



XIMB-Centre for Case Research

RURAL DRINKING WATER SUPPLY

(A case of Basic Rural Infrastructure in the KBK districts, Orissa, India)

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The present case is intended to be used as the basis for class discussion to help raise relevant questions to think and to contextualize management and institutional issues rather than to illustrate either effective or ineffective practices. It is intended neither to glorify nor to criticize an individual or an organization.

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RURAL DRINKING WATER SUPPLY

(A case of Revised Long Term Action Plan for KBK districts in Orissa, India)

In the small village located in the Chandahandi block of Nawarangpur, Manu, a kid of fifteen, had to devote his time from studies to accompany his mother for fetching potable water for his family. Traveling long miles on foot under the hot sun to bring water had become a part and parcel of their daily routine. Water, for them seemed to be a far-fetched dream. The nearest water source, a tube well was about 2 Kilometers from the village. The morning sun took them out of their homes, laden with empty pots to get their fill for the day. If by any chance any one of the women failed to make it to the water source, she had to bear the scorching heat of the sun through the parched roads to carry back just a pot of water, which would probably last for a few hours. The evening sun also reminded them to get back to their chore of collecting water for the coming night.

One day, Manu's mother fell sick, when his father had gone to the local town for some work. Manu could not go out to get water as the neighboring women who usually accompanied his mother had already left. His younger brother and sister were parched and were in need of water. Manu was helpless and decided to rush out alone to collect a pot of water. On reaching the tube well, Manu found it abandoned, as it was out of order. With the hope to fetching some water home, Manu had walked the distance to the tube well and finding the tube well defunct, tears rolled down Manu's cheeks. "If only I knew how to fix it up, I could take water home" Suddenly he remembered Golu bhai, a young man of 25, who was a member of tube well maintenance staff and knew how to fix a tube well. But, Golu lived another 1 kilometer away in another village and what if he was not at home, he wondered. The other option he thought was to walk another 1.5 kms to the market place and collect water from the hand pump there. Manu was in real dilemma what to do, what if that hand pump was also defunct? With a prayer in mind and hoping for the best, he decided to walk on...

At the end of June 1st Fortnight of July 2006, there were 2526 habitations in Orissa that were without safe drinking water. But now the collectors have reported that this number is 2578. It calls immediate intervention of Collectors of Angul, Boudh, Deogarh, Gajapati, Kalahandi, Kandhamal, Kendrapara, Keonjhar, Koraput, Nawarangpur, Nayagarh, & Rayagada where the figures are comparatively higher than in other districts.

THE KBK DISTRICTS

The undivided districts of Koraput, Bolangir and Kalahandi (popularly known as KBK districts) have since 1992-93 been divided into eight districts, viz., Koraput, Malkangiri, Nawrangpur, Rayagada, Bolangir, Sonepur, Kalahandi and Nuapada. These eight districts comprise of 14 Sub-divisions, 37 Tahsils, 80 Blocks, 1,437 Gram Panchayats and 12,104 villages. See **Exhibit 1** for the total administrative units and **Exhibit 2** for the geographic map with climate, rainfall, irrigation and other demographic details.

The KBK districts account for 19.72% population of the state of Orissa and 30.59% of the geographical area of the State. This region is one of the poorest and most backward regions in the country. The literacy rate at 36.58% is much lower than the State average of 63.61%. The population also suffers from high morbidity on account of under-nutrition as well as endemic malaria and other localized diseases. Tribal communities with a population of about 38.72% dominate this region. As per 1991 Census, about 38.72% people of these districts belong to the Scheduled Tribes (ST) communities including four primitive tribal groups (PTG), i.e., Bondas, Dadai, Langia Sauras and Dangaria Kandhas. Some demographic and literacy indicators are summarized in **Exhibit 3**.

Rainfall is generally erratic and unevenly distributed. Irrigation facilities (both surface and lift) are inadequate. Problems of soil erosion and land degradation are common. Water retention capacity of the soils is generally poor. These factors, among others, significantly contribute to low land productivity. With over 50% of the forest cover either lost or degraded, at present all the eight KBK districts are ecologically disturbed. All these factors aggravate the problem of poverty in the region.

Employment opportunities in the region are limited to rain fed agriculture, which does not generate adequate avenues of employment for the rural poor. As a result, many men and women go out to urban areas both inside and outside the State in search of employment. This leaves the old and infirm in the villages. As per the 1997 census of BPL families, about 72% families below poverty line live in this region. District-wise information about the number of BPL families as per 1992 and 1997 census are summarized in the **Exhibit 4**. In order to tackle the various problems of poverty in the KBK region, the Government of India planned to implement the Revised Long Term Action Plan (RLTAP) in these eight poor districts of Orissa.

REVISED LONG TERM ACTION PLAN (RLTAP): 1998-2006

In 1998, a Revised Long Term Action Plan (RLTAP) for the KBK districts was submitted to Government of India on its advice. The project was prepared in a sub-plan mode to address the peculiar socio-economic problems of this chronically poor region that is also geographically contiguous. This project envisaged an integrated approach for speeding up the socio-economic development of this region by synergizing effectively the various developmental activities and schemes under implementation both in Central as well as State sectors.

The critical gaps in the development efforts as well as resources were sought to be bridged through Additional Central Assistance (ACA) / Special Central Assistance (SCA) as a special dispensation. Therefore, there had to be pooling of resources for different sources like: (i) Normal flow of funds to KBK districts under Central Plan (CP) and Centrally Sponsored Plan (CSP) schemes, (ii) Additional funds received from Government of India exclusively for programmes in KBK districts as agreed by the Planning Commission, and (iii) Central assistance under programmes of Government of India to be implemented in KBK districts with some relaxation in norms such as Accelerated Irrigation Benefit Programme (AIBP) for earmarked irrigation projects.

