

DECENTRALIZED GOVERNANCE OF IRRIGATION INFRASTRUCTURE FOR SUSTAINABLE AGRICULTURE

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Abstract

Recently effective governance of different aspects of water resources development and management has been given top priority by planners and policymakers at local, national and international level. This paper attempts to examine the decentralized governance aspects of institutional restructuring of irrigation in India with special reference to Orissa, which include Participatory Irrigation Management policy, legal framework, programs and their implementation. The study concludes that the Water Users' Associations are more functional if they are formed spontaneously and demand driven. The WUAs should be endogenously created based on felt needs of water users, their common interest and collective effort under effective leadership. The existing social capital like social network, kinship ties, and community solidarity should be used to foster WUAs. The approach should be voluntary, bottom-up and flexible. The WUAs should be multifunctional.

1. Introduction

Effective governance of different aspects of water resources development and management has been given top priority by planners and policymakers at local, national and international level. UNDP is assisting countries in building cross-sectoral capacities and putting in place effective and sound policies and institutions to manage and develop water resources in a sustainable way. An initiative by UNDP (UNDP 2004) focuses on building capacity for better water governance, decentralization, basin management and shared waters, participation, establishing an enabling environment, economic instruments and financing issues. Further, such initiatives and dialogues are resulting in increasing information exchange and cooperation among stakeholders and also improving capacity building and collective planning and decision making in an atmosphere of confidence and trust. The active issues on water sector governance are

- Role of governance systems in promoting efficient and equitable water resources management;
- Type of legal instruments, policies and institutions that are required to encourage stakeholder participation in decision making;
- Identification of participants in a governance system, their involvement process and stages of involvement in the water allocation process;
- Mobilizing political support for the analysis of governance systems for contributing alternative solutions to make water governance more effective;

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- Encouraging politicians, planners, decision-makers and other stakeholders to facilitate the necessary changes in water governance with solutions that corroborate to the priority needs of water users;
- Analyzing governance regimes from various locations around the world to assess the working principles of water governance;
- Establishing Integrated Water Resources Management (IWRM) as a practical and ongoing process for water resources management.

It is a well recognized fact that agriculture is the highest water user in almost all countries including India. For sustainable agriculture, improved irrigation service delivery ensuring equity in water distribution, efficiency in water utilization and sustainability in water use is greatly necessary. Decentralized governance of irrigation infrastructure has recently been emphasized as an essential precondition for proper operation and maintenance of irrigation systems and to supply irrigation water according to farmer's need in a predictable, reliable and equitable manner. It is also apparent that in both developed and developing countries the sub-sector has strong vested interests and weak governance systems. Governments typically have neither the will nor the resources to counter the rural political constraint and the consequences in this major water use sector. Continuous efforts are being made in various regions of world to address these governance issues of water resources. Many developing countries like India, Philippines, Morocco, Mexico, Nepal show how formerly strictly hierarchical government irrigation agencies can decentralize decision-making and devolve management responsibilities to the level of farmers' groups with water rights and management of publicly owned irrigation systems transferred to Water Users Associations (WUAs). Although these reform process cover only in some regions or a part of the irrigated area in many countries it is an important step towards decentralization. By taking a purely sectoral approach, some opportunities for more efficient water uses have been overlooked. However, this provides a stepping stone to greater reform. In addition to above many countries have started customized actions and reformations to their diverse water institutions to improve governance. But developing effective governance systems is a long-term iterative process.

It is established that in democratic and developing countries like India, genuinely participatory governance of a common property resource like irrigation at the local level can yield benefits in terms of both efficiency and equity, by providing the water users a sense of ownership, by allocating resources according to people's demand and need as well as by utilizing their skills and knowledge. The reform or decentralization of governance of irrigation infrastructure or Irrigation Management Transfer to Farmers' Organizations is now widely accepted and used as an effective tool for improving management efficiency, accountability, agricultural and economic productivity and cost recovery and finally sustainable irrigated agriculture. As a result, it is now observed that an increasing number of governments around the world are adopting programs to devolve responsibility for irrigation management to farmers organizations or to Water Users Associations (WUAs) in their reform process, which is known as Participatory Irrigation Management (PIM) and is found place in their national policies. Indian irrigation sector in recent years is also in the same PIM trail where attempts are being made to increase farmers' direct participation in decision-making and investment.

The level of devolution of management responsibility precisely varies for different types of irrigation systems. In India during 1990s systematic institutional and organizational changes have been undertaken to increase farmers' participation in irrigation management through formation of Water Users' Association or Pani Panchayats.

