a newsletter on rural water and sanitation in India

Jalvaani

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INNOVATIVE INITIATIVE

Listening to the voice of communities

Evolving a strategy to combat arsenic contamination in groundwater in West Bengal

In West Bengal, approximately 7 million people are currently at risk of exposure to dangerously high levels of arsenic from contaminated groundwater. The challenge facing the state is enormous – the number of contaminated tubewells is growing and consequently the exposure of communities to the effects of arsenic contamination is increasing. Arsenic can have an adverse impact on health, and arsenicosis and cancer are well-documented effects. Arsenic also impacts the social and economic well-being of the people, leading to a number of related problems.

GUY STUBBS/WSP-SA

Household perceptions of the value of 'safe' water need to be assessed.

Although the State Government and local institutions in rural West Bengal have taken several initiatives to inform people about the health risks associated with arsenic contaminated water, and to provide alternate sources of arsenic-free safe drinking water, such measures require more attention. Both short-term and long-term solutions to providing communities arsenic-free water are currently being promoted in the arsenic-affected districts. Alternative filtering technologies and the development of different water distribution systems and sources are being proposed as solutions. Most of these initiatives are supply-driven, and provided by the State Government with little community involvement and contribution. Local solutions are urgently required to evolve sustainable institutional arrangements based on the needs of beneficiaries. These should be based on an assessment of the perceptions of the community of the value of water and how much they are willing to pay for water services.

Bangladesh is currently facing a similar problem of groundwater arsenic contamination and an increasing number of tubewells are yielding water containing high levels of arsenic. Contamination of the groundwater has adversely affected access to safe drinking water sources for over 30 million people in the country. An economic analysis of rural communities and their preferences in terms of proposed solutions to assess the willingness of households to pay for arsenic-free safe drinking water options was commissioned by Water and Sanitation Program-South Asia (WSP-SA), World Bank (SASES), Institute of Economic Growth, Delhi, and Bangladesh Rural Advancement Center, Dhaka.

GUY STUBBS/WSP-SA

Communities need to be involved in implementing appropriate solutions to the arsenic problem.

Another issue indirectly raised by the study is the role of monitoring water quality. Establishing standards, creating an independent water regulatory agency, developing a monitoring process, and linking this with local governments are policy issues that require to be addressed even as quick solutions to the arsenic crisis are developed.

The Bangladesh study has highlighted the need for assessing the preferences of the community to implement appropriate solutions to address the problem of arsenic contamination. However, solutions cannot be replicated without taking into consideration local conditions. A similar study is being commissioned by the Government of West Bengal to ensure that household preferences and willingness to pay are considered in implementing sustainable solutions.

For further information and a detailed report on Bangladesh contact
Water and Sanitation Program-South Asia
55 Lodi Estate, New Delhi 110 003
e-mail: wspsa@worldbank.org

A contingent valuation methodology was used to elicit household preferences and the extent to which households would be willing to contribute to schemes. Special scenarios were created to represent different options to households. Care was taken to minimize biases related to responses.

The Bangladesh study clearly brings out the low level of knowledge and awareness of the health implications of arsenic contamination even in arsenic-affected areas. It is necessary to increase the level of household and public awareness of arsenic contamination, its seriousness in terms of the effects on public health, and the various technology options available to address this problem. There is a strongly voiced preference for accessing piped water systems and a willingness to share the capital and O&M costs of these systems.

