Draft for comments

World Bank and Irrigation Reforms: Case of Andhra Pradesh, India

by

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Abstract

This paper presents the emergence, process and politics of the Participatory Irrigation Management (PIM) policy in Andhra Pradesh state, India. The paper is divided in to four sections. After the brief introduction, section one, discusses the emergence of irrigation management transfer policies, models and the role of the World Bank. Section two, discusses the salient features (the scale, speed, political and legislative support) of the Andhra Pradesh irrigation reform and the role of the World Bank. The different policy actors and their policy contestation are discussed in section three. In section four, the paper concludes that in contrary to what is generally expected, irrigation reforms in Andhra Pradesh did not lead to participatory management of irrigation resources, but served to preserve or strengthen the actor's interests especially of the irrigation bureaucrats. By doing so the paper offers a critical analysis of role of donor actors like World Bank in irrigation management reforms and aims to contribute to the further debate on irrigation reform policies and contemporary models of institutional evolution.[2]

Introduction

There has been the recognition since the mid 1960s regarding the performance of irrigation systems particularly the large canal irrigation systems. There were series of efforts to increase the performance of the systems. The efforts initially were focused at

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[2] This paper is based on a PhD research study titled 'The Politics of Policy: Participatory Irrigation Management in Andhra Pradesh' conducted with irrigation and water engineering group at Wageningen University based in the Netherlands and defended in 2006. The primary research was conducted during 2001-2003 on the left main canal of the Nagarjuna Sagar multipurpose irrigation project in Andhra Pradesh. The thesis investigated the politics of the Andhra Pradesh irrigation reform policy and process.

plot or tertiary unit and pipe committees. During the 1980s the focus gradually moved to secondary and primary canals. In the 1990s the debate shifted to irrigation sector level. The need for irrigation sector reforms seems to be well understood against this backdrop of shrinking commands of large irrigation projects and state budgets for irrigation sector.

The World Bank in its document titled Water Resources Strategy summarizes its strategy plan for irrigation sector as -more crop, cash and jobs per drop. To achieve this, the new era according to the World Bank, "requires irrigation institutions that are radically different from the top-down, construction-oriented irrigation agencies that developed over the past half-century." Taking forward a similar understanding, several pilot projects and experiments with Water Users Associations (WUAs) and institutional changes to the irrigation sector have been initiated supported fully or partially by the World Bank in various countries.

The poor performance of irrigation sector in India have justified irrigation sector reforms (often supported by external aid agencies) which are aimed to address the vicious cycle caused by low budgets, lack of maintenance, poor irrigation services, lack of users' participation, and poor fee collection. Within this context, the neo-liberal policies promoted by World Bank have a large impact on irrigation management reforms especially in developing countries.

Abstaining from a gradual approach to reforms, the State of Andhra Pradesh in India was the first state to effect legal changes, to enable institutionalization of water sector reforms. In keeping with the World Bank's 'big bang' approach, the state of Andhra Pradesh under the Chief-ministership of Mr.Chandrababu Naidu enacted a new legislations starting from 1995 to provide the supportive legal framework, seeking to reorder the institutional structures of the irrigation sector.

Section 1 : World Bank and Irrigation management transfer policies

Irrigation management transfer, or turnover, has become a widespread strategy in Asia, Africa, and Latin America. In more than twenty five countries governments are reducing their roles in irrigation management while farmer groups or private organisations are taking them over (see Vermillion 1992).

There are various motivations or reasons for governments to implement a turnover programme. The most commonly mentioned reason in the literature is 'to reduce the cost of operation and maintenance of irrigation systems'. By doing so governments are relieved of their huge budget commitments for the irrigation sector. From the literature it is also clear that IMT was introduced to increase users' participation and hence to achieve higher cost recovery leading to better system performance and productivity. Other motivations to implement turnover policies have been support from international and bilateral funding agencies and political gains. Describing the global trend towards devolution, Vermillion and Garces-Restrepo (1998) discussed that:

> Largely driven by government fiscal shortages and a common inability to raise sufficient revenues from collection of water charges, since the 1970s, governments around the world have adopted programs one after another to devolve responsibility for irrigation management to WUAs consistent with overall structural adjustment programs, irrigation management transfer has been supported by the major international development banks (World Bank 1993; EDI 1996; Arriëns *et al.* 1996). The reforms generally include efforts to organize WUAs, train future managers, make essential structural repairs, and negotiate and formalize agreements between the government and the water users (Vermillion and Garces-Restrepo 1998:1)

The countries like Mexico, Colombia, Turkey and Andhra Pradesh (India) have followed a big bang approach. The motivations for reforms in these countries though slightly differ; the bank played an important role in not only implementing the reform but showing them as reform models. In this case of Colombia, the demand for turnover came from the farmers. This is known as the bottom up approach to IMT. In contrast, we find a top-down approach to IMT in the case of Mexico. IMT has been a top-down process motivated by international development banks and implemented by the Government of Mexico (Kloezen *et al.* 1997: 3).

