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**FUNCTIONING OF WATER USERS ASSOCIATIONS OR PANI PANCHAYAT IN ORISSA:
PRINCIPLE, PROCEDURE, PERFORMANCE AND PROSPECTS**

Sushanta Kumar Mahapatra



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1

INTRODUCTION

Participatory Irrigation Management (PIM) has been conceived as the thrust area in effective irrigation management by involving and associating farmers in planning, operation and maintenance of the irrigation system. The number of organisations registered or in the process of formation has been used as the scale of success of PIM. But institutional aspects of farmer participation in irrigation receive less attention in the current PIM policies. Similar to many other countries, many states in India are looking to involve farmers in the operation and maintenance at higher levels through a variety of PIM and Irrigation Management Transfers (IMT) Programs.¹

The National Water Policy, 1987, emphasised the participation of farmers in different aspects of the management of the irrigation system, principally in water distribution and collection of water rates. The Vaidyanathan Committee on Pricing of Irrigation Water suggested farmers' participation in the management of irrigation systems.² A separate Working Group on PIM was set up by the Planning Commission to re-examine and recommend strategies for the Ninth Five Year Plan, where the legal, financial, and institutional factors were recognised as vital to the successful implementation of PIM programs. According to the Mid-Term Appraisal of the Ninth Five Year Plan, the progress achieved so far in PIM, in improving water-use-efficiency, is rather low. The irrigated area transferred to WUA in India is only about seven per cent as against 45 per cent in Indonesia, 66 per cent in Philippines, and 22 per cent in Thailand.³ Lately, the voluntary sector and Non-Governmental

Organisation (NGOs) have made their presence felt in the area of Common Property Resources (CPRs) focussing on participatory forms of development.⁴

It was probably Henry Hart, who pointed out for the first time in 1961 the need for irrigation associations in canal irrigation systems.⁵ The Maharashtra State Irrigation Commission suggested the same in 1962. The Second Irrigation Commission, 1972, went to the extent of citing cases from all over India of what were believed to be irrigation Panchayats, and attached 'high importance' to the formation of such societies.⁶ It also recommended states to undertake legislation for this purpose. The Command Area Development Programme, launched within the Sixth Five Year Plan, 1980-81, adopted the formation of irrigation associations as one of the strategies for the improvement of the canal systems. Chambers (1988) has shown that the reported cases of 'considerable achievement' of irrigation associations were instances of nominal success in three projects: the Mohini Cooperative in Gujarat, the Pani Panchayats (Mula Project) in Maharashtra and the Pipe Committee of Pochampad in Andhra Pradesh.⁷ Ten years of failed attempts and exaggerated claims of success have already convinced many experts that programmes in this area are not worth pursuing. Sengupta (1992) has pointed out three serious deficiencies:

1. Most of the attempts intrinsically assumed that users' cooperation do not exist in India.

1 See Ashok Gulati, Ruth Meinzen-Dick and K.V. Raju, *Institutional Reforms in Indian Irrigation* (New Delhi: Sage Publications, 2005).

2 Government of India, Planning Commission, Report of the Committee on Pricing of Irrigation Water (Vaidyanathan Committee) (1992).

3 Government of India, Planning Commission, Ninth Five Year Plan (2000).

4 See Kanchan Chopra, Gopal Kadekodi and M.N. Murty, *Participatory Development, People and Common Property Resources* (New Delhi: Sage, 1990), Kartar Singh, 'Determinants of People's Participations in Watershed Development and Management: An Exploratory Case Study', 46 *Indian Journal of Agricultural Economics* 278 (1991), Kartar Singh, *Managing Common Pool Resources: Principles and Case Studies* (Delhi: Oxford University Press, 1994), Nirmal Sengupta, *Managing Common Property: Irrigation in India and the Philippines* (New Delhi: Sage Publications, 1991).

5 See Sengupta, note 4 above at 79.

6 Government of India - Ministry of Irrigation and Power, Report of the Indian Irrigation Commission, Vol. I and II, 373-374 (1972), See Sengupta, note 4 above at 79.

7 See in this context Robert Chambers, *Managing Canal Irrigation: Practical Analyses from South Asia*, (Cambridge: Cambridge University Press, 1988). See Sengupta, note 4 above at 79.

2. Not only were the efforts clumsy, but their weaknesses were never reviewed.
3. In the absence of any effective coordinating agency between various departments and the states, the dissemination of information pertaining to these projects was left totally to informal methods.⁸

Although Pani Panchayats have been introduced and promoted in the State of Orissa for some time now, the acceptance of the concept has been lethargic and scattered. A full census is not available and we do not know the size and nature of the PP and whether they are indeed functioning or not. There are no reliable figures and also a lack of data available regarding number of WUAs in existence. In this new institution (PP), informal societies serve political purposes; retain caste power replacing indigenous practices. Therefore an endeavor has been made to find out how far the new institutions will be sustainable in the long run. Though there is much talk about people's participation in the canal irrigation system, there has only been a transfer of more rights and responsibility to farmers at the tertiary level. The right to prepare all the basic designs have remained State Departmental prerogatives.⁹

This paper is organised in the following manner. Section one discusses important issues and experiences of the performance of Farmer Managed Irrigation System (FMIS), Water User Association (WUAs) and Participatory Irrigation Management (PIM) studies in different States. Section two analytically reviews the Orissa Farmers Management of Irrigation Systems Act and studies the functioning of the Pani Panchayat (PP). On the whole it briefly discusses the status of PP in Orissa, primary motivations for introducing PP in the State, emergence of the PP Act, and characterisation of farmers' organisation, diverse strategy and assignment of PP, state-wide initiation of PP, and salient features of Biju Krushak Vikask Yojana (BKVY). Section three briefly examines the socio economic characteristics of the studied PP members,

their distribution of ownership of land patterns, cropping pattern, cropping intensity, and the production of output and crop income. Finally section four deals with different aspects of PP such as the maintenance of water rights, land rights in PP, farmers' assessment of PP, and the reasons behind the non-utilisation of the estimated area of PPs. The appendix contains the profiles of the selected PP.

2 PANI PANCHAYAT IN ORISSA: INITIATIVES AND CHALLENGES

Government of India adopted the National Water Policy in 1987. The same was reviewed and updated in 2002. Based on the policy, guidelines were issued to all the States regarding PIM, which stressed on farmers' involvement in various aspects of management of irrigation system, particularly in water distribution and collection of water rate. The government of Orissa adopted a similar policy of PIM in its State Water Policy of 1994, which emphasises transfer of irrigation management to farmers. From being a mere provider of water the state has moved into a paradigm of sustainable water resources management with a focus on people's participation.

Ever since the late 1990s, the Orissa Government has been demonstrating a massive interest in farmers' participation in water management. This, however, appears to be wisdom which has been received from the World Bank. The necessity for farmer participation arose from the Government's assurance to the World Bank funded Orissa Water Resources Consolidation Project (OWRCP). As a component of this project, the Farmers Organisation and Turnover (FOT) programme has been given much importance. FOT actions largely include some methodical procedures through which tertiary segments or downstream parts of the canal system such as minors and sub-minors are handed over to beneficiary farmers for their operation and maintenance by forming PPs or WUAs. The main purpose of the FOT programme is to entrust responsibility to farmers through the formation of PPs or WUAs. These responsibilities include the

⁸ See Sengupta, note 4 above at 79-80.

⁹ Nirmal Sengupta, 'Institutions Against Change' (Paper presented at the workshop entitled Asian Irrigation in Transition- Responding to the Challenges Ahead organised by Asian Institute of Technology, Bangkok, 22-23 April 2002).

