822 IN03

Water for the Future

Netherlands
Development
Cooperation
in India

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Netherlands Development Cooperation in India has a very strong focus on Water. The main focus of Netherlands Development cooperation with India over the past decades has been on the rural poor, who constitute one third of the rural population of India.

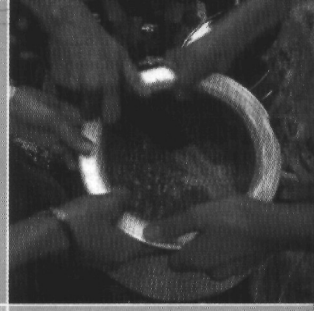
Two main areas have been on the agenda:

- to improve the access of the rural poor to clean and safe drinking water and environmental sanitation. The emphasis during the 80-ies and 90-ies has been very much on implementation of piped systems, in Andhra Pradesh, Karnataka, Gujarat and Kerala and handpumps in Uttar Pradesh. Over the last 5 years in Andhra Pradesh, Gujarat and Kerala serious attempts have been made to have local communities involved in deciding, designing and implementing and maintaining their own community managed drinking water and environmental sanitation facilities.
- to improve the livelihood base of the rural poor through strengthening the knowledge base of small and marginal dry land farmers in integrated water management and more sustainable agricultural practices. Initiatives are being supported in farmers — men and women — monitoring groundwater levels, adapting cropping patterns to reduce water use, practice rainwater harvesting and developing local (micro) integrated watershed management. Farm productivity is improving through increasing biomass, increase or organic matter in soils, reducing soil erosion and practising integrated pest management.

Community involvement and the strengthening of local decentralised governance is a prerequisite in the preparation, design and implementation of these projects. The emphasis is on poverty reduction, decentralisation, local participation and women's empowerment, through fortification of local group initiatives and local institutions.

Facilitators, not providers

Water and sanitation projects are about more than just installing the hardware

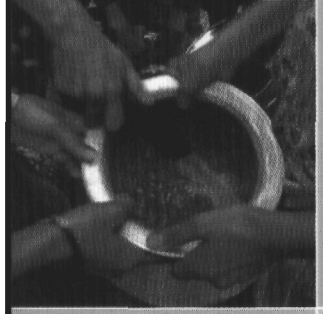


Sustainable development of the water and sanitation sector is not just about completing a facility or installing handpumps, but the way these interventions are used to improve the quality of people's lives. Traditionally, water and sanitation projects have had a strong engineering orientation and were looked at in isolation, often leaving out poorer sections from actual benefits.

The Ghogha Regional Water Supply and Sanitation Project (GWSSP), implemented with assistance from the Royal Netherlands Embassy (RNE) in the Ghogha area of Bhavnagar district, Gujarat, went beyond providing water and sanitation facilities to 200,000 people, by attempting to integrate the concepts of community participation. Users were involved in planning, location of facilities, construction, operation and maintenance, to improve the chances that the services match what the people want, are willing to pay for, and are willing to maintain. The project focused on developing the skills of communities to maintain the services, and instilling a sense of responsibility and ownership. By involving the engineering team from the Gujarat Water Supply and Sewerage Board (GWSSB) in the process, attempts were made to shift their traditional role from being a mere 'provider' to 'facilitator' of community based rural water supply.

Initially, the project was conceived as a piped water scheme, bringing water to the 80 villages covered by the project from the Shetrunji reservoir, located 25 kilometres (km) away. During the inception phase of the project, which began in 1997, the water from the reservoir was found insufficient. An assessment concluded that groundwater in the area could provide a sustainable supply for 8-10 months in a year, provided proper well siting is done, combined with water

Users were involved in planning, location of facilities, construction, operation and maintenance



Villagers were asked to decide on the setting up of service facilities, such as stand posts, wash facilities and cattle troughs

resource management. Even groundwater, however, would not serve all the villages throughout the year. A multiple sourcing approach was found to be the best option, based on local sources and supply from a pipeline that was already planned. An additional Water Resource Management programme was added to the project, to make local sources more sustainable.

The next step involved rapport building with communities, selection of pilot villages and implementing partners, and decision on strategies. Surveys of water supply facilities, population, hygiene and sanitation status and existence of village level institutions were carried out. To involve communities, *pani-samitis* (water committees) were formed. Women's priorities and needs were given special consideration. Villagers were asked to decide on the setting up of service facilities, such as stand posts, wash facilities and cattle troughs, which were later verified by the GWSSB engineers. The community then contributed to the operation and maintenance costs of the facilities for six months, and an external agency was then contracted to build the facilities. Meanwhile, capacity and institution building activities are undertaken as part of the project.