A total outlay of funds to the tune of Rs.6, 251.08 crore over a project period of 9 years from 1998-99 to 2006-07 was envisaged under the revised project. See **Exhibit 5** for the details. The district wise expenditure for the 8 selected schemes under the RLTAP budget during 2001-06 amounted to Rs. 1791.75 crores. See **Exhibit 6** for the details of the different schemes.

Providing safe drinking water to the people in the KBK region was one of the eight schemes of this RLTAP. The scheme was intended to reduce the burden of walking long distances to fetch potable water, besides reducing the occurrence of diseases due to unsafe drinking water. The total expenditure on this scheme accounted for 4 percent of the total expenditure of RLTAP in KBK districts. However, the drinking water scheme accounted for 15.5% of the total expenditure on various schemes in the district of Nawarangpur.

The primary responsibility of providing drinking water facilities in the country rests with the State Governments. The efforts of State Governments are supplemented by Government of India by

providing financial assistance under the Centrally Sponsored Scheme of Accelerated Rural Water Supply Programme (ARWSP). The ARWSP has been under implementation since 1972-73. Under ARWSP, the following norms were being adopted for providing drinking water to the rural population.

- 40 litres per capita per day (lpcd) of safe drinking water for human beings.
- 30 lpcd additional for cattle in the Desert Development Programme Areas.
- One hand pump or stand post for every 250 persons.
- The water source should exist within 1.6 km in the plains and within 100 metres elevation in the hilly areas.

Further, water is defined as safe if it is free from biological contamination (cholera, typhoid, etc.) and chemical contamination (excess arsenic, fluoride, salinity, iron, and nitrates).

In 1986, the National Drinking Water Mission was set up and later in 1991 it was renamed as Rajiv Gandhi National Drinking Water Mission. In 1999, the Department of Drinking Water Supply was created to provide a renewed focus with mission approach to implement programmes for rural drinking water supply. There have been several other Government programmes for making drinking water available in rural villages. The Bharat Nirman Programme was one such that had taken steps towards building up a strong Rural India by strengthening the infrastructure in six areas viz. Housing, Roads, Electrification, Communication, Drinking Water and Irrigation, with the help of a plan to be implemented in four years, from 2005-06 to 2008-09.

The availability of safe drinking water plays a pivotal role in the health and well being of the people. The rural water supply & sanitation organization, which is functioning under the Rural Development Department, primarily aims at providing safe drinking water to the rural people of the State. As per the records of this organization, it has fully covered 1,14,099 earlier identified habitations of the State and its current thrust has been now to augment & maintain the water supply system in the State, promote sustainability of sources and to maintain the quality of service.

Having implemented so many types of schemes under different programmes of the Government both at the central and state level, it is only appropriate to assess the extent of success of having reached safe drinking water to the people in the KBK region. There could be several questions for investigation;

whether the target group has been really benefiting from these schemes, and whether the required assistance and provisions have actually reached the beneficiaries. One also wonders whether the expenditure stipulated for the work is adequate and whether the institutional settings are able to deliver the expected outputs and desired outcomes.

These were some of the questions that arose in the minds of the team of professors at XIMB that was requested by the Principal Accountant General, Orissa to investigate the impact of these programmes, especially the impact of RLTAAP scheme(s) at the grass root level. Thus, the management team from XIMB took up a survey and case studies of the programmes including the Rural Drinking Water Scheme (RWDS) to find the underlining problems of water supply in these districts. The team also aimed to look into the operational and institutional mechanism of the scheme so that the management system can be improvised to improve the delivery of the programme.

STRUCTURE FOR IMPLEMENTATION

The Rural Water Supply & Sanitation organization implements rural drinking water supply programme by utilizing the outlay under Accelerated Rural Water Supply Programme (ARWSP), Special Central Assistance (SCA) under RLTAAP for KBK districts and Swajaldhara. It also implements rural sanitation programme under the centrally sponsored Total Sanitation Campaign (TSC). Besides providing economic assistance in implementing the schemes and programmes, both these organizations provide emergency support service during natural calamities.

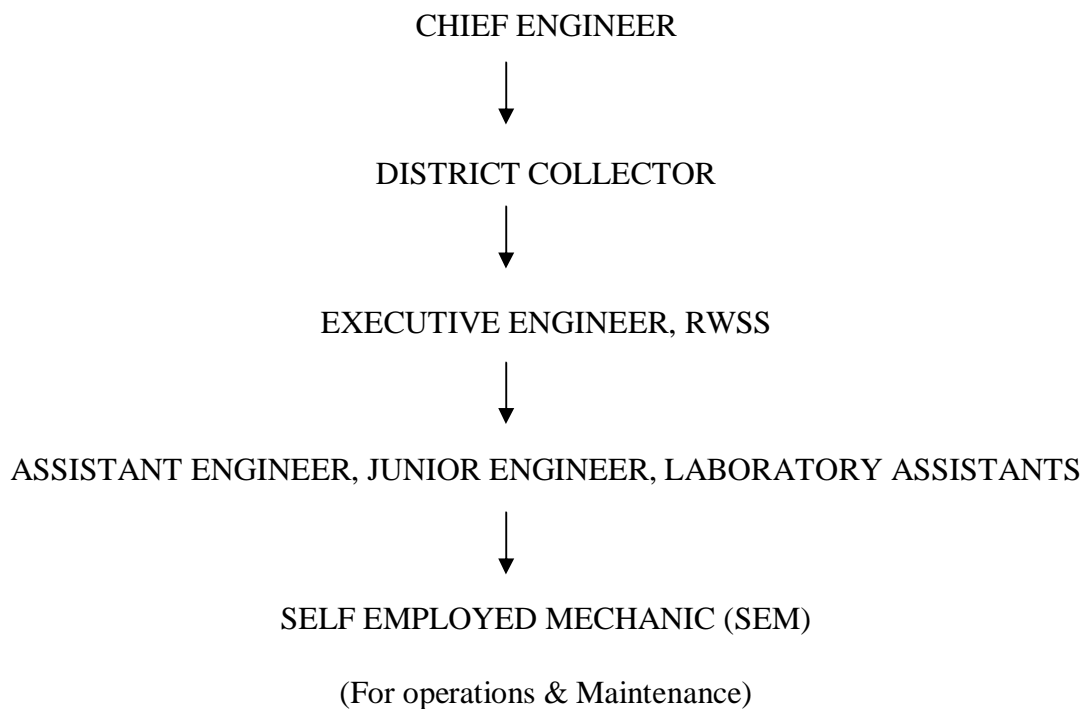
For the successful implementation of community-based and demand-responsive programmes such as Swajaldhara and Total Sanitation Campaign, Orissa State Water and Sanitation Mission, a registered society under the aegis of Rural Development Department, was constituted and established vide Resolution No.9990/RD date.05.05.2002. The Mission works in collaboration with UNICEF and other agencies concerned. Rural Water Supply & Sanitation (RWS&S) Organisation deals with rural water supply and rural sanitation.