Quality rank, 2003

122 countries are ranked according to the quality of water, ability to improve and recycle water, and groundwater availability

Rank	Country	Indicator value
1	Finland	1.85
2	Canada	1.45
3	New Zealand	1.53
4	United Kingdom	1.42
59	Peru	-0.08
60	Lebanon	-0.11
61	Romania	-0.13
62	Albania	-0.14
119	Jordan	-1.26
120	India	-1.13
121	Morocco	-1.16
122	Belgium	-2.25

Source 'Water for People, Water for Life' World Water Development Report, World Water Assessment Programme

Notice Board

29th WEDC Conference
Theme: Towards the Millennium Development Goals: Actions for Water and Environmental Sanitation Organized by WEDC and National Water Resources Institute
September 22-26, 2003, Abuja, Nigeria
www.lboro.ac uk/wedc/conferences/29contents.htm

9th World Water Congress: Water Resources Management in the 21st Century
Organized by International Water Resources Association (IWRA)
October 5-9, 2003, Madrid, Spain
www.cedex.es/iwracongress2003/en/hoja2_en.htm

South Asian Conference on Sanitation (SACOSAN)
Organized by Ministry of Local Government, Rural Development and Cooperatives, Bangladesh
October 21-23, 2003, Dhaka, Bangladesh
For details, contact. Md Shariful Alam, msalam@unicef.org
or Ryan Knox, ryan.knox@verulamassociates org

NEW MINISTER FOR RURAL DEVELOPMENT

Shri Kashiram Rana joined as Minister for Rural Development in May 2003. Shri Rana was earlier Union Minister of Textiles, Government of India.

WORLD ENVIRONMENT DAY, JUNE 5, 2003

This annual event is organized by United Nations Environment Program to stimulate worldwide awareness of the environment and enhance political attention and awareness. The theme this year was 'Water: Two Billion People are Dying for It'. The theme has been chosen to support the UN International Year of Freshwater, 2003 and World Water Day. The main international celebrations were held in Beirut where over 100 countries participated.

The event aimed to give a human face to environmental issues, empower people to become active agents of sustainable and equitable development, promote an understanding that communities are pivotal to changing attitudes towards environmental issues, and advocate partnership which will ensure all nations and people enjoy a safe and more prosperous future.

www.unep.org/wed/2003/

A newsletter jointly produced by:

Rajiv Gandhi National Drinking Water Mission Government of India
RGNDWM

Water and Sanitation Program-South Asia
WSP-SA

Jalvaani *Jal* means water and *vaani*, voice

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***Jalvaani* is a forum for the exchange of ideas and experiences on rural water and sanitation issues. We welcome your contributions on initiatives in this sector. Please send us short write-ups of approximately 300 words at the following addresses:**

WSP-SA, 55 Lodi Estate, New Delhi 110 003
Tel: 2469 0488-9; Fax: 2462 8250; e-mail: wspsa@worldbank.org
RGNDWM, Block 11, 6th Floor, CGO, New Delhi 110 003
Tel: 2436 1656, 1950 & 2106; Fax: 2436 4113/4427;
e-mail: jstm@water.in.nic.in; ddarwsp@water.in.nic.in

This newsletter aims at communicating key themes and messages on water and sanitation to different stakeholders in India.

Groundwater contamination from fluoride, excessive iron and other toxic elements is an important concern facing the country today. A study was recently commissioned in Bangladesh to assess household preferences for arsenic mitigation technologies, including piped water, and estimate their willingness to pay for options in some areas of Bangladesh. To ensure sustainability of the solutions to be implemented, it is necessary to move from a supply-driven approach to one based on listening to the voices of the community. As it may be possible to learn from the Bangladesh experience, a similar study is being considered by the Government of West Bengal to suggest a policy framework to tackle the problem in the state.

In Khammam, the local Village Water and Sanitation Committee has been successfully managing the distribution of rural piped water supply and ensuring 100 percent cost recovery. A system of rules and regulatory mechanisms has been put in place to ensure there is equitable distribution in the village. This model could be the basis for implementing community-based management systems in other areas.

To ensure sustainability of water supply schemes, it is necessary to establish appropriate O&M services that are contextually relevant. In Maharashtra, several institutional arrangements for O&M of water services are being successfully practiced in rural communities. These include informal agreements, community-based approaches, a formal arrangement with a registered society and a contractual agreement with a private operator. These options indicate that it is necessary to have a flexible approach when setting up O&M services.