A key part of the project involved promoting a better understanding of the relationship between water and health, through increased awareness of safe hygiene practices amongst the target groups, capacity building of the implementing groups, and networking. A hygiene promotion programme is being implemented in 40 project villages, involving schoolteachers, social workers and community-based organisations. The sanitation programme focused on promoting safe excreta disposal mechanisms and improvement of community sanitary conditions. Demonstrations have been carried out on improved drainage, composting and wastewater treatment.

It became apparent during the implementation of the project that the GWSSB accepted the guiding principles of the project only reluctantly, and remained a supply oriented engineering institute, strongly reliant on centralised planning and procedures. A key learning was that such institutions are not the most suitable for carrying out community-based projects. The Gujarat Department of Water Supply has created an independent & semi autonomous society namely Water and Sanitations Management Organisation (WASMO) to facilitate community involvement in decision making and doing the things their own way.

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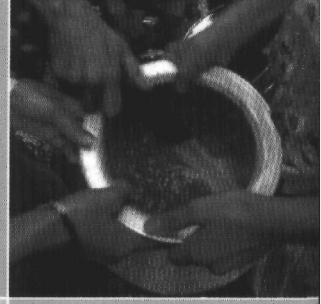

Community mobilisation for water

Rural communities take control in the management of water supply and sanitation schemes in the coastal regions of Andhra Pradesh

The Andhra Pradesh Community Managed Rural Water Supply and Sanitation Project AP III was implemented in Vizianagaram district. The project intended to address the underlying principle of participation, to empower people to voice their concerns. It also intended to address issues related to sharing of resources and benefits, influencing decision making, redistribution of power and control and acquisition of skills and knowledge to discharge these functions, specifically in relation to drinking water supply and sanitation related to issues in the rural context.

The rural water supply and sanitation sector has by and large operated on the basis of centrally determined policies and standard design criteria for implementation While this approach contributed to the construction of a large number of schemes, applying standard design criteria all over the country resulted in a total disregard for territorial, topographical, hydrological variations, and most importantly, did not recognize local socio-cultural characteristics.

The overall concept of this project was to develop new approaches to rural water supply and sanitation that would promote community ownership and management and field test these approaches on the ground, in order to achieve the main objective of the AP III Program which was to enhance rural water supply and sanitation policy at the state level. Similar changes in policy have been recently reflected in the conditions laid down for the Central Government's financial support to State Governments through the Accelerated Rural Water Supply Program (ARWSP), as stated in the Sector Reform guidelines of Rajiv Gandhi National Water Mission, where user contribution to capital and

To develop new approaches to rural water supply and sanitation that would promote community ownership and management

The project established systematic improvements in accountability, planning, implementation and reporting

operation and maintenance costs have been made preconditions to project approval.

The project was designed as a four-year experiment where the initiation phase would conceptualise and field-test new approaches in a limited number of habitations. The initiation phase adopted a process approach, stimulating the community and the implementing agency through continuous dialogue and social mobilisation techniques, to participate in a realistic assessment of needs, wants and wishes, flexibility in design and a greater role to be played by the community in the creation and operation of the drinking water facilities at habitation level.

The community mobilisation process was initiated on the premise that inputs could be provided at specific defined intervals and an effort could be made to try and control the outcomes. However, once the process was initiated, its components often took divergent paths and significantly influenced other project components, like technical, institutional and managerial activities. At the same time the mobilisation also strengthened and provided a binding to the entire fabric of the project.

The project was implemented in 25 habitations of Jami and Gantyada Mandals of the Vizianagaram district. At the end of the project period the following has been achieved:

- Sufficient drinking water is delivered on a daily basis.
- There is greater knowledge and understanding among the users regarding design, construction and operation of the facilities.
- The facilities are operated and managed by the communities.
- The inclusion of waste water disposal, renovation and rehabilitation of existing sources, hygiene promotion programs and community organization to improve solid waste management have all contributed to a significant improvement in the larger sanitation picture in project habitations.
- The project established systematic improvements in accountability, planning, implementation and reporting.

These changes have now resulted in a Sector Reform Program in five districts, which include many characteristics that are similar to the concepts that were developed and field-tested in Vizianagaram.

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Water vision

Ambition marks the water reforms initiated by the government of the southern Indian state of Andhra Pradesh

Andhra Pradesh is known as a 'river state', but recurring droughts, expanding demands, inefficient use of surface water and indiscriminate use of groundwater has resulted in a water crisis. Approximately 36 percent of rural habitations and 28 per cent of urban habitations do not have adequate drinking water facilities. The state has undertaken an ambitious programme of irrigation reforms and water conservation, involving stakeholders in a big way. Legislation has already been passed to support the reforms, including a Farmers' Management of Irrigation Systems Act, 1997, and the Water, Land and Trees Act, 2002. Rainwater conservation is encouraged in urban and rural areas through a programme popularly known as *Neeru Meeru* (Water and You).