> Mexico experienced rapid and widespread incorporation of user participation in the irrigation sector. The objective was to make the

> national irrigation system financially self-sufficient as well as to obtain full cost recovery over time for major works already constructed. The cornerstone of this policy was the transfer of irrigation management to Water User Organizations. Crisis situations in irrigation system financing and management provided the impetus for sweeping changes. By the end of the 1980s, an estimated 1.5 million ha (out of 6.1 million) of irrigated land went out of irrigated production because of lack of funding for completion of infrastructure and O&M. Bank management was influential in pointing out the need and direction for change, and the Bank provided a loan (co-financed by the Inter-American Development Bank) for the Irrigation and Drainage Sector Project. The three pillars of this project were decentralization and transfer of irrigation districts to Water User Organizations, self-sufficiency in fee collection to cover full O&M costs, and efficiency in budget allocation (Meinzen-Dick and Reidinger 1995 : 13)[3].
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> The [Mexican] program has also been a source of inspiration and ideas for many developing countries that have sent their irrigation officials to Mexico for observation and study(McCalla and Segura 1995: v)[4].

Turkey has a legal framework allowing the transfer of management responsibility for publicly constructed irrigation schemes to local control since 1954. Turkey began an accelerated programme of transferring management responsibility for large irrigation systems to locally controlled organisations in 1993. Svendsen and Nott document that:

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[3] Meinzen-Dick, Ruth and Richard Reidinger (1995) Participation in Irrigation, Social Development papers No3. Social Development Family of the World Bank. Papers in the Social Development series are not formal publications of the World Bank. They are published informally and circulated to encourage discussion and comment within the development community.

[4] See Gorriz Cecilia MN, Subramanian Ashok, and Jose Simas (1995) *Irrigation Management Transfer in Mexico Process and Progress.* World Bank Technical Paper number 292. Also see Gorriz, Cecilia and David Groenfeldt, "Participatory Irrigation Management in Mexico: Seeing is Believing," WBI, 1996 and Groenfeldt, David, "Irrigation Management Transfer in the Philippines," WBI, 1996.

> Within three years, the national irrigation agency, the Turkish General Directorate of State Hydraulic Works (DSI), had succeeded in transferring nearly one million hectares or 61 percent of the publicly managed irrigation in the country, to local government units or to special-purpose irrigation associations created at the local level. Important motives driving this fast-paced implementation were (a) the rapidly escalating labour costs, (b) a hiring freeze in government agencies and (c) the consequent concern over the agency's ability to operate and maintain systems serving the expanding irrigated area for which it was responsible. Also, World Bank pressure for improved cost recovery provided added impetus for change. Bank-funded study tours to Mexico and elsewhere gave DSI managers a vision of what could be accomplished through a program of management transfer to locally controlled organizations (Svendsen and Nott 2000: 27).

Similarly a World Bank report states that:

> The Operation and Evaluation Department of the World Bank revealed in its first irrigation sector study in 1981 that the Bank's right hand pressed Turkey hard to get water charges up from 85 percent to 100 percent of O&M costs, while its left hand was making repeated irrigation loans to Indonesia, where water charges recovered 15 percent of O&M and there were no serious efforts to reform the system. Clearly, forces other than the policy rules and statements are shaping the policy (World Bank 1995:38).

In the case of Andhra Pradesh, Reddy (2002, 2003) argues that Andhra Pradesh reform policies are also influenced by World Bank lending policies.[5] Reddy claims that instead

[5] Mr. Chandra Babu Naidu was known as a believer in reforms and market oriented approaches. His belief in reforms was clear when he submitted a deficit budget in March 1995 in his capacity as Finance Minister in the N.T. Rama Rao government. Mr. Naidu argued that the budget would be a surplus one, if the subsidies on rice and power are included together with the losses made due to the prohibition policy of the state. When Chandrababu Naidu became the Chief Minister of the state in September 1995, the ban was lifted on prohibition and the government reduced the subsidies on rice and power. The power sector is another sector along with irrigation undergoing reforms in the state (see Reddy 2003 for detailed explanation).

of opposing conditions, politicians seeking peoples' mandate, have used statements of reforms and associated funding as a sign of their political credibility. Reddy (2002) argues how is that Andhra Pradesh PIM has attracted so much of attention with in a short span of time? What happened to irrigation management in Andhra Pradesh since 1997, so as to make such sensational claims? Reforms and the associated funding are viewed as a useful tool to establish the political credibility to the newly elected Chief Minister of Andhra State. His top priority was to establish himself as a development oriented leader. It was argued by Prof. Reddy that it was a perfect opportunistic alliance of interests of Chief Minister who is looking for some credibility and the World Bank to pursuit it's reform agenda at the state level that shaped the PIM policy in the state[6]. Reddy termed the alliance as a designer politics. The above discussions clearly show that bank is an important actor in irrigation management transfer programmes implemented in different parts of the world.

Section 2: Andhra Pradesh Participatory Irrigation Management

In this section, I present the salient features (the scale, speed and political and legislative support) of the Andhra Pradesh irrigation reform and the role of the World Bank.The state of Andhra Pradesh (A.P) known as rice bowl is no exception. Andhra Pradesh is a state based on primarily agricultural economy with a population of more than seventy millions and the fifth largest state in India[7]. The increasing gap between irrigation potential created and utilized, low rates of irrigation fee collection and other factors have lead to the initiation irrigation reforms.

