In the midst of green valleys, a large number of Kerala’s scenic villages face acute drinking water shortage. Ollavanna and Pantheerankavu in Kozhikode district would have remained two such villages had the local community not decided to take matters into its own hands.

In 1987, when villagers of Ollavanna Gram Panchayat started collecting funds for their own mini piped water schemes, just three small water supply schemes constructed and operated by the Kerala Water Authority (KWA) existed in the village. These supplied water to about 1,000 households – only a quarter of the total population of the panchayat – through 25 public standposts and 42 private connections. Besides, operation and maintenance of these systems was always a problem.

Faced with an acute water supply problem, the people of Ollavana decided to intervene and experiment with operating a rural piped water supply scheme with private resources and funds.

The scheme, initiated in 1987, works on fairly simple principles. A cooperative society is formed, which charges a membership fee of anything between Rs 4,500 to Rs 12,500 per family, depending on the cost of the scheme. A typical scheme has an intake well, overhead tank and a distribution system with household connections. Expertise, material and labor are sourced locally. Poorer families pay their contributions in installments.

Once the schemes are up and running, operational improvements have followed automatically. Different schemes have distinct, but equally simple, procedures for consumption, maintenance and billing. Even technology has been geared to meet local needs. In Kambiliparamba, the society eliminated the need for a pump operator by installing a sensor-based switching system that starts the pump when water in the tank falls below a certain level and stops it when full.

Water no longer a pipe-dream in Kerala villages

A gram panchayat shows the way by getting people to pay for their own water supply schemes

A public standpost

One of the bigger private schemes
The by-laws of the typical society running the water supply schemes have also evolved over time and with experience. Every year, the general body (GB) elects an executive committee (EC) whose office bearers run the scheme. The EC’s accounts and annual report are scrutinized by the GB. The societies have worked out institutional arrangements for holding GB meetings, finances, new connections/transfers or even dissolution of the society. Normally the assets of a dissolved society are handed over to a newly registered society and not divided amongst the members.

It has been the experience of the societies that once an initiative is launched, funds are not a major problem. They have come from private sources. Their success is now a shining example of what user intervention can do where government agencies fail. The experiment has caught the popular imagination in Ollavanna and today 26 water supply cooperatives are up and running in the panchayat and another six are in the pipeline.

Villages like Ollavanna and Kambiliparamba have proved that ‘willingness to pay’ and ‘willingness to charge’ for better services go hand in hand. The local community has de-mystified technology and shown that local initiatives can and do succeed. The community does not have to run after politicians and bureaucrats when it can put up its own commercially viable services. The experiments have also shown that the private schemes are better constructed, better maintained and more cost-effective than those heavily subsidized or run by the state.

ERRATA: On page 6 of Jalvaani (Vol 2 No 3) it was wrongly reported that the maximum subsidy for low cost latrines was Rs 625. It is actually Rs 500. We regret this error. – Editor

Did you know that 75 percent of rural Indians do not have latrines?
A study has been conducted by the WSP–SA to analyze what has become of the promises made since independence to provide the poor free and safe household water. Pointing out that a large number of poor people still do not receive safe household water, the study focuses on ‘willingness to pay’ and ‘unwillingness to charge’. The study has come out with the following conclusions:

- Large number of people, supposedly unable to afford safe water, still do not receive it, and have to pay if they do receive it.
- The huge subsidies allocated to the sector primarily benefit the better-off.
- The public authorities responsible for service are generally ineffective.

The recurrent financial and investment requirements of the sector vastly exceed the public funds likely to be available.

NEW DEPARTMENT OF RURAL WATER SUPPLY

Provision of safe drinking water to people in rural areas is top priority for the Government of India. To focus attention on the subject, it has created a new Department of Rural Water Supply in the Ministry of Rural Development and has appointed M R S. K. Tripathi as its first Secretary.

Jalvaani believes in highlighting positive stories and bringing to our readers best practices and innovations happening in the rural water supply and sanitation sector (RWSS) in remote corners of the country.

Feedback received by the Editorial Board indicates that our “positive stories” are being well received and in this issue, too, we focus on successful innovations and initiatives, which have the potential to evolve into best practices in the sector.

The cover story is on village-level initiatives in RWSS in Kerala. The Ollavanna project highlights that the Gram Panchayat and the local community have succeeded in resolving local water supply problems through an innovative cooperative scheme, which can be replicated across the state. It is also perhaps the only case in the country where the local community has been able to raise 100 percent capital cost as well as successfully implement O&M with 100 percent community contribution. The interview in this edition of Jalvaani shows how active involvement of women through panchayats has made RWSS more sustainable.