Currently in India, decentralization of governance of Irrigation infrastructure or Participatory Irrigation Management (PIM) through Irrigation Management Transfer (IMT) at various levels is being implemented in different types of irrigation systems in several states like Andhra Pradesh, Orissa, Gujarat, Karnataka, Maharashtra and Madhya Pradesh. The PIM program in India though implemented initially under externally assisted economic restructuring programs like Water Resources Consolidation Project (World Bank), system rehabilitation program (European Commission), irrigation infrastructure development by assistance of Japan Bank for International Cooperation (JBIC) etc. is now spreading to all irrigation commands through Union and State government initiative or in some cases spontaneously. Against this backdrop, the major objectives of the paper are

(1) To critically analyze the water policy, PIM Act and Rules, and the implementation of irrigation management transfer to farmers in different types of irrigation systems like major and medium canal irrigation, minor flow and lift irrigation projects highlighting its achievements and failures in India with special reference to Orissa;

(2) To identify the hindrances and obstacles in implementing PIM and achieving its objectives in surface water as well as groundwater irrigation command area;

(3) To suggest measures for tackling the problems encountered in implementing PIM and how to make it effective for ensuring sustainability of irrigation infrastructure and

2. Water Policy Setting

Water is a prime natural resource, a basic human need and a precious national asset, which need to be governed by national perspectives for its planning, development and management. In India the first National Water Policy was adopted in 1987 and this recognizes the importance of PIM as a strategy to improve irrigation service. The recently enunciated National Water Policy, 2002 is more explicit in emphasizing the need for farmers participation in irrigation management and broadly outlines a Participatory Approach to Water Resources Management as follows:

'Management of the water resources for diverse uses should incorporate a participatory approach: by involving not only the various government agencies but also the users and other stakeholders, in an effective and decisive manner, in various aspects of planning, design, development and management of the water resources schemes. Necessary legal and institutional changes should be made at various levels for the purpose, duly ensuring appropriate role for women. Water Users' Associations and the local bodies such as municipalities and gram panchayats should particularly be involved in the operation, maintenance and management of water infrastructures/facilities at appropriate levels progressively, with a view to eventually transfer the management of such facilities to the user groups/local bodies.'

In Orissa, the first State Water Policy was adopted in 1994 which follows the principles enunciated in the National Water Policy, 1987 and aims at promoting citizen participation in all aspects of water planning and management and handing over of operation and maintenance of irrigation systems to the users in due course. Subsequent to the declaration of the National Water Policy in 2002, Orissa state water policy 2007 has been declared where, same thrust has been given for Participatory approach to water resources management.

3. Approach of PIM in India

As many as 13 States namely Andhra Pradesh, Assam, Bihar, Chattisgarh, Goa, Gujarat, Karnataka, Kerala, Madhya Pradesh, Maharashtra, Orissa, Rajasthan and Tamil Nadu have enacted the Participatory Irrigation Management (PIM) Law till December 2007. So far 54330 Water Users Associations (WUAs) covering an area of 12.32 million hectare have been formed in various states. (PIB: Press Information Bureau, 11 February 2008, MOWR; Govt. of India). Other states are in the trail of enacting either exclusive legislation for PIM, or are exploring scope to exercise power for PIM through existing laws. In general the legal framework provides for creation of farmers organizations at different levels of irrigation system as under

1. Water Users' Association (WUA): will have a delineated command area on hydraulic basis, which shall be administratively viable. Generally a WUA would cover a group of outlets or a minor.
2. Distributary Committee: will comprise 5 or more WUAs. All the presidents of WUAs will comprise general body of the distributary committee.
3. Project Committee: will be an apex committee of an irrigation system and presidents of the Distributary committees in the project area shall constitute general body of this committee.

The Associations at different levels are expected to be actively involved in:

- i. maintenance of irrigation system in their area of operation;
- ii. distribution of irrigation water to the beneficiary farmers as per the warabandi schedule
- iii. assisting the irrigation department in the preparation of water demand and collection of water charges
- iv. resolve disputes among the members and WUA
- v. monitoring flow of water in the irrigation system etc.

In India, PIM seems to have two approaches ó the legislative and the motivational. Andhra Pradesh and Madhya Pradesh first enacted legislation and went in for fast and extensive introduction of PIM i.e. going in for a top down approach. As against this, Maharashtra and Gujarat adopted the motivational strategy i.e. a bottom-up approach. On the other hand Orissa has adopted a in between process. To start with, in the implementation of PIM, for a certain period a bottom up approach with motivational strategy was adopted. Later on when the movement attained a certain level of

momentum, the state adopted somewhat a top down strategy legislating the Orissa Pani Panchayat Act, 2002. The strategy adopted by state of Orissa is proving to be more effective. There is a steady progress in achieving the goals of PIM.

In Andhra Pradesh, a big-bang approach was followed by forming nearly ten thousand WUAs within a year of implementation of the program by legislating Farmers Management of Irrigation System Act in 1997. However the performance of the WUAs has been poor with a lot of problems (Jairath 2003). In fact, the irrigation water has been subjected to gross and unwarranted political interference and vested interests all over India and is a major challenge to achieve the ultimate goal of PIM.

The motivational approach, on the contrary, so far adopted in Maharashtra and Gujarat may not have achieved quick spread all over the state but the motivated water users groups showed spectacular success in few of the irrigation projects of Maharashtra and Gujarat. From the above examples it can be seen that the strategy that has been adopted by Orissa seems to be more effective.