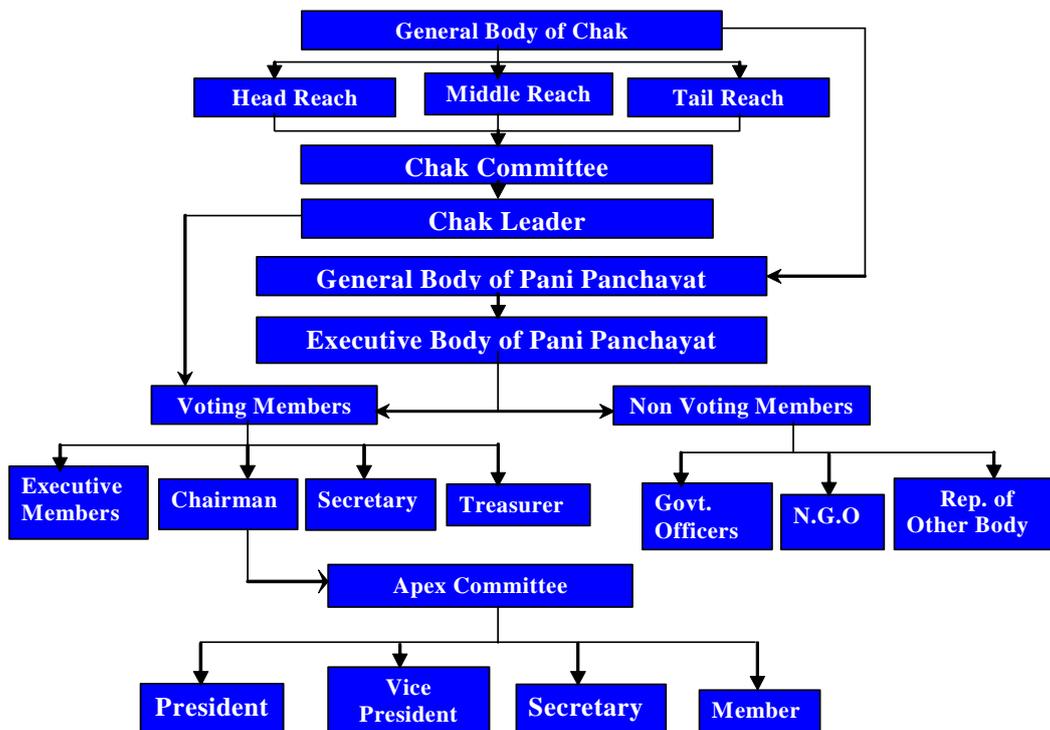
collection of water rates, distribution of canal water among water users, operation and maintenance of canal at lower level such as minor, sub-minor, and distributary level.

In this programme, PPs are created on a three-tier system with two informal associations and one formal association on hydraulic boundaries ranging from 300 ha to 600 ha. of command area. At the lowest level, a Chak Committee is formed taking three farmers, one each from the head; middle and tail reach of the ayacut of an outlet. A representative, called the chak leader of each of these chak committees, is an executive member of executive of the PP. The President, Vice-President, Secretary and Treasurer of the PP or WUA are elected from the executive body of the concerned PP. All the water users are members of the general body of the PP. At the project level, a federation of all WUA is established. This body is called the Apex Committee and has a formal but non-binding advisory role in mail system operation and maintenance. The executive members of the Apex Committee are elected from the Presidents of all WUAs within the command area jurisdiction of the irrigation project.

The basic organisational structure of the Pani Panchayat is presented in Figure 1.

In, Orissa PIM, covers all the irrigation projects in the state. The Orissa Farmers Management of Irrigation Systems Act, 2002, called the Orissa Pani Panchayat Act, 2002, is the facilitating tool for farmer participation. The first step made in this process of reform was to hand over a part of the network of the canal system/irrigation for its Operation and Maintenance (O&M) to the farmers or the beneficiaries through ‘Pani Panchayat’ or WUAs. The utility and benefits of PP have been demonstrated by the Water and Land Management Institute (WALMI) to the farmers. Farmers are given suggestions on minimising maintenance work for ensuring free flow of water up to the tail reaches. They are also helped in organising water distribution in their jurisdiction, resolving disputes, if any, and adopting their own crop planning etc. The PPs were registered as legal bodies to provide the required legitimacy and identity.

Fig.1 Organisational Structure of the Pani Panchayat in Orissa



2.1 Emergence of the Act

The Orissa Farmers Management Irrigation Act provides for the establishment of farmers organisations in all the irrigation systems, for their operation and maintenance. The Act has 43 sections divided into seven chapters. Each chapter provides specific provision for a specific objective/activity. This Act was passed by the Orissa Legislative Assembly and was assented to by the Governor on the 25 June 2002. *The Orissa Pani Panchayat Act, 2002, is an Act to provide for farmers' participation in the management of irrigation systems and for matters connected therewith or incidental thereto* (The Orissa Gazette, No.1053, 8 July, Cuttack: 2002). Orissa, which is essentially an agricultural state, depending on an efficient and equitable supply and distribution of water, needs to ensure optimum utilisation of water by farmers to improve agricultural production.¹⁰

2.2 Characterisation

The Orissa Pani Panchayat Act, 2002 extends to the whole of Orissa. The Act defines 'Farmers Organisation' to mean:

1. PP at the primary level consisting of all water users, as constituted within a specified hydraulic boundary of a major, medium, minor (flow and lift both surface and groundwater) and creek irrigation projects funded by the Government as constituted under section 3,
2. Distributary Committee at the secondary level, as constituted under section 5,
3. Project Committee at the project level, as constituted under section 7;
4. Every PP shall consist of all the water users who are land holders in the area of a PP;
 - a) Explanation I. - A land holder may nominate any adult member of

his/her family to be the member of the Pani Panchayat;

b) Explanation II. - A minor landholder shall be represented by his /her legal guardian.¹¹

5. As per Section 21 (1), the Government may, by notification nominate at least one officer each from the Department of Water Resources, Department of Agriculture and Department of Revenue to be the members of the Pani Panchayat without having the right to vote.

2.3 State-wide Initiation of PP Programme as of Mid-2005

The Government of Orissa with a view to provide equitable, timely and assured irrigation has introduced the concept of PPs through farmer's awareness programmes in the irrigated commands throughout the State. The concept has finally lead to the transfer of tertiary irrigation networks (Minor/ Sub-minors) to registered 'Pani Panchayats'. The responsibility of operation and maintenance (O & M) of the reservoir/diversion weir (as the case may be) dam, spillways, sluices, primary and secondary distribution networks, rests with the Department of Water Resources (DOWR), while the responsibility of 'O & M' of the tertiary systems (below minor/sub-minor) is with PPs. The geographical extent of the programme covers the entire state comprising about 18.25 lakh hectares of Major, Medium & Minor irrigation command areas in all 30 districts of Orissa.

Starting from a few pilot projects, the PIM has now been extended as a policy to the entire water resources sector encompassing major, medium, minor (flow) and lift irrigation projects. As of 2001-2002, 7333 PPs have been constituted in the State. The realised irrigation potential of 75,000 hectors has been handed over to PP for operation and maintenance of the system. As of October 2002, 434 PP have been registered having ayacut area of 3,

¹⁰ See Government of Orissa, The Orissa Pani Panchayat Act, 2002, *The Orissa Gazette*, No. 1053, 8 July 2002.

¹¹ Section 3 (4), The Orissa Pani Panchayat Act, 2002, available at <http://www.ielrc.org/content/e0211.pdf>.