Another important story in this issue is on Self-Employed Masons (SEMs) in Orissa. Under the SEM scheme, local artisans, for a regular payment, will look after repair and maintenance of hand pumps. The scheme will not only generate employment for local youth but will possibly make O&M of hand pumps sustainable. The active involvement of panchayats is another positive aspect of this exercise as is UNICEF’s role in facilitating the process.

The NGO story focuses on the SWAJAL experience in Uttar Pradesh. It highlights the fact that hygiene awareness campaigns go a long way in motivating and guiding the local community to achieve total sanitation. This has come out of the experience in Banna village in Nainital district.

In parts of West Bengal, arsenic in ground water has increasingly become a problem. A number of organizations and funding agencies are involved in tackling this issue. Jalvaani’s technology section briefs readers on two of the cheapest and most cost-effective methods of treating arsenic-contaminated water.

And remember, Jalvaani is meant to be an interactive journal, so please do send us your comments and suggestions.

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Poor maintenance is a problem that has dogged many of the 150,000-odd hand pumps constructed by Orissa’s Rural Water Supply and Sanitation (RWSS) Organization. Many of them have not been in use for years, despite the fact that simple repairs could easily put them back in operation. It is against this backdrop that the state government decided to hand over repair and maintenance of the hand pumps to the panchayats, hoping that the user community would be more effective.

The two-tier structure for the maintenance and repair of hand pumps in rural Orissa is an outcome of nearly 10 years of experiments in UNICEF and DANIDA projects in the state.

At the base of the system is the self-employed mechanic (SEM), selected by the gram panchayat from among local artisans. The SEM will be given training before he or she is hired and will be paid Rs 15 per month for each hand pump in his or her charge. Each SEM will be given a charge of maintaining 20 to 25 pumps.

The SEMs will carry out all minor repairs and the RWSS Organization will provide the spare parts. But it will be the gram panchayat, which will be responsible for the overall management and monitoring of the hand pumps and hire the SEMs. A sub-committee of the panchayat, the village-level water and sanitation (WATSAN) committee, will assist the gram panchayats and ensure that there is community participation in the project.

A mobile RWSS team for each block, comprising a junior engineer and technical staff, constitutes the second tier of the structure. This mobile team takes care of all major repair works.

UNICEF is assisting the Orissa government in handing over O&M of hand pumps to panchayats in the districts of Ganjam, Phulbani, Kandhamal and Puri.

UNICEF usually provides training, tool kits and spare parts to support the SEMs. If the SEM is a woman, she gets a bicycle as well.

All the stakeholders agree that the project so far has been a great success. In Ganjam district, a total of 68 SEMs have already been trained and in Kukudakhandi and Rengailunda blocks, hand pumps have been handed over to a total of 47 SEMs. In seven other blocks in the district, SEMs are undergoing training. It is estimated that a SEM would, on an average, earn Rs 400 to Rs 500 per month through the scheme.

But like all new projects, this one too has its teething problems. The Panchayati Raj and Rural Development Department are supposed to share the cost of paying the SEMs for the first three years, but the government departments have not been in a position to pay the mechanics for their services.

UNICEF is now assisting by providing the initial payments under an agreement that the government would refund it. It is also helping towards setting up of repair and maintenance funds under the WATSAN committees. These funds would provide payments for the SEMs and also pay for minor repairs.
Total sanitation by deft planning

Villagers of Banna get together to make an uphill task look easy

It was not surprising that it took longer than usual to plan a sanitation project for Banna village. Sanitation projects have had limited success in the hills. Therefore, in Banna, as in other hill areas, the target for sanitation has been kept at 50 per cent.

Situated in Dhari block of Nainital, Uttar Pradesh, Banna is a village that spans an altitude range of 600-1,800 meters above sea level. The Central Himalayan Rural Action Group (CHIRAG) started work in this village in the first batch of the Uttar Pradesh Rural Water Supply and Environmental Sanitation Project (SWAJAL) in 1996. Under the Hygiene Environmental Sanitation Awareness (HESA) campaign, efforts were made to give a 100 per cent household sanitation coverage to the village.

The first step was the formation of a Village Water and Sanitation Committee (VWSC). Twelve hamlets in the village were identified by CHIRAG and discussions held to explain the objectives of SWAJAL and the role of the VWSC. Each cluster then chose a representative. Once meetings and selections were completed, a general meeting of the revenue villages was called to ratify the choice of representatives. The gram pradhan and other representatives of the panchayat were also invited.