While there have been a number of successful community-based initiatives in the rural water sector, these have not developed into national level programs. Based on a review of global experiences, a recent paper highlights the issues, constraints and challenges that impede the scaling up process in this sector.

Several areas in Gujarat have been facing persistent problems of water quality and supply. Ms Nafisa Barot, Executive Trustee, Utthan, discusses how solutions lie in mobilizing communities, particularly women, to find appropriate solutions. Ms Barot also discusses the various technologies adopted to ensure the availability of water.

As always, we look forward to your comments and suggestions.

Rakesh Behari
Joint Secretary and Mission Director
Rajiv Gandhi National Drinking Water Mission
Department of Drinking Water Supply

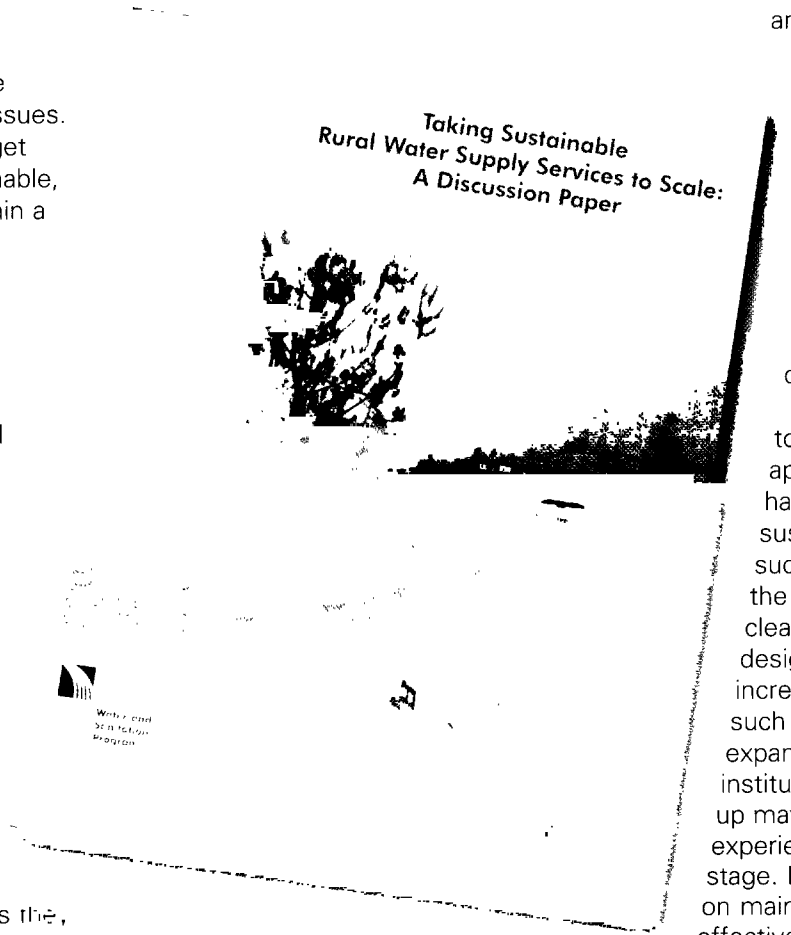
Upscaling rural water supply schemes

Expanding an initiative to benefit a larger number of individuals is key to increasing the impact of development. In the rural water supply (RWS) sector, while several successful initiatives have been documented, few have evolved into sustainable national programs. Drawing on experiences in China, Ghana, India, Indonesia, South Africa and the US, a recent discussion paper explores in depth some overarching issues, constraints and challenges related to the sector.

The scaling up of an effective RWS initiative involves a number of issues. It should reach the target population with sustainable, improved services within a reasonable time frame (inclusion), and there should be a system of actors and institutions (public, private, and/or civic) in place with the necessary capacity and resources to carry out the service delivery approach indefinitely (institutionalization).