32,000 hectare in major and medium irrigation projects under the Orissa Water Resources Consolidation Projects (OWRCP). Under minor irrigation (flow) 329 PPs have been registered covering an area of 76,000 hectare up to October 2002. Totally 5,619 PPs have been formed, and out of those 2,847 have been handed over to farmers as of 26 January 2003. Twelve thousand six hundred and eighty eight PPs have been constituted in the State by Mid-2005, covering an area of 9.95 lakh ha. Irrigation management has been transferred to 10764 PPs covering 7.11 lakh ha, out of total command area of 18.25 lakh ha. Four Pilot projects in the first phase namely, Ghodahada project, Rushikulya Distributary No. 11 of Ganjam District and Aunli and Derjang Projects of Angul District were identified for this work during 1996 and related activities of PPs started simultaneously in the projects.

2.4 Diverse Strategy and Assignment of Pani Panchayat

The different scheme of PP has certain consequences in relation to the source of water.¹² This difference must be considered as a qualitative change from the condition of agriculture, which is entirely rain-fed. It is obviously related to the cropping intensity throughout the year in relation to the assurance and availability of water. However, there is at least a certainty of irrigation during Kharif (rainy season-June to November). Sometimes it is rainfall, sometimes it is a wrong technical design, sometimes the command is not homogenous and is scattered and consequently there are losses in transit. There are number of human factors, which also compromise the possibilities of achieving the level of irrigation that was originally or traditionally intended and designed.

2.5 Sources of Funding and External Resource Mobilisation for Pani Panchayat

According to the Act, the farmers' organisations will get access to funding granted by the State and Central Governments for the development of the area of

¹² There are three types/schemes of PP, lift irrigation, minor irrigation (flow including tank) and canal irrigation.

operation, and to resources raised from the financing agency, income from the assets of the organisation, fees collected by the organisation and donation received from any other sources. The funds thus mobilised shall be deposited in a Nationalised Bank or a Co-operative Bank or the District Co-operative Central Bank or the Orissa State Co-operative Central Bank in the names of such office bearers as may be prescribed. The Executive Committee of the Farmers' Organisation shall maintain a sinking fund with a view to facilitating repayment towards borrowed funding. Resource mobilisation from outside the system includes cash and kind resources mobilised from the central or local government, or labour contributions from other command areas in emergencies. The PP systems look for external resources for augmenting, assuring and minimising the labour requirements for maintenance, and for increasing the volume of water flow in the canal. The farmers' organisation may levy and collect fees as may be prescribed by the government and/or decided by the organisation from time to time. In case of Lift Irrigation Points, the farmers' organisation shall fix a water rate which may cover the cost of the energy charges and maintenance charges of the Project. In case a water user does not utilise any water in a particular season, the Farmers' organisation shall be competent to fix such minimum charges as may be decided by the General Body of the Farmers organisation. No water tax can be collected by the Orissa Lift Irrigation Corporation from the members of the Farmers Organisation.

2.6 Government's Control over Pani Panchayat

In order to supervise the functions of the officer including the Collectors, the Government can appoint a Commissioner and give him the required powers for carrying out the functions specified by the Government. The Government also has powers to give directions to competent authorities/ farmers associations to take such actions as may be specified by it. The Government shall appoint officers from the Department of Water Resources as special officers or as competent authorities for implementing the decisions taken by the Executive Committees and they have powers of direction or instruction for carrying out the works entrusted to them within the purview of the Act. Every Farmers' Organisation

shall extend such cooperation or assistance as may be required by the competent authority, and follow such directions or instructions as may be required by the competent authority, from time to time, for carrying out the purposes of the PP Act.

2.7 Provision for Offences, Penalties and Recovery of Arrears

As per Section 30 of the PP Act, those who violate the provisions of the Act, 'shall, on conviction, be punished with imprisonment for a term which may extend to one month or with fine which may extend to two hundred rupees, or with both'. It further provides for recovery of money due to a Farmers' Organisation as arrears of Land Revenue.

2.8 Disputes Settlement

The Executive Committees of PPs/distributary/project/Apex Committee are the authorities for the settlement of disputes arising among members of such an organisation and the concerned committee shall be selected by the managing committees of immediate higher level organisations. The concerned members if agreed upon by the decisions of such committees shall be final. All the appeals under this act shall be disposed off within fifteen days. It is necessary to underline the powers of the Apex Committee or the Government. Section 26 of PP Act says 'any such dispute or differences arising between a member and the managing committees shall be determined by the Apex Committee, whose decision shall be final'.

2.9 Biju Krushak Vikask Yojana (BKVY)

The subsidiary of PIM is the Biju Krushak Vikask Yojana (BKVY) which is a unique model in the minor irrigation sector (flow as well as lift) of ensuring user's participation right from the inception of project. The salient features of BKVY is that there is an open invitation to farmers to form themselves into registered PP to derive the benefit of irrigation assistance from the Government and farmers contribute 20 per cent of the capital cost in the shape of cash or kind (in backward regions such as Kalahandi, Bolangir and Koraput district so called

KBK and tribal sub plan areas the contribution of farmers is kept at 10 per cent). The State provides the rest of the capital cost as one time assistance and also executes the project on behalf of the PP. After completion of the project it is handed over to the PP for operation and maintenance. The Government does not intend to collect any water tax from the farmers and the projects are to be maintained by the PP themselves. For this scheme an amount of Rs. 367.69 crores has been proposed in the Tenth Plan out of which Rs.117.69 crores has been earmarked for the KBK district. Negotiated loans amounting to Rs. 250.00 crores from NABARD are also proposed for funding of this scheme during Tenth Plan.

2.10 An Assessment of Orissa Pani Panchayat Act 2002

2.10.1 Supportive Sides

The Act provides a legal framework for a better participation by farmers in water management for the first time in the history of irrigation legislation in Orissa. The Act enables farmers' participation, not only at a lower level but also in a restricted manner at the main system level. The farmers' collective action is enabled through the formation of PPs, the office bearers for which have to be elected through a democratic process. The Act also provides for the autonomous management of the irrigation system by Farmers Organisations in their respective areas for both the maintenance of the system and for the distribution of water supply. The annual grants allocated by the Government for various purposes, such as for operation and maintenance can now be better utilised by PP. Also the PPs have legal powers to levy and collect additional water charges, which would enhance their financial positions. This provision would go a long way in improving the cost recovery. With regard to the settlement of disputes, since the decisions taken by the concerned committees or their higher level committees are final, the Courts are forbidden to entertain any further appeal. A major breakthrough in relation to the management of Farmers Organisations is that the members of the association are vested with powers to recall the committee members. This provision would contribute towards the

accountability of the elected leaders and restrain them from mismanagement. Further, the Government does not have the power to wind up the executive committees of PPs unlike in cooperatives and Panchayats.

2.10.2 Harmful Sides

It is important to take a critical view of the provisions of the PP Act and such a view may help in correcting the inadequacies in the Act. Due to compelling socio-economic, technological and institutional factors, many traditional irrigation institutions (TII) are in the process of decaying or already defunct in many villages of the state and country, TIIs are still functioning to a reasonable degree.¹³ In such village societies,

- Is it essential to superimpose a new institution (e.g. PP), through legislation, on the existing ones?
- Is it actually empowering to alter the norms and institutionalised practices, which have evolved over a long period of time?
- How can the State impose a non-functioning or a mal-functioning irrigation system to the people through an Act?
- Even if the State imposes it through law, to what extent will people accept it, and what kind of a collective action can we expect from them?