Drinking water supply is a state subject. The efforts to provide all rural habitations with potable water free from chemical and bacteriological contamination are supplemented by the grant-in-aid received under the centrally sponsored plan. Under the department of Rural Development, there are two

departments viz., (a) Rural Works and (b) Rural Water Supply and Sanitation. The Rural Water Supply and Sanitation has two Chief Engineers for two functions viz., (i) rural water supply and sanitation and (ii) Orissa State Water and Sanitation Mission. Our focus in this case is the Rural Water Supply and Sanitation (RWSS). RWSS is headed by a Chief Engineer at the state level. The Chief Engineers is responsible for providing potable drinking water supply to the rural habitations under different schemes. He is also responsible for the administration, monitoring and control of the various projects. (See <http://www.orissa.gov.in/RD/index.htm> for detailed organization chart of the Rural Water Supply and Sanitation Organization).

While at the state level, the Chief Engineer heads the department, at the district level, the Executive Engineer heads the team of Assistant Engineers, Junior Engineers, Laboratory Assistants and other staff to implement, operate and maintain the water supply systems. The flow chart for the implementation of the rural water supply and sanitation projects can be visualized from the following **Chart-1**.

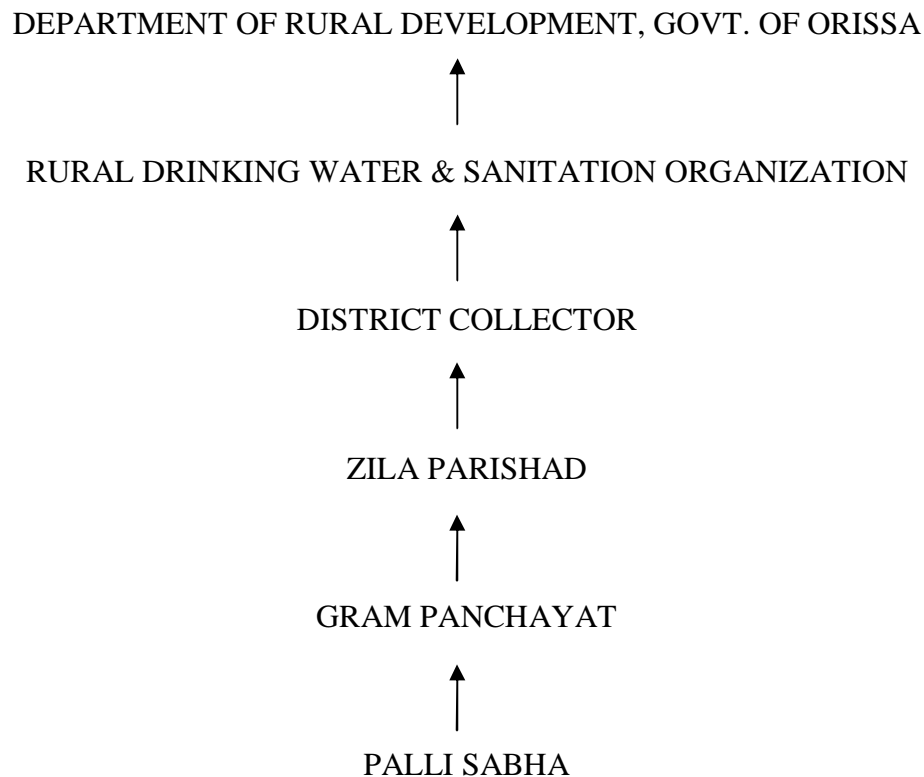
Chart 1: Flow Chart for Project Implementation by RWSS



The projects however are based on the total demand placed by the various district collectors to the department. The demand is generated from the top and scanned at each level before a compiled list of demand is approved by the district collector at the district level and sent to the Rural Water Supply and

Sanitation Organization under the Department of Rural Development. The need of the villages through the Palli Sabha are first collated and screened at the Gram Panchayat level. These are then placed in the Zilla Parishad. The Zilla Parishad members along with the Collector then screen and select the proposal. The selected proposals are then approved and sent to the RWSS for consideration by the Department of Rural Development. Once the proposals are approved, the clearance and budget is sanctioned to the respective District Collectorate. **Chart 2** shows the flow chart of the flow of proposals for approval at different stages.

Chart 2: Flow Chart of the Project Proposals for Approval



The stages of approval and the steps for implementing a water supply system in a community or a village have many steps as observed in Chart 1 and Chart 2. The question of coordination between the different government levels from state to village pose a matter of concern. The time taken practically for a simple execution of a proposed plan is worth considering.

MAINTENANCE & OPERATION

The maintenance of these tube wells has been assigned to Self Employed Mechanics (SEMs) to be carried out on a weekly basis, under the guidance and support of the Department. These SEMs have been deployed by the RWSS organization and are deemed to be handled by the respective Gram Panchayats. Employing the rural barefoot mechanic has indeed been an innovative approach. The success of the maintenance and operation by the SEM further depended on how they were trained and made accountable. Although women were most responsible for water in the villages, they seemed to be little involved at any stage of the structure and function of the Rural Drinking Water Supply System.

