary matter. Maintenance deteriorated, as the regular cleaning of canal stretches was simply abandoned. Fee collection efficiencies did hardly increase, and the District remained short of money. It thus could not replace worn-out equipment, nor could it pay its staff or the IA contracts on time. Political patronage in the allocation of works and the career perspectives of the engineers became more prominent. This was caused by changes in the socio-political context – the increasing powers and funds of congressmen and the concurrent downfall of NIA funding - that went beyond the scope of the examined policies. The effect, however, was that farmer control over the performance of its service provider remained strongly bounded.

The Progressive Image of the NIA

Readers familiar with earlier publications on irrigation reforms in the Philippines might be rather surprised by this book. My findings deviate rather strongly from the widely spread progressive image of Philippine irrigation management reforms. This section explains this deviation. I have three explanations.

Firstly, time and space account for much of the difference. With regard to the time element, the progressive picture of the NIA and its reforms emerged around the participatory approach developed by the agency during the 1980s. What people perhaps assumed is that this 'progressive wind' carried on during the 1990s. This however, was not the case. The group around Ben Bagadion, the NIA's ' champion of change' had already lost much of its influence by the second half of the 1980s. After the downfall of Marcos and the different changes in the NIA leadership, the NIA central office became the locus of power struggles involving serious charges of graft and corruption (Gaffud 1994). The NIA leadership thus ceased to create a conducive environment for furthering progressive reforms.

With regard to space, the NIA's progressive reforms concerned the way in which the NIA organised construction activities in communal systems. Though the spirit as well as some of the ideas of these reforms 'spilled over' into the NIA approach towards the management of its national systems, these effects were constrained.

The NIA reforms in the management of its national systems were confined to a narrowly focussed financial concern. Hence, 'the progressive wind' in the NIA approach to communal systems could not enter easily into the arena of national systems in which the vested interests of a large and well-established NIA bureaucracy was in place.

With hindsight, these findings mean that the widely praised book edited by Korten and Siy (1989) was overly optimistic. As the title 'Transforming a Bureaucracy' already suggests, the authors claimed that they found an effective and lasting way to change the very culture of a money and construction oriented, engineers-dominated bureaucracy. Up to the present day, the book is a classic for students in development administration. This is probably because the book provides such a rare example of a detailed analysis of successful change of a Third World bureaucracy. Unfortunately, the book suggests more than has happened in reality. With hindsight, the more appropriate title should have been 'how to initiate bureaucratic reform'. How to sustain it, is a completely different matter.

The second explanation is to be found in different types of analysis of management reform programs. My focus was on how and why questions and I analysed management from a socio-political perspective. This is a markedly different viewpoint to look at such reforms than is usually presented in consultancy evaluation reports. The latter type of studies is more narrowly focussed and only takes an interest in comparing policy inputs to outputs.

If I had applied such a kind of research in the District, my findings would have looked rather positive as well. Meetings were held, IAs were re-organised, and a substantial part of the IAs and federations might have responded that the management of the system as well as NIA-water users relations had improved. However, the standard deviation would have been rather large as well, reflecting the large differences in 'success' and 'failure'. I hope it goes without saying that such research would fail to explain these differences, nor would it be able to unravel the complexity of the organisational processes in the District.

Also within academia there are strongly diverging analyses of irrigation phenomena. The work of Uphoff (1992) on irrigation management reforms in Sri Lanka serves as an interesting comparison. Uphoff's perspective is focussed on 'social energy' emerging out of change programs. He provides a very optimistic

and enthusiastic account of changes that happened in the system studied. It would be an interesting experiment if we would change research sites. He would probably find huge amounts of 'social energy' in 'my District', while I would probably also find intense power struggles and intricate socio-political networks in 'his area'.

Without trying to discredit his (or my own) work, it shows the importance of perspective. Given the very limited number of thorough studies on irrigation management it is unfortunately still the case that the perspective chosen by one researcher might go far in creating an image around policy reforms in a certain country.

The third type of explanation is that the NIA's progressive image was instrumental to satisfy its financial interests. To understand why certain policies are being reproduced despite the fact that they are considered as 'failures', it is helpful to examine what 'failed' policies do achieve, i.e. the intended or unintended 'side-effects' (Ferguson 1990). In the case of the NIA, the side-effect of implementing financial autonomy and turn over reform was that it secured the NIA's access to funds from the World Bank and the Asian Development Bank in particular.

The World Bank has pushed for the reform towards financial autonomy (Svendsen *et al.* 1990). Since the mid-eighties, the World Bank as well as the Asian Development Bank have made the adoption and further development of turn over policies conditionalities of their subsequent loan packages for national systems (Panella, forthcoming). The larger chunk of these loans is intended for the rehabilitation of existing schemes and the construction of new ones. A small percentage of these funds however, need to be used for 'institutional development', i.e. the organising of farmers and the turn over of management tasks to them (Raby 1997).

Given the serious financial problems of the NIA and its financial dependency on WB and ADB loans, it makes perfect sense to this agency to 'do development' and thus follow the reform fashions prescribed by these lending institutions. The national level of the NIA was outside the scope of my research. Hence, I do not know the extent to which the adoption of these policies at that level was based on financial concerns rather than a genuine belief in the need for managerial reforms.

However, such pragmatic line of reasoning was certainly present among the UPRIIS leadership. Whether they liked the institutional reforms or not was largely irrelevant. The overriding concern to

adopt these policies was simply because it was a requirement to get access to the IOSP rehabilitation and maintenance funds. To secure access to future funds, the UPRIIS leadership tried to reproduce the image of success (they at least partly failed to do so, see chapter 6). Institutional development performance reports and 'functionality surveys' of the IAs and the federations were used to reproduce this image, without necessarily representing the realities in the field. Hence, the everyday politics of securing the physical works budget of the NIA has been a contributing factor to the reproduction of the NIA's image as a reform and farmer oriented agency.

Recommendations: Strengthening the Frontliners

This section outlines my ideas on how reform of the management of large-scale canal systems in the Philippines should proceed. This is not just a question of improving the actual management of the systems, but also a question of improving the wider governance structures that set the rules for the actual management of irrigation systems.

Though I feel that the farmer federations need to be further empowered by giving them larger responsibilities (see below), I do not recommend here the full turn over of Irrigation Districts to farmer-controlled bodies. This might be somewhat surprising, given the present-day popularity of such radical turn over schemes in international policy making circles, and the actual – and apparently successful - implementation of such schemes in countries like Mexico (Kloezen 2002) and Turkey (Svendsen and Nott (1997). I do not recommend this, mainly because I lack the knowledge to come up with a sensible assessment. Such a scheme might work very well, and there are indeed indications – from pilot schemes in Mindanao - that full turn over can be a successful option for the management of Philippine canal systems. However, such a set-up would offset too many unpredictable dynamics to be sensibly discussed here on its merits. It requires the study of actual pilot schemes to come up with a sensible assessment.