[6] The regional party Telgudesam came in to power in 1983 breaking the dominant caste based politics of patronage in the state. Mr.Naidu was known as a believer of reforms and market oriented approaches. It was clear when he submitted a deficit budget in March 1995 in the capacity of a finance minister in the N.T. Rama Rao government. Mr. Naidu argued that the budget would be a surplus one, if the subsidies on rice and power are included together with the losses made due to prohibition policy of the state. When he became the chief minister in September 1995. The ban was lifted on prohibition and reduced the subsidies on rice and power. Power sector is another sector along with irrigation is under going reforms in the state at present. See Narasimhareddy paper in Hooja Rakesh ed, 2003 for more detailed explanation.

[7] The State of Andhra Pradesh was formed merging regions with varied endowments, historical legacies and institutional arrangements. The challenge of development policy was to integrate these diverse units such as underdeveloped Telangana, drought-prone Rayalaseema and coastal Andhra into a single economic entity and to accelerate growth and equity.

The World Bank, in 1976 approved three major loans for irrigation development in Andhra Pradesh to improve the performance of its irrigation systems.[8] The Bank extended its financial support to implement the Participatory Irrigation Management program in the state. To implement the reforms the state successfully enacted[9] 'The Andhra Pradesh Farmers Management of Irrigation Systems Act (APFMIS Act) no 11 of 1997'. As a result elections were held for more than 10,000 newly crafted water users associations covering major, medium and minor irrigation projects in the state of Andhra Pradesh. The reform process implemented with a big bang approach has attracted a lot of national and international attention, and reference is now made to the `Andhra model' of irrigation reforms. The irrigation reform quickly has been labeled as the 'AP model' of irrigation reforms. The A.P irrigation reform is based on the neo-liberal belief that scaling down the irrigation bureaucracy, increase of water charges, transfer of operation and maintenance of irrigation infrastructure and water distribution to user associations would lead to growth in irrigation sector. It was very clear that irrigation reforms in the state through the funding received from international agencies like World Bank and backed by a strong political will under the leadership of the then chief minister Mr.Chandra Babu Naidu. The Bank played in important role not only by providing funds but also advisory and visibility to the AP reforms. I quote below World Bank's own statement:

> The World Bank is actively engaged in providing knowledge and advisory services in Andhra Pradesh- for the water components of the state's 2020 Vision, on benchmarking and options for irrigation reform, on utility reform, groundwater management, water rights administration and ecological flows…..In the state of Andhra Pradesh the challenge is to

[8] Prior to funding AP irrigation reform programme under AP-III, the World Bank financed projects include: Pochampad Irrigation Project; Godavari Barrage; Andhra Pradesh Irrigation and Command Area Development Composite (AP-I) and Second Andhra Pradesh Irrigation (AP-II). The National Water Management Project financed by the Bank included an A.P component to demonstrate improved network designs in six medium schemes. To this list AP-III Irrigation is added with a loan commitment of U.S $325 million and the irrigation component of APERP (source: Centre for Environment Concerns (NGO) Reports).

[9] The Legislation was enacted by the state assembly/ received the assent of the Governor on the 7th April, 1997 published on the 9th April 1997 in the Andhra Pradesh Gazette Part 1V-B (Ext) as an Act to provide for Farmers' participation in the Management of Irrigation Systems and for matters connected therewith or incidental thereto. The Act is a sum of five chapters with 43 provisions.

> assist the state in its efforts to improve the management and development of its water resources. An emerging global software center, Andhra Pradesh has made good advances in collecting data, but lags behind in interpreting and using those data for decision making. The challenge includes developing a legal, regulatory, and institutional basis for making reallocation of water more flexible and voluntary and thus calls for careful attention to the sensitive issue of users' water rights. …The World Bank is, and is likely to remain, a central partner in advancing this ambitious and vital agenda, providing both advice and investments (World Bank, date?. India: Andhra Pradesh, Country Applications).

The reforms provided a window of opportunity for the advocates of management transfer policies. The A.P irrigation reform policy mainly seeks to address technical, organisation and socio-political dimensions of the irrigation management.

Box 1: World Bank Portfolio in Andhra Pradesh

A shared commitment to poverty reduction is the basis for the long development partnership between AP and the World Bank. With a lending portfolio (net commitment) of roughly US$900 million, the World Bank's program in the state is the second largest Bank program among Indian states after Uttar Pradesh. In the last several years, the Bank has financed a variety of state specific investment projects: rural poverty, rural roads and state highways, health, child nutrition, forestry, irrigation, and power projects - and two structural adjustment loans which focus on fiscal, governance and power sector issues. Two livelihood projects, the AP District Poverty Initiatives Project and AP Rural Poverty Reduction Project, are models of community driven development. In addition, various analytical studies have aimed at helping the state address complex policy issues.

Source:www.worldbank.org

Section 3: Bank Conditionality and Policy Contestation

The different actors and their policy contestation are discussed in this section. Instead of taking for granted the neo-liberal policy discourse, this section presents how different policy actors attributed meanings to policy and contested in its implementation. The

section especially examines the blue print approaches and the proclaimed success of the A.P irrigation reform model.

I first explain the enforcement critique. Thomas (2004) wrote that "in the 1980s, the World Bank stepped up policy-based lending, making loans conditional on government policy and institutional reforms in the borrower country. In 2002, policy-based lending (or adjustment loans) accounted for 64 per cent of total commitments. Some critics have argued that conditionality has failed because borrowers do not comply with conditions, and that borrowers do not comply because donors do not enforce the conditions, due to their own institutional incentives to lend"(2004:485)[10]. The argument is that World Bank should use policy of selectivity instead of conditionality. For example, World Bank can lend governments that have already good policies and institutions in place.

