

# **Participative Water Management in Industrial and Non-industrial Districts of Odisha**

Banikanta Mishra and Sagarika Mishra

Draft: Please do not quote without permission of one of the authors.

\*Professor of Finance, XIMB (Xavier Institute of Management – Bhubaneswar), Bhubaneswar 751013, Orissa, India ([banikant@ximb.ac.in](mailto:banikant@ximb.ac.in)) and Research Associate, XIMB (Xavier Institute of Management – Bhubaneswar), Bhubaneswar 751013, Orissa, India ([sagarika@ximb.ac.in](mailto:sagarika@ximb.ac.in)), respectively. The authors thank Sudhir Pattnaik for his help in preparation of the questionnaire, Birendra Nayak, Sudhir Pattnaik, and Anita Mishra for accompanying the authors for the village-level surveys, Brajabihari Mishra, Jitendra Patro, and Rajendra Patro for conducting the field surveys, and Brajabihari Mishra for facilitating the village-level surveys.

## **Participative Water Management in Industrial and Non-industrial Districts of Odisha**

When Pani Panchayats (Water Users Association) were introduced in Odisha, there was a lot of resistance from common people, and quite justifiably so. Though focus of these WUAs was on irrigation, the whole concept needs to be studied from a macro perspective of management of what we may call “water commons”. In fact, it is quite similar to the concept of “river commons”. The focus of this paper is on analyzing the overall concept of water commons in Odisha, with particular emphasis on irrigation. We believe that the attitude towards WUA would have varied depending on the characteristics of the localities. We would analyze whether the attitude towards WUA and its success have been different between industrial and non-industrial districts. In the course of our research, we would look at the traditional conflicts – that have been far more pronounced in recent times - between water allocation for agriculture vis-à-vis industry.

*Key Words: Participative Water Management, Privatization of Water, Water Users' Association, Industrialization, Irrigation Management*

In this article, we study whether irrigation-water-management has undergone any change in the recent years in Odisha due to emergence of Pani Panchayats (PP), the Water Users' Associations (WUA), by focusing on two selected districts: Dhenkanal and Puri. As per the classification of Odisha's districts by Mishra (2010), Dhenkanal is an industrial district and Puri non-industrial.

As one would expect, a study partially supported by the World Bank and authored by an official of the Water Resources Department of Orissa concluded that, “There is no doubt that pani panchayats are an excellent platform for increased agricultural production and for improved economic conditions of the farmers” (Swain 2009). Similarly, in reference to institutional response to challenges of water-management, a World Bank publication echoes a similar hope (Saleth and Dinar 1999). “International lending/development agencies like the World Bank, with its declared commitment for capacity building, have a clear stake in promoting policy studies of the kind needed now” (ibid).

But, people do not easily buy into such “dream selling”. In the blunt conclusion of a paper presented at a national seminar in India, Late Rajendra Sarangi, an M.Tech from Indian Statistical Institute - Kolkata and one of the most respected socio-political activists of Odisha, said as follows. “The Government talks of active involvement of all stakeholders. In normal times, instead of stakeholders, we would have been talking about only the population of India. But, the World Bank has made the Government of India to think of different interest groups as different stakeholders.” He delineated MNCs as one of the proposed interest-groups of the Government and forewarned that MNCs and other wasteful and unsustainable users of water would ultimately drive away the bargaining power of the general populace.

His concerns are echoed in the clear verdict that was delivered by the jury in a public-hearing on water, held under the banner of Campaign Against Marketisation of Water that was initiated by Orissa Khadya Adhikar Abhijan, Lok Shakti Abhijan, Lok Sangram Manch, Lok Bigyan Parishad, and Ambedkar-Lohia Vichar Manch in collaboration with Orissa Lift Irrigation Corporation (OLIC) Employees Federation and Navadanya: Pani Panchayats are a prelude to water privatization” and, therefore, unacceptable (Sarangi 2002). The jury consisted of a former judge and law secretary of the state, a retired chief engineer and former MD of OLIC, an advocate and human-rights activist, a director of an institute in Odisha, and a professor regarded by many as the best socio-economic analyst of the State.