As per the Orissa PP Act 2002, 'every Pani Panchayat shall consist of all water users who are landholders in the area of PP'.¹⁴ The way farmers are defined in the Act is somewhat narrow. If one concludes from the above section that a PP includes only those cultivators who own or cultivate land, then the Act excludes the landless population from becoming members of a PP.

The government has to constitute an Apex Committee, which will have an overall control over

PPs. But the constituent members of this Committee have not been spelt out. The ambiguity lies, whether the members of Apex Committee are primarily from PP or from the Department of Water Resources or from any other section. This is important because the Apex Committee takes most of the final decisions, and if this Committee is dominated by the WRO, then the strength and autonomy of PPs will get diluted. On the other hand, if the members of the Apex Committee are nominated from political parties, there is every possibility of misuse of this provision in favour of the ruling parties.

Section 21 (1) of the PP Act provides for the appointment of personnel from the Department of Water Resources of the Orissa Government as competent authorities for implementing the decisions of the Farmers' Organisation. However, their role is not specified. The Act is vague in defining the powers of the 'competent authorities' and requires the Farmers' Organisation to give effect to such orders. The Government may issue such orders and directions of a general character as it may consider necessary in respect of any matter relating to the powers and duties of the competent authority and the Farmers' Organisation shall give effect to such orders and directions. Such undefined powers given to the Department of Water Resources personnel may result in the misuse of power. In which case, the whole purpose of empowering water users will be defeated. Further, such powers given to the Department of Water Resources personnel may weaken or dilute the autonomy given to Farmers Organisations. In the final analysis, the PPs may be reduced to following directions given by the Department of Water Resources.

Section 26 of PP Act says 'any such dispute or differences arising between a member and the managing committees shall be determined by the Apex Committee, whose decision shall be final'. It is significant that even in the case of a settlement of disputes among water users, the final decision in the hands of the Department of Water Resources. Currently, the matters concerning water disputes are resolved through local institutional mechanisms. The main idea of the 73rd amendment to the Constitution of India is to strengthen the democratically elected government which represents all sections of the village population. However, the

¹³ See S. Janakarajan, 'In Search of Tanks: Some Hidden Facts', 28/26 *Economic and Political Weekly* 53-60 (1993).

¹⁴ Orissa Pani Panchayat Act, 2002, Section 3 (4) (i).

formation of PPs weakens this very elementary objective.

Despite the fact that the State Water Policy mentions farmers' participation in irrigation management, their rights over water are not clearly defined. The extent of users' participation is limited to the operation and maintenance at local levels only. The involvement of the community in the system level designs and construction are neglected. As the water policy is an important document that spells out the development strategy of a state, such neglect is a serious flaw and needs to be revised.

The State has resorted to turning over to people irrigation systems that are beset with problems such as an absolute deviation from the original operational rules, a gross disparity between the availability of water supply and the demand for it, low recovery rates, the availability of very little resources for operation and maintenance, corruption at all levels, fragmented community action and so on. For a long time, the State played a major role in deciding the rules and regulations of water management. There were no provisions for user's participation. Though there have been some attempts made in recent times towards promoting user participation, these legislations are not comprehensive. Moreover, there is no scope for involving farmers in the plan and design of the system right from the project formulation stage. Even the existing rules and regulations of irrigation systems, which are managerial in nature, suffer from a number of problems.¹⁵ The more crucial issue of the relationship between water and water users was never a part of the State's agenda.

The next section of the paper deals with an evaluation of water management through community participation and the emergence of PP in a case study of Vir Bajrang Bali Pani Panchayat under Lift Irrigation Point (LIP) of the Hirakud Command Area (HCA).¹⁶

¹⁵ See K.V. Raju, *Legislative Framework for Farmers Participation in Irrigation Management* (Ahmedabad: Indian Institute of Management, 1994).

¹⁶ It is realised that, it is too early to assess and evaluate the formal PP in Hirakud Command Area, Orissa, as the process of implementation is just falling in line.

3

FUNCTIONING OF WATER USERS ASSOCIATIONS/PANI PANCHAYAT IN HIRAKUD COMMAND AREA (HCA)

This section examines the functioning of the Vir Bajrang Bali Pani Panchayat by observing the socio-economic condition of PP members, their distribution of ownership of land patterns, cropping pattern, cropping intensity, production of output and crop income.

3.1 Methodology

In order to examine the functioning and impact of transfer of irrigation management to the water users, a detail survey of 70 households (HH) has been done in a case study of Vir Bajrang Bali Pani Panchayat under Lift Irrigation Point (LIP) of the Hirakud Command area, Orissa. The Primary data has been collected from Bandhapali village of Kardola Panchayat in Dhankauda Block of Sambalpur district. Bandhapali village is 32 KM away from the district headquarter Sambalpur. The nearest railway station is at Hirakud, at a distance of 24 km from the village. *Bandhapali* is a revenue village of *Kardola* Panchayat comprising of one ward.

Both quantitative and qualitative information have been obtained in order to observe the efficacy of different types of institutional arrangements. Qualitative information was obtained by way of Participatory Rural Appraisal (PRA), such as focus group discussions, and interviews of senior citizens and officials in the irrigation department. Discussions were also held with the office bearers of the concerned PP, in addition to those outside the PP i.e. women and landless people. Two structured questionnaires; one related to WUAs and another related to households were prepared to collect quantitative information. These interviews were unscheduled and carried out in variety of locations like in a school house or Panchayat building, on a temple veranda, under a tree, or in private homes. 'Before and after' scenarios were exploited to evaluate the impact as there is no option

for 'with and without scenarios', as all the farmers getting irrigation water are covered under PP. The field work was conducted during the month of January- February 2005.

The PP is named as Vir Bajrang Bali PP and registered under the Society Registration Act, 1860. Vir Bajrang Bali PP refers to the organised effort of groups of farmers of *Bandhapali* village to formulate and implement community irrigation projects based on certain mutually agreed upon principles for water sharing. During the survey we found that there are no women members in the organisation. The names of members have been mentioned in the Minute Book, Cash Book, and Receipt Book. There are 30 members enrolled by depositing a membership fee of ten rupees. The members have decided to concentrate on the all round development of the

villages under PP and protect the resources and rights of the members. Since PP deals with water which is a Common Property Resource, they present an interesting instance of Participatory development of Common Property Resources. Though participatory, they are different from co-operatives. This difference manifests itself in their organisations structure and functioning.

3.2 Socio economic characteristics of Pani Panchayat Members

This section explains the socio-economic characteristics of the selected PP members that include classification of house hold, family size, working members, level of education, housing condition, provision of electricity, characteristics of ownership of holdings, cropping pattern, cropping intensity etc.

Table-1: Classification of Households by Caste and Size of Holdings among Different Size Groups of Pani Panchayat Members

Size of Land holdings (in Acres)	SC	ST	OC	TOTAL
0.01-2.50	18	04	09	31 (44.2)
2.51-5.00	06	03	11	20 (28.6)
5.01-10.00	-	-	10	10 (14.3)
10.01 & above	-	01	08	09 (12.9)
Overall	24 (34.30)	8 (11.40)	38 (54.30)	70 (100.0)

Source: *Field Survey (2004-05)*

Note: i) Figures in the parentheses indicate the percentages of the respective categories.

ii) Blank entries in the Table denote nil.

iii) SC- Scheduled castes, ST-Scheduled tribes, OC-Other castes (which includes OBC-other backward castes, FC-Forward castes).