The department also has a laboratory for testing water from the various tube wells and piped water systems. Water is to be checked mainly for iron and fluoride contents. Water samples are supposed to be obtained from different locations and then tested for portability of the water. While the institutional structure seems to be strong, the success of the department and RLTA objectives greatly depended on proper functioning of the structures and systems.

From the year 2006-07, the maintenance work of the tube wells have been handed over to the Gram Panchayats (GPs) with budgetary support from the Government of Rs. 2,00,000 per year to the GPs. The GPs were to seek technical support for major repairs of tube wells / piped water from the RWSS department. There would be a mobile maintenance unit for each Block for regular operation and maintenance of water supply systems and sources within the Samiti area. The Panchayat Samiti was to pay the salary and wages and other allowances of the employees. The requirement of spare parts for maintenance of hand pumps, tube wells and pipe water supply will be assessed periodically by the Junior Engineer, RWSS.

Officially, the GPs were empowered to carry out all the responsibilities. However, though the GPs were authorized to carry out all responsibilities, the question has been whether their practical involvement and difficulties have been attended to. Whether the people in the GP aware of these developments? Whether the quality of work and regularity of the employed personnel supervised from time to time? The transparency and democratic process within the Gram Panchayat was also an issue for the overall success of the Drinking Water Scheme.

In the above scheme of moving the responsibility of operation and maintenance to the GPs, the role of RWSS staff in the district level under the Department of Rural Development and that of the Department of Panchayati Raj were to be clarified. Initially, the department of Rural Development sent out a communication but was not implemented effectively by the Panchayati Raj department. Therefore to clarify the role of different agencies, the Department of Rural Development and Department of Panchayati Raj jointly released a circular stating that the responsibility of regular maintenance of the water supply systems will be directly under the Gram Panchayat. See **Exhibit 7a** and **7b** for the above official communications.

FIELD OBSERVATIONS

The management team from XIMB planned to take up the Rural Drinking Water Scheme in Nawarangpur district as a case for detailed analysis. On reaching Nawarangpur the team checked into a small motel in the heart of the town. One of the members enquired the owner about the availability of drinking water. The motel had good provision of water for various purposes. The team decided to check out the water supply system in the town. If a motel had 24 hours water supply, were other areas also self sufficient in water. Soon after breakfast, the group got into their hired taxi to survey the local area.

The team however made a courtesy visit to the Office of the Collector prior to visiting the various villages. After meeting the District Collector, the team had many more queries on the water supply system in the district. With queries flooding their minds, the team met Executive Engineer, RWSS, who was in total charge of the Rural Water Supply and Sanitation in the district and placed their concern from their initial observations about the defunct wells, wasting water and most importantly the quality of the water.

The Executive Engineer reasoned that the shortage of funds, for both spare parts and staff salary was the cause for their inability to fully deliver the objectives of RWSS. However, the Executive Engineer was satisfied with the respect to the overall portable water supply systems in the district. With regard to the role of his field staff with the joint circular of department of Rural Development and department of Panchayati Raj, many of the officers in the office of the Executive Engineer were not clear. While the circular implied the new role of the field staff of RWSS at the district level who earlier had the responsibility of maintenance work, it did not fully clarify the job description of the RWSS staff at the

district level. This seemed to have confused the role of the field staff and the GPs and seemed to be affecting the overall delivery of the water supply systems in various locations.

After the preliminary meeting with the officials at the office of the Executive Engineer, RWSS, the team expressed their desire to take a look at the laboratory for testing portability of water. The Executive Engineer replied “Oh sure, why not,” replied the Executive Engineer. He called out to one of the staff members and said, “Rakesh, just open the laboratory and let them visit the laboratory”

The team waited on for another about 15 minutes and no one turned out to say whether they could visit the laboratory. The team members then walked out of the Executive Engineer’s room to find if the laboratory was opened. The Executive Engineer also came out along with the team members. All of the team members and the Executive Engineer stood waited outside to be lead to the laboratory.

The Executive Engineer after a while looked at Rakesh and said “I had asked you to open the Laboratory; Have you opened the laboratory?” A perplexed Rakesh pointed out to a room adjacent to where all of them were standing and said “The laboratory is out there sir and it has been opened.”

The team went inside the laboratory. It was surprising to note the pathetic condition of the laboratory that greeted them. Water samples were placed on a table, with tattered labels and one could hardly read the matter written. The photographs reveal the quality of the water samples; especially the tattered labels (See **Exhibit 8a** and **Exhibit 8b**). Can one decipher the written record on these bottles, which is going to decide the fate of the chemical analysis?

From the Office of the Executive Engineer, the team left with a mixed feelings and ventured to visit the villages in the district. The case team was accompanied by the Assistant Engineer and the Junior Engineer. The team decided to randomly visit some villages along the road that went from Nawarangpur to Chandahandi. Some of the villages were near the main road and some others were a bit away from the main road. The villages visited also comprised communities of tribal population, mixed population and road side settlements with migrant population.

The visiting team observed many things as they stopped by in different villages. The team members interacted with the women groups and some men in the villages and communities on the issues of drinking water as they observed the infrastructure of tube wells and piped water system.

The people in general were found to be fetching water from tube wells and piped water supply. People reported that the distance traveled by them to fetch water in the recent years had considerably reduced than earlier. Open wells continued to serve the main source of water in some villages.

In some villages, there were queues near the hand pumps, of women filling their pots. Most of them lived nearby. In some locations, the team found abandoned tube well; on approaching they found it to be defunct (see **Exhibit 9**). A member in the team pondered over the reasons why this well had become defunct, when it was situated in the heart of a populated inhabitant locality. Was the nature of the community responsible for the situation or the lack of attention from the SEM and RWSS?