Among those who argue that conditionality has been ineffective, there are two schools of thought. Some development experts argue that externally imposed conditions cannot create sustainable reform (the 'ownership critique'). …..Others have argued that conditionality is ineffective because the Bank does not adequately enforce its conditions by cancelling loans and cutting off access to credits to non-performing borrowers. According to these critics, the problem is not that change cannot be brought about with the carrot and the stick, but that the stick is not applied reliably and with sufficient force (Thomas 2004:487).

In the context of Andhra Pradesh, the observations suggest that the World Bank not only showed the carrot but also applied the stick when ever necessary. I show that carrot and stick is not just enough to implement a reform policy but one need to understand that the policy process is inherently political and in the most cases the outcome is not what is expected. In the following I discuss the policy contestation and show how PIM policy has been contested by various actors.

Policy contestation model

Among many approaches to policy analysis I discuss two important schools of thought here. Some policy analysts use the linear planning framework that can be characterized

[10] Thomas, M.A. (2004) Can the World Bank enforce its own conditions ? *Development and Change* 35(3): 485–497. Institute of Social Studies: Blackwell Publishing.

as a `policy as prescription' approach. Where as, the others believe in a contrasting approach that emphasize a `policy as process' perspective (see Mackintosh, 1992). A process-oriented framework starts from the observation that the outcomes of policy implementation are highly variable. Implementation is an ongoing, complex and interactive process of decision-making by the different interest groups involved: governments, bureaucrats, beneficiaries and funding agencies and so on. Policy implementation is an example of strategic action in which a government agenda becomes articulated with local interests, the policy content is renegotiated and transformed, and particular intended and unintended outcomes are produced. I conclude that (reform) policies are not automatically implemented the way they were visualized but are contested.

The paper shows the contestation of policy by different policy actors and documents the gaps in policy translation. I show the policy contestation in three important arenas of irrigation namely: irrigation operation and maintenance works irrigation water distribution and irrigation fee collection (Joint Azmoish). By doing so the paper shows how the donor agencies and their conditions and the state government policies failed in delivering the expected policy outcomes.

3.1 Arena of Irrigation Operation and Maintenance works

The popular IMT/PIM discourse in India and elsewhere is that the turnover of irrigation operation and maintenance works to WUAs will achieve quality of water distribution, low costs of irrigation to farmers and governments, and transparent and efficient water use[11] (see Uphoff 1986; Sengupta 1991; Mitra 1992; Vermillion and Garces-Restrepo 1996, 1998; Levine *et al.* 1998). As a precondition, the researchers and practitioners argued that the irrigation structures should be fully repaired prior to or after the irrigation management transfer to the user associations (see Johnson *et al.* 1995; Geijer *et al.* 1996; Meinzen-Dick *et al.* 1997; Vermillion 1997).

[11] For reviews of PIM impact studies discussing critical factors for success of PIM reforms, see Vermillion 1997, 2000; Svendsen et al. 1997.

> *Silently watching the canal system heading towards a collapse would be nothing short of an economic crime*- Ashok Gulati, Ruth Meinzen-Dick and K.V Raju (1999).

> A World Bank report states that 'poor quality of project design and planning are big problems, but poor operation and maintenance is a bigger one' (World Bank 1994:86 cf Svendsen and Huppert 2000).

The AP irrigation reform policy explicitly aimed to address the maintenance crisis. It has also promoted as a pre condition-the Users involvement and ownership through actual implementation of Operation and Maintenance activities through the elected WUAs and not through independent contractor system existed in the past.

In the case of AP, the formation of WUAs took place before the rehabilitation of irrigation structures. The WUAs were expected to take up the rehabilitation works with the initial funding provided by the government. The reform programme emphasised rehabilitation of existing irrigation infrastructure and maintenance to address the deferred maintenance.[12] In addition to provide a momentum to reform exercise more financial powers were accorded to irrigation bureaucrats by the Act. For example, the Assistant Engineers who are designated as competent authorities for WUA can now sanction budgets up to Rs. 50,000 and supervise irrigation works. They did not have these budgetary powers during the pre-reform period.[13] Irrespective of all the policy objectives what has happened on the ground was much contrary to the World Bank or the state government plans.

[12] Maintenance is the set of services which slows the deterioration of a facility, whether caused by use or aging, sustaining its capacity to provide a specified level of valued goods or service (Svendsen and Huppert 2003: 29). Deferred maintenance can be described as the maintenance activities that are pending or delayed until a later period i.e. deferred to the future. There is general agreement amongst irrigation experts that deferred maintenance is one of the most important determinants of performance deficits in irrigation. The higher the deferred maintenance, the larger the rehabilitation needs.

[13] Discussing the irrigation reform effort in AP, Svendsen and Huppert (2000) write in the preface of their report that the policy makers and senior civil servants are attempting to overturn 100 years of authoritarian management by transferring *control* of irrigation system water delivery and maintenance services to organised groups of farmers (italics mine).