Table-2: Demographic and Socio-economic Characteristics among Different Size Groups of Pani Panchayat Members

Size of Land holdings (in Acres)	No of Hhs	Average family size (per HH)	Average male member (per HH)	Average female member (per HH)	Working member male (in %)	Working member female (in %)	Illiteracy of the head of the HH	Quality of house (in %)			
								Thatched	Kuchha	Pucca	Electrified
1	2	3	4	5	6	7	8	9	10	11	12
0.01-2.50	31	5.85	3.27	2.58	89	11	58	54	46	-	100
2.51-5.00	20	5.39	2.50	2.89	95	05	20	55	25	20	100
5.01-10.00	10	4.50	2.50	2.00	100	-	-	-	30	70	100
10.01 & above	09	4.20	2.15	2.05	-	-	-	-	20	80	100
Overall	70	5.24	2.77	2.47	87	13	35	49	33	18	92

Source: Field Survey (2004-05)

Note: Blank entries in the Table denote nil.

Table-3 Characteristics of Ownership of Land Holding among Different Size Groups of Pani Panchayat Members

Size of Land holdings (in Acres)	No of HHs	% of HH	Total area of ownership holding (in acre)	Average amount of land owned per HH (in acre)	Total area of operational holdings (in acre)	Average area operated land per HH (in acre)	Total PP area owned (in acre)	Average PP land to owned land	Total Non PP area owned	Average non PP land to owned land	Total PP land to operated land	Average PP land to operated land	Total Non-PP area operated	Average Non-PP land to operated land
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
0.01-2.50	31	44.30	33.36	01.07	133.97	04.32	21.56	00.69	10.75	00.34	45.81	01.47	30.30	00.97
2.51-5.00	20	28.60	77.20	03.86	68.91	03.44	46.10	02.30	31.23	01.56	62.40	03.12	57.80	02.89
5.01-10.00	10	14.30	74.00	07.40	84.30	08.43	24.92	02.49	49.04	04.90	37.50	03.75	24.50	02.45
10.01 & above	09	12.90	134.01	14.89	51.24	05.69	31.08	03.45	102.89	11.43	47.25	05.25	41.85	04.65
Overall	70	100.0	318.5	04.55	338.42	04.83	123.66	01.77	193.91	02.77	180.60	02.58	154.45	02.20

Source: Field Survey (2004-05)

Table-1 indicates that, 44 per cent of households belonged to marginal farmers, and 29 per cent belonged to small farmers. Thus the small and marginal farmers together formed around 73 per cent of the farmers. The medium farmers constituted fourteen per cent of the farm households. By contrast the large farm households constituted thirteen per cent of farm households. Thus, a majority of the PP members belong to the marginal and small farmers. In the village, there are groups of 2-3 farmers operating their personal lift. Apparently, they belong to the well-to-do segments of land holding hierarchy. On the contrary, small and marginal farmers cannot afford to invest in private lift schemes, as they are short of surplus capital. The SC and ST population together constituted 46 per cent of the total households and the remaining 54 per cent belongs to other castes population. Thus, there is a bias towards upper classes in terms of membership.

Table-2 indicates that the average size of family among the member was 5.24. It is as low as 4.20 in cases of large farmers and as high as 5.85 in cases of marginal farmers. Thus the family size decreases with the rise in the status of household. The average number of male members in the family was 2.77 and that of female member was 2.47 among the member of PP. There are some variations among different class of PP member. The level of education of the head of the households has been classified into illiterate and literate. The level of literacy among the head of the household has been given in col. 8 of the Table- 2. It is seen that 35 per cent of the head respondent were illiterate among the PP members in aggregate. The composition of workers in a household is important as far as the socio economic condition of a household is concerned. Table-2 shows that, of the total number of workers 87 per cent are male. It is observed that percentage of male member increases with increase in class size. In the marginal farmers group 89 per cent are male working members, whereas in the case of small farmers it is 95 per cent. On the other hand in the case of medium group farmers all the working members are male and there is no female participation. Thus it is observed that as the class size increases, the percentage of working female members decreases. Eleven per cent of the working female members contribute in the marginal farmers group, whereas it is five per cent in the case of the small farmer

group. By contrast, it becomes nil in the case of medium and large farmer group.

The quality of houses of PP members is provided in col. 9-11 in Table-2. The residential arrangements of households are influenced by their ability to generate surplus. Utilisation of that surplus contributes to the better quality of house. Generally a person is likely to construct better quality of house, if they have surpluses. There will be surplus if the person concerned has more production and less family members. It is observed that those members who have more land under Pani Panchayats have the better quality of house facilities. Table- 2 shows that 49 per cent of the households ate thatched, which are of a lower quality. Marginal and small farmers group possess this type of house. Hardly 18 per cent are pucca houses and 33 per cent are kuchha houses. It is observed that the medium farmer group contains 70 per cent pucca house and 30 per cent kuchha houses, whereas the small farmer group contains 55 per cent thatched, 20 per cent pucca and 25 per cent kuchha. Thus we see that, with the increase in size of holding the quality of the house increases. All the members of the PP, be they though marginal, small or medium have provisions of electricity.

3.3 Distribution of Ownership of Land Patterns among Different Categories of Households

Land is an important form of asset of the households in rural areas. It not only provides self-employment to its owners, but is also utilised as collateral while getting loans from formal or informal credit sources. The pattern of ownership of land holding among members of the PP is provided in Table-3. The average area owned per household is 4.55 acres for the overall PP members. The average size of land owned by a marginal farmer is 1.07 acres, and that of the small farmer was 3.86 acres. On the other hand, for the medium farmer it was 7.40 acres and for large farmer it was 14.89 acres. The analyses of distribution of ownership of land revealed that there is high inequality of land ownership among different groups of PP members. The landlord groups were dominating the decision making process of the PP. The distribution of operated areas among different group of households is given in the Table-3, column 6 and 7.

It is seen that there is a slight variation in the distribution of operated area in comparison with that of owned areas. Irrigation facilities are important for crop production and it assures the yield of crops. The average size of PP land to operated land is 2.58 acres whereas to own land is 1.77. This is because many farmers have leased land under PP. The marginal farmer has 1.47, the small farmers have 3.12 lands under PP. whereas the medium farmer has 3.75 and the large farmer has 5.25. Likewise the average Non-Pani Panchayat land is shown in Table-3 column 14 and 15.

it has bearing on demand for PP by the cultivators. For instance, there is a certain crop like HYV paddy, which requires more fertiliser in comparison with other crops. Similarly cultivation of vegetables also requires high dose of chemical fertiliser. To show the average gross cropped area and cropping intensity of the PP member two Tables (4 and 5) are given. These Tables are provided because those members have land both under PP and also under Non-Pani Panchayat. A peculiar situation is noticed in Table-4 that, under PP the overall cropping intensity among the member is 200. The cropping intensity for all types of farmers is equal. In this type of land, only one crop is produced that is paddy. Here farmers grow paddy in both the Kharif and Rabi seasons.

Table- 4: Cropping Pattern and Cropping Intensity by Different Size Groups under Pani Panchayat

Size of Land holdings (in Acres)	No. of HH	Average Gross Cropped area under PP (in acres)	Of the total Gross Cropped of Kharif, per centage of area devoted to Paddy	Of the total Gross Cropped of Rabi, per centage of area devoted to Paddy	Cropping Intensity (CI)☞
1	2	3	4	5	6
0.01-2.50	31	04.16	100	100	200
2.51-5.00	20	05.56	100	100	200
5.01-10.00	10	06.66	100	100	200
10.01 & above	09	07.86	100	100	200
Overall	70	04.82	100	100	200

Source: Field Survey (2004-05)

☞ Cropping intensity = [Gross Cropped Area (GCA)/Net Sown Area (NSA)] * 100.