To contribute to this programme, the Government of Netherlands has provided interim assistance to the government of Andhra Pradesh for a Water Conservation Mission. During the interim phase of this Mission, intended to extend to long-term support, the following activities will be carried out:

- Development of a Andhra Pradesh Water Vision
- Capacity building in local water resource management
- Research and development in water policy
- Information and innovation management
- Review of legal framework for water resource management

A draft Water Vision prepared through a consultative process is already complete and is under review (*see box, and www.wcmap.org*). A number of departments, institutions and experts provided input to this draft through workshops conducted in each of the 23 districts of the state, and through the Internet.

A Strategic Water Framework for integrated planning backs the Water Vision. This will include conservation of rainwater by watershed development and construction of several small dams on tributaries to avoid submersion of large areas, while contemplating bigger projects for hydropower generation, navigation and flood control. Reforms of the administrative and legal powers that govern water will be needed to ensure equitable distribution. Pollution of tanks, groundwater and urban/rural domestic water supplies will be addressed through Water Users' Associations and Water Conservation and Utilisation Committees. Traditional water management methods, coupled with high technological solutions, accurate information and a need-based research agenda will provide a firm foundation for

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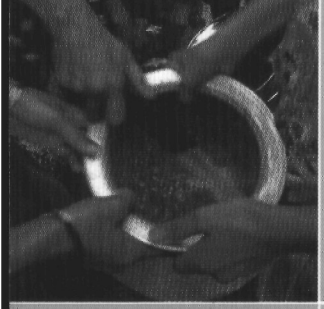

A state wide Water Information and Management System (WIMS) will be set up

The Andhra Pradesh Water Vision

The shared Water Vision of the people and the government of Andhra Pradesh is to

- Have access to clean water supplies for all the people
- Encourage individual, community and Government commitment and participation for efficient water management to secure water resources for present and future uses
- Develop a sustainable irrigation sector
- Transform the existing subsidised and government-controlled water management system into a sustainable self-reliant and people-managed one
- Achieve sustainable levels of water extraction from rivers, tanks and groundwater resources
- Develop efficient rain-fed agriculture
- Conserve every drop of rainwater to generate more revenue and community satisfaction
- Improve management of surface water bodies
- Increase the level of participation of women and landless people in decision-making at local levels
- Conserve aquatic ecosystems and the environmental services they provide such as secure fish stocks and clean water

sustainable water resource management.

The programme will include concerted efforts at capacity building. A Water Mission/Water Management and Coordination Advisory Committee, comprising water experts, policy advisors, media and senior citizens may be formed to develop policies and strategies. Education and awareness on the importance of good water management will be carried out through an online campaign and training schools. Research will be carried out on ways to save water, improve water productivity, develop and promote water efficiency technologies and enhance agricultural production and prevent degradation of soil and water resources. A state wide Water Information and Management System (WIMS) will be set up, with information on the use of irrigation efficiency best practices, a five-year water auditing programme and a water knowledge information system.

Finally, the programme will need water managers who understand the potential benefits of integrated water management, and have the adequate skills to apply specific management tools, to reform regulations, strengthen need-based financing systems etc. A statewide leadership programme will aim at developing these capacities.

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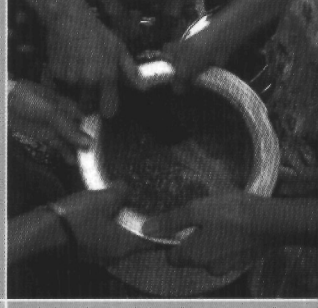


A mission to Empower

The government of Gujarat sets up an organisation to decentralise water management by empowerment of the water committees (paani samiti's)

Water management is a priority in the Indian state of Gujarat, which has suffered drought for two consecutive years recently. Of the last 76 years, Gujarat has seen drought for 26 years. About 70 per cent of the area in the state is unsuitable for groundwater extraction. Where extraction is possible, levels are depleting by an alarming 2 to 3 meters a year. Fluoride levels are high in the groundwater in almost half the state. This extreme situation has forced the state government to realise that it cannot be the sole provider of water, and has to empower communities to help themselves.