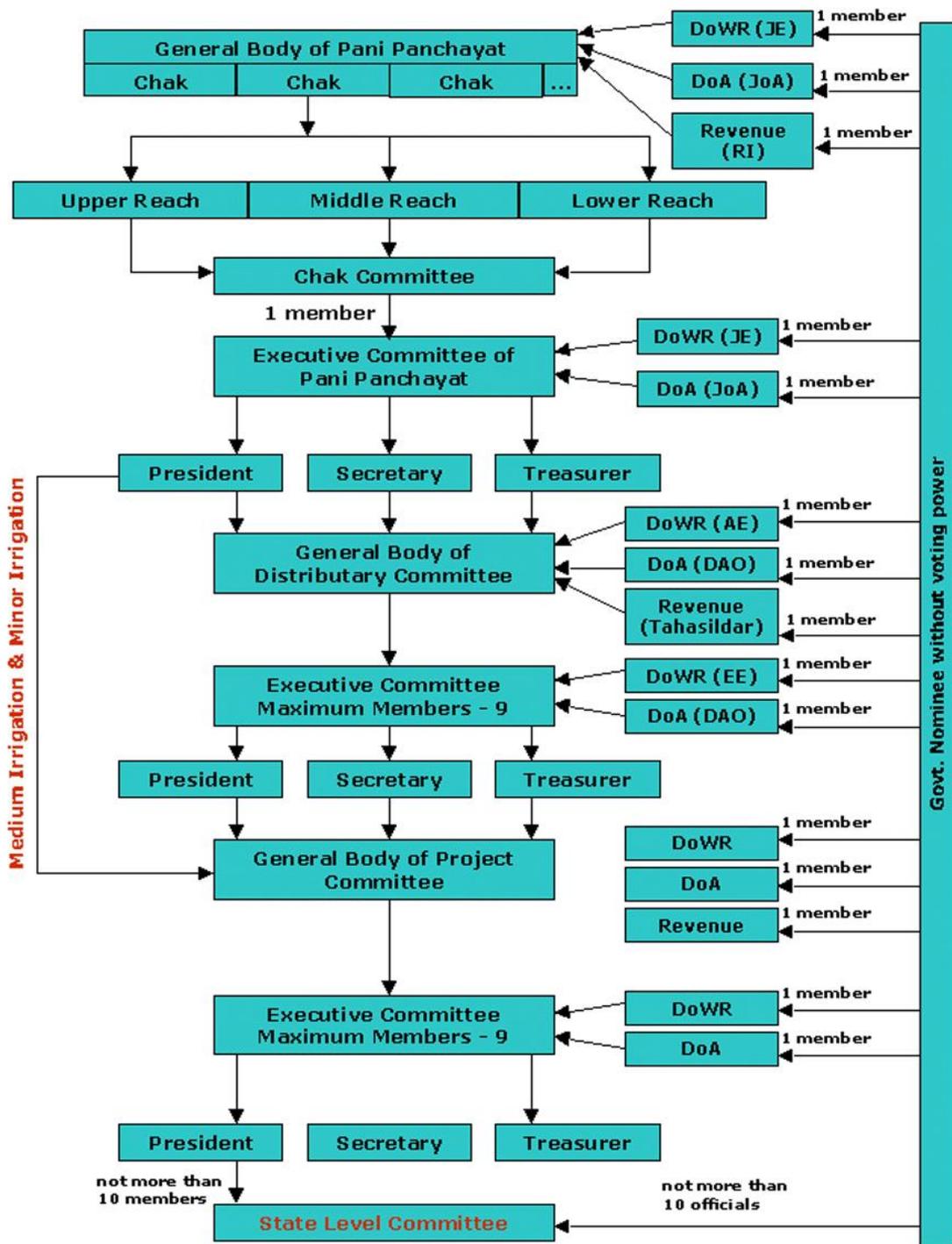
4. PIM IN ORISSA

Orissa is a predominantly agricultural state in the dominion of India. In Orissa PIM approach has been put into practice through formation of Water Users Association (WUA), which is known as Pani Panchayat (PP). PP is the primary level farmer organization (Das et.al.2004). The structural arrangement of farmer organization is three tiers for Medium and four tiers for Major Irrigation Projects and its hierarchical arrangement is indicated below also shown in Fig. 1.

WUA / Pani Panchayat at primary level consisting of several Chak or Outlet Committees.

- 1) Distributary Committee at secondary level (major projects) is a federation of all the WUAs / Pani Panchayats under the distributary
- 2) A Project Committee at project level is a federation of all Distributary Committees for major Projects. Similarly for medium irrigation projects, a Project Committee at project level is a federation all the WUAs / Pani Panchayats.
- 3) A state level committee is constituted by the Government with presidents of the project committees not exceeding ten.

A Pani Panchayat/WUA is an association of all persons owning land within a hydrologically delineated portion of the command area ranging in size approximately from 300-600 ha in case of major/medium / minor irrigation project. It may be in respect of minor or sub-minor or direct outlets from the main or branch distributary of the project. In case of minor flow or lift irrigation, the area is limited to project command area when the project command area is less than 300 ha. The WUA/Pani Panchayat is a part of the farmers organization recognized by Orissa Pani Panchayat Act 2002, also all farmers organizations are body corporate as defined therein. Orissa is one of the pioneering states to legislate the Orissa Pani Panchayat Act in 2002. (Das et al., 2004).