The 12-member VWSC was adequately represented by all sections of society with four women and three SC/STs on it. The community selected all office-bearers. The VWSC members were given extensive training by CHIRAG in the planning stages to give them the capacity to handle project-planning activities including construction of demonstration units for latrines and soak pits.

As the HESA campaign was well-received, the initial plan was to construct 143 latrines to cover 90 per cent of Banna village. However as the implementation phase progressed, every one of the 155 households in the village constructed latrines. All households also constructed soak pits, and most constructed a bathroom adjoining the latrine. The constructions exceeded the initial plan drawn up by the villagers. The VWSC was active in motivating and guiding the people, and when construction started, the VWSC, along with CHIRAG, supervised the activities and ensured quality control.

The success of the SWAJAL project in Banna has had a positive impact on nearby villages that are now being covered under the next batch of the project. These villages, which have completed their planning phase, are extremely enthusiastic about SWAJAL. They have not only deposited the cash contribution, but have also collected the local material required for the construction of hardware items. The success of the project in Banna can be attributed to the people’s active acceptance of the HESA campaign and their desire to improve their quality of life. Other Bannas in the making are shattering the myth that sanitation has a limited coverage in the hill areas.
SP-SA, funded by the UK Department for International Development (DFID), endeavors to assist select state governments translate Government of India (GOI) Policy Reforms in the Rural Water and Sanitation Sector (RWSS) into ground reality. These policies of the GOI promote a strategy for achieving accelerated coverage, improved sustainability and improved water quality. Key reform issues include greater community participation, increased cost recovery from user charges and decentralized authority from state level to Panchayati Raj and community level. It is believed that many of these reforms can be realized through demand-responsive approaches.

The objective of the three-year project is to assist in building capacity in two states to implement institutional reforms to improve the performance and sustainability of rural water and sanitation projects. The DFID-funded program proposes to initiate a multi-pronged intervention at the national, state and district level including:

- Promoting an enabling environment for RWSS policy reforms at the GOI and state level through national, state and district-level workshops, publication of a quarterly newsletter.
- Helping build institutional capacity to analyze/formulate and implement policy reforms in two states. Setting up a Policy Support Cell and strengthening a state training institution to provide human resource development and training to the different stakeholders to operationalize the new approach at the state level.
- Helping these two states actually implement the policy reforms on a pilot scale, which would later lead to replication across the state.

Through its activities in the pilot districts in two states, WSP-SA hopes to set a high standard in pilot design, capacity building, implementation and monitoring that will be either adapted or replicated in the other pilot districts across the country. As the RGNDWM is piloting the GOI reform process in 58 districts across India, the WSP-SA project will run in conjunction with the activities of the RGNDWM and the state governments that are implementing the reform process. It is hoped that, with the creation of an enabling environment for the reforms in the two states, the state governments may be able to attract large investments to promote efficient and sustainable RWSS services.

The Ninth Five Year Plan continues to promote the reform agenda in the water sector. It enunciates some key principles such as water being managed as a commodity and not as a free service; adopting a demand responsive and participatory approach to service delivery; and users being allowed to levy charges to cover full O&M costs. Twenty per cent of the funds under Accelerated Rural Water Supply Program are being released to states willing to adopt a demand responsive approach in the collaborating pilot districts identified so far.

- Andhra Pradesh: Chittoor, Guntur, Mahbubnagar
- Arunachal Pradesh: Lohit, West Siang
- Assam: Kamrup, Sonipur, Jorhat
- Bihar: Dhanbad, Vaishali
- Gujarat: Rajkot, Mehsana, Surat
- Haryana: Gurgaon, Rohtak
- Himachal Pradesh: Sirmour
- Jammu & Kashmir: Srinagar, Udhampur
- Karnataka: Bellary, Mysore, Mangalore
- Kerala: Malappuram
- Madhya Pradesh: Sehore, Gwalior
- Maharashtra: Dhule, Amravati, Nanded, Raigarh
- Manipur: Thoubal
- Meghalaya: Ribhoi, East Khasi
- Mizoram: Aizwal South
- Nagaland: Kohima, Dimapur
- Orissa: Koraput, Ganjam & Bolangir
- Punjab: Bhatinda, Moga
- Rajasthan: Ajmer, Barmer, Sikar, Jaisalmer
- Sikkim: Sikkim South, Sikkim West
- Tamil Nadu: Coimbatore, Vellore, Cuddalore
- Tripura: West Tripura, South Tripura
- Uttar Pradesh: Lakhimpur-Kheri, Bahraich, Ailgarh, Rai Bareilly
- West Bengal: Midnapur, North 24 Parganas
- Andaman & Nicobar: Andaman

FUNDING AGENCIES

WSP-SA – DFID

Translating policy reforms to reality

RGNDWM

Piloting reforms

The publication of a quarterly newsletter.