The other reason why I do not recommend full turn over is substantive. Full turn over would imply that the NIA District management gives way to some sort of a farmer-elected body that is in charge of the management of an irrigation scheme. I am wary

of such a solution, as it might further weaken the Philippine state, and strengthen the already strong local society. As discussed in this book, the Philippine countryside is about little administration and much politics, partly because public officials are elected rather than appointed (cf. Fegan 1994). Given this situation, I doubt whether it is wise to make irrigation resource management subject to elected societal actors, rather than appointed state officials. In short, full turn over might be a good option, but there are good reasons to carefully monitor the impact of such changes on irrigation efficiency as well as equity in pilot schemes, before it is implemented on a larger scale.

I first present my recommendations with regard to irrigation management. It is followed by a discussion of improving the wider governance environment for irrigation in the Philippines.

Good management: the need to empower the NIA and the IAs

What if no new policy reforms are implemented and things just take their 'natural' course? In other words, is there really a need to change the present modes of conduct? What is 'bad' about the present ways of irrigation management?

As can be read in the epilogue, the District is not doing that badly. It is still being managed, the majority of the farmers do get their water and NIA does get around 60% of its fees. Moreover, the District has finally arrived at a situation that may be called 'financial sustainability'. Cost cutting and increased fee collection have brought the NIA District to a situation where it can cover its expenses through the collection of fees (though it is still supplemented with a limited amount of O&M subsidies).

The acute financial crisis in the District thus seems to be over and likewise the need to further to reduce the workforce. If managed well –and helped by nature in terms of a favourable river water supply - the District may even start to slowly recover some of its losses. It might buy a few new motorbikes for its work force, and at least might have the money to supply gasoline to its fieldworkers and pay the incentives to the IAs on time. It might even be able to raise the incentives to higher levels.

In the longer run there is also a good chance that present service levels can be maintained. As long as the central government does not run into a new fiscal crisis, political pressures will ensure that

the government –through its ADB and WB loans – will continue to supply UPRIIS and the other national systems with funds to maintain and rehabilitate the systems. In short, there are no urgent needs for reforms (which, I am afraid, also implies that the chances that reforms will happen are limited).

Nevertheless, I do think that reform is needed for economic reasons. The UPRIIS District is being managed at sub-optimal levels, and I believe this to be true for other schemes in the Philippines as well. Cost cutting has made system management cost effective. As shown however, service levels to tail-end areas have suffered due to poor water management and poor maintenance. The larger economy would thus benefit from better management. More concretely it would help thousands of tail-end rice farmers to get access to a reliable water supply.

Moreover, when developments are less favourable than sketched above, management levels will drop further. There are some real threats to sustainability. Firstly, a new economic crisis will jeopardise future subsidies to the NIA, and will in turn cause further system deterioration. Secondly, the reduced NIA work force is ageing and retiring in the years to come. If financial setbacks occur – for instance due to unfavourable river supplies and rainfall - the NIA might not replace these people on time. Then, service levels will drop further. Thirdly, a future populist President of the Estrada type (see the epilogue) might jeopardise the NIA's fee income once again. The NIA might then respond by again following the path of cost cutting and further reduce service levels.

Perhaps the more important reasons for reform are political in nature. To a large extent, actors that have no direct stake in the use of water or canal roads controlled irrigation management in the District. As shown in this book, local, mostly political, power holders seriously challenge the authority of the NIA in water management. The same is true for maintenance and repair works. The severe reductions of the NIA budget, and the complementary rise of budgets of local government and the pork-barrel funds of congressmen and governors have caused this. Moreover, the higher-level politicians have furthermore strengthened their control over the NIA works budget. Consequently, farmer leaders nowadays turn to politicians to get their roads or canals fixed, rather than to the NIA. It thus means that electoral considerations and political patronage govern irrigation management.

This situation is not good from a managerial point of view. As the NIA authority is undermined, both water management and the allocation of works become more contested and messy, and follow political considerations rather than technical need. There is a real danger that this process will further continue. For instance, more and more village governments are nowadays in possession of heavy equipment. Though this is a good development in itself, it further reduces the need for NIA services and thus further undermines the bargaining power of the NIA to make local power holders accountable to NIA rules and regulations.

I also think it is an unwanted situation from a wider democratic point of view. Though politicians are elected, the Philippine political system is certainly no guarantee for democratic and just management of – in this case – natural resources. Obviously, in the Philippine context it is neither possible – nor necessarily beneficial - to simply remove electoral politics from irrigation management. However, I think it is necessary and possible to move towards a more balanced situation.

My recommendations are thus geared towards a strengthening of the irrigation administration and a weakening of the power of local power holders. Concretely, this requires the empowerment of both the NIA and the IAs. I first discuss the NIA. Following Evans (1995), an effective bureaucracy is both embedded and autonomous. This book shows that the NIA engineers and workers are (more than) sufficiently embedded in local society. Through multiple ties of political patronage, kinship and friendship they are responsive and accountable to local needs. However, they lack a sufficient degree of *de facto* autonomy to prescribe their rule over the NIA clientele and local politicians.

The NIA authority needs to be strengthened. I thus depart from mainstream policy discourse that is mostly focussed on empowering farmers to make irrigation agencies downwardly accountable to them. In the case of the Philippines, I believe that there is another and perhaps more pressing need: to empower the NIA to make farmers upwardly accountable to the agency, and to make NIA workers and engineers more accountable to the rules and regulations of the agency at large. At the most general level, organisational theory argues that there are three different belief systems with regard to questions of management: it should be organised through the state, the community or the market (Hood 1998). In this case, I thus see the need for some Weberian-like

measures to strengthen a state bureaucracy to improve irrigation management (cf. Moore 1992).

Secondly, there is a need to empower the federations of IAs. They need to be strengthened not (only) because of the need to make the NIA downwardly accountable, but because they represent a form of functional administration that may help to weaken political mechanisms of irrigation management. At present, the discretionary power and resources of the IAs and federations are simply too limited to make a difference. By turning them into 'real' organisations with substantial duties, responsibilities and resources, they stand a chance against the political forms of local governance.

First recommendation: the need for improvement of the merit system

This book has given reason to believe that the present-day politics of works and work are one of the biggest obstacles for good management of the UPRIIS system. The rent- and position seeking alliances of engineers at UPRIIS as well as national level together with the high level politicians-*cum*-contractors stand in the way of good management. These alliances undermine the proper functioning of the merit system of promotion and transfer. It lessens the need for the UPRIIS managers to treat system management as a serious and demanding professional and intellectual activity. In short, these politics disrupt good system performance.

How to deal with it? This is a problem that is not easily solved. One could hope that strengthened federations of IAs would ensure popular control over the works budget and the performance of the engineers. However, my findings show that much of these politics are way beyond the control of local farmer leaders. Also, the farmer leaders were – logically – struggling for the particular interests of the areas they represent, rather than the overall performance of the NIA engineers. Finally, the idea of increased popular control seems to be informed by the odd assumption that farmer leaders are scrupulously honest. It is equally possible that their increased participation will put forward people that wish to join such alliances, rather than to fight them.

Another option would be to increase the NIA budget and to decrease the pork-barrel funds. This might be the start of a process that could turn things around. However, as this requires legislation of congressmen that are directly benefiting from the present modes of conduct, it is not clear to me who will press for such change, and in what forum.