In addition to the lack of attention to defunct tube wells, the operating tube wells were also poorly maintained. The team found the surroundings of tube wells in many locations were poorly maintained. Surroundings of such tube wells often become the breeding ground for mosquitoes and flies (see **Exhibit 10**). The wastage of potable water alarmed the management team and they reasoned out with the accompanying staff from the office of the Executive Engineer on how they could avoid this situation. The team wondered if the nature and the type of community determined how the tube wells and piped water systems were maintained.

Condition of Water Supply Systems in different Communities:

The nature and the characteristics of these communities can be studied on the basis of origin, religion and caste. The inhabitants in Nawarangpur district were mostly tribals, nomadic and almost aboriginal. The tribals living here are namely Bhumias, and Dombs. The latter are wide spread through the district and enjoy status next to Kondhas. They are weavers and drummers by profession and enjoy great influence over others. The dombs are engaged in cattle trade. The Mirganis appear to be sub caste of dombs. They differ from the Oriya dombs by not killing cattle for food but they partake of the beef of the animals that dies naturally. They claim to be superior to Oriya dombs. They earn their livelihood by cultivation and weaving. In the upper rank of the social scale we come across Sankharies, who deal with lac and who make basket, chains and dolls out of it. They are good artists, artisans and traders. Malis originally grow and collect flowers for temple worship. They now switched over to cultivation of Sugarcane, tobacco etc. on the banks of Indravati river. Sundhis are famous for distillation and selling of liquor. Tradition holds that they are the descendants of a Brahmin father and royal mother. They are usually rich and wealthy in

status. A number of migrants from coastal districts of Orissa and from the adjoining state of Andhra Pradesh also form a substantial portion of the population. The migrant population dominates in the semi-urban and urban locations in the districts. The religion of the district is composite comprising of people with different faiths, viz., Hindu, Christian and Islam.

As the research team visited different villages, they noticed different response by different communities on the water facility created by RWSS. The team came across a small community housing a cluster of 20 families belonging to the same caste and tribe and following the same religion. The hand pump in their locality seemed to be in proper working condition catering to the needs of the dwellers. The surrounding area was also neat and well maintained. The families took turn to remove accumulated garbage if any, and even looked after the maintenance of the hand pump. The young men in the community carried out any minor repair work required and the expenditure was shared amongst the occupants. However, none were members of the SEM, and were not aware about its existence. See **Exhibit 11** for the tube well and its surroundings in this community. Similarly, in another location with piped water system, the women folk took interest to keep the water post clean and their surroundings clean (see **Exhibit 12**). However, they could not control on the waste of water due to the design of water post that was without tap.

When the team enquired with the accompanying Assistant Engineer and the Junior Engineer on why the tap was not provided with a tap. The Assistant Engineer reasoned that since the motor pumps water directly, providing a tap could be pose risk of bursting under higher water pressure. While the logic look fine, one of the team member enquired, whether the piped water supply system has provision for overhead tanks, that could remove such risk of higher pressure, the district officer was unsure and kept quite. The problem in the piped water system had other dimensions too. The water taps without the pipes not only lead to waste of water and water stagnation around the water posts close to the pump house, but also posed insufficient water supply at water posts that were away from the pump house.

A visit to another community in the adjacent locality had a different story to tell. This particular hand pump was in the center of a market popularly known by the villagers as the “weekly haat” (see **Exhibit 13**). The scattered dry leaves, vegetable and fruit wastes, filth and dirt all over made one wonder how people walk in to the tube well to collect water for drinking purpose. To add to the woes, the broken knob, lying in damaged condition, made the situation worse with overflowing water accumulating nearby. The place seemed to be in a really filthy condition, signifying the no concern attitude of the

community residing around the tube well. The inhabitants in this area belonged to different tribes and followed different religions. The team pondered why the tube wells were managed differently in these two sites, although they were in nearby communities. Does the nature of the community have any role to play in the maintenance of these surroundings?

The people in the villages were little aware of the previous or the present maintenance policy and institutional structure. On talking to the beneficiaries, many of them mentioned to have not known if any one came to check the tube well from time to time. Repairs were undertaken only when reports are made when the tube well was totally dysfunctional. The women in particular seemed to be far away from the situation with no role in maintenance. It's worth wondering whether they had no interest in the maintenance of these pumps, or whether they were not allowed to undertake this work. Their involvement in this matter could help to ensure smoother working of these tube wells.

The 73rd amendment not only made the Gram Panchayats, a crucial link between the community and the state, but also made them the storehouse of information based on which development initiatives can be planned and initiated (see the insert in the following page). Why has it not been functional? How could these be put to practice? Is there any role of ownership and responsibility of the people for the success of the programme that is often implemented from the top to down perspective? Can the Government functionaries seem themselves as facilitators rather than the prime movers?

The concept of integrated governance lies embedded in the 73rd amendment of the Indian Constitution, which clearly brings people's planning to the forefront, and paves the way for ensuring grass root participation in governance. By making the gram panchayats a people's body the 73rd amendment entrusted them with the responsibility of looking after the following development functions, namely: Agriculture, including agricultural extension; Land improvement, implementation of land reforms, land consolidation and soil conservation; Minor irrigation, water management and watershed development; Animal husbandry, dairying and poultry; Fisheries; Social forestry and farm forestry; Minor forest produce.; Small scale industries, including food processing industries; Khadi, village and cottage industries; Rural housing; Drinking water; Fuel and fodder; Roads, culverts, bridges, ferries, waterways and other means of communication; Rural electrification, including distribution of electricity; Non-conventional energy sources; Poverty alleviation programme; Education, including primary and secondary schools; Technical training and vocational education; Adult and non-formal education; Libraries; Cultural activities; Markets and fairs; Health and sanitation, including hospitals, primary health centres and dispensaries; Family welfare; Women and child development; Social welfare, including welfare of the handicapped and mentally retarded; Welfare of the weaker sections, and in particular, of the Scheduled Castes and the Scheduled Tribes; Public distribution system; Maintenance of community assets.