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The presence of arsenic in groundwater poses a serious health hazard in several regions in rural West Bengal, where aquifers are the main source of drinking water.

Arsenic is a heavy toxic metal and ingestion of amounts beyond 0.05 milligrams per liter of water can cause abdominal pain, diarrhoea, muscular cramps, weakness, and in more severe cases, ulcers, skin disorders, neurological problems, peripheral vision and even skin cancer leading to deaths in extreme cases. Symptoms of arsenic poisoning can take eight to 14 years to manifest in a person. If caught early, however, the poisoning can be reversed.

Currently, experiments are being undertaken with a number of arsenic mitigation technologies. The basic methods involve oxidation-coagulation-flocculation-sedimentation-filtration.

Two of the cheapest and most cost effective methods are described here.

**BUCKET TREATMENT METHOD**

**COAGULATION AND PRECIPITATION**

The bucket treatment method is simple and cost effective. Based on the chemical behavior of arsenic in water, the bucket-type chemical treatment was designed to develop a method to remove arsenic from water. The method uses a ratio of chlorine or potassium permanganate and alum to treat ground water for arsenic removal. The water is collected in a bucket and the chemicals are mixed and rigorously stirred. After a few hours, the arsenic sludge settles down at the bottom of the bucket. The arsenic-free water is then drained out from the top.

This method is simple and cheap, (Rs 120 per annum per family), but the poor quality of chemicals available in the open market tends to limit its impact.

**WATER FILTER METHOD**

**ACTIVATED ALUMINA**

The water filter has two chambers. The upper chamber has a nylon bag containing activated alumina (AA). The nylon bag makes it easier to withdraw the entire medium whenever needed either for regeneration or washing. The nylon bag usually has a pervious bottom and impervious sides. The upper chamber is fitted with a flow control orifice and a nozzle at the bottom to achieve the desired contact time between the medium and the water. One batch of AA (either fresh or regenerated) can serve for a number of months, giving a daily output of about 50 liters. There are a number of types of AA available in the market and selection depends on the level of arsenic in the water. Poor quality AA can make the filter process ineffective. AA can be substituted by activated carbon, hydrated ferric oxide or silicon oxides. A major drawback of the filter is that it tends to get clogged. Efforts are underway to tackle this problem.
Power to the people

Mrs P.D. Malathi, President, Mararikulam South Panchayat, Alappuzha Dist, Kerala

What do you think of the recent efforts of decentralization?

Power should be with the people, especially in the water and sanitation sector. We have seen that state agencies like the KWA have limitations. Thanks to the decentralization program, we have already constructed 1,000 latrines in our panchayat. We need another 3,700 latrines in order to achieve total sanitation (population 40-45,000). As we decide on how to use a large proportion of the state finances, we can draw up programs to meet our needs. For instance, when the government and donor programs talk of sanitation, they only mention latrines. However, we are also taking steps for solid waste management (SWM) as part of the campaign to achieve total sanitation. With all the waste now being dumped in the rivers and canals, SWM is a major issue for Kerala panchayats.

Do the poor really have a voice and choice or are the panchayats being run by the elite and a partisan political party?

As the Socio-Economic Unit Foundation (SEUF), an NGO, has worked with this panchayat for the last three years, it has already introduced the concept of people’s participation here. We are not talking to politicians, be they UDF or LDF members. We are talking to beneficiaries of the programs. In our panchayat, we have 40 neighborhood groups. Each neighborhood group sends three participants (including one woman) to the water and sanitation (WATSAN) committee. The WATSAN committee meets at least twice or thrice a year. With the people involved in the decision-making, there is no question of elite rule.

Was it difficult to get elected as a woman?

Our government has made sure that 33 percent of gram panchayat presidents are women. However, my panchayat is not a reserved seat (for women). I was elected because I am aware of the needs of the people in the panchayat and have worked for a number of years for their good. Many of the issues that we deal with in the panchayat level are concerns of women, like water and sanitation. I encourage both men and women to participate in the panchayat programs and the women can easily approach me with their problems. Involving women in the planning process is critical.

Should panchayats be asking the villagers to contribute towards the cost of infrastructure projects?

We get limited funds from the government and are not able to meet all the demands of the people. As the people themselves decide on how to use these funds they have to make choices. Everybody wants the government to provide free rural infrastructure. However, this is not always possible.