(Fig.1 Structural arrangement of Farmers' Organisation in Orissa)

Notes: DoWR: Department of Water Resources, DoA: Dept. of Agriculture, JE: Junior Engineer, JoA: Junior Agricultural Officer, AE: Assistant Engineer, EE: Executive Engineer, DAO: District Agricultural Officer

In Orissa the state government is implementing the Pani Panchayat Programme with a great zeal. The area under PP has expanded rapidly as shown in Table 1. Data on progress of PIM in Orissa indicate that by 15th Feb. 2008, 16109 PPs have been formed covering an area of 15.04 lakh ha. Irrigation management has been transferred to 14554 PPs covering 9.83 lakh ha out of total command area of 21.92 lakh ha. Thus, the data reveal that the PIM program in Orissa is intensifying and very soon the entire irrigation command of the state will be farmer managed.

The major functions of Pani Panchayat as envisaged in the Act include: 1) preparation of cropping program considering the soil and agro-climatic condition and diversification, 2) plan for the maintenance of irrigation system in the area of its operation and carrying out the maintenance works with the funds of the PP, 3) regulation of the use of water among the various pipe outlets under its area of operation according to the warabandi schedule ensuring economy in the use of water allocated and 4) assisting the revenue department in the preparation of demand and collection of water rates. Also they will resolve disputes between the water users, raise resources etc.

For Implementation of PIM Program in Orissa, Two basic institutional arrangements in the devolution of irrigation management are considered

1. Rights, Responsibility and powers to be included in the devolution of irrigation management through creation of supporting legal framework
2. Organizing water users' associations, train future managers, make essential repairs and formalize agreements between water users and the government

For successful implementation of Pani Panchayat Program, the implementation process in Orissa is divided into several phases viz. (i) Preparation, (ii) Assessment, (iii) Organising (iv) Joint management and (v) Turnover. Various activities are taken up in sequence from motivation to turn over in different phases.

5. IMT in Different Irrigation Systems in Orissa

In Orissa the Irrigation Management Transfer Programme is being implemented in the name of Pani Panchayat Programme. The principal objectives of Pani Panchayat are to promote and secure distribution of water among its users, adequate maintenance of the irrigation system, efficient and economical utilization of water to optimize agricultural production, to protect the environment, and to ensure ecological balance by involving the farmers, inculcating the sense of ownership of the irrigation system in accordance with the water budget and the operational plan.

Keeping the objectives in fore front, in this section we briefly discuss the salient features, achievements and constraints of the Pani Panchayat program, which is under implementation in various types of irrigation projects in the state.

5.1 Major and, Medium Flow Irrigation System

In Orissa, efforts on PIM approach have been initiated since eighties by Water and Land Management Institute (WALMI) through United States Agency for International Development (USAID) assisted Water Resources Management & Training Project (WRM&T) in a few irrigation projects. Though a number of Water Users Associations (WUAs) were created, they could not sustain due to lack of supportive legal and policy environment and inadequate procedural arrangements.

During the mid-nineties a second attempt was made with enlarged vision in a few

irrigation projects under World Bank assisted Water Resources Consolidation Project. Farmers were advised for taking up of minimum maintenance work of the tertiary system for ensuring flow to the tail reaches. They were helped to organize water distribution, resolve disputes and adopt suitable crop pattern etc. Pani Panchayats (WUA/ PPs) were registered under the Society Registration Act, as legal bodies to act as a formal structure. These PPs have taken over the system and have been successful in overcoming the poor O&M and have improved agricultural productivity. In the capacity building process, WALMI took active part in the training of the officers and farmers and in generating a conducive environment by creation of mass awareness for the promotion of PIM and formation of PPs in the state.

Being impressed by the remarkable achievements made by the Pani Panchayats, in the year 2000 the Government took a policy decision to extend this program to the entire irrigated areas of the State. Up to 2003 the PPs have been registered under Society Registration Act. In 2002-03 Government of Orissa brought in statutory recognition to Pani Panchayat by enforcement of Pani Panchayat Act 2002 and Pani Panchayat Rules 2003 there under.

5.2 Minor Irrigation Projects (Rehabilitated with EC Assistance)

The PIM program in the European Commission assisted minor irrigation projects is different from the major, medium or minor irrigation projects. In these projects the concept of complete transfer of irrigation management to farmers is currently under practice. In this system of irrigation management 56 minor irrigation projects covering an area of 9000 ha of the state have been rehabilitated through European Commission assistance and are being managed by the farmers. In these projects the rehabilitation program is taken up by formation of Pani Panchayats/ WUAs and the management responsibility of these minor projects are completely transferred to Pani Panchayats. In this sector out of 56 Pani Panchayats formed 20 Pani Panchayats covering command area of 4000 ha have been transferred to farmers. These projects are excluded from the government list for water charge collection. The farmers are motivated and their capacity is built through training, so that they can operate and maintain the small systems without bureaucratic intervention. They are given freedom to collect their irrigation service charges from which they will maintain their irrigation system. As no systematic study has been made in these projects, information on strengths and weaknesses of these turned over projects is not available. The over all impression is that the handed over projects are becoming successful when the farmers group is small, homogeneous and progressive and changing their cropping pattern to cash crops. These projects are now completely looked after by farmers for their operation, maintenance and management. This will be replicated in more number of minor irrigation projects very soon, for which impact evaluation studies are now being carried out by research organisations to unveil the success and shortcomings of this programme.