The detailed report pointed at some important clauses pertaining to Irrigation Management Transfer (IMT) that was contained in a World Bank publication on “Irrigation Sector”. We highlight them below.

“WUA must contribute up-front a part of the investment costs and should immediately shoulder O &M (Operation & Management) responsibilities and costs at their levels in the irrigation system. WUA need to be financially self sufficient, at least for O&M, right from the outset.

Generally WUAs would be distinct from grass roots social organization such as the Panchayats.

Within each WUA, member should have water rights proportionate to their farm area and be able to sell, buy, lease or rent their water.

The actual irrigation service should be handled by a separate water service agency (WSA), or several WSAs.

The critically needed and urgent priority is to increase water charges to cover O&M thus enabling the financial autonomy of WUAs, WSAs and the Irrigation Department. There is no avoiding this difficult step. Once water rates have been raised to cover O&M, they should be annually reviewed and adjusted for inflation; one technique is the use of an automatic commonly available price index.

It is expected that making the farmers and the WSAs directly responsible for billing and collection will dramatically increase collection rates.

Increased water rates should be accompanied by client driven improvements in the irrigation service, where the farmer appreciates that the service is improving or will improve an increase in fees is more readily accepted.

Water charges should take into account the costs of capture, conveyance and distribution (O&M + Capital costs), but the scarcity value of water as a resource can be further reflected through water markets. In countries where a water rights system and formal water markets exist, the scarcity value of water is reflected in the market value of a water use right.

An independent price regulating agency should be set up and be charged with making annual reviews of O&M and water pricing and resultant recommendations to the Government. Water charge setting needs to be removed from the political arena.

The funds for irrigation should be sought from capital and debt markets and also by encouraging private sectors to invest in irrigation development.

There should be a strong partnership between the Government, WUAs & civil societies. The WSAs facilitate contact with NGOs and private firms while introducing less politicized environment to set and collect water charges. It shall also enable the option of mobilizing private sector funds."

The main objective of setting up PPs as per the World Bank recommendation (or imposition?) is to ultimately reduce the role of the government and public-sector in managing irrigation-system in the State, which is the backbone of its agriculture, the State's lifeline. This is the best way to open up the State's water resources to private ownership. In a 1998 World Bank report titled "Initiating & Sustaining Water Sector Reforms: A Synthesis", it was, in fact, stated that it "is a prerequisite to increasing private financial flows to the sector" (Sarangi 2002).

The public-hearing drew some important conclusions. (1) Attempts to privatize irrigation system had failed in the British-ruled India, leading to huge liabilities for the state exchequer. (2) The 1960s experiment by the then Chief Secretary of Odisha of handing over the management of the irrigation-system to farmers' cooperatives was also a failure. (3) The objective of making profit from irrigation-system through water-tax – whether by the government or the private sector - has been historically shown to be untenable. (4) Water subsidies are required for the large number of farmers in the State who are small or marginal and, therefore, should not be discontinued. (5) It is desirable that "the local community should participate in the management of local resources." (6) The NGOs, which are ramifying in the State by day, have become puppets in the hands of international donor agencies, who push their own greedy agenda. (7) No legislation should directly or indirectly counter the "natural right" to water; therefore, water should also in no case be privatized. (8) Government should focus more on creating environments for rainfall and proper irrigation than for regulating water supply. (9) Bureaucratic inefficiency and non-commitment should not lead us to blame the efficacy of the prevalent, traditional irrigation system in place. (10) Zamindar class had been created by the imperial powers to collect rent on land (zamin); similarly, PP system would ultimately create a Panidar class.