Perhaps the best possibility for improvement is increased control of the NIA's central office over the performance of the UPRIIS managers. I have two reasons to believe that it may be possible. Firstly, there are many NIA managers who are performance-oriented and would like very much to reduce the hold of higher-level politicians over the works domain. Hence, people within the agency might support such changes.

Secondly, the epilogue shows that central office did indeed push for such changes. Under the ruling of administrator Soriano in 1997-98, the UPRIIS leadership was replaced by other managers, which was beneficial to system performance. In general, system performance will benefit from strengthening the upward accountability of system managers towards the central office by improving 'control through competition' (Hood 1998). By close monitoring of the performance of managers by the central office, and by regularly replacing managers with competitors on the basis of strict and well-defined performance criteria, the management of the systems will improve.

Second recommendation: sanctioning farmers and the IAs to pay fees

An important solution to many of the problems in the UPRIIS systems – and I think this is true for national systems throughout the Philippines – is an increase in the O&M budget of these systems. This is true for whatever type of organisational structure is designed to manage these systems. Even if the systems were turned over to farmers, they would also need higher level of funds to ensure proper system management.

The NIA District offices barely raise enough income to pay the wages of their downsized personnel numbers. Anything else is postponed or abandoned. Hence, offices are worn out, field personnel do not have vehicles or sufficient gasoline, and the heavy equipment has become inoperable and is not replaced. To rectify

this situation, the District offices need a substantial increase in their income, to allow them to improve operation and maintenance and to buy sufficient vehicles and pieces of heavy equipment.

The key to an increase in the District budgets is farmer fees. Fees, rather than government subsidies could tie management to local needs, even if there are many 'ifs' and 'buts' in this. Moreover, I do not see why the general taxpayer rather than the direct beneficiaries would have to pay for irrigation. The farmers in the national systems – especially those in Central Luzon - are relatively privileged citizens. Government subsidies are thus better used for more deprived groups in society. There is also a practical reason. Central government has great difficulty in collecting taxes, more than the NIA does. Hence, the NIA better relies on its own source of income, i.e. fee payments from the farmer beneficiaries.

The key to a higher fee income is the increase of collection efficiencies as well as the increase of the benefited areas (well served with water). For the time being, there is no need to raise the amount of fees to be paid. The Districts income will double if farmers were forced to actually pay their present-day dues. A doubling of the budget will be sufficient to turn around the downward spiral of the last two decades.

The present-day collecting system is untenable. The NIA spends high amounts of time, money and energy, nagging and begging for fee payments in home-to-home visits of farmers. Through a variety of measures that are mostly based on persuasion, the NIA tries to talk the farmers into payment. This strategy fails, as only around 50% of the collectibles are actually collected. Moreover, the collection costs – notably the labour costs of the collectors and the costs of hauling, drying and selling wet palay – are so high that little is left for productive purposes (World Bank 1996). Hence, farmers should be required to pay in cash, and – like their colleagues in Mexican (Kloezen 2002) or Peruvian (Vos 2002) systems – should be the ones to remit their payments either in the bank or in a NIA office.

The key to a more efficient collection system and higher collection efficiencies is the implementation of an effective sanctioning system. Farmers have to become financially accountable to the NIA. The 'fee-for-performance' principle should work two ways. Farmer fee payments should not only hold the NIA accountable. It should also be that without (full) fee payment, the NIA is not providing performance. Hence, the

challenge is to find mechanisms that put an end to the financial free riding of farmers (receiving water and other services without (fully) paying dues). This will not help to save water, but it will help to bring the quality of the NIA services at higher levels, and thus, eventually, might benefit tail-end areas.

The NIA thus needs to take a tougher stand towards the farmers. There are two ways to do so. Firstly, the NIA should expand its administrative and legal measures to make farmers pay. The present-day measures of demand letters and the annotation program are somewhat effective, but only focus on long time back-accounts. The NIA needs to respond much faster to farmers who did not pay the full amount of their dues. Demand letters should follow within days after the closing date of fee payment for a given season. A system of fines and eventually the realistic threat of a court case should provide the incentives for farmers to remit their dues on time. As things stand now, farmers prioritise the payment of their debts to loan sharks that demand high interest rates, followed by the payment of services that can be cut of, like grocery supplies of local vendors and electricity and telephone services. Hence, the NIA competes with other institutions in the demand for payments, and at present is losing out.

The second way is to cut off non- and partial payers from NIA services. This book shows that the present-day management realities are far away from such measures. Still, I think, it is a necessary requirement to establish the NIA's authority and to acquire sufficient budget.

The most feasible measure is to link road and canal maintenance services to fee payments. The NIA Districts should prioritise those stretches of roads for resurfacing and stretches of canals for de-silting that are serving groups of farmers that had relatively high fee collection efficiencies in the preceding season. To avoid that the NIA only serves upstream areas, the deal would have to become somewhat more sophisticated. For instance, the maintenance services should be prioritised to those areas in which collection efficiencies reached a – say - 5% increase compared to the attained efficiencies in previous seasons. The condition is that the allocation of works thus becomes a transparent and publicly announced process. As this book showed, this requires rather substantial changes in the present modes of conduct.

Fees-for-water

Water is of course the more difficult NIA service to cut. Given field-to-field irrigation practices and the many legal and illegal passage points and re-use/first-use connections, it is hard to cut off individual farmers who did not pay their fees.

This is not to say that it is impossible. It is being done in a large-scale Peruvian system where farmers also grow rice and make use of field-to–field irrigation practices (Vos 2002). Farmers do pay their fees because of the fact that the managing entity – in this case a farmer-controlled body - otherwise withholds water in the beginning of the season. Hence, before they get water to start land preparation, farmers go the office of the managing entity and pay their dues of the last season. This clear-cut moment – Vos calls it an 'obligatory point of passage' - gives the agency sufficient leverage over the farmers to enforce their payments. The UPRIIS farmers experience a similar clear-cut moment of starting irrigation for the preparation of their lands.

A difference with the Peruvian case – which complicates matters for the NIA case - is that the NIA is not actually delivering the water at lower levels of the system. Due to the downsizing of the field personnel, the ditchtenders are no longer around at field level to give – or to withhold - water. The NIA would need to expand its number of fieldworkers to pose such a convincing threat. It would not be necessary to actually start taking control of field level management. It would need to have sufficient presence in the field to set examples. Hence, the idea is that at the start of every season the NIA selects a limited number of partial- or non-payers in each village, and ensures that water to these selected farmers is closed-off until they pay. By publicly announcing such measures, the NIA shows it means business, which urges other farmers to pay as well.

A more feasible option might be to relate fee payments to the water delivery of groups of farmers along the same sub-lateral. Under the present set-up of individual farmers paying fees to the NIA, the NIA lacks the legal ground to do such a thing. Individual farmers would probably start and win a court case, as they could rightfully claim that the NIA cannot hold farmers accountable for the (mal-) behaviour of others. However, the present-day pilot program of turn over opens up the way to relate group fee payments to water delivery.

Under this pilot scheme of so-called Irrigation Management Transfer (IMT), a federation of IAs – covering the area of a watermaster division of around 1000 hectares – is legally liable for the fee payments of the individual farmers. Hence, the NIA sends one bill to the federation, and it is up to the federation to collect fees from its farmer members (NIA UPRIIS District-IV 2003).