Initially with the availability of state funding, the irrigation structures were rehabilitated and maintenance works were carried out in the entire state irrigation network by the newly elected WUA representatives. The first maintenance and rehabilitation program was implemented from May to July 1998. According to the government records more than 22,000 works[14] were taken up by WUAs and completed by 31st March 1999. In the year 1999-2000, about 49,000 works worth Rs.4 billion were taken up at the state level. This shows the availability of funding and the magnitude and scale of rehabilitation activities carried out during the initial years of the reform programme in the state. But very soon the activities were criticized stating WUA leaders became the *defacto* contractors. As a result the contractor-bureaucrat- politician nexus continued. The WUA members were not aware of how funds were utilized and did not participated in decision making.

Maintenance Plan

I observed that none of the WUAs in the study area did not have or prepared a maintenance plan. Such a plan is essential to carry out irrigation works. A maintenance plan describes the need and scope of the maintenance activities to be carried out by WUA and Irrigation Department. The WUA leaders claimed that 'the Irrigation Department neither insisted nor assisted in preparing such plans'. The irrigation staff argued, 'what is the use of making such plans when we do not know the quantum of funds available'. The reason for such statements was that both the department staff and WUA leaders waited for government orders to be released with the details of budgets. These tendencies clearly show that the reform programme was driven by state funding. Why did WUA leaders and irrigation staff wait for the government budgets? What has been the role of users in maintenance activities? I try to answer these questions by analysing the funds utilisation by the WUAs in the study area.

[14] Of the 17,869 works taken up by WUAs across the state, 2496 works were executed by DCs and 2522 works by the I&CADD through tenders and contracts.

Utilisation of Funds

During the year 1998-99 funds for both rehabilitation and maintenance were released. In April 1998, the government released a total grant of Rs.1,064.7 million to WUAs at the rate of Rs. 247/ha for the total localised command of approximately 4.4 million hectares.[15] During 1999-2000 the focus of works was entirely on minimum rehabilitation of irrigation structures. However, in the following year the allocations for minimum rehabilitation works also decreased. According to the government policy 2000-2001, the WUAs were expected to meet the costs of regular maintenance works from internal resources and from the share of cess collection that they receive from the concerned Revenue Departments.

Although the government allotted uniform funds on the basis of command area to all WUAs, not all the WUAs could utilise the available budget. Only a few WUAs in the study area made full use of the minimum rehabilitation funds in 1998-99. Some WUAs could utilise only part of the fund, as they could not complete the required quantum of works. This raises the question that whether providing funds uniformly on the basis of command area is rational.

Table1: Irrigation structures and budget allocation (in Rs.)

WUA	*Command Area (ha)*	*Total length Minor &Sub minor canals(km)*	*Direct Pipes (No.)*	*Regulators (No.)*	*O&M funds Utilised*	*Minimum Rehabilitation Funds Utilised*		
					1998-99	*1998-99*	*1999-00*	*2000-01*
169	2214	17.15	5	4	172,820	733,519	436,489	111,451
170	1497	16.80	4	1	307,451	nil	290,473	76,039
171	1631	13.41	6	0	79,548	nil	255,459	46,221

Source: Section office, WUA records, Kalluru Irrigation Subdivision.

In the three WUAs the number of irrigation structures, the length of canals that need to be maintained are varied. Therefore, the infrastructural maintenance needs and funds required are not the same. The command area under each WUA is different. The cropping pattern with in these WUAs is also different. The command size does not necessarily reflect maintenance needs. The tail end infrastructure was neglected previously and was

[15] Government order Ms No 64 dated 02.May 1998

in need of more funds to invest to bring them back to their original state. In this case, the tail end WUA171 received less funding compared to the WUA169 though the need for rehabilitation funds were high. The policy of allocating funds on the basis of command size, rather on the basis of real requirements needs to be closely studied.

Crop Cess as a source of revenue:

The WUA presidents especially from tail end areas claimed that their resource needs were much more in terms of repairs as the structures were tampered by the users in the past. At the same time due to scarcity of water many users have changed their cropping pattern from wet to irrigation dry crops. This change had implications on the revenue source for the WUA. The crop cess for the irrigated dry crops is less compared to wet crops. That means the share of the revenue cess that the WUA receives also less compared to head reach WUAs, which represent more wet cultivation.

Policy contestation through aligning:

Compared to earlier years, the implementation of irrigation works became more complicated in 2001-02. The WUA leaders and irrigation staff did not show much interest in carrying out the works. There may be many reasons but here, I discuss three important reasons. The first, the change in availability of funds for irrigation works. Second, the WUAs were expected to meet their O&M expenditure from the share of the cess collection. The revenue department delayed in depositing the share of cess collection in WUA accounts. Third, the government was not ready to pay the 40 per cent of the estimated budget as an advance to the WUAs. In addition, the government asked the WUAs to deposit the 15 per cent contribution collected from the users.

There were discussions between the WUA leaders and the concerned irrigation competent authorities on the possible ways to carry out the irrigation works. The leaders openly shared that they were unable and unwilling to raise the contribution from the water users.[16] The leaders were very reluctant to stress users' contribution as it was their

[16] I refer to a similar observation from Daram Sammakka, an active WUA president of Ellabotharam from

last year in the WUA office and elections were to be held in the near future. Therefore, it is clear that they did not want to displease the members by asking them to contribute.[17] I argue that by not motivating users to contribute, the WUA presidents want to be in a safe position. Firstly, they remain popular and secondly, are not questioned by members. In the process, the policy objectives are not met but the individual interests are safeguarded.