The question also arises about the awareness of the community and in specific the women section who form the main beneficiaries. Is not the involvement in major decisions and implementation of schemes biased towards the men folk? Though the majority of the beneficiaries constitute the women population, how much are they involved in the SEMs, and subsequently in the decision making process? As the team interacted with the populace of the area, the members could make out the significant line of difference existing between the paper work and its practical implementation. The tribal women of the region were not even aware of their right to involvement in these matters, let alone providing their opinion. Their role was restricted to fetching the water from the hand pumps to their homes.

In fact the degree of their awareness towards this scheme itself is an issue of concern from the implementation, operation and maintenance perspective. Has the department and the government taken the level of understanding of the beneficiaries into account during their schematic planning? What can be done to ensure maximum participation of the womenfolk to implement these schemes?

While drinking water has been made available to a large population, the group pondered whether the maintenance and cleanliness has actually been satisfactory? Can the long-term objective of drinking water supply to achieve good health through clean water and hygienic surrounding for the beneficiary be at stake with the above issues of implementation and practices of the beneficiaries? Has the 74% BPL population existing in the district of Nawarangpur been taken into consideration during the implementation of programmes? The total expenditure on all the schemes enforced by the Government during 2006-07 was estimated to be about 1800 crores, with Rural Drinking Water Supply comprising 4% of the total amount. However, from the total expenditure in Nawarangpur district, 15.5 % of the expenditure was in the drinking water supply scheme (see **Exhibit 6**). Whether the allotted amount was sufficient and whether the institutional mechanism was geared to utilize the funds properly to deliver the objectives of the Rural Drinking Water Schemes including that of RLTA? What are the management concerns in effective delivery of such schemes in rural villages in India?

QUESTIONS FOR DISCUSSION

1. Is the implementation structure of the Rural Water Supply and Sanitation Organization well designed to meet the objectives of the Rural Drinking Water Scheme of RLTAAP?
2. What are the major problems in the approval process and implementation of the drinking water schemes?
3. How could the approval and implementation process be improved?
4. What were the issues of operation and maintenance of tube wells?
5. What were the issues of operation and maintenance of piped water system?
6. How could the operation and maintenance of drinking water supply systems be improved?
7. How could the testing of water quality be ensured and informed to the users of the water supply systems installed by the RWSS organization?
8. How could the participation and ownership of the women folk be incorporated in the overall programme including demand assessment, implementation, operation and maintenance of the water supply system?
9. How do the general characteristics of the recipient community influence the success of the programme implementation?

APPENDIX

Exhibit 1: Divisional distribution of KBK districts.

Sl. No.	District	Area (Sq.km)	Number of					Villages
			Blocks	TSP	Sub-div	Tahsil	GP	
1	Koraput	8,807	14	14	2	7	226	1,997
2	Malkangiri	5,791	7	7	1	3	108	928
3	Nawrangpur	5,291	10	10	1	4	169	897
4	Rayagada	7,073	11	11	2	4	171	2,667
5	Bolangir	6,575	14	-	3	6	285	1,792
6	Sonepur	2,337	6	-	2	4	96	959
7	Kalahandi	7,920	13	2	2	7	273	2,205
8	Nuapada	3,852	5	-	1	2	109	659
Total		47,646	80	44	14	37	1,437	12,104

Source: <http://www.orissagov.nic.in/portal/default.asp> <accessed July 2008>

NABARANGPUR DISTRICT MAP



DESCRIPTION		
01	District office Nabarangpur has been functioning w.e.f.	02.10.1992
02	Geographical Area	5294.0 Sq.KM
03	Total Forest Area	1583.4 Sq.KM
04	Reserve forest Area	535.335 Sq.KM
05	The Cultivable Area	1,85,824 Ha
	(a)Single Crop	1,47,132 Ha
	(b)Double Crop	38,692 Ha
	(C)Irrigation Area	29823 Ha
	(d)More than 2 Crops	NIL
06.	Population as per census 2001	10,18,171
	(a)Male	5,11,004
	(b)Female	5,07,167
07	Population growth rate	20.6 %
08	Total No. of BPL Families as per 1997 Survey	192
09	Literacy (As per 2001 Census)	1,34,463
10	(a)Male	
		28.10 %
		9.01 %



Exhibit 2: Geographic, Demographic, Economic activity Profile of Nabarangpur district, Orissa

Exhibit 3: Demographic and Literacy Indicators in the KBK Districts: 2001

District	Population Density	Population Indicators					Literacy Rate	
		Total (000)	Female (%)	Rural (%)	ST* (%)	SC* (%)	Total (%)	Female (%)
1. Koraput	134	1,178	49.96	83.18	50.67	13.41	36.20	24.81
2. Malkangiri	83	480	49.91	92.79	58.36	19.96	31.26	21.28
3. Nawrangpur	192	1,018	49.81	94.18	55.27	15.09	34.26	21.02
4. Rayagada	116	823	50.71	85.98	56.04	14.28	35.61	24.31
5. Bolangir	203	1,336	49.56	88.45	22.06	15.39	54.91	39.27
6. Sonapur	231	541	49.13	92.59	22.11	9.50	64.07	47.28
7. Kalahandi	168	1,334	50.00	92.49	28.88	17.01	46.20	29.56
8. Nuapada	138	531	50.15	94.34	35.59	13.09	42.29	26.01
KBK Districts	152	7,241	49.91	89.89	38.72	16.63	36.58	24.72
Orissa	236	36,707	49.29	85.03	22.21	16.20	63.61	50.97