This scheme, I think, might potentially improve irrigation management. Unlike the earlier type 1 and type 2 contracts, this scheme at least potentially gives the federations sufficient power, resources and duties to make it into a 'real' organisation. Under the present set-up, the federation is entitled to 36% of the collectible, and might even be increased to 50%. This seems to be a sufficiently large budget for proper remuneration of workers cleaning the canals, office workers doing the billing and accounting, a water master to co-ordinate water management and to pay leaders managing the organisation. Moreover, if fee collection efficiencies are high enough, the federation will have the budget to buy its own equipment. In short, it is a scheme that at least potentially empowers farmers to be involved in system management.

However, the results so far indicate that the scheme is going to fail because of a too accommodating strategy on the side of the NIA. The turn over scheme lacks a credible sanctioning mechanism to become effective. The first results of the 2002-03 dry cropping season showed that the federation in the 4th District of UPRIIS collected less than half of the collectible, far lower than the NIA used to collect in the area. As the farmer leaders lacked the urge to collect, collections went down. The NIA even decided to employ NIA collectors in the area, to avoid a significant drop of its income.

Under the present conditions, the NIA cannot do very much to enforce the deal made with the federation. It could sue the federation in court for not paying their dues, but that would result in the resignation of the leadership of the federation and it would stop others from taking up such positions or accepting such a contract. The NIA could also threaten to end the contract as the federation does not meet its obligations, but it would not be considered a real threat as the farmers do not really consider such a contract as crucial for their well-being.

It is a real possibility that this turn over scheme is going to lead to a further contraction of service levels in the UPRIIS Districts. It allows the NIA to further cut costs by reducing its field personnel,

and in return it will (have to) accept a further reduction of its income. The pilots have been introduced in upstream areas, which are the best paying areas of the Districts. As the turn over scheme allows the federations to keep 36% of the collectible, the NIA income will go down as long as partial or non-payment of farmers remains an acceptable option.

The main problem of the present approach to turn over is that it is too much based on luring the farmer associations into a deal with the NIA. On the one hand, the NIA is too conservative with regard to turning over power and resources, which thus lead to rather powerless institutions. On the other hand however, it is too accommodating when it comes to the duties and responsibilities of these associations.

Hence, I believe that the only way forward is that the NIA is going to take a tougher stand. In the case of these single billed turn over areas, the federation will only meet its obligations when credible sanction mechanisms are in place. The NIA would have to convincingly threaten the federations with cutting off water and other services to enforce full payments of the federations to be made. In line with Vos (2002), I believe that the best credible threat for the NIA is to seize the momentum at the start of the season. As long as a federation does not fully pay – in the first year it may be 90% - of the dues of the preceding season, the deal should be that water will not flow into its canal system.

Third recommendation: central control of economic viability

As I show in this book, financial autonomy has brought a situation in which the NIA District's primary concern is focused on earning the wages of its personnel. It considers itself financially viable when it is able to pay the wages. Hence, this form of decentralised management has shaped the interests of the NIA District in ways that are not congruent with wider economic objectives. More concretely, the tail-end areas could be served better when wider economic rather than narrow financial interests structure the strategies of the NIA District.

The best actors to look after tail-end interests are of course the tail-end farmers and their leaders. This book has shown that they are indeed pretty good in defending their interests. They are well organised and have developed all kinds of legal and illegal ways to

bring water to the tail of the systems. However, it seems that they cannot do it alone. They are up against politically powerful head-end farmer communities and municipalities, and they are up against a NIA management that is primarily concerned with saving money and attaining viability.

This protection of tail-end interests, and in general the protection of the wider economic gains of canal irrigation, is the responsibility of the NIA's central office. The NIA's central level thus has to ensure that such negative side effects of decentralisation are prevented. This again, is a requirement that is not easily fulfilled. The NIA's central office has been the main culprit of the cost cutting and downsizing measures. Nevertheless, they do have to play such a role if things are to be improved. In line with Tendler (1997) I believe that decentralised management can only work it goes hand in hand with strict central control.

To prevent spatial differentiation and a narrow focus on viability to happen, the NIA central office should develop regulations and ensure their implementation. Concretely, it should determine a more encompassing definition of viability, which ensures that the UPRIIS Districts can deliver sufficient levels of services to allow for the economic prosperity of the irrigated areas.

Such 'economic viability' would require sufficient amounts of maintenance budget – for instance at least equal to the expenditures on personnel – to allow for proper maintenance and repair works and the timely repair and replacement of machinery. Such a more encompassing definition of viability would of course not directly solve the problems. It would simply show that the NIA Districts are not viable at all, and would perhaps have to double their income to attain 'real' viability. It would at least make the problems clear and thus strengthen the need to address them.

Likewise, control of the NIA's central office would have to be safeguarded against the neglect of the tail-end areas. Concretely, the performance evaluation criteria of the Districts as well as the engineers should give much more weight to the size of the program and benefited area. Nowadays, much weight is given to financial viability and collection efficiencies. This book shows that both these indicators can be attained by serving upstream areas only or by cost cutting rather than by improving services. A better financial criterion for evaluation would for instance be the attainment of a targeted percentage increase in total income in a given year, compared to previous years.

Strict central control should go hand in hand with further decentralisation of powers to the NIA Districts. The Districts need to be given more autonomy to run their own affairs. As things stand now, the Districts are formally considered to be financial 'responsibility centres', but in practice do have to 'surrender' to the NIA's central office all income that surpasses the amount needed to cover the operational expenses. If they would be allowed to keep such income, it would allow them to re-strengthen their maintenance capacity, for instance by buying new equipment. Likewise, the Districts should be allowed to hire or contract people without being stopped to do so by central NIA or central government. Obviously, they can only do so if they can afford it. Such measures honour well-managed systems, while poorly led systems will be more exposed and thus would be amenable for appropriate action to be taken by the NIA's central management.

Fourth recommendation: empowering the Zone Engineers

Future reform should be based upon trust in state workers and geared towards creating worker commitment. This departs from the present-day mainstream guiding principle in irrigation policy discourse, which is based on 'mistrust' with regard to public agents. Their alleged rent-seeking and shirking behaviour has to be controlled by either rolling back the state, or by fixing this bad behaviour through user or client control. This is the wrong starting-point. Firstly, one cannot do without these public servants. As this book shows, NIA actors were central in giving shape to policies that supposedly were 'rolling back the state'. Also after these policies were implemented, NIA actors still played key roles in the 'turned over' or financially autonomous system.

Secondly, and more importantly, 'mistrust' is a far too negative and one-sided starting-point. NIA actors played constructive roles in the management of the District. Rent-seeking and shirking were present and explored, but this was not the only or the most important kind of behaviour. There was a lot of commitment and genuine concern among NIA staff about the plight of farmers in getting water, and about proper management of the system. Many had lost at least part of their motivation for work. However, they had so for valid reasons. Given the difficult and deteriorating conditions, one should be surprised about the degree of

commitment still present to make the best of the situation, rather than the degree to which people gave up (see chapter 5).