In RWS projects, the target population is not easy to identify. It cannot be assumed, for example, that households that already have access to services are excluded from the target population as they may want and be willing to pay for a higher level of service. On the other hand, not all eligible households that have been identified may choose to participate in an RWS initiative as they may be satisfied with existing service levels or unable to meet the project's cost-sharing arrangements. There is also a continuing debate on the best implementation strategy – whether to launch a national program, incorporate schemes into broader rural development initiatives, or expand gradually from a limited or pilot program.

Four broad constraints have been identified for the failure to take RWS initiatives to scale:



- *Resource constraints:* Inadequate funding, human capital, institutional capacity, supply chains or other resource limitations render a successful small-scale initiative unfeasible on a larger scale.
- *Lack of knowledge or shared understanding:* Individuals responsible for planning or implementing such initiatives do not fully understand the principles and/or the roles they are expected to play in scaling up.
- *Resistance:* Despite an understanding of a successful, sustainable approach to RWS service delivery, key stakeholders are unwilling to support scaling up.
- *Untested implementation conditions:* When extended to new areas/communities, a successful initiative encounters difficulties because of unique features (for example, technical, social and policy) not confronted in the pilot communities.

Though the shift towards a phased approach with piloting has delivered sustainable and successful projects for the past two decades, clearly changes in the design of pilots can increase the likelihood that such initiatives will be expanded and institutionalized, as scaling up may have little to do with experiences at the pilot stage. Further research on mainstreaming effective RWS delivery approaches may provide for a more scalable and successful project design.

A detailed discussion paper is available. Contact
Water and Sanitation Program-South Asia
55 Lodi Estate
New Delhi 110 003

One size does not fit all

Alternative operations and maintenance arrangements in Maharashtra

Fiscal constraints and the failure of existing State agencies to provide efficient operations and maintenance (O&M) for rural water supply systems has highlighted the need for more appropriate approaches to their management. Institutional arrangements for O&M have taken a variety of forms, including informal agreements, formal contracts, regional agencies, national or State level regulation and agreements for joint operations. In Maharashtra four different models of arrangements are currently being practiced.

A highly informal arrangement exists in Hingoli district, where multiple piped water schemes have been constructed by one or more residents to supply water to the community. In each scheme the source was first developed for irrigation purposes and later used to supply water to households near the source, at the request of the village community. As one scheme cannot meet the needs of the entire village, other farmers also developed their own sources for additional supply. Under the scheme, submersible pumps draw water from a borewell, which is then supplied directly by PVC pipes to the users. The users are charged an annual fee of Rs. 360, which is the same tariff charged for piped water supplied through government agencies. Although the schemes meet a strongly felt need of the community, concerns exist over the quality of water and the informal nature of the system.

A community approach guides the scheme in Hadshi village, Pune district. The scheme is owned and maintained by a self-help group formed by women members of the beneficiary community. The group exercises complete control over the decision-making process, from the stage of design to maintenance, with crucial support from local NGOs. The entire initial cost of construction, as well as the maintenance costs, were borne by the community without any assistance from government agencies. The community contributed 40 percent of the total construction cost and borrowed the balance amount through an NGO. Each household contributed Rs. 2,000 towards the construction cost, and currently pays Rs.100 per month to repay the loan. The key factors contributing to the success of the scheme are the small size of the community (150 people) and the close ties between the people.

A more formal arrangement is found in Chandnapuri, in Ahmednagar district. Here the multi-village scheme is managed by a registered society with membership from gram panchayats and block-level officials. The society is chaired by the leader of one of the member panchayats. A Village Development Officer from one of the villages takes on the responsibilities of the Secretary of the society. The Block Development Officer is the society's administrative advisor and a Deputy Engineer from the block is the technical advisor. The Chair and the Secretariat of the Society are annually rotated among the member villages. The society is responsible for water distribution from the source to the village storage tanks, after which distribution becomes the responsibility of the gram panchayats. The gram panchayats collect the water charges, which are decided by the society, retaining 20 percent for village level O&M and transferring the balance to the society.