3.4 Cropping Pattern and Cropping Intensity among the Farm Households

In this section we analyse the cropping pattern adopted by different categories of households among the PP members. It also discusses the cropping intensity of cultivated land among these households in their operated area. A discussion on cropping pattern and cropping intensity is important because

Table-5 shows that though the PP members have land outside the PP, their overall cropping intensity is 222.66. Out of the total gross cropped area, 91.12 per cent of it is devoted to paddy followed by pulses (3.59 per cent), Oilseeds (2.26 per cent), vegetables (1.97 per cent) during Kharif seasons. On the other hand during Rabi season the same percentage that is 91.12 per cent is devoted to paddy followed by pulses 3.60 per cent, oilseeds 2.31 per cent, and vegetable 1.97 per cent. So multiple cropping is done here.

Paddy is the major crop in both the Kharif and Rabi season. There is a small crop diversification. Thus in both the Table 4 and 5, it is observed that paddy is the dominant crop. When both the Tables are

compared, it is seen that the cropping intensity of area under PP scheme is lower than the Non-PP land. In the case of PP land there is prevalence of mono-crop (only paddy), while there is crop diversification in the case of Non-PP land. It appears that despite irrigation facilities available, the cropping intensity is generally low among all categories of household.

3.5 Crop Income per Household

This section discusses the average crop income earned by different categories of farm households. It also describes the composition of income coming from different varieties of crop produced by farmers. The expenditure incurred by different categories of farmers in order to produce this crop has not been deducted from the gross income. In view of this, the income discussed here is a rough indicator of the living conditions of the farmers. A discussion on the income derived from the farm activity is important because it will indicate whether a farmer has sufficient amount of income to be able to live in a condition better than before formation of PP.

The average annual income is derived from both Kharif and Rabi crops. In the irrigated area, farmers have cultivated crops both in the Kharif and Rabi season. It is important to note that the income earned per acre of paddy cultivation during the Rabi season is higher in comparison with income earned per acre in the Kharif season. This is due to the risk and uncertainty associated with crop production in Kharif season is relatively higher and hence total output produce is lower.

Table-6 shows both the average amount of crop income earned by members under PP and by the same member under Non-PP. It can be seen from the Table-6 that the average amount of income earned by members having land under PP is Rs. 18,712.09. It is as low as Rs. 11, 630 in case of marginal farmers who have leased land and as high as Rs.45, 890 in case of large farmers. In case of small farmers it is Rs. 14,711.81 and in case of medium farmers it is Rs.35, 440.60. So the annual income increases with the increase in farm size. It is noteworthy that, monthly income for average PP members is about Rs. 1559.34 (calculated from

column 3, Table-6). Land under PP produces only paddy. So paddy constitutes the total income.

On the other hand, for the same members owning land under Non-Pani Panchayat areas, the average income from that land is Rs. 44,888.57. Here also the average crop income is increasing with increase in farm size. The monthly income for the average Non-PP member is Rs. 3740.72 (Calculated from column 5, Table-6). The Table-6 also depicts the composition of income coming from different crops. The composition of income from various categories of households reveals that about 90.18 per cent of the crop incomes have come from paddy cultivation, followed by pulses (3.58 per cent). Contribution of vegetables is about 3.32 per cent followed by oilseeds (2.10 per cent) and others 0.82 per cent.

It appears that the members of PP households have derived more than half of paddy cultivation in both the Kharif and Rabi season. The analyses of pattern of income generated from crop production revealed that, the average per household income derived from crop by different categories of households having land in the Non-PP is much higher than that from PP land. The studied PP, which was established in 1997 with a view to promoting scientific water management techniques, with full users' participation, does not seem to suggest that the main goal of forming PP has been attained. For instance, available data shows that in Non-PP we get better opportunities compared to PP.

Table- 5: Cropping Pattern and Cropping Intensity by Different Size Groups under Non-Pani Panchayat

Size of Land holdings (in Acres)	No of HH	Average Gross Cropped area under Non-PP (in acres)	Of the total Gross Cropped of Kharif, % of area devoted to						Of the total Gross Cropped of Rabi, % of area devoted to						CI
			Paddy (in %)	Pulses (in %)	Vegetables (in %)	Oil Seeds (in %)	Others (in %)	Total	Paddy (in %)	Pulses (in %)	Vegetables (in %)	Oil Seeds (in %)	Others (in %)	Total	
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
0.01-2.50	31	01.60	18.99	01.57	01.00	01.26	-	22.82	18.99	01.37	00.87	01.18	-	22.41	212.00
2.51-5.00	20	02.53	18.69	-	-	01.00	-	19.69	18.69	-	-	-	-	18.69	247.44
5.01-10.00	10	03.45	21.26	02.02	00.97	-	-	24.25	21.26	02.23	-	01.13	01.00	25.62	236.55
10.01 & above	09	05.36	32.18	-	-	-	01.06	33.25	32.18	-	01.10	-	-	33.28	205.55
Overall	70	02.41 (168.5)	91.12 (153.52)	03.59 (6.06)	01.97 (3.32)	02.26 (3.81)	01.06 (1.79)	100 (168.5)	91.12 (153.52)	03.60 (6.06)	01.97 (3.32)	02.31 (3.90)	01.00 (1.68)	100 (168.5)	222.66

Source: Field Survey (2004-05)

Note: i) Figures in the parentheses indicate the absolute figures in acres.
ii) Blank entries in the Table denote nil.

Table-6: Average Amount of Crop Income Earned by Different Size Group of Members under Pani Panchayat and Non Pani Panchayat Land

Size of Land holdings (in Acres)	No. of HH	Average crop income per HH under PP land (in Rs.)	Paddy Contribution (in %)	Average crop income per HH under Non PP land (in Rs.)	Paddy Contribution (in %)	Pulses Contribution (in %)	Oilseeds Contribution (in %)	Vegetables Contribution (in %)	Others
1	2	3	4	5	6	7	8	9	10
0.01-2.50	31	11630	16.28	35130	11.45	01.43	00.56	01.14	-
2.51-5.00	20	14711	25.18	48990	18.89	-	01.54	02.18	-
5.01-10.00	10	35440	33.50	69090	24.66	02.15	-	-	00.82
10.01 & above	09	45890	25.24	93450	35.18	-	-	-	-
Overall	70	18712	100%	44889.	90.18	03.58	02.10	03.32	0.82

Source: Field Survey (2004-05)

Note: Blank entries in the Table denote nil.

4

WATER RIGHTS, LAND RIGHTS AND PANI PANCHAYAT

This section concentrates on the issues of maintenance of water rights, land rights in PP, farmers' assessment of PP, and reasons for explanation of the non-utilisation of the estimated area of PPs.

The beneficiaries of PPs are only those who have lands.¹⁷ That means it is based on ownership of land and rights in land. This demonstrates that the poor and the landless could not be given access to water, which is a common property resource. It is unreasonable to expect a landless labourer to invest in PP in the hope of some future benefit when someone might grant him sharecropping rights. For the landless, 25 per cent of the project cost is too high to be invested in a PP. This demonstrates the impracticability of the provision in granting water rights to the landless. But rainfall belongs to the entire village community and all must have equal access to this water. The rights in land are rigid and inflexible and there is a basic inequity in the means of production and social structure. Earlier all the poor were given equal access to water, which in fact is the only way to sustain our traditional water bodies. Thus, it was possible to share water in relation to the needs of subsistence and it could counter the inequality based on the rights of land. This is how the water as a common property resource developed as a community asset to protect the interests of the entire community. Traditionally, access to water was free every body and not in relation to the rights in the lands. After PPs came into picture, only the members who have rights in land, have rights on water. This is likely to give rise to a 'Panidar' (water lords) class. Hence, a natural right for irrigation water has become insecure and ineffective.