I am inspired by Judith Tendler's book on good governance in Brazil (1997). Her book provides detailed analyses of state programs that effectively provided good services to citizens. This happened in a Brazilian state that was known for its backwardness, political patronage and rent-seeking behaviour. Good governance emerged partly because public managers and workers were committed to make their work successful. In line with Tendler then, policy programs should not only –and not primarily- be guided by the need to create accountable public servants. Rather, they should be concerned about how to get them motivated and committed to their jobs.

How to get committed fieldworkers? In line with Tendler, I believe that providing people with demanding tasks and discretion is the way to do so. One important measure would be to put the planning and implementation of the physical works at the discretion of the Zone Engineers and the watermasters. Each Zone should get a part of the works budget. Together with the water masters and the farmer leaders in the Zone federations, the Zone Engineer should plan how to make use of the money, and thus determine which problems need to be prioritised. As outlined above, this should be done in a way that enforces fee payments of farmers.

Furthermore, the surpluses in fee collection should at least partly be retained by each Zone and should be used to replace vehicles and to buy pieces of heavy equipment (e.g. a number of 'mini dump trucks', a grader and a backhoe). It is up to the Zone Engineer, together with the watermasters and the IA leaders, where to employ this equipment.

These measures would make the position of the Zone Engineer and watermasters a more challenging one, and would empower them vis-à-vis local power holders. As things stand now, they have little bargaining power. As the decisions over the allocation of works are made by the Maintenance Engineer and the District Chief, Zone Engineers have no formal influence. Moreover, as the NIA contracts out most of its works budget to contractors-*cum*-politicians, it are politicians rather than NIA officials who take the credit for equipment being employed in the system. By providing Zone Engineers and their fieldmen with a works budget and equipment, the situation would change for the better.

Another advantage of these measures is that the decisions over the works budget would at least partly be pulled out of the 'back-room' deals explored in the previous chapter. Obviously, it would increase the chances of the emergence of new forms of rent-seeking at the Zone level. However, given the nearness of the field workers and IA leaders, there is reason to believe that such rent-seeking behaviour is better checked than when left at higher levels.

Fifth recommendation: empowering the watermasters

If the NIA pushes through with the pilot Irrigation Management Transfer (IMT) schemes, there will be no more need for watermasters. Like the ditchtenders, they will be phased out. As indicated above, I am in favour of this IMT scheme, provided the NIA becomes much stricter with regard to the duties and responsibilities of the federations. Under the present management set-up however, reforms should further empower the watermasters and thus give them reason to be more committed to their job.

Under the present set-up, the watermasters find themselves in a Catch 22. On the one hand, they are expected to deliver services to the farmers following the 'pay-for-performance' principle: the NIA delivers the services in return for user fees. On the other hand however, the water masters can no longer deliver such services, as their fieldmen were phased out. Instead, these services are to be delivered by the IAs under the contrasting principle of 'joint management'. Hence, these frontline workers have been put in the difficult situation that they have to deliver services by steering people (the IA leaders) who were hard to control.

The very combination of these contrasting organisational principles made things complicated. For instance, as water users felt they were already paying for services, they were not easily motivated to take care of certain managerial tasks (e.g. canal cleaning). This was worsened by the fact that the contracts with the IAs were neither clear nor financially attractive. The responsibilities of the IAs with regard to fee collection were not well defined. Moreover, as the NIA needed the fees more badly than the IAs did, the IA leaders could easily take a free ride on the efforts of the fieldworkers.

In the case of the canal cleaning contracts, remuneration for the IAs was low and payments often late. Hence, the IAs simply

refused to enter into such a contract, leaving canal sections unattended. Or the cleaning was done rather poorly. As breaking the contract was hardly considered a punishment, the watermaster was not in a position to take a tough stand. The only option available was to try to motivate IA leaders to do it, albeit poorly, and to help them in actually organising the farmers to conduct the job (for further detail, see chapter 5).

I already presented my recommendations with regard to fee collection. With regard to canal cleaning, the way forward is for the NIA to turn the contract into a more production-oriented, business-like deal. This would mean that the NIA raises the remuneration for the canal cleaning to fair levels and ensures timely payment. The remuneration should be sufficiently high to allow IA leaders to hire labourers to clean the canals. The original idea that payments can be low as farmers will clean canals based on voluntary labour and community spirit is unrealistic. In the highly monetarized economy of Central Luzon, money and not voluntary labour makes the world go round.

To empower the watermasters vis-à-vis the IAs, it might be a good idea for the NIA to provide the watermaster with a monthly budget for canal cleaning in his division. In principal, canal cleaning should be organised through the contracts with the IAs. However, the watermaster should have the option to actually break the contract with the IAs when do not live up to the agreed conditions, and supply the services through other means. If the payments for these services meet market standards, then the area master would not have difficulty to hire local labourers to conduct canal cleaning. This alternative option provides the watermaster with control over the IAs through competition (cf. Hood 1998) This semi-market mechanism can thus help to establish a more straightforward relation between the IAs and the frontline workers.

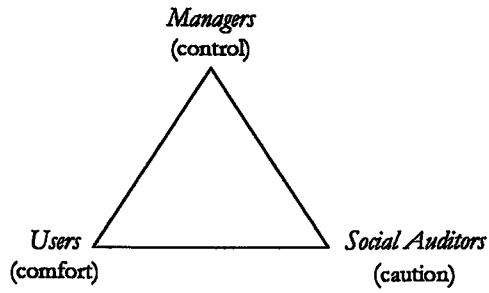
More straightforward measures could also boost morale among the NIA work force. For instance, the NIA should allow the promotion of fieldworkers to higher positions. These positions are the exclusive domain of people holding a degree in civil or construction engineering. Watermasters were acting as capable Zone Engineers and Hydrologists, but without receiving the official position (and related salaries and benefits). Hence, possibilities for upward mobility were *de facto* closed off. By accepting working experience as a qualifying criterion, this would give the more capable fieldworkers an attractive career perspective.

Good governance : the need for social auditors

Who are the potential readers of this book? In other words, who are the actors who are concerned about Philippine irrigation management (reform)? In the Philippines, this group is largely limited to NIA officials, a few national and international irrigation experts and a few academics. This situation is a problematic one. There is no platform for a lively debate on the important issue of irrigation management. Now and then, NIACONSULT produces reports, but this organisation is too close to the NIA to play a more critical role. Consequently, these reforms lack a 'learning-by-doing' approach, or any approach that helps to systematically evaluate policy processes and outcomes, or allows for a careful design of the next step (Korten 1989).

Hence, there is a need to strengthen the wider governance structures in the Philippines in which irrigation management issues are being discussed and decided upon. In particular, I believe there is the need to strengthen the involvement of so-called 'social auditors'. These are third actors in the governance of irrigation management, next to the NIA and water user organisations (see figure 8.1).