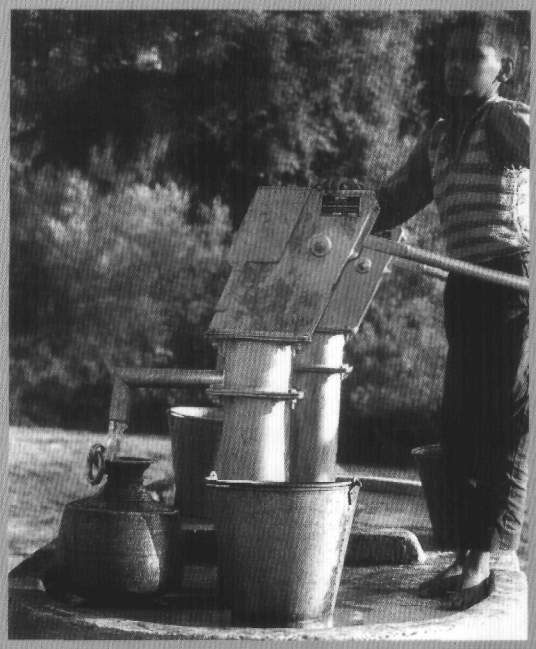
To drive the process of community involvement in water and sanitation services, the government of Gujarat, with support from the Royal Netherlands Embassy (RNE), has constituted a semi-autonomous Water and Sanitation Management Organisation (WASMO). The mission of this organisation, which took over its portfolio in September 2002, is to

- facilitate decentralised community management of in village water supply and sanitation improvements
- take initiatives and provide input in new policy formulation in the water supply and sanitation sector, and extend institutional support for sustainable community based rural water supply and sanitation programmes
- develop programme strategies and operational mechanisms to integrate new thinking into the water sector
- work towards the transfer of ownership of water projects to the local community.

In addition, WASMO will address capacity building of people's organisations to shoulder the responsibilities of planning,

Take initiatives and provide input in new policy formulation in the water supply and sanitation sector

Reconstructing drinking water and sanitation facilities in 1260 earthquake affected villages in 6 districts of Gujarat



implementation, operation and management of water supply schemes. It will promote a mix of appropriate technologies and innovations, and local initiatives based on traditional knowledge. New management practices will be developed to facilitate the process of finding new solutions. The organisation will also focus on evolving appropriate pricing strategies and cost recovery mechanisms.

In the near future, WASMO will apart from other obligation, work on the completion of the Ghogha Regional Water Supply and Sanitation Project (GRWSSP) (see *Facilitators, not providers*), and in reconstructing drinking water and sanitation facilities in 1260 earthquake affected villages in 4 districts of Gujarat.

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Managing excess

Water management is equally important in regions of plenty

With an annual average rainfall of 3600 millimetres (mm) and a cropping intensity of 156 per cent, the problem in the extreme north eastern part of the Indian state of West Bengal is not lack of water. Rather, it is the unpredictability of its availability, as the extremes of recurring floods and droughts cause considerable damage to life and property in the region.

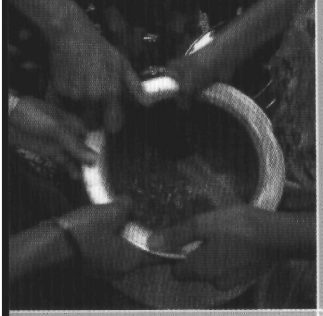
Since 1984, the Government of West Bengal, with funding from the Royal Netherlands Embassy (RNE), is working on a project to manage water better in the three districts of Darjeeling, Jalpaiguri and Cooch Behar. Most of the people in the project area are dependant on agriculture for a livelihood. Sixty per cent of the farmers qualify as marginal (with land holdings of less than one hectare), and about 25 per cent are small farmers (landholdings of one to two hectares). Their main crop is paddy, though tobacco, jute, pineapple, orange and jackfruit are also grown to provide supplementary income.

A series of interventions to promote integrated water management, including cost and energy efficient ways to extract groundwater, experiments to calculate appropriate water requirements for crops grown in the region, and watershed management have been carried out as part of the North Bengal Terai Development project.

Stopping the flow

Many water managers assume that water management is only needed in regions of scarcity. By building embankments, channels, culverts and farm ponds to reclaim large areas of land lost to floods, stop soil erosion, retain soil moisture, increase crop diversity and increase livelihood opportunities based on aquaculture, the North Bengal

Interventions to promote integrated water management, including cost and energy efficient ways to extract groundwater



Terai Development Project has demonstrated the wisdom of managing water judiciously in regions of plenty

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Energy efficient pumps

Modifications were made to existing centrifugal pumps used to lift groundwater, by reducing the rotations per minute, regulating the temperature of the machines and reducing friction losses in the pipes by removing suction valves. This resulted in a 50 per cent fuel saving, while substantially increasing the flow of water. Farmers, believing bigger to be better, were not initially receptive of these changes, and had to be convinced of the benefits through demonstrations, advocacy and training. Similarly, manufacturers of the pumps had to be convinced to make the necessary changes in their production line.