In 2002, the Orissa Chief Minister Nabin Pattanaik told the eminent journalist P. Sainath that 'We want

to hand over control to the community, to the farmers themselves'.¹⁸ But not quite the way things are working out on the ground. In the real world, community control of water is now a cover for private control. P. Sainath (during his visit to Aunli project, 2002) adds that the concept of 'Panchayat' is meant to be a democratic one.¹⁹ However, there is no farmer in it at all. People do not participate in the scheme. A few big farmers have captured the whole thing. The idea of PP has failed totally in all the areas visited area and in all of Orissa. It does not make sense socially, institutionally, culturally, economically or politically. Water is becoming private property. If we look at the principles of PP from the point of view of water as a common property resource, then we should keep in mind that water rights should be given to every one including landless, women and that every one has an equal right to share this common natural resource.²⁰

4.1 Maintenance of Water Rights in Pani Panchayat

The PP committees are not concerned with the maintenance of water rights for the members of the command area or with the protection of the rights against intrusions from outside the system. There are some water shares for the landlord. There is no relation between the size of the individuals land holding and the number of water shares that he holds. Land and water are separate entities. There is no such situation where one can sell one's share of water or buy water from a shareholder.

4.2 Impact on Other Sources of Water

A substantial area in Orissa is irrigated by sources other than canals, tanks and lift points. Rivers (by manual lift), dug wells, springs, and other traditional water harvesting structures are quite common in tribal/mountainous tracts, dry-land areas of Western

¹⁷ See Orissa Pani Panchayat Act, 2002, Section 4 (i).

¹⁸ See P. Sainath, 'Little Pani, Less Panchayat', *The Hindu*, 22 September 2002, available at <http://www.hindu.com/thehindu/mag/2002/09/22/stories/2002092200250100.htm>.

¹⁹ *Id.*.

²⁰ *Id.*.

Orissa and in all those areas where canal irrigation has not reached. With the setting up of the Water Service Agencies (WSAs- a euphemism for Private companies trading in water) it is feared that gradually the entire water resources of the State, zone after zone, will be usurped by these WSAs through creative interpretations of the agreements signed for the purpose. Farmers then would be heavily charged for drawing water from the canals, as according to the government's Water Policy PPs would be accountable to the WSAs and the Government would be only playing a mediatory role without any interference in pricing of services as is the case presently with the power sector reforms. Further people would have to pay service charges for drawing or using water from their own wells, ponds, and other water bodies as the WSAs would claim ownership of the entire water resource under their geographical jurisdiction as happened in Bolivia and Argentina.

4.3 Farmers' Assessment of Pani Panchayat

Water supply is not fully guaranteed. Disputes are due to insufficient water. Old and unlined canals exaggerate this trouble further. Necessary on-farm development works were not carried out in the village and improved methods of irrigation were not taught. PP also desires support with other inputs. Currently, non-availability of agricultural inputs on time, limits the farmers' returns. Production losses are claimed to be a contributory factor to defaults in payment.

Only 42 per cent of the farmers surveyed knew the name of the PP President, hardly any one knew the names of managing committee members (See Table-7). Awareness about the formation of formal PP in the village was less (30 per cent) [Fig.2]. Many farmers had no idea about the PP Programme. Most of them had very little information about the activities of the PP. Seventy eight per cent of the farmers responded that there was no change in area irrigated after the formation of PP. (fig.3). With regard to the women's participation in the PP activities, 82 per cent responded negatively (fig.4). The claim for better control devices like installation of sluices, repairs of shutters is replicated in the responses of the farmers surveyed during the field work on the changes in the water availability after formations of PP. Seventy five per cent of the sample

farmers recommended the installation of shutters to improve regulation and 66 per cent also wish for disciplinary action against violators. Technical structures like shutters had been installed at these points during the initial stages for controlling the flow into these inlets. The flow could be reduced or totally cut off depending on the water available and the requirements of equal distribution within the command areas. This was done through instituting a system of rotation of water supply. Instituting the functioning of the rotation system however requires a complementary technical function of the control structures, unauthorised withdrawals of water by upstream farmers using engines for pumping water, further accentuate the unequal distribution which is to some extent inbuilt in the delivery systems due to increased losses. This has resulted in continuation of the head tail discrimination in access to irrigation water from public sources due to systemic and technical features as well as the violations of rules of water distribution. Eighty six per cent of the farmers surveyed responded that, there was no change in per acre yield of rice due to PP (fig.5). The majority of the farmers (72 per cent) responded that maintenance after the formation of PP also remained the same (fig.6). Again with regard to the availability of water, a majority of the farmers (65 per cent) responded that there is inadequacy of water (fig.7).

4.4 Explanation for the Non-utilisation of the Estimated Area of PPs

In many cases, the initial formalities have been concluded. There is no follow-up action due to lack of motivation and leadership amongst the members. In some situations the irrigation water does not reach up to far off fields either because the intermediary non-members do not allow the watercourse or the land is at a higher elevation. In few cases, it is observed that some of the technical decisions were wrong and hence even though there is relatively an easier availability of water, the water lifting mechanical devices have a limited capacity and to that extent the intensity of farming over the two to three seasons in a year cannot be achieved. In the absence of the right to decide on dead storage, the occupational groups may not have incentive to participate, leading to inefficient and underutilisation of PPs.

Table-7: Farmers Responses in the Pani Panchayat Field Study Areas

Sl. No.	Question Asked	Options	Response as per cent
1	Election/Selection of PP members	Fair Unfair	35 65
2	Maintenance after PP was formed	Same Worse Distinct improvement	72 — 28
3	Changes in Area irrigated after PP formation	Yes No	22 78
4	Change in Per acre yield rice due to PP	Yes No	14 86
5	Have you been paying water dues as per	Revised rates Old rates Not paying	28 34 38
6	Suggestions for controlling water distribution	Installation of Shutters Disciplinary action Miscellaneous*	75 66
7	Whether woman should involve in PP activities	Yes No	18 82
8	Your preference is for	PP Irrigation Dept. Personnel Traditional Irrigation Institution Indifferent	45 18 23 14
9	Do you know the name of your PP president	Yes No	42 58
10	How many General Body (GB) meetings have been held in your PP	Two- Four More than four None Do not know	18 08 34 40
11	Were you informed about the GB meetings and did you attend	Informed & attended Informed but did not attended Not informed	08 22 70
12	Are you aware of formal PP functioning in the village	Yes No	30 70
13	Water availability	Adequate Inadequate	35 65

Source: Field Survey (2004-05)

* Controls necessitate not only for letting the water in but also for preventing the flow.

Note: Blank entries in the Table denote nil.