FIGURE 8.1: A tri-polar set-up for good governance of irrigation systems



Source: Moench, Caspari et al. *1999: xii*

These social auditors could be NGOs, Rural Development Departments or academic institutions. They are the

> "watch dog" social activists as well as various organs of the state that are responsible for assuring appropriate justice. They are not users or managers, and their concerns often stem from different

> callings – those of equity, sustainability and fair play. [They] often work together to assure proper functioning by the concerned water bureaucracy. They also often act as catalysts for change (Moench, Caspari *et al. 1999: xi)*

Such enabling tri-polar governance setting did exist around the development of the NIA's participatory approach applied in communal schemes during the first half of the 1980s. A steering committee composed of NIA top-level managers, the responsible program leaders as well as university researchers met frequently to evaluate the policies, and to come up with intelligent moves in the wider policy environment. Backing and actual involvement of the Ford Foundation gave further credit as well as seed money to this task group. The role of the Institute of Philippine Culture of Ateneo de Manila University is especially worth mentioning. For several years, it conducted detailed and applied action-research to support the policy reform programs. Being a relatively independent but committed research institute, it was instrumental in organising a constructive and informed process (de los Reyes and Jopillo 1987).

Unfortunately, such a committed but critical and scholarly environment did not emerge around reforms in the management of the national systems (and it ceased to exist around the reforms for the communal systems). Formulated in positive terms, it seems to me that there are good opportunities for universities or research institutions to jump into this matter and to take up again the critical but constructive role of social auditor.

Likewise, Philippine NGOs and people's organisations (POs) could also contribute a lot to the emergence of a more conducive governance environment for irrigation management. Philippine NGOs and POs are widely acknowledged to be a vibrant part of Philippine civil society (Lara and Morales 1990) and play pivotal roles in policy making and implementation around such politicised issues as land reform (Borras 2001) and the government protection of the rice price (Ramos 2000).

At present, their role in the governance of irrigation is rather limited. Within the District studied, peasant organisations were active as local chapters in villages. However, they did not engage very much in irrigation management issues. They had a critical attitude towards fee payments, following a rather populist line of thought. Also each was involved in particularistic efforts to allocate

NIA resources to their local stronghold. However, there was no widely organised 'People's Organisation' (PO) or NGO active in the area, let alone one that was involved in matters of irrigation governance.

At the Manila level, the situation was not very different. Both more mainstream and more radical farmer organisations and NGOs critiqued government for its limited spending on irrigation systems (Montemayor 1995). Though this critique was valid (see chapter 6), these organisations scarcely took up – nor were they informed about – questions on how to re-organise the governance of irrigation management.

However, there are good possibilities for both national or regional NGOs and local POs to develop their roles as social auditors in irrigation governance. At the local level, they could play an important role in future reform efforts, either by organising farmer leaders, or by critically evaluating reform processes. Also at the national level, there are several NGOs that could in theory play such an important 'critically engaged' role. The least this book might do is to arouse the interest among these NGOs and POs. This book shows that the issue of irrigation is much more complicated - and interesting - than just being a matter of government funding and good engineering.

Canal irrigation is – and remains to be – one of the most vital resources in rural Philippines. Furthermore, this book shows that all the larger issues that are high on the agenda of reform oriented organisations are present in the case of irrigation: it is about struggle and everyday politics, it is about democracy, local governance and (unequal) access to resources. Last but not least, it is about the search for more just and productive state-society interactions.

9

Epilogue

(1998 – 2003)

Somewhat to my surprise, I found the working morale of both NIA staff and IA leaders to be intact when I re-visited the 4th District of UPRIIS in January 2003. Things were a bit better than they were when I left the District at the end of 1997. This was partly because of nature. The 1998 dry season had been dramatic. However, since then the river water supply and local rainfall had been favourable. More important though had been the impact of a temporary change in the UPRIIS leadership.

General Soriano, the tough ruler who administered the NIA from early 1997 to mid 1998 did what few would have thought to be possible: he unseated the UPRIIS leadership that had been in charge of the system for a long period of time. The new Operations Manager was a former ranking officer in the Institutional Development Department (IDD) at the NIA's central office. He brought with him some of his trusted men who replaced the sitting District Chiefs. The new Chief of the 4th District, let me call him engineer Dizon, was formerly the IDD Chief in another province.

This engineer Dizon, together with the new OM, brought a new spirit into the management of the system that could still be felt years after they were replaced in 1999. Both NIA staff and IA leaders were enthusiastic about Dizon's style of management. He boosted morale as he showed that things could be done differently. He went out late at night to ensure that water would reach tail-end areas. He dealt with IA leaders rather than local politicians, and was keen on visiting IA-meetings and supporting the local IDD officer.

He was strict on his field workers but at the same time honoured their requests like renovating their field quarters. As he inspired his successor and was able to promote a few performance-oriented field workers to (acting-) engineering positions, the changes lasted beyond his departure.

The everyday politics of works and work

This is not to say that the politics of works and work suddenly ceased to exist, or really changed in character. History repeated itself as the OM and this engineer Dizon ran into a conflict with congressman Lopez over a physical works issue. Like the earlier Chief of the 4th District, they also refused to bow their head to high-level politicians demanding control over the works contracts. Like the earlier Chief, they were both forced to leave in 1999. Since then, the OM position has been the subject of struggle between two politically-backed engineers who are both long-time managers in the UPRIIS system.

These politics of work are still also at work at middle-management level. On my very first day of visiting the NIA District office, I found myself invited to a lunch party organised by one of the District engineers. The party was not for me, but for a Joson-backed rich businessman who might run against congressman Lopez in the 2004 elections. This politician was building up his network of local vote brokers. In return, he might give favours when things would work out as planned. Hence, as before, befriending and allying with high-level politicians is an important way of furthering a career in the UPRIIS management.

High-level politicians are still also powerful players in the contracting of physical works. The Joson family – after the release from jail of its two most powerful members in 1998 following the inauguration of President Estrada – is fully back into the game. NIA engineers told me that the Josons – and their political following of contractors – dominate the 'bidding process' and get the best projects. Congressman Lopez and his related contractors were second in line, and had control over most of the projects in the southern part of the UPRIIS system.

These politics of works are also present at field level. IA leaders and local politicians make a lot of use of the services of congressman Lopez in getting their roads and canals fixed. Since

the 2004 elections were getting closer, the congressman was considered *mabait* (kind), in lending his equipment like a grader or backhoe to these local leaders. A new phenomenon is that the larger barangays in the District nowadays also possess heavy equipment, which were used to maintain NIA facilities. The NIA itself no longer has such facilities. Despite the highly developed creative skills of the NIA repairmen, the worn-out equipment could no longer be kept alive.

The everyday politics of water

Main system water management in Zone 2 was largely still under the control of the NIA-IA partnership headed by the Zone Engineer. The everyday politics of water in Zone 1 had changed. It became less politicised and the NIA regained some of its authority. This was partly because local politicians had less cause to intervene, as the latter years brought good water supply into the system. It was also caused by an improved performance of the NIA workers and engineers.

For several years after 1997, Meneses Jr. remained an important actor in the water distribution of the Zone. He succeeded his father as the mayor of Victoria from 1998 –2001. Being the mayor, he no longer needed to go into the field. He simply ordered the NIA engineers to take care of the interests of his rice-farming citizens. Still, main system management became less contested. The NIA took care of his interests and at the same time – due to better water and hard work – was able to improve the water supply to the tail-end. The improved performance had a lot to do with the hard work and leadership capabilities of Argee, who had been promoted to acting Zone Engineer. He used his promotion to improve the water supply of his co-farmers and citizens in the downstream municipality of La Paz.