I tried to understand users' contribution in WUAs during the past years i.e. 1998-2000. The discussions with users showed that they were neither asked to pay nor mobilised to participate. In this context, the WUAs found two ways to solve the issue of lack of users' contribution. The WUA leaders from Nidanapuram major shared that the competent authorities do understand their problems. There is a symbiotic relationship established between the irrigation staff and WUA leaders. For example, users' contribution is mandatory and should be recorded in the records to release the government budget to the WUAs. In most WUAs, the president (himself) deposited the money in the name of users' contribution and carried out the works. The irrigation staff knew the fact but cooperated by recording it as the users' contribution. Now the question is how the money that is deposited in the name of users' contribution is retrieved and paid back. Again, the irrigation staff helped in escalating the estimated costs. In some cases the money was later adjusted by increasing the total volume of the work done by the person on behalf of the WUA. An engineer argued that the adjustment was done to convince the WUA leaders to carry out the works.

I observed another practice to record the mandatory users' contribution. In the records, a certain part of work is shown as *shramadan* (voluntary contribution of work) by the users, as this is approved under the Act. However, in later years the volume of work decreased, as the budgets available declined. In this situation, helping WUA leaders by increasing the volume of work became difficult for the irrigation staff. As a result, interest in taking up works diminished and WUA leaders resisted taking up the works. As

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Telangana Region. She shared during an interview conducted in 1999 that the collection of 15percent as farmer contribution was very difficult to achieve because no farmers are willing to spend for irrigation works on the top of the water cess that they are being paid to the government.

[17] The majority of the WUA leaders expressed that raising contributions from water users makes them unpopular. They stated, 'as elected members we could not afford to do that. It is the department duty to collect the fees. If we insist on the issue of contribution from the members, their participation in the WUA meetings would even be lower'. It can be concluded that majority of WUA leaders do not want to be involved in seeking users' contributions. In Chapter 7, I further discuss the politics of cess collection and the role of WUA leaders.

a result, the government changed its policy. It made arrangements to release twenty five percent costs of the work estimate as a mobilisation advance by deducting the fifteen percent users' contribution. A few WUA leaders responded positively to this new arrangement.

3.2 Arena of Irrigation Expansion and Water Distribution

Earlier studies conducted in irrigation described the problems of data collection by different agencies, lack of standard formats, lack of systematic collection practices and inconsistency, inaccuracy and under-use of data (see Vaidyanathan 1999, Rawal 2001, Guilmoto 2002). Apart from some of these limitations, in the case of AP, I argue that irrigation has been used for political gains at the state level. Also there are evidences for manipulation of data at different levels to protect individual interests: for instance, bureaucrats tried to protect their career related interests and political executives used the data to justify their policies.

The state government claimed that during the period 1998-2000, more than 290,000 ha of 'gap command' were bridged as a result of irrigation reforms in the state[18] (GoAP 2000). The Chief Minister Mr. Naidu and Minister for Major and Medium irrigation made statements regarding the irrigation reform achievements in the press and electronic media at various occasions. Though there are variations in the figures, the intention was to describe government achievements and reform results. According to a statement by the Irrigation Minister for Major and Medium irrigation in 1998:

> The maximum gap in irrigation potential bridged was in [the] SRSP project, where the irrigation potential created was 659,000 acres [266,802ha]. Average area irrigated during past three years was 115,000 acres [46,559ha] and ayacut transplanted in the current year was 366,000 acres [148,178ha]. Next came the Nizamsagar project with gap bridged being 74,000 acres, irrigation potential created being 23,000 acres. A total of 17,000 acres of ayacut was bridged under the Vamsadhara project and about 50,000 acres

[18] The claim was that in 1998-99 year 207,288 ha and in 1999-2000 an additional 83,147 ha of gap command was bridged under major irrigation projects in the state (source: www.apirrigation.com).

> [20,243 ha] under NSPLC and 53,000 acres [21,458 ha] under NSPRC. (conversion in to hectares mine, *The Hindu*, December 16, 1998).

In another statement in 1999, the Minister for major and medium irrigation declared that 'the state has a command gap of 15 lakh acres [607,288 ha]. Out of it, a total of 207,288ha of command (about one third of the existing gap) has been brought under cultivation, as a result of better maintenance work during the initial years of reform period (*The Hindu*, March 15, 1999). If these statements are correct, substantial changes should have been evident in terms of irrigation expansion, better water distribution practices and water use resulting in increased production and labour opportunities in the command area. I did not find enough evidence on the ground for these claims.

When I looked at both the oral and published claims, I expected clear evidence of the expansion in MBC command area. I assumed a spread of newly irrigated plots, reduction of gap command and improved water distribution practices. I expected this in view of the focus on the infrastructure rehabilitation embarked upon under the reform policy. In contrast, I could neither find the newly irrigated plots based on published statistics, nor the Irrigation Department staff helped me in locating the plots under the MBC command area. This led me to ask questions like why are the engineers not able to demarcate the plots? Is it because the expansion does not exist at all or because they failed to record it? What are the practices of recording? Who are all involved in reporting or recording?

I observed different people define gap command in different ways. An assistant engineer defined the gap as 'the difference between the localised command and actual area irrigated'. An executive engineer referred the gap as the difference between the irrigation potential created and utilised. Similarly Researchers and agencies have interpreted the extent of gap command area differently (see GoAP 1995; Jairath 2001; Raju 2001; Peter 2001; Reddy 2003). To understand further I looked in to the data collection practices and showed that there are different practices existed. Factors like lack of education at the Luskar level, none use of formats and oral reporting practices, different interests of Irrigation and Revenue departments lead to the data construction politics of data use (for a detailed discussion see Chapter 6, Nikku 2006). As a next step, I have tried to understand the day-to-day water distribution practices in the study area.