5.3 Lift Irrigation Projects

In lift irrigation sector Govt. of Orissa has taken steps to decentralize the management of Lift Irrigation Project to user farmers by formation of Pani Panchayats. By taking over the projects the farmer groups (Pani Panchayats) are becoming the owner of the project and are entitled to operate and maintain the projects themselves to derive maximum benefit. They are not depending upon the bureaucratic decision for trivial

matters. In the first stage Government of Orissa has rehabilitated more than six thousand Lift Irrigation Projects in the coastal districts of Orissa, which had become defunct during super cyclone in 1999. The rehabilitation programme was taken up with financial assistance of Department for International Development (DFID) to restore 70,000 ha of lift command of the state. The project was implemented jointly by Orissa State Disaster Mitigation Authority (OSDMA), Department of Water Resources (DOWR) and OLIC for which Adam Smith Institute (UK) has provided consultancy services for training and technical assistance. Further financial assistance is provided from different programmes implemented by the State such as Biju Krushak Vikash Yojana (BKVY), Western Orissa Development Council (WODC), Integrated Tribal Development Project (ITDP) and KBK Development Program to rehabilitate or creation of new Lift Irrigation Projects. These projects are implemented with participatory management approach, where Pani Panchayats are formed and rehabilitation or new constructions are taken up by the Pani Panchayats themselves after obtaining farmers' consensus. In the lift irrigation sector a large number of public lift irrigation projects have been completely transferred to the farmers for their operation, maintenance and management. The numbers of such project are 12118 with an area of 2.70 Lakh ha (February 2008). In these projects the PP collects water charges, pays electricity charges and maintains the project as well as distributes water among the beneficiaries.

A review of performance farmer managed PPs reveals that despite efforts from Government agencies, the utilization of LIPs during the Rabi 2003-04 and Kharif 2004 was not satisfactory as large number of operable LIPs have not been operated by Pani Panchayats in both the seasons. Also the area under irrigation in respect of the operated LIPs was smaller in comparison to the designed capacity. The situation necessitated a study to reveal the reasons of sub-optimal operation of LIPs by the Pani Panchayats.

6. Strengths and Weaknesses of the PIM Program in Orissa

Crafting a new institution in the management of irrigation infrastructure is obviously a difficult task. Changing the mindset and ingrained attitude of farmers and officials of water agency is not so easy. Therefore, while motivating the farmers to form Pani Panchayats and implementing various activities of Pani Panchayat program many problems are encountered in the field, which may hinder the formation of Pani Panchayat and their sustainability in the long-run leading to weakening the Pani Panchayat Programme that aims at sustainable irrigated agriculture.

According to Global Water Partnership (GWP) good water governance should abide by the principles such as open and transparent, inclusive and communicative, coherent and integrative, equitable and ethical. Also the governance structure should be responsive and sustainable.

Various studies of PIM program in Orissa show the following SWOT Observations

Internal Factors

Strengths

- PP emerging as a strong institution for conjunctive use of water.
- No water shortage during Kharif.

- Promoting non-paddy culture in Rabi.
- Higher Level Committee of Farmers organization in the PP environment are institutionalized and operationalized.
- Intensive capacity building support to the PP members.
- Practicing farm mechanization.
- Conflict between ayacutdars and non-ayacutdars minimized
- Thrust is being given for Gender mainstreaming.
- Proposed River Basin Organizations can improve the water availability for both the inter-sectoral water user and inter-category irrigation facilities.
- All women PP first and only of its kind in India.

Weaknesses

- Poor representation from different outlet committees/ chaks in PP
- Poor maintenance of records.
- Project/Apex committee overshadowing the PPs.
- Poor resource generation for O&M activities.
- Dependence on Govt. grants.
- Lack of coordination with Revenue Dept. for effective water tax collection.
- Poor attendance in PP meeting by members from adjacent village.
- No corpus fund available with PP.
- Lack of financial incentive for office bearers leading to poor performance.
- Low attendance in General Body meeting.
- Entrepreneurial initiatives lacking.
- Lack of coordination between line departments on crop planning and enterprise development.

External Factors

Opportunities

- With better management water supply capacity can be enhanced.
- Option for Crop Diversification improving water use efficiency.
- Scope for business operations like input and output marketing through PP.
- Better utilization of resources through integrated farming system approach.
- PP can integrate the efforts of line departments through regular interaction.
- Scope for farmer-to-farmer extension.
- Incentives to PP management would lead to greater ownership.
- Sustainable O&M mechanism can be institutionalized
- Livelihood improvement can be possible through multifunctional activities by PP

Threats

- Competitive use of water leading to damage to the storage system during scarce season.
- Dominance of the big farmers cornering the benefits.

- Damage by stray animals.
- Presence of absentee land lords.
- Share croppers do not have right in PP.
- Damage to distributary channels by influential people.
- Conflict between villages in command area.
- Encroachment of the catchments and heavy siltation of tank systems.
- Competition among inter-sectoral water use and inter-category irrigation facilities /projects in the upper reach affecting flow into Dams and Reservoirs at down stream.
- The conditional loan assistance by World Bank, European Commission, Asian Development Bank for project specific change in state policy may undermine the water governance as such benefits of policy change are not available to rest of the farmers of the state.