The mobile phone facilities that became available in latter years also helped the NIA to re-take some of its authority. It greatly facilitates communication between the dispersed field workers and their superiors as well as the farmer leaders. Argee's mobile phone was the nodal point in this network. During times of scarcity, he frequently receives requests from different tail-end farmer leaders, questions from his superior officers, and 'text out' orders to his gatekeepers. He thus remains up to date without having to travel

on hardly passable canal roads and can quickly respond to changing circumstances. It also facilitates the reproduction of group identity among the strongly reduced NIA workforce. It is especially important to the NIA gatekeepers who are guarding gates at night-time in remote areas. Through their mobile, they can text or call for back up in case of conflict with hot-headed farmer leaders or politicians.

The struggle for scarce water was still very much present. The difference was that the various rival alliances started to co-ordinate their efforts with the NIA field men and Zone Engineer. They did so, because their confidence in the NIA's doings to control and deliver water had grown. Moreover, the increase in power of the NIA in main system management also meant that it would be unwise to take the NIA for granted, as this might harm their own interests. In short, the acting Zone Engineer had attained the upper hand. His rule was however a fragile and probably a temporary one. Future seasons of scarce water might again change the situation. So far, the new power holders in Victoria showed little interest in water distribution. However, future scarcity and electoral campaigns may well change that situation.

Another development of recent years is the nearly finished Casecnan project. Under a so-called 'Build, Operate and Transfer' (BOT) scheme, an international contracting firm has constructed a trans-basin canal that supplements water to the Pantabangan reservoir from a neighbouring watershed. For 20 years this contracting firm will be selling the water to the NIA for irrigation and electricity, which presumably allows it to profit from its earlier investments in the construction of the trans-basin.

So far, District 4 has not yet benefited from this project as upstream checking diverted the extra available water. It is highly questionable if this will change for the better in the near future. At present, The NIA is constructing the irrigation facilities of the 5th District of UPRIIS that will be served with the enlarged capacity of the Pantabangan reservoir. As this 5th District is going to serve the presently non-irrigated lands of the very heart of the bailiwick of the Joson family, new political pressures will enter inter-District water distribution. As long as the political map of Nueva Ecija remains unchanged, it seems to be rather predictable where water will and will not flow in the years to come.

Machismo and violence are still trademarks of the *Nueva Ecijanos*. In the area of the 4th Irrigation District, a brother of

Meneses Jr. – and rival mayoral candidate – was killed in 2001. In 2002, 40 bullets ended the life of a barangay kapitan in Zone 1. Recent years were also bloody as unknown people opened a 'war on drugs'. In a few months time, more than 20 alleged drug pushers in Victoria and neighbouring municipalities were shot dead, 6 of them being found in the morning in the rice field of the father of one the NIA engineers.

Since then, the act of killing drug pushers spread to other municipalities throughout the southern part of Nueva Ecija. Some believe the killings are conducted by a so-called 'Red Vigilante Group', as part of a new strategy of the New People's Army (NPA) to re-gain popularity in the plains of Central Luzon. Others suspect that such a group may be operational, but rather as hired goons of mayors who want to show that they are 'tough on crime'. The third theory is that it is the work of a drug syndicate that is forcefully taking over the market of a rival syndicate.

Although this violence is not irrigation related, it does set the scene in which people have to operate. Toughness still counts along the NIA canals. As a counter-measure, several NIA fieldworkers in recent years joined the Philippine reserve army and/or a military brotherhood. By doing so, they feel safer as toughguys might not so easily dare to harm them.

The everyday politics of fees (wages)

President Estrada did not do the NIA a favour when he made the issue of irrigation service fees part of his pro-poor populist politics. In his first State of the Nation Address in mid-1998 he announced that farmers would no longer have to pay irrigation fees. He repeated this statement in a speech delivered in one of the towns of the UPRIIS 4th District in September 1998. When he delivered the speech, he already knew that he would not be able to keep his promise. By that time he had already signed a presidential order that called for so-called 'socialised' fees instead of the abolishment of the fees. Under the new structure, fee payment was related to the size of farmer's landholdings (see table 9.1).

This greatly affected the fee income of the District, as around 80% of the farmers had (or reported to have) landholdings smaller than 2 hectares. Moreover, the speech of the President gave farmers the idea that they did not have to pay fees at all.

Consequently, fee income plunged in 1998 and 1999 and NIA workers were faced with delays of salary payments up to 5 months.

TABLE 9.1: The socialised fee rate system in reservoir systems during 1998 - 2000

	Wet season cavans *of* palay/*ha.*	*Dry season* cavans *of* palay/*ha.*
Old rate	2.5	3.5
0 - 2 ha	1.5	2
2 - 5 ha	2.5	3.5
> 5 ha	4	5

Source: NIA (1998), in: Panella, forthcoming

Since that time, the NIA District became even more pre-occupied with fee collection and cost cutting, and financial viability has been the result. A massive information drive of the NIA District in 1998 helped to convince the farmers that irrigation services were not for free, and that the District needed their payments more than ever before. The union struggle of the NIA employees made the government release funds for O&M subsidies that also helped to attain financial viability of the District. The improved work morale discussed above and the favourable water supply helped the NIA to attain higher fee incomes. In addition, the new administration of President Arroyo abolished the socialised fee system, and thus gave further rise to an increase in the District's fee income. Continuing reduction of the work force allowed the District to further cut costs. As a result, the District has attained financial viability since 1999 onwards.

This brought a new situation. From a strictly financial point of view, the District's position has become sustainable. Two decades of continuous downsizing, cost-cutting and fee-raising strategies have made this possible. The District is no longer in acute financial problems and it seems no longer necessary to further reduce the workforce (although future water scarcity, poor management or the loss of government subsidies might again jeopardise that income). It is even able to hire some extra people, though rulings of the national office forbid addition to the regular work force. This is good news. Nevertheless, the District's contraction has negatively affected its level of services, which it has not been able to turn around in latter years. For instance, cleaning of large parts of the canal system is still not being taken care of (see chapter 6).

The everyday politics of turn over

The NIA is furthering its turn over program, though indeed still at the pace of a turtle (Sun and Groenfeldt 1995). At the end of 2002, the UPRIIS Districts started a pilot program of the so-called Irrigation Management Transfer scheme. In the 4th District, a federation covering the area of a water master division of around 1200 hectares in the upstream part of Zone 2, entered into the IMT contract.

The deal is that the IA farmer federation takes full charge of water management, maintenance and fee collection in its area, while the NIA ensures water delivery to the different sub-laterals. The biggest change is that the federation is being billed by the NIA, and thus needs to fully take care of fee collection in its area. Moreover, the federation is now sharing the fee income with the NIA, rather than receiving incentives.

It took a lot of discussions with the IA leaders, and organising work of the institutional development officer and a number of temporary NIA-hired organisers. Progress was slow, as the promised funds for rehabilitating the area before transfer did not come. Also, the organisers had great difficulty to attain sufficient attendance in the meetings held at village level. Apparently, farmers were not very enthusiastic about the new governance scheme, or took it for granted. Also the IA leaders lacked enthusiasm, and the downstream federation of Zone 2 refused to enter into the new type of contract. The involved IA leaders considered it as *hilaw*, half-baked. They felt that the transfer scheme was still set-up with the intention to help out the NIA, rather than that it would really bring a new form of governance.