A recent research (Sahu 2008) points out how PP has not been able to score over the traditional system. “PP as a new policy intervention in participatory water management and development in Orissa does not show any improvement over the conventional system of water management and irrigation infrastructure. Poor community participation under new policy initiatives and institutions, especially among marginal groups and lower caste people has halted meeting the objective of participatory water management and development. Dominance of few elite members, lack of group dynamics, exclusion of local practices and institutions, absence of defined property right, constraints in supply of inputs such as credit and extension services, etc. discouraged their active participation.” Interestingly, it points out that, where PP failed to find acceptance, some informal institutions using village elders and arbitrators became instrumental in solving conflicts relating to water allocation (ibid). It argues that any new participative water management system in Odisha “without addressing local socio-economic, cultural, and institutional issues and problems of accountability and transparency of existing system would lead to sub-optimum community participation and collective action in water management and development” (ibid).

In a study relating to PP in Maharashtra, which seem to favor PPs, the researcher points out about the existing water-rights – or the lack of it - of the landless (Sangameswaran 2009). “What is particularly ironic about this exclusion of the landless is that there has been a long-standing demand by activist groups in Maharashtra to get the state to de-link water rights and land rights from the point of view of equity (drawing on the Pani Panchayat principles), and water rights to the landless formed an explicit part of this demand. However, the kind of de-linking that the state has undertaken via the water entitlements not only excludes the landless, but has led to fears about the progressive commercialization of the water sector and the possible negative distributional consequences of this. The research quotes another work that highlights the dangers of creating water-rights and trading in it. “Dwivedi *et al* (2006) point out that trading in water rights would make it even more easy (than it is already) to bypass conflicts over water resources (including between different uses), as those with greater resources at their command can now legally purchase the rights, even if such a purchase is problematic on grounds of equity.”

## **DATA**

We employed field-investigators to collect household data based on a questionnaire provided by us (Appendix – I). We chose two different districts, one industrial (Dhenkanal) and another non-industrial (Puri). In each district, blocks, villages, and households were randomly chosen; data was collected from 260 households. We also went for village-level surveys to selected villages and spoke to PP office-bearers and villagers.

## **ANALYSIS**

Table-1 give some summary statistics. As we see average land-holdings by people are roughly the same in two districts, though average land-holdings by the PP is higher in Puri compared to Dhenkanal and so is the corresponding average monthly income in the locality. Higher fraction of respondents in Puri has a high land holding (> 1.5 acres), whereas it is almost even in Dhenkanal. Table-2 presents the method of irrigation used in the two districts. Whereas industrial Dhenkanal relies mostly on rain-water (high risk), Puri sees a variety of options evenly distributed in popularity. Table-3 (a and b) show the level of participation – rather lack of it - in PP meetings and the size of land-holdings. It is observed that, in Dhenkanal, both small and large land-holders are equally likely to be passive in PP meeting and activities; but, in Puri, small land-holders are far more (26%) likely to be passive than the large ones (5%). Table-4 talks about duration and “perceived” success of PP. In Dhenkanal, average duration of PP is much higher (6.4 years) than that in Puri (2.4 years). But, it is in Puri that the access of tail-enders to water has improved far more (almost 50%) than it has in Dhenkanal (20% only). Interestingly, almost half the respondents in each district felt that they have not benefited due to PP.

## **OBSERVATIONS**

During our village-level surveys, some interesting facts came to light. In one PP, the way the PP started was rather curious one. A villager was going to the “hat” and heard a government announcement about the concept of PP in the roaming public-address-system. He then ran back to the village and told people about PP. Then, they got together later, and, under his leadership, formed the PP in that area.

Water-tax aspect is definitely quizzical. Annual water- tax paid in summer and rainy seasons are different. In summer, people pay Rs.180 per acre and, in rainy season, Rs.100. The rainy-season tax is collected from everyone, but the summer-tax is collected only from those acres getting irrigation-facility in summer, which may, of course, be underreported by the owners. Thus, if a PP has 800 hectares of land of which 500 hectares irrigated during summer, government’s total collection per year from the above tax would be around five lakh rupees. That is a lot of money. One wonders why people cannot get much benefit despite giving so much. Though the PP receives

some money as annual PP grant from the state government – Rs.100 per hectare – that is somewhat irregular and not anywhere near what people are paying out.