Apart from above general findings the following problems are encountered in implementing Participatory Irrigation Management in Orisaa

Surface Flow Irrigation Segment

(i) Heterogeneity

Community heterogeneity, caste antagonism and class differential observed among water users have significant implications for the formation and sustainability of WUA. The more homogeneous the farmers community within a PP boundary, the easier it is to implement PIM. Moreover, the farmers having different political affiliations may have differences of opinion and convergence may be difficult to achieve.

As the boundaries of Pani Panchayats are determined on hydraulic basis, most Pani Panchayatø will cover multiple villages. If villages coming within the boundary of a Pani Panchayat have hostile relationships, this may pose a serious setback in achieving the objectives and functioning of Pani Panchayat.

The Pani Panchayat Act 2002 of Orissa does not have space for the landless and women to become members of PPs. Only landholders are recognized as members of the Pani Panchayat. Hence women who mostly do not hold title to the land and the landless tenant do not have any right over water. Thus, the inequity in property rights is more reinforced than ameliorated. This needs amendment to create space for participation of women jointly with their spouse and informal tenants in the management of water resources.

A learning-while-doing approach should be followed to determine the modalities of organising Pani Panchayat depending on the socio-economic condition, psychology and cultural heritage of the farmers in the locality.

(ii) Open and Transparent

At the time of election of leaders of chak committee, executive committee of Pani Panchayat and of Project committee, many problems crop up. Water users having different political affiliations reveal their differences in interest and opinion. Political

differences result in formation of separate groups within a particular Pani Panchayat or among Pani Panchayats. Any community movement has inherent element of politicisation. Such happenings are also being observed in the field of implementation of PIMs. It is always not possible to rule out the adverse impact of political interference inspite of the vigilant and democratic structure of Pani Panchayats. In future it can not be predicted how political process develops in PIM and it would be quite significant to observe the same for framing future strategy. Though the election procedure under Pani Panchayat Program has no provision for role of any political party, the unwanted political interference during implementation process does spoil the very purpose of the program i.e. organising water users for a common cause. The political interference creates separation walls among the water users. In fact, it is impractical to avoid such political interference but some times the degree of political interference has an important bearing with the successful achievement of objectives of Pani Panchayat. Less political interference implies smoother and easier formation and functioning of Pani Panchayats.

One of the important constraints that affects the process of formation and sustainability of PPs is lack of confidence of water users in the credibility of its office bearers and/or local leaders. Unless the office bearers and leaders are honest, dynamic and farmer friendly, the very purposes of the program may not be successful. The role of the office bearers of Pani Panchayats like president, secretary and treasurer is very much crucial for obtaining the intended benefits of Pani Panchayat programme. They should have strong commitment for the cause of farmers' benefits and they should be honest, efficient and corruption free.

The executive committee should meet regularly to take decision on operation and water management issues. The general body meeting should be convened and all decisions and actions taken need to be informed to the water users for maintaining transparency. No room should be left for arousing suspicion in the minds of water users regarding misuse of administrative and financial powers. Thorough care should be taken that the rural elites do not capture power (Bardhan, 2002). Local accountability mechanism should be strengthened. In the Orissa Pani Panchayat Act 2002, there is a provision to recall the presidents of Pani Panchayats if they are not responsive to farmers' needs and misuse their power and position.

Devolution of irrigation management responsibility to the farmers' organizations (Pani Panchayat) has been made with one of the objective to check corruption and to maintain transparency. But it is observed that the element of corruption is also present in activities of many of the office bearers of Pani Panchayats. The cause of such trend is that like Andhra Pradesh in Orissa mostly the rural elites and wealthy farmers have been elected as President, Secretary and treasurers of the Pani Panchayats. Instead of promoting social well being, these powerful oligarchs are more engaged in rent seeking activities and capturing unearned income. Most of them were contractors or became virtual contractors by grabbing the work order by sheer manipulation and foul means. Thus the local level corruption by the Pani Panchayat office bearers is nothing but old wine in a new bottle and said as devolution of corruption. The Orissa Pani Panchayat Act has of course provided safeguards against this. There is a provision that if the president misuses his power and position, he can be recalled by the general body after one year of

holding the position. This is a unique feature of Orissa Pani Panchayat Act, which strengthens the democratic institution of election in its true spirit.

(iii) Physical System Inefficiency

Due to resource constraint, most of the irrigation projects suffer from several physical system deficiencies. It is observed that unless the faulty structures are renovated, rehabilitated and become fully operational, the farmers hesitate to take up the responsibility of operation and maintenance of an inefficient system. Before turning over the minor/subminors or L.I points to Pani Panchayat for operation and maintenance, the project authority should conduct a proper hydraulic testing of the irrigation system in the presence of Pani Panchayat executives and farmers for its capability to deliver reliable, equitable and satisfactory irrigation service. Even if these systems are not in good shape concrete steps should be taken to improve the system and an efficient and fully operational canal system should be handed over to the PPs for its management.