Nevertheless, the outlook of IA leaders towards turn over – or IMT as it is called now – has changed somewhat in comparison to 1997. The IA leaders demanded a 50-50 sharing system, rather than the 36-64 deal pushed for by the NIA. If they would get the 50%, they indeed thought it to be a scheme that might work. The above-mentioned engineer Dizon might have brought part of this zeal. Field trips to show case schemes in other parts of the Philippines that already had implemented far-reaching turn over schemes, had also impressed several IA leaders. Though the majority of the NIA work force was still very sceptical of turn over and negative about the changes of the last two decades, some had become more positive about the idea of transfer. They even played with the idea

that one-day, they might be hired as a water master or manager of a future farmer-controlled management organisation in charge of irrigation management at Zone level.

This short update on developments in the UPRIIS District shows two things. Firstly, it re-emphasises the fact that irrigation management cannot be understood in managerial or administrative terms only. The socio-political dimension is far too pervasive to be considered as 'context'. Whether one likes it or not, politics is at he heart of irrigation management (reform) and thus needs to be a central element of analytical as well as policy making frameworks. Secondly, it proves that in 2003 the irrigation management in UPRIIS is still best described as a fascinating mixture of different forms of organisation, based on co-operation and conflict, as well as the threat of violence and friendship.

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Samenvatting

(Dutch Summary)

Water, Werken & Loon. De dagelijkse strijd over irrigatie waterbeheer hervormingen in de Filippijnen

Dit boek onderzoekt het publieke management van een grootschalig irrigatie systeem in de Filippijnen en hoe beleid hierop inwerkt. Hervormingsbeleid in de Filippijnen was een voorbeeld voor de rest van Azië gedurende de jaren tachtig en negentig. Zowel de hervormingen van de irrigatiedienst, de NIA (National Irrigation Administration) alsmede de participatie van gebruikers in het management van het stelsel werden als succesvol beschouwd. Dit boek bestudeert het effect van dit beleid en is kritisch ten opzichte van de vermeende beleidssuccessen.

Beleidsstudies van management hervormingen kennen vaak een nogal functionalistische aanpak. Zulke studies vergelijken wat vooraf de bedoeling was met de resultaten achteraf. Het implementatie proces zelf blijft vaak onbesproken. De studie in dit boek kent dit manco niet. Het is gebaseerd op 18 maanden intensief veldwerk en bespreekt in detail hoe mensen zich organiseren, hoe ze een systeem managen, hoe ze omgaan met hervormingsbeleid en waarom ze bepaalde keuzes maken. Bovendien laat deze studie zien hoe deze praktijken zijn gerelateerd met de organisatie van de Filippijnse overheid en samenleving.

Met deze aanpak komt een fascinerende wereld tot leven. Het is wereld waarin NIA managers (ingenieurs) en veldwerkers, boeren leiders en politici dagelijks strijden over de verdeling van schaarse middelen. Meest zichtbaar is de strijd over schaars irrigatie water die essentieel voor de landbouw productie van duizenden kleine boeren. Om water veilig te stellen interveniëren boeren veelvuldig

en actief in het management van het stelsel. Ze organiseren zich en hun leiders sluiten allianties met politici, bestuurders en ambtenaren in deze strijd rond water. De formele structuren en de scheidslijnen tussen bestuur en politiek en tussen gebruikers en overheid blijken in de praktijk van weinig waarde. In plaats daarvan bestaan een aantal min of meer permanente rivaliserende allianties die op basis van interpersoonlijke relaties van verwantschap, vriendschap en politieke patronage zijn georganiseerd. Tenslotte blijkt ook de dreiging met geweld en in mindere mate omkoop praktijken de organisatie van het irrigatie waterbeheer vorm te geven.

Een andere hot issue is de organisatie van het onderhoud van het stelsel. Zowel geld als machines voor onderhoud zijn schaars, en de besluitvorming over welke wegen en kanalen wel en welke niet worden onderhouden is in hoge mate gepolitiseerd. Het management van het stelsel levert dus zowel goede oogsten als misoogsten, goede wegen en onbegaanbare wegen en zowel geslaagde en mislukte politieke of bestuurlijke carrières op.

Dit boek exploreert ook hoe de wereld van de aannemerij – die strijd over de verdeling van lucratieve opdrachten – het management van het stelsel vormgeeft. Het is een complexe wereld waarin hoge politici door middel van hun controle over benoemingen en promoties van ambtenaren een flinke vinger in de pap hebben. Allianties van gouverneurs en afgevaardigden van het Congres met hoge NIA bestuurders en aannemers spelen hier een ingewikkeld, risicovol maar lucratief steekspel.

Tenslotte is er de dagelijkse strijd over loon. Als verzelfstandigde overheidsdienst draagt de NIA zorg voor zijn eigen inkomen dat wordt verdient via het heffen van water leges aan gebruikers. Dit blijkt geen sinecure. NIA veldwerkers en managers hebben allerlei ingenieuze strategieën en methoden ontwikkeld om de boeren te bewegen tot betaling van deze leges, en om op die manier tijdig hun eigen salaris te verdienen. Dit levert een merkwaardige maar boeiende relatie tussen burgers en overheid op.

De strijd over deze schaarse goederen is onderzocht in relatie tot drie verschillende soorten van hervormingsbeleid die het management van het systeem sterk heeft veranderd. Ik laat zien hoe de verschillende actoren zin geven aan dit beleid, en hoe ze het inzetten, aangrijpen, tegenhouden en/of veranderen. Ten eerste

kregen de locale actoren te maken met saneringsbeleid van de overheid dat sinds het begin van de jaren tachtig de NIA bureaucratie sterk heeft verkleind. Ten tweede dwong de financiële verzelfstandiging van de NIA tot allerlei bezuinigingsmaatregelen alsook pogingen tot vergroting van het inkomen van deze publieke organisatie. Tenslotte werd er zogenoemd 'turn over' beleid uitgevoerd waarin watergebruikers werden georganiseerd en geacht verschillende management taken van de NIA over te nemen.

Het bestudeerde systeem ligt in de rijst vlaktes van Centraal Luzon, ongeveer honderd kilometer ten Noorden van Manila. Het is eén van de 4 irrigatie districten van het grootste irrigatie stelsel van de Filippijnen, het Upper Pampanga River Integrated Irrigation System (UPRIIS). Een groot stuwmeer en lokale rivieren leveren het gehele jaar water voor rijstteelt op een kleine 100,000 hectare in de vruchtbare valleien van de provincies Nueva Ecija, Bulacan en Pampanga.

Curriculum Vitae

Joost Oorthuizen was born in 1965. He graduated *cum laude* in irrigation engineering and development sociology at Wageningen University in 1991. He has worked for several years as a University Lecturer with the Irrigation Group of Wageningen University, where he conducted his Ph.D. research and teached and published about irrigation management reform. In latter years he has been working as a change management consultant and trainer for a private company in the Netherlands.