Fig. 2

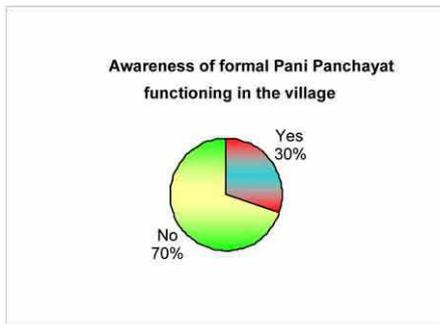


Fig. 3

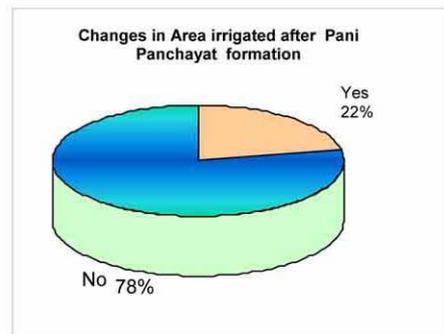


Fig. 4

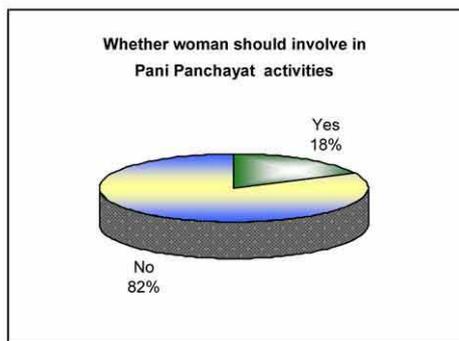


Fig. 5

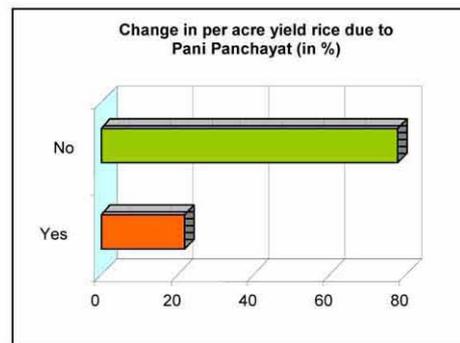


Fig. 6

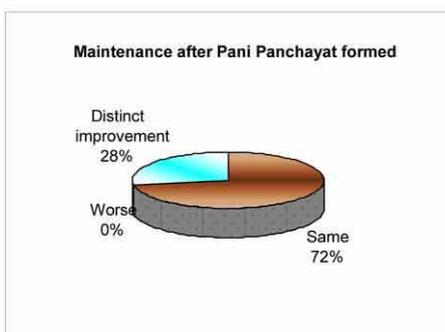
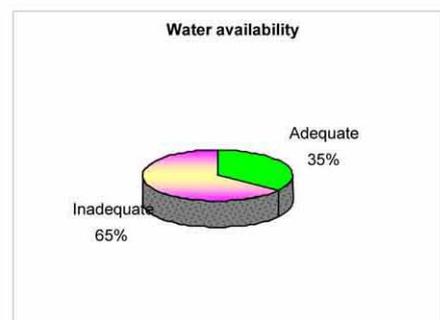


Fig. 7



Source: Field Survey (2004-05)

5 CONCLUDING OBSERVATIONS

An analysis of land holding pattern reveals that majority (73 per cent) of the PP members is the marginal and small farmers. The proportion of medium farmers and large farm households constitute 14 per cent and 13 per cent of the farm households respectively. The category and caste-wise distribution of households reveals that there is bias towards upper classes in terms of membership. Unusually, under PP the overall cropping intensity among members is 200 per cent. The cropping intensity for all types of farmers is equal. Paddy is the only major crop which is produced in both the Kharif and Rabi seasons, since through the formation of PP water is provided throughout the year. Despite the fact that the PP members have land outside the PP, their overall cropping intensity is 222.77 per cent. While comparing cropping intensity between PP area and Non-Pani Panchayat area, it is observed that the cropping intensity of area under PP scheme is lower (i.e. 200 per cent) than the Non-Pani Panchayat land (i.e. 222.77 per cent).

Awareness about the formation of formal PP in the village was less (30 per cent). Many farmers had no idea about the PP Programme. 62 per cent of the small farmers are not satisfied with the functioning of the PP Committee. The State should act as a facilitator not controller. PP do not imply that the state should completely withdraw from irrigation, but would continue to provide critical services, particularly water supply at the main delivery points, providing information, training and accounting. The poor and landless should have the right and access to water and this right should be linked with their right to employment. After PPs came into picture, the members who have rights on land, have only rights on water, which is likely to give rise to a 'Panidar' (water lords) class. Hence, the natural rights for irrigation water become insecure and unsuccessful.

From the above discussion we can conclude that the performance of PPs as regulatory institutions in charge of water distribution on an equitable basis has been weak and unsuccessful. This raises doubts

with regard to their capacity to generate resources through collection of water cess. Researchers have drawn up a strategy for policy makers to ensure IMT programs become more pro-poor stressing the need to clearly define the rights of farmers, raise awareness of these rights, reform the election process, and monitor participation in water user authorities.²¹ Despite the irrigation agency in Orissa having taken a policy decision to encourage farmer's participation and attempts being underway to motivate farmers to form WUAs, the farmer's response in this regard is not of a satisfactory level.²²

It is also argued by Swain that farmers will be come forward to form WUAs and will be ready to take up the additional responsibility if they are convinced that benefits due to participatory management will exceed their cost of participation. As most of our farmers are not educated and lack vision to comprehend the future benefits due to participation, special care should be taken while motivating the farmers. They have to be convinced that the benefit due to participation will be substantial, tangible, quick yielding and sustainable. Though water is the most crucial input required for plant growth, the productivity impact of irrigation depends on the use of other yield enhancing complementary inputs like HYV seeds, fertilizer, manure and modern agronomic practices. Therefore other agricultural inputs should be made available to the farmers in time and as per requirement through WUAs. The farmers having different political affiliations may have a conflict of interest and difference in opinion. Learning by doing approach should be followed to determine the model and modalities of forming WUAs.²³

21 For detailed discussions, see International Water Management Institute, *Irrigation Management Transfer: How to Make it Work for Africa's Small Holders?* (IWMI, Water Policy Briefing Series 11, 2003), available at http://www.iwmi.cgiar.org/Publications/Water_Policy_Briefs/PDF/wp11.pdf.

22 Mamata Swain, 'Turning Over Irrigation Management to Farmers – Issues for Concern', in Gyana Chandra Kar and Mamata Swain eds, *Farmer and Local Participation in Irrigation Management* 128 (New Delhi: Commonwealth Publishers, 2000).

23 *Id.*

Even though PP has been initiated and endorsed in the State for more than a couple of years, the acceptance of the model has been lethargic and scattered. There is no easily accessible data to evaluate this performance. As a whole PP is unexecutable and unacceptable. PP is not in the interest of the people. There are so many constraints like selfishness, illiteracy, and a lack of interest on part of the big landowners, which hinders the improvement of PP. Many registration actions of PP are complex and long, raising the costs of participation for the farmers. Simpler procedures are needed that will provide the PP organisations with sufficient legal standing to deal with government agencies, contract with private firms, contractors, and control resources within the group.

A detailed action plan should be prepared in consultation with the water users through a Participatory Rural Appraisal method. A feasibility study should be undertaken by examining the caste class conflict, groupism, political differences and history of confrontation and conflict, if any. It is necessary to apply a bottom-up approach instead of top-down for sustainability. There must also be mechanisms to ensure that the benefits of the project are equally distributed among all concerned stakeholders.

Name of the Source:	Mahanadi River
Area in acre (ayacut):	123.66 Acre
Horse Power Used:	15 HP (Horse Power)
Office Bearers:	Total No. of PP members: 63 No. of Committee members: Four
President Election:	Nomination

Appendix

Profiles of the Selected Pani Panchayat (PP)

Name of the PP:	Vir Bajrang Bali Pani Panchayat (Lift- I & II)
Location:	Village: Bandhapali Gram Panchayat: Kardola, Post office: Chiplima Block: Dhankauda District: Sambalpur, State- Orissa
Age of the system:	Old registration 1996-97 as WUA, Newly formatted in 2001-02 as PP
Type of the system:	Lift Irrigation (LI)
Total No of LI Points:	Lift I and II

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