In the Songaon-Mekhali regional scheme in Pune district, day-to-day O&M activities are contracted out by the zilla parishad to a private operator. The contract between the zilla parishad and the contractor is prepared according to the standard contract format prescribed by the State Government. An open bid process is used to invite applications. The contract is renewable on an annual basis and is managed by the zilla parishad, under the supervision of block-level officials. The contractor is responsible for maintaining daily water supply at the specified quantity and quality up to the village level, for which a pre-specified fixed monthly fee is paid to cover wages and salaries, repair and material costs. The electricity costs are met by the district administration. The gram panchayat maintains the distribution system within the village and is responsible for the collection of water charges for private and public connections, and depositing the recoveries with the zilla parishad.

For further information contact
Water and Sanitation Program-South Asia
55 Lodi Estate
New Delhi 110 003
Tel: (91-11) 24690488
Fax: (91-11) 24628250
e-mail: wspsa@worldbank.org

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"The key to management of water is local ownership"

Ms Nafisa Barot discusses Utthan's experiences in promoting decentralized and equitable rural water resource systems

Utthan was established in 1981 to ensure community development. How did the concerns for water management enter the agenda and what was the approach used?

Utthan began as the dream of four professional women working in the Bhal region where the feudal structure of society left women with little power to direct their own lives. Conflicts over scarce drinking water were a daily affair, inhibiting collective action. Utthan decided to organize women around issues of everyday livelihood and survival.

Utthan supported women in creating pressure at the state level, and fighting corruption and political interference at the community level. A powerful women's movement emerged, leading to the creation of Mahiti, a community-based group, which has been promoting decentralized, sustainable and equitable water resource management systems through women's collectives and *paani samitis*. Thus Utthan's agenda began to focus on establishing water supply and sanitation systems, which would give communities the power to decide technologies as well as control over its management. This initiative was later extended to four other districts of Gujarat.

How did Pravah develop as an advocacy group for drinking water issues?

Utthan's State-wide study on drinking water in 1994 led to the formation of Pravah as a platform for representatives of the government, politicians, voluntary organizations and donors at the State level to voice collective concerns on issues related to water. Pravah has also disseminated information to its partners, which has resulted in collectively identifying relevant issues and building consensus among members for problem-solving.

Pravah has effectively advocated for a change in drinking water policies, resulting in the passing of Government Resolutions by the State.

Utthan has successfully promoted rainwater harvesting to ensure the availability of water. What is your experience of the technologies used?

Utthan has been able to effectively mobilize communities to adopt rainwater harvesting. Women and communities see it as a source of security. A range of socially and economically viable technologies have been developed, which have integrated traditional systems (such as roofwater collection tanks, storing water in the dark) with modern low-level technology (such as aeration systems and small handpumps). The traditional practice of harvesting water in ponds in saline areas has also been revived through community efforts by lining them with water-proofing material. Even the poorest of the poor are able to contribute up to 30 percent of the cost.

Utthan has supported communities to choose appropriate technologies. In Dahod, checkdams have been constructed and wells recharged. In Amreli and Bhavnagar districts, roofwater has been harvested to dilute the salinity in groundwater and recharge handpumps. In fluoride-affected areas of Patan district, communities have deepened ponds and recharged shallow aquifers.

The focus of your program has been to ensure participation of all sections of the community. How has this been achieved, particularly with regard to women's participation?

To ensure sustainability of its programs, Utthan creates an independent space for women to come together to share their concerns and take decisions for collective action. Utthan has helped build women's capacities to enable them to participate in village-level institutions, such as *paani samitis*, watershed committees, and panchayats. Community norms ensure that at least 50 percent of the representatives at these institutions are women, and that women are involved in planning, implementing and managing projects.

The important lessons we have learnt are that women and the poor see a clear relationship between water security and the improvement of health conditions, resulting in the possibility of employment opportunities. Power comes from these disadvantaged groups being able to decide, own and manage their own resources, after sustained effort and struggle.

Ms Barot is Executive Trustee, Utthan, Gujarat and South Asia Representative, Water Supply and Sanitation Collaborative Council

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