Note: Population Density is number of persons / sq.km

Source: <http://www.orissagov.nic.in/portal/default.asp> <accessed July 2008>

Exhibit 4: Census of Families Below Poverty Line (BPL): 1992 & 1997

S. No.	District	1992 Census			1997 Census		
		Total	BPL	Percent (%)	Total	BPL	Percent (%)
		(lakh families)			(lakh families)		
1	Kalahandi	2.41	2.07	85.77	3.08	1.93	62.71
2	Nuapada	0.94	0.79	83.64	1.27	1.09	85.70
3	Bolangir	2.39	1.81	75.82	3.30	2.01	61.06
4	Sonapur	0.92	0.57	62.29	1.10	0.80	73.02
5	Koraput	1.88	1.63	86.59	2.65	2.22	83.81
6	Malkangiri	0.80	0.68	84.81	1.09	0.89	81.88
7	Nawrangpur	1.52	1.38	90.56	2.15	1.59	73.66
8	Rayagada	1.42	1.22	86.04	1.88	1.36	72.03
Total (Southern Orissa)		12.28	10.14	82.60	16.52	11.89	71.97

Source: <http://www.orissagov.nic.in/portal/default.asp> <accessed July 2008>

Exhibit 5: Projected Outlay of the Government of Orissa for KBK Districts

1998-99 - 2006-07

Sl. No.	Scheme	Projected Outlay (Rupees in crore)					Grand Total (INR in crore)
		Central Plan (CP)	Centrally Sponsored Plan (CSP) Shares		Total Central Share	Total State Share	
			Central	State			
1	Agriculture	44.74	30.19	10.01	74.93	10.01	84.94
2	Horticulture	66.17	6.35	1.62	72.52	1.62	74.14
3	Watershed Development	601.90	194.96	81.42	796.86	81.42	878.28
4	Afforestation	347.83	14.11	14.11	361.94	14.11	376.05
5	Rural Employment	-	2,235.05	558.76	2235.05	558.76	2,793.81
6	Irrigation	812.11	-	-	812.11	-	812.11
7	Health	150.95	-	-	150.95	-	150.95
8	Emergency Feeding	88.50	-	-	88.50	-	88.50
9	Drinking Water Supply	-	67.74	67.74	67.74	67.74	135.48
10	Rural Connectivity	-	534.70	65.00	534.70	65.00	599.70
11	Welfare of ST/SC	257.12	-	-	257.12	-	257.12
Total		2,369.32	3,083.10	798.66	5,452.42	798.66	6,251.08

Source: <http://www.orissagov.nic.in/portal/default.asp> <accessed July 2008>

**Exhibit 6: District-wise expenditure for 8 selected schemes, 2001-06
(INR in crore)**

Scheme	Wings	Kalahandi	Nuapada	Bolangir	Sonepur	Koraput	Rayagada	Nawrangpur	Malkangiri	Total	% Share
Rural connectivity	Works	7.9	3.09	5.69	5.59	9.87	9.48	6.32	8.22	56.16	
	RW	7.05	2.72	4.89	0	17.76	7.09	5.46	8.87	53.84	
	PMGSY	77.19	24.55	63.21	25.55	45.47	31.5	32.23	13.09	312.79	
	Total	92.14	30.36	73.79	31.14	73.1	48.07	44.01	30.18	422.79	24%
		21.8%	7.2%	17.5%	7.4%	17.3%	11.4%	10.4%	7.1%	100.0%	
Drinking Water	Total	10.94	7.79	8.95	4.87	9.4	8.46	10.27	5.45	66.13	4%
		16.5%	11.8%	13.5%	7.4%	14.2%	12.8%	15.5%	8.2%	100.0%	
Rural Employment	IAY	85.07	13.31	33.11	16.57	38.45	36.74	34.29	16.86	274.4	
	SGRY	75.23	50.28	54.16	34.92	88.33	79.75	84.3	64.67	531.64	
	SGSY	13.57	8.75	15.75	5.81	17.21	9.81	12.35	6.72	89.97	
	Total	173.87	72.34	103.02	57.3	143.99	126.3	130.94	88.25	896.01	50%
		19.4%	8.1%	11.5%	6.4%	16.1%	14.1%	14.6%	9.8%	100.0%	
BKVY	OLIC	9.13	3.05	7.66	12.22	7.95	2.87	10.8	1.6	55.28	
	OAIC	0.69	1.62	0.95	1.52	0.87	1.02	3.73	2.27	12.67	
	MI	0.0007	0.0002	0.38	0.15	0.89	1.34	2.62	2.66	8.04	
	Total	9.82	4.67	8.99	13.89	9.71	5.23	17.15	6.53	75.99	4%
		12.9%	6.1%	11.8%	18.3%	12.8%	6.9%	22.6%	8.6%	100.0%	
MHU	Total	2.87	1.32	3.16	1.92	3.95	3.24	2.65	2.64	21.75	1%
		13.2%	6.1%	14.5%	8.8%	18.2%	14.9%	12.2%	12.1%	100.0%	
EFP	Total	15.76	8.95	11.55	4.19	13.8	7.67	6.68	5.62	74.22	4%
		21.2%	12.1%	15.6%	5.6%	18.6%	10.3%	9.0%	7.6%	100.0%	
Afforestation	Total	12.79	8.73	15.92	4.33	16.6	12.24	7.91	5.97	84.49	5%
		15.1%	10.3%	18.8%	5.1%	19.6%	14.5%	9.4%	7.1%	100.0%	
Watershed	Total	29.32	15.45	23.94	11.34	28.42	15.22	14.96	11.72	150.37	8%
		347.51	149.61	249.32	128.98	298.97	226.43	234.57	156.36	1791.75	100%
		19.4%	8.3%	13.9%	7.2%	16.7%	12.6%	13.1%	8.7%	100.0%	
Population (in '000)		1334	531	1336	541	1178	823	1018	480	7241	
		18.4%	7.3%	18.5%	7.5%	16.3%	11.4%	14.1%	6.6%	100.0%	

Source: Office of the Principal Accountant General, Bhubaneswar, Orissa

Exhibit 7a: Officials Communications of the RD Department

**Government of Orissa
Rural Development Department**

Dt.05.04.2006

NO.DWS-12/2006-4837/RD

From
Sri Aurobindo Behera, IAS, Commissioner-cum-Secretary to Government

To
All Collectors

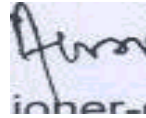
Sub: Signing of an MoU between Gram Panchayat and RWS&S defining their respective roles and responsibilities in management of drinking water supply systems.