The idea is that improved water distribution practices would result in irrigation expansion. I found that irrigation engineers still control the water distribution though the PIM policy transfers the responsibility to WUAs (see Box 2).

BOX 2: Water distribution at night

It was a cold winter night of November. I made a request to join the Deputy executive engineer on a night patrol. He agreed readily. We left the Kalluru camp office by seven in the night. On the way an old Luskar joined us. We reached the zero km point of the MBC within fifteen minutes by Jeep. The Engineer instructed the Luskar to completely close the first sluice. It appeared to me that the engineer was determined to push water to tail-end. The jeep driver and I had to help the Luskar to close the gate since the Luskar did not have the right tools to close the sluice.

The head reach farmers usually do not give attention to the water levels in their canals during nights. They know that they have access to water without much hassle. After closing the sluice we headed towards the Madhira subdivision. At the site of Mustikuntla Major located at 14.54km a group of farmers were sitting in a make-shift tent. The engineer got down and inspected the sluice readings. He suggested that the shutters should be lowered as more water was being discharged than required. The farmers objected to operate the gates. Most of them were drunk and in a hostile mood. The engineer asked for the WUA president. The farmers replied that their WUA president was not helpful and hence they needed to come to the canal for water. The engineer tried to convince the farmers by saying that he would tell their WUA President.

Then he gave instructions to the Luskar to lower the sluice gates and got into the vehicle. It was eleven o'clock in night and we further proceeded downstream. We reached Gosaveedu minor located at the 36km of the MBC, but the Luskar on duty was not found. He might have thought his higher officer would never make a visit in that cold night. Again I helped the old Luskar who was accompanying us to close the gates. The old Luskar murmured about the difficulty he might face the next morning from his absentee colleague. We crossed the railway line after Madhira around 3am. I saw a number of water engines kept on the bank of the empty canal at 47km. Farmers were sleeping next to their engines, probably in the hope of some water. The long pipe from the engine ended with a foot valve laid in the small ditch made by digging the canal bed. It seemed to me the standing chilli and cotton plots needed at least a watering immediately in order to survive.

Since there was not enough water to operate the sluices, farmers were allowed to pump water

from the canal directly to their plots. Farmers spent money for fuel, to rent engines, and for the long plastic pipes to transport water to the plots.

By the time we reached Kambampadu village at the tail reaches of Nidanapuram major, the sun already started rising in the east. The presence of engineer on the canal at that time created a hope among the farmers. When we entered into Kambampadu village, the driver drove the jeep into a farmer's courtyard. The family offered us hot water to brush our teeth. An aroma of warm tea filled the air along with a hope for water in the canal! The engineer told the group of farmers gathered that they would receive water in the canal in about three hours. The water would be enough to run their water engines for few hours. I agreed with him if there would be no blocks in the canal by the farmers upstream of Kambampadu. The further tail end villages (V.Annavaram and Chilukuru) of the major lost their hopes to receive water even for a single wetting.

Source: Field notes dated November 21, 2001

I conclude that WUAs have not taken up water distribution functions. In the absence of functional WUA the access to water is influenced by push and pulls factors. As a result there were no improvements in water distribution and user practices.

3.3 Arena of Joint supervision and Irrigation fee collection

The Joint Azmoish is a joint supervision of survey of irrigated command area in a hydraulic unit. It is a joint survey conducted by the representatives of the WUA, departmental staff members of irrigation, revenue and agriculture to agree and report irrigated area and type of crop. The activities of each participating department are jointly coordinated and are complimentary.

Vaidyanathan (1999) argues for the country as a whole that, it is the poor service of irrigation that led to the poor payment of water charges. For example, water availability was never a problem of the head reach farmers. But these farmers too do not pay the water cess often, due to the weak collection mechanisms. The Revenue Department is empowered to collect irrigation revenues and irrigation water supply by the irrigation Department. To achieve better results, *Joint Azmoish* (supervision) of irrigated commands by both Revenue and Irrigation Departments was introduced.

The Joint Azmoish (JA) policy aimed to address the issue of poor collection of irrigation cess and low recovery rates through better service delivery. The government has legitimised the participation of WUAs in the process of JA through the APFMIS Act. In this section, I show how this policy is contested while implementation.

Revised Water Charges:

The water rates have remained unchanged for long periods in Andhra Pradesh.[19] As part of the reforms the water charges were tripled in 1996 in the state (see Table 3).