(iv) Capacity Building and Incentive

The water users should have thorough knowledge of various aspects of PIM program such as the process of forming Pani Panchayat, its structure, short-term and long-term benefits; functions, rights, duties and responsibilities of Water Resource Department and WUA. The water users need to understand and appreciate the goals and objectives of the program. However, in some cases it is observed that farmers wrongly infer that it is a process of privatization by which government wants to get rid of the problem of distribution and operation by simply handing over the system to the farmers. In some other cases, farmers feel that operation and maintenance of irrigation structures is the task of irrigation staff but the Government is exerting extra pressure on farmers for the purpose without any additional benefits. Such type of numerous misunderstandings stands on the way of smooth formation of Pani Panchayat / WUAs. Hence farmers should be made full aware of the pros and cons of the PIM programme in its right perspective. Farmers, office bearers of PPs, irrigation officials and field level staff should be given training on various aspects of water resource management to build their capacity to operate and maintain the turned over system.

Farmers usually come forward to form Pani Panchayat / WUAs and become willing to take up the additional responsibility, if they are convinced that the benefits due to participatory management will exceed their costs of participation. At the initial stage financial incentive in the form of O&M grants given by the Government of Orissa to PPs for more than 75 per cent of farmers becoming members of PP is encouraging farmers to actively participate in the PP programme.

(v) Irrigation Officials' Perception

It is observed that the functionaries of the irrigation department very often develop negative attitude towards PPs. They presume that by handing over the system to the PPs their responsibility is over. As a matter of fact the PPs seek their guidance and technical advice off and on. Therefore, a helping attitude will solve many of the problems that the PPs are facing in managing the system by themselves. A fear of losing their job is also looming in the minds of many irrigation staff. As a result some of them are not

cooperating with the reform process. Irrigation executives are also afraid of losing their power and control.

6.2 Lift Irrigation Segment

The problems faced in the major and medium canal irrigation projects as discussed in the preceding paragraphs are also encountered in implementing PIM programme in the lift irrigation projects. However, in the case of handed over lift irrigation projects there are many specific problems in electric power supply, water availability, farmers' access to knowledge and information, socio-economic condition and legal and policy framework, which require special attention. The problem areas are discussed below.

(i) High Water Rate and Low Crop Income

Many farmers are not evincing any interest in the PP activities under the impression that water rates to be fixed by the PP will be higher and cultivating crops by paying such increased water rates will not be profitable. Moreover, as power supply is not reliable, crop cultivation depending on lift irrigation is quite risky. Of course, the Orissa Pani Panchayat Act 2002 clearly mentions that in the case of lift irrigation projects, Farmers' Organisation shall fix the water rate, which may cover energy charges and maintenance charges of the project. Therefore, as the Act has laid down such objective criteria to determine water rate, the apprehension that the water rate will be higher if the project is managed by the PP is unfounded.

Interestingly speculating water rates to increase, many farmers are not coming forward to use water from handed over lift irrigation projects. As a result, the number of water users and area irrigated from a lift project is remaining well below its capacity. Consequently, given the fixed cost component of power supply, per unit area energy cost is becoming high. Therefore, the PP is forced to increase the water rate to recover the fixed cost of energy supply from few farmers irrigating small area from the project.

The small farmers whose main source of livelihood is agriculture, lack the ability to pay such high rates. On the other hand, the large farmers view agriculture as a non-profitable enterprise and prefer to engage themselves in different types of trade and business. It is observed that many of the large farmers are not interested for cultivation of second crop as they are either service holders or they are engaged in more profitable profession. Also they don't lease out their lands for share cropping as there are no takers. Most of them are absentee landlords. Thus, during rabi season a large proportion of command area remains fallow. Moreover, it is observed that in small rain-fed streams, water availability becomes very low/inadequate to grow summer rice. Farmers interested to grow rice as 2nd crop are compelled to keep their land fallow due to non-availability of adequate water.

(ii) Policy and Legal Framework

For smooth implementation of PIM program, a clear policy guideline and legal framework is necessary. In case of lift irrigation projects, it is worth mentioning that a policy redefining the jobs of the agency staff (OLIC) in the new situation is either not clearly available or not clear to the employees. As a result there are numerous misunderstandings, which is creating problems in co-ordination between the PP and the OLIC staff.

Also, in the PP Act, for the lift irrigation segment there is no provision for formation of higher level farmers' Organisation above Pani Panchayat or federation at

block/ district level to resolve the issues related to Pani Panchayat either for resolving issues with government agency or issues related to input supply, selling of product and processing. The farmers feel the need for such a forum to put forth their common problems near the Government for solution.

It is noticed that the arrangement for legal aid to the farmers in the process of appeal is not adequate in settling irrigation-related disputes, energy supply disputes etc. For example, one LI point in Beduapala village in Bhuban Block of Dhenkanal district, is operated by Pani Pachyat. The LI point gets power from a common transformer being used by both farmers and domestic consumers. Due to some dispute the Pani Panchayat was deprived of power supply for which the Pani Panchayat moved the matter to the District Consumer Forum to get justice. The District Consumer Forum gave the verdict in favour of Pani Panchayat. Central Electricity Supply Company has appealed to the higher judicial forum i.e the State Consumer Forum. However, the poor farmers do not have sufficient resources to plead the case at the state level.