Sir,

This has reference to RD Department Memo No.2384 dt. 19.2.2006 on maintenance of hand pump tube wells and sanitary wells by the respective Gram Panchayats with the back up technical support of RWS&S organization.

It has been decided at the level of Government that an MoU will be signed between the Gram Panchayat and RWS&S Organisation (represented by concerned Junior Engineer) defining their respective roles and responsibilities with regard to repair/rejuvenation and management of drinking water supply systems and also handling the related issues- Since all Gram Panchayats may not be required to operate and maintain piped water supply schemes (the facility not being available within their area) a model MoU has been designed for hand pump tube wells and sanitary wells and another for PWS schemes. The model MoU relating to management of hand pump tube wells and sanitary wells is sent herewith. The model MoU relating to PWS Schemes will be shortly circulated.

It has been decided that RD Department guidelines and instructions will be followed when it comes to utilization of funds available with PRIs with-regard to drinking water supply and sanitation. It is requested that this may please be brought to the notice of the PRIs. The RWS&S Executive Engineers are being asked to supply the required numbers of copies of the model MoU for circulation.



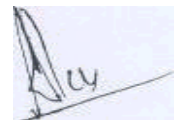
Yours faithfully,

Memo No.4838 /RD

Dt.05.04.2006

Copy along with enclosure forwarded to the Chief Engineer, RWS&S/SEs of all RWS&S Circles/Executive Engineers of RWS&S Divisions for information and necessary action.

Joint Secretary to Government



Memo No. 4839/RD

Dt.05.04.2006

Copy along with enclosure forwarded to PS to APC-cum-ACS/PS to Com-missioner-cum-Secretary, PR Department for kind information of the APC-cum-ACS and Commissioner-cum-Secretary, PR Department.



Joint Secretary to Government

Exhibit 7b: Joint Officials Communications of the RD and PR Departments



Sri S. N. Tripathi, IAS
Commissioner-cum Secretary to Govt.
Rural Development Department
Government of Orissa

Sri G. K. Dhal, IAS
Commissioner-cum-Secretary to Govt.
Panchayat Raj Department
Government of Orissa

No.2542datei20.10.2006

To

All Collectors and Chief Executive, Zilla Parishad

Sub: Management of Rural Water supply systems through Panchayati Raj Institutions (Gram Panchayats)

Madam/Sir,

In order to improve the quality of governance of water supply and sanitation services in the rural areas, the Gram Panchayats will take over the rural drinking water supply asset and manage the drinking water supply programme in their respective Panchayats. Vide the letter no. DWS-12/2006/12242 dated 27/09/2006 of A.P.C-Addl. Chief Secretary you were intimated regarding management of rural drinking water supply systems through Panchayati Raj Institutions. Further, the gist of the approved arrangements relating to management of Rural Drinking water Supply Systems through Gram Panchayats is given below for your reference.

1. All the Gram Panchayats will take over all Rural Drinking Water systems and maintain the same.
2. The Gram Panchayats will utilize the grants made available under the 12th Finance Commission Award for repair/rejuvenation as also the O&M cost.
3. The RWS&S organization will continue to provide technical support for restoration/ rejuvenation/up-gradation of drinking water supply systems.
4. Self-employed mechanic (SEMs) deployed by RWS &S organization will be deemed to have been deployed by the respective Gram Panchayats and work under them. The tools and tackles issued to the SEMs by RWS&S will be deemed to have been issued by the respective Gram Panchayat.
5. There will be a mobile maintenance unit for each Block for regular operation and maintenance of water supply systems and sources within the samiti area.
6. The Panchayat Samiti will pay the salary/remuneration and other allowances of RWS&S regular employees deployed at Panchayat Samiti/Gram Panchayat. The Gram Panchayat will pay the wages of SEM/NMR/HR/DLR.
7. The Panchayat Samiti will pay salary/wages and other allowances of all the regular employees/NMR/HR engaged at the Panchayat Samiti.
8. The cadre of all categories of field staffs (except SEMs), now under the control of RWS&S organization, will continue to be maintained by the RWS&S organization.
9. A block level purchase committee will be formed with the Chairmanship of Block Development Officer and other member's i.e Assistant Engineer, RWS &S and Junior Engineer, RWS&S for procurement of materials from authorized manufacturing firms/suppliers as approved by Chief Engineer, RWS&S for repair and rejuvenation.
10. The requirement of spare parts for maintenance of, hand pumps, tube wells, pipe water supply will be assessed periodically by Junior Engineer, RWS&S.

Please facilitate the process at your level for effective management of rural water supply system by the Panchayatiraj Institutions (PRIs).

Yours faithfully,

S. N. Tripathi
Commissioner- cum-Secretary to Govt.
Rural Development Department

G. K. Dhal
Commissioner-cum Secretary to Govt.
Panchayatiraj Department

Memo No. 2543/ dt. 20.10.2006

Copy to all RDCs/ -

Copy to Chief Engineer, RWS&S/Chief Engineer, OSWSM for information

Copy to Project Directors, DRDA for information and necessary action

Copy to SEs, RWS&S/Executive Engineers, RWS&S for information and necessary action

Copy to All Asst. Engineers, RWS&S/ Junior Engineer, RWS&S for information and necessary action

Copy to all BDOs for information and necessary action

Exhibit 8a: 1 Day old Water Samples in the Laboratory of the district RWSS department



Exhibit 8b: The Water Testing Laboratory, RWSS, Nawrangpur District



Exhibit 9: Defunct Tube Well in the Compound of a populated Habitat



Exhibit 10: Water Logging near the Tube Well of an area with Migrant Population



Exhibit 11: A well maintained Tube Well in a Homogenous Tribal Community



Exhibit 12:
A Community with Piped Water System, where the women ensured cleanliness of the surroundings



Exhibit 13: A Tube Well in a Market Place (with Heterogeneous Community)



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