Local material makes better filters

Despite the abundance of bamboo in North Bengal, farmers were using costly filters in their wells Experiments carried out with bamboo filters fitted with wire and thread nettings as a cheaper alternative were successful. Since farmers were involved in the experimental stages, they accepted the alternative easily.

With the involvement of farmers, an overall effort has been made to understand water usage in the region and put in place institutional mechanisms to strengthen community capacities for integrated water resource management. Efforts have been made at local capacity building to encourage community involvement in water management through awareness building and training in crop water requirement, irrigation scheduling and technological innovation. Strongly embedded in local realities and resources, the efforts are proving sustainable.

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User friendly

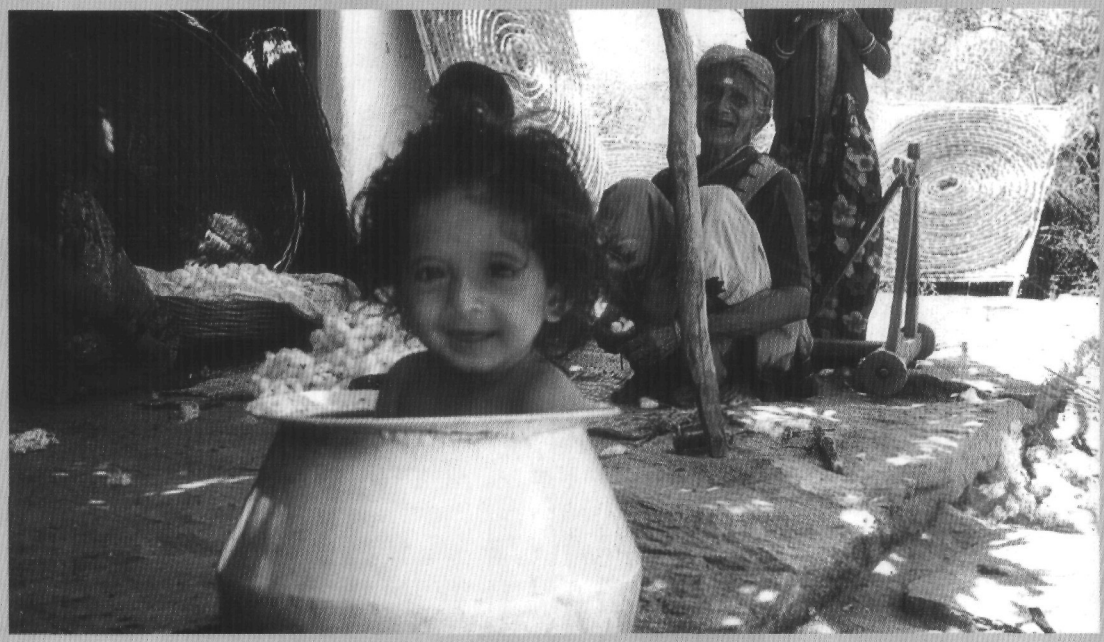
A recent project in south India aims to strengthen user groups to manage water and sanitation

The state of Kerala is a densely populated, narrow stretch located on the southwestern part of peninsular India. With an average rainfall of 3000 millimetres from both the southwest and northeast monsoons, and 44 rivers, there is abundant water availability. The rural water supply and sanitation programme to be implemented with assistance from the Royal Netherlands Embassy (RNE) in the state focuses on promoting integrated management of this resource, paying greater attention to human, institutional, social and environmental aspects than to mere engineering.

The programme covers over 200,000 households in two districts, Idukki and Alappuzha, using a range of feasible and appropriate technology options, including traditional water sources, roof water harvesting, gravity water supply schemes and pumping water supply schemes. A participatory approach will be adopted to find solutions to problems such as drainage for waterlogged areas, protection of backwater canals and development of traditional water sources.

While working with existing institutions at the state and Panchayati Raj Institutions, the project will focus on User Groups – associations of user households working for water supply and sanitation. These groups will share 15 per cent of the costs of the programmes implemented. While district level organisations will make available a further 10 per cent of the costs, the project will provide the remaining 75 per cent. In addition to identifying and training local leaders as User Group committee members, the project will identify and train Village Resource Cadres – local experts who can be contacted by the User Groups for social and technical services.

The Project will support the Government of Kerala in facilitating the development of a broad based sector policy



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