Furthermore, there is no organizational link of the Pani Panchayat to water sub-basin/ basin management. In a case of conflict in water rights in small streams, a private farm was found pumping out more water from the stream, whereas the Pani Panchayat though operating the LI Point was unable to supply to the whole command due to deficit of water during peak demand towards the last part of the rabi season.

Few lift irrigation projects using ground water are apprehending non-availability of water due to absence of property right over ground water. A detailed Ground Water Regulation Act for exploitation of ground water by individuals or other types of users is necessary.

(iii) *Problems in Power Supply*

It is a common complaint by PP member farmers that power supply is unreliable due to frequent burning or failure of transformer. A large number of LIPs are not functioning either due to transformer problem or theft of conductor despite availability of water.

On many occasions due to theft of conductors and subsequent undue delay in its replacements for supply of power to LIPs, the Pani Panchayat is not able to operate the LIP and supply water to the interested farmers. The restoration of power supply by the Electricity Company is taking years together due to cumbersome procedure. Some times these points are without power supply for long period making the Pani Panchayat members hopeless and they lose interest. The problem is arising because, the property right of the transformers and feeder conductors supplying power to LI points is not clearly defined.

(iv) *Awareness Creation, Motivation and Capacity Building*

To remove several misunderstandings regarding the role, responsibility and functioning of PP, a proper awareness campaign and motivation of farmers is necessary. The general opinion is that in the case of major and medium canal irrigation projects the Department of Water Resources had undertaken these activities in a mission mode, whereas without enough preparatory work the LI projects were handed over to PPs hastily. Also, adequate capacity building through training and skill development has not been made in comparison to the major and medium irrigation projects. As a result, the PP movement in LI projects in Orissa is not successful as expected.

7. **Suggestions**

The following suggestions are made with reference to flow and lift irrigation segment

- The WUA is more functional if it is need based and demand driven. The WUAs should be endogenously created based on felt needs, common interest and collective effort. The existing social capital like social network, kinship ties, community solidarity should be used to foster WUAs. The approach should be voluntary, bottom-up and flexible.
- PIM is a participatory program and for its successful implementation there should be true involvement, commitment and co-operation among farmers, personnel of Department of Water Resources and other concerned line departments, and the implementing agencies/NGOs.
- The irrigation system should be improved and the canal should be brought to discharge the designed quantity of water and make proportionate distribution of water. There should be a proper hydraulic testing of the canal in the presence of water users. The farmers should be satisfied with the condition of the canals and a fully operational improved irrigation system should be turned over to the farmers.
- The organizing efforts should be closely integrated with physical system improvements to ensure that the farmers are committed to maintaining the improvements.
- Farmers' representatives should not misuse their power. Department of Water Resources must support the group decision in their internal affairs and refrain from interfering.
- Commitment and active interest of top policy makers and irrigation executives is essential in overcoming bureaucratic inertia and resistance to PIM program.
- As the PIM process is very complex, no detailed blueprint solution or road map for achieving the changes can be laid down. In fact, the process requires experimentation, negotiation, adaptation to local circumstances and time. It is emphasized that it may take a long period to achieve attitudinal changes needed at all levels for true success of irrigation management transfer program.
- WUAs are concerned about legal complexity due to emergence of free riders and anti-socials. Sufficient administrative and legal support should be given to WUAs for tackling such situations.
- The WUAs often demand a minimum period of warranty from Water Resources Department and working agencies for the physical work done on the system improvement program in terms of workmanship and quality.
- Regular monitoring and evaluation of PIM program is necessary.
- Appropriate managerial and technical training should be imparted to office bearers of WUAs to build their capacity to manage the irrigation system efficiently. Irrigation officials as well as field staff should, also, be trained from time to time to imbibe the right mindset, attitudinal change and technical expertise required for participatory irrigation management.

- There should be downward accountability of irrigation officials to client farmers.
- PPs/WUA should have proper legal status and clear water right. The water resource department should supply canal water as agreed in the Memorandum of Understanding between the WUA and the department.
- There should be a regulatory body to adjudicate any conflict or breach of contract between PPs/ WUAs or between PPs/WUA and the department.
- The WUAs should be multifunctional. Along with the management of water, WUAs need to facilitate timely supply of good quality agricultural inputs like improved seeds, fertiliser, farmyard manure and farm implements at reasonable prices. The UAs may also take up other allied activities like transfer of technology through effective extension services, marketing of agricultural produce and agro-processing for value addition; so that agriculture can be a profitable and paying enterprise.
- Data on technical, socio-economic, agricultural and environmental indicators of irrigation system in pre and post-IMT situation should be collected regularly to evaluate the impact of PIM and to draw lessons from the experiences.
- Last but not the least the Pani Panchayats should be financially viable by raising funds from different sources such as water charge collection, from O&M grant or by taking up commercial activities. The PPs should also play multifunctional role and promote Self Help Groups (SHGs) among themselves to improve livelihood, providing micro-credit, and promoting marketing of products and providing other assistance to the member farmers.

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