In this light, the following comments by some villagers is noteworthy. From the amount given by the government to PP, 10% is retained by the PP, 60% is paid towards payment for work execution, 20% goes to beneficiary costs, and 10% goes to irrigation officials.

In some cases, PP-members take loans – often at high rates of 40% to 50% annualized - to make payments for work. This happens since the PP-office-bearers in some cases, being local people, can easily be pushed by the villagers to get work done; the qualities of these works are usually better because of accountability, some villagers thought. But, big works – those above Rs.5 lakh value – still goes to contractors.

The so-called “forced commitment” of PP-office-bearers led to another interesting observation by us. Earlier, when government was in complete charge, if there was a problem, people pestered the local irrigation officials to fix it. Now, they approach PP, who often does not get much help from the government. Thus, PP has become a clever way for the government to pass on its own responsibility to people.

## **CONCLUSION**

We are afraid that the PP-system, which passes on the management of irrigation to the locals (albeit, we think, temporarily), as a “strategy” may be a part of a “bigger scheme of things” that pro-privatization government may have in its mind. Without any help from the government, many PPs would perhaps fail. This would allow the government to tell people that the villagers are not good at managing water and, therefore, the management should be passed on to private parties. Many villagers who would have been upset with the “inefficiency” of the PPs would buy this argument easily and make way for privatization of irrigation system in the state, perhaps the ultimate, but unstated (or tangentially stated), goal behind the PP-system.

This is perhaps what the State Planning Board and Programme Implementation Committee had in their mind when they expressly observed that lift-irrigation points should be progressively privatized by handing over the operation and maintenance of all lift-irrigation-points to gram-panchayats, panchayat-samitis, or zilla parishads or, as an alternative, to farmers’ cooperatives or water-users’-associations (Sarangi 2002).

## **LITEARATURE CITED**

Dwivedi, G., Rehmat, and Dharmadhikary, S. (2006) “*Water: Private, Limited*”, Badwani, India: Manthan Adhyayan Kendra.

Mishra, Banikanta (2010): "Agriculture, Industry and Mining in Orissa in the Post-Liberalisation Era: An Inter-District and Inter-State Panel Analysis", *Economic & Political Weekly*, 15 May

Sahu, Basanta Kumar (2008): "Pani Panchayat in Orissa, India: The practice of participatory water management", *Development Houndmills*, Vol: 51, Iss: 1, 121-125.

Saleth, R. Maria and Dinar, Ariel (1999): "Water challenge and institutional response: A cross-country perspective", *Policy Research Working Paper Series 2045*, The World Bank.

Sangameswaran, Priya (2009): "Water Rights for the Landless in Western India: From Pani Panchayat to Water Entitlements", *The European Journal of Development Research*, Vol: 21, Iss: 2; April, 195-212.

Sarangi, Rajendra (2002): "Public Hearing on Water: Jury's Report", *Campaign against Marketisation of Water*, Bhubaneswar

Sarangi, Rajendra (2005): "Marketisation of India's Water Resources: Role of World Bank and the Orissa Experience", Paper presented at the Seminar Against Privatisation of Water Resources at Tirunelveli, Organized by Peoples Art and Literary Association, Chennai, 3 September

Swain, Debraj (2009): "Orissa's pani panchayats - a case of successful irrigation management", *CRBOM Small Publications Series No. 4*, Center for River Basin Organizations and Management, Solo, Central Java, Indonesia, August.

## **Appendix – I**

### **Questionnaire: Pani Panchayat**

**Name of Village/Block:** \_\_\_\_\_

**Panchayat:** \_\_\_\_\_

**District:** \_\_\_\_\_

**Gender: Male/Female**

**Age:** \_\_\_\_\_

**Profession:** \_\_\_\_\_

**Monthly Income:** \_\_\_\_\_

1. Since when is Pani Panchayat (PP) functioning in your locality?
2. How was the allocation of irrigation water done before PP came?