TABLE 3 : Changes in the water charges in A.P (1989-1996)

Nature of Crop	*Rates of water cess in past and present (in Rs per ha)*			
	Major and Medium Irrigation		*Minor Irrigation*	
	Pre-revised 1.7.1989	*Revised w.e.f 1.7.1996*	*Pre- revised 1.7.1989*	*Revised w.e.f 1.7.1996*
First or Single Wet crop	150	500	100	250
Second & Third Wet crop	150	375	100	250
First crop Irrigated Dry	100	250	50	150
Second &Third ID crop	100	250	50	150
Du fasssal crop	300	825	200	825
Aquaculture	0	1250	0	1250

Note: 1. Du fassal crop: is a long duration crop also annual crop harvested two times in a crop calendar, 2. we.f = with effect from

Source: Irrigation sector: A factual Note 1996, Government of Andhra Pradesh

Institutional Linkages and Revenue Sharing:

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

[19] The Ninth Finance Commission recommended an O&M allocation of Rs 324 per ha for 1990-95. Actual allocation in AP was only Rs 75 per ha in 1990-92.

revenue sharing was also introduced between the WUAs and the Revenue department as an incentive mechanism to raise the cess collection (see Table). But the question is would farmers pay or willing to pay the cess. If no what are the reasons and how can the WUA motivate the farmers to pay the cess.

TABLE 4 : Cess collection across irrigation systems (1997)

Level	*Major*	*Medium*	*Minor*
Water Cess share per Ha in Rs	*500 (100)*	*500 (100)*	*250 (100)*
State/Irrigation Department	250 (50)	250 (50)	Nil
WUA	125 (25)	150 (30)	225 (90)
Distributory Committee(DC)	50 (10)	No D.C	No D.C
Project Committee (PC)	50 (10)	75(15)	No P.C
Gram Panchayat (GP)	25 (5)	25(5)	25 (10)

Note: figures in parenthesis are percentages

Are farmers willing to pay?

The farmers' willingness to pay the cess is directly proportional to the services provided by the WUA.[20] The farmers' responses (across the head, middle and tail reaches) show that they are willing to pay the revised water cess if they receive good service. To present an example:

> The farmers from Korlagudem village in WUA 172A located at the head reach, and Kesavapuram farmers in WUA 171 located on the tail reaches of Punyapuram major expressed alike that they will pay the cess to WUA in advance, if the WUA provides water supply at the right time and in the right quantities. In the farmers' words, we are producing 30-35 bags of paddy per acre in *Kharif* season with uncertain water availability. One bag (75-80kg) of paddy costs Rs 400 even under the lowest market price. If there would be assured water supply, we can produce up to 40-45 bags. We are ready to pay one bag of paddy or its cost to the association.

[20] This relationship may not be true always. As a contingent evaluation method it is a good argument, yet can be calibrated with capacity to pay issues probably using land size as a proxy. I could not carry out this exercise.

The farmers are even willing to pay double the current water cess i.e. Rs 500 per ha of wet crop if water supply is assured. They believe that, with the assurance of water in time in the right quantities, total production per acre can be increased with the same amount of labour input. They repeatedly stressed that they are ready to pay one bag of paddy per acre (2.5 bags for ha) to the association or to the government in advance of the season. The WUA Presidents also confirm that, if water supply is assured in time and quantity, they would ensure the collection of water cess from the farmers. They blame the water supply as erratic, and unreliable. They did not reflect on their role and lack of cooperation between WUA leaders in water supply, but argue that supplying water is controlled by the Irrigation Department.

I conclude that increasing the water charge prices is not the solution in the absence of assured supplies. The reform programme could not address sufficiently these two interlinked issues i.e. assurance of water delivery and cess payment.The field evidence show that the rate of cess collection has not improved even after introduction of JA under the reform. The majority of the WUA leaders did not show interest in the cess collection for their own political reasons. Though a few of the WUA presidents were interested in JA, the participating bureaucrats were not interested in facilitating the process.[21] The degree of control over the process by the WUAs was also limited.

The participating bureaucrats and departments have been able to continue their earlier practices and defend their interests by not participating in the process. There seems to be a common understanding between the officials and their practices, and none of them have taken any initiative to improve the process. As a result they continued to use different formats to report the command statistics, and hence the problem of under reporting continued.

The paper concludes that a host of institutional and political factors influenced the implementation of Joint Azmoish and subsequently the cess collection in the state. The JA policy is highly prescriptive. The policy prescribed the rules and expected farmers, irrigation and revenue bureaucrats to follow the instructions and procedures. The government assumed that the WUAs would function actively and that cess collection would increase in the state. It shows the ‘policy as prescription approach’. However, the

[21] During my revisits to MBC, I came to know that the Joint Azmoish did not took place for the year 2003-04 as the government declared a crop holiday and thus the collection of cess was cancelled.

implementation of JA confirms that the actors tried to continue their practices and interests rather than following the rules prescribed by the policy. This implies that actors play an important role in the policy process by generating their own ideas and practices. In this case, the powerful actors like the Revenue bureaucrats influenced the direction of the policy.

Section 4 : Conclusion

The paper by analyzing the Andhra Pradesh irrigation reform policy provides an alternative perspective of irrigation management reforms through an analysis of irrigation bureaucrats as important policy actors. In contrast to the policy objectives, the irrigation bureaucrats (especially the front line) successfully lobbied with various actors including the state to protect their status and interests. The paper argues that the A.P irrigation reform policy did not result in a complete devolution of bureaucratic powers but served to reorder bureaucratic control over irrigation management.

The paper concludes that in contrary to what is generally expected, irrigation reforms in Andhra Pradesh did not lead to participatory management of irrigation resources, but served to preserve or strengthen the actor's interests especially of the irrigation bureaucrats. By doing so the paper offers a critical analysis of role of donor actors like World Bank in irrigation management reforms. The paper recommends that there is a need for further research and debate on irrigation reform policy processes and contemporary models of institutional evolution.

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