3. Whose idea was PP (all villagers or some selected villagers or the government)?
4. If it was your idea, why did you suggest it? What benefit did you expect?
5. If it was government's idea, why did you accept it? What benefits did you expect?
6. How was the PP in your locality formed?
7. What has been your role in the formation of PP?
8. What has been the government's role in the formation of the PP?
9. What has been the role of outside agencies (please specify) in formation of the PP?
10. Does PP take any decision regarding water in its meetings or does PP only ratifies decisions taken by other bodies or groups (not involving all the villagers)?
11. What specific decisions are taken by PP?
12. What is the structure of decision-making in PP? Is it democratic?
13. What is your role in the above structure?
14. What is the amount of land you hold?

15. What is the amount of land-holding by the President of PP?

16. Has your or other villagers' access to water improved/deteriorated by formation of the PP?

17. Has the access of tailender (kenal tali) farmers increased/reduced by the formation of PP?

18. Has the amount of irrigated land in the village increased/decreased due to PP?

19. Has it improved/reduced the number of crops you grow?

20. Has it improved/deteriorated crop diversity?

21. Has it improved/reduced the yield?

22. Has it increased/reduced your income?

23. How did you irrigate your land before PP came?

24. How much do you pay for water now? Is it a big burden on you?

25. Do you feel that volumetric measurement of water should be used to fix the "water tax"?

26. Do you feel that water gets diverted from agriculture to industry?

27. If answer to the above question (27) is yes, has this diversion increased after 1991 or after recent industrialization in your district or nearby localities?

28. Has the agrarian history of your locality affected the relative allocation of water to industry and agriculture?

<b>District</b>	<b>No of respondents</b>	<b>No of villages taken</b>	<b>No of PPs taken in this study</b>	<b>Average age of respondents</b>	<b>Average monthly income</b>	<b>Average land holding</b>	<b>Average amount of land - holding by P P</b>	<b>Having land holding &lt; 1.5acres</b>	<b>Having land holding &gt; 1.5acres</b>
<b>Denkanal</b>	260	5	5	48	1464	2.06	414.5	139	121
<b>Puri</b>	260	16	6	48	1669	2.19	641.4	79	181

<b>Table-2</b>			
Method of irrigation before introduction of P P			
<b>How did you irrigate your land before PP came?</b>	<b>No of response</b>	<b>How did you irrigate your land before PP came?</b>	<b>No of response</b>
Denkanal		Puri	
Rain water	143	River water, water pump	38
Rain water,	37	Lift irrigation	44
Hand lifting(Tenda)	10	water pump ,canal	45
River lift	32	Canal,rain water, water pump	39
Other	38	Other	94

<b>Table -3 a.</b>		
Land holding and participation		
	<b>Having land holding &lt; 1.5acres and not participating in PP activity</b>	<b>Having land holding &gt; 1.5acres and not participating in PP activity</b>
<b>Denkanal</b>	50 (36%)	40 (33%)
<b>Puri</b>	17 (26%)	8 (5%)

<b>Table -3 b.</b>		
Land holding and participation		
	<b>Average land holding of people who are not participating in PP activity</b>	<b>Average land holding of people who are participating in PP activity</b>
<b>Denkanal</b>	1.89	2.16
<b>Puri</b>	1.48	2.26

**Table -4**

**Duration and success of P P**

	<b>Has your or other villagers access to water improved/deteriorated by formation of the PP ?</b>	<b>Has the access of tailender farmers incresed/no change by the formation of PP?</b>	<b>Has your or other villagers access to water improved/deteriorated by formation of the PP ?</b>	<b>Has the access of tailender farmers incresed/no change by the formation of PP?</b>
	Denkanal		Puri	
Average Duration of P P (Years)	6.4		2.3	
Improved	104	52	149	121
No change	109	208	111	119
Deteriorated	47	0	0	0