

## Output-Based Aid in India: Community Water Project in Andhra Pradesh

Cledan Mandri-Perrott

Providing safe drinking water to poor families in the coastal area of Andhra Pradesh is critical for the economic development of the region as well as to improve health and living conditions. A community water project supported by the Global Partnership on Output-Based Aid (GPOBA) is increasing innovation and efficiency in the sector through a community-based public-private partnership model using cost-effective water purification technology. Enhancing the sustainability of pilot water projects in villages in Andhra Pradesh has been a key part of the project design. The scheme provides a performance-based subsidy linked to the delivery of pre-agreed outputs which include three months of billed water services. The output-based approach requires that tariffs paid by users for consumption cover the costs of operation and maintenance, user-fee collection, and education and communication activities with key stakeholders and vulnerable groups such as young mothers, infants, and families living below the poverty line. Tariffs also cover loan repayment, thus helping to ensure the long-term sustainability of the services. The project has potential for replication in other villages in Andhra Pradesh and ultimately in other parts of India.

### Background

Safe drinking water is a key development issue in India, where only 18 percent of rural households have access to clean water and 21 percent of communicable diseases are water-related. Andhra Pradesh, the country's fifth most populous state, is considered a leading reform state, with a clear long-term strategy toward infrastructure development laid down in its Vision 2020 document. The state has significantly improved water supply coverage in the past two decades, such that the proportion of its population with access to water has increased from 3 percent to 65 percent.

Despite this progress, estimates suggest that up to 17 million of Andhra Pradesh's 80 million inhabitants experience bacteriological contamination of water. Those most affected are rural households in the coastal districts, areas that also have high infant mortality rates and low service coverage. Barriers to improving access



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to water services in these areas include geographical remoteness, the lack of a sustainable tariff structure, poor operation and maintenance of existing systems, lack of technical knowledge among rural communities, and scarcity of public funds. Social factors also contribute to poor service levels in rural areas, notably the caste system and high rates of illiteracy. There is a need, therefore, both to increase investment in rural water schemes in Andhra Pradesh and to build awareness among rural communities of the benefits of clean water.

**Cledan Mandri-Perrott** is a Senior Infrastructure Specialist with the World Bank's Finance, Economics, and Urban Department.

**Table 1. Schedule of Outputs and Disbursements**

Indicator #	Output Item	Description of the Output	Means of Verification	% Disbursed
1.	25 UV water purification plants/ CSWSs installed	Construction and installation of the complete CSWS	Completion report for each plant available from the Independent Verification Agent	20
2.	Registration of the households	Paid subscription fees	Minimum 500 Below Poverty Line households registered for paid usage of water; subscription fee available from such households	60
3.	Three months of billed user fee consumption	m <sup>3</sup> of water sold	Continued usage of paid water by a minimum of 500 households; billing records	20

## Participatory community model

In 2006, Naandi Foundation, an Indian non-governmental organization, and Water Health International (WHI), a disinfection technology provider, approached GPOBA to request funding for pilot rural village water schemes in coastal Andhra Pradesh combining water purification technology with a community-driven and performance-based approach. The proposal was accepted by GPOBA and, in May 2007, Naandi and GPOBA signed a grant agreement for an output-based aid (OBA) project to improve rural water services in three coastal districts of Andhra Pradesh: Guntur, Krishna, and West Godavari.

The project aims to create Community Safe Water Schemes (CSWS) in 25 villages that currently lack access to clean drinking water, benefiting around 12,500 poor households. It is estimated that each CSWS would benefit a minimum of 500 poor households. Each CSWS will have a water treatment plant connected to a water distribution point from which users will purchase water in jerry cans. Although this project does not envisage domestic connections, it is a first step in providing safe and affordable drinking water in areas where typically the existing water source is of poor quality.

The OBA schemes involve the village council or “Panchayat,” Naandi, and WHI in a public-private partnership. Their roles in this project are as follows (see also Figure 1):

1. The *Panchayat* provides a regular source of water, secure land, the community financial contribution, and electricity at a pre-agreed tariff for the CSWS.
2. *Naandi* acts as project manager and provides pre-financing for each project as well as collecting user fees. It will mobilize the community towards raising

the community contribution and develop a communication and awareness campaign, working with key stakeholders such as schools, community self-help groups, and health workers to change the behavioral practices of poor families regarding water. Measurement of outputs will be necessary and Naandi will thus conduct baseline, mid- and end-line evaluations to measure the impact of the scheme. Furthermore, it will train Safe Water Promoters and Village Health Workers.

3. *WHI* is the project operator. It will build and install the ultraviolet (UV) filter water purification plants and the basic infrastructure needed to operate them (i.e., pumping system, storage tank, and shelter) in the 25 villages<sup>1</sup>; hire and train a plant operator for each village; and share project implementation risks by providing Naandi with operational performance guarantees.

## Output-based aid approach

GPOBA is subsidizing the cost of setting up the water treatment plants in 25 villages through a US\$800,000 grant. The subsidy is paid to Naandi in installments after independent verification of three pre-agreed outputs (see Table 1) which Naandi pre-finances through commercial borrowing<sup>2</sup>. Notably, a significant part of the subsidy is payable only after each CSWS proves it has provided reliable water services for at least three

<sup>1</sup> WHI has provided community-based organizations with the same operating model in the Philippines and is planning to replicate this model in several countries in West Africa (Ghana and Nigeria). For information about WHI, see [www.waterhealth.com](http://www.waterhealth.com).

<sup>2</sup> Naandi is expected to use the GPOBA grant agreement and the operational guarantees provided by WHI as collateral.

months after becoming operational. Together with an independent verification agent, the World Bank's Water and Sanitation Program (WSP)<sup>3</sup> will conduct ex post reviews of the completeness, accuracy, and authenticity of the documentation provided for each village, and undertake ex post physical spot checks of the outputs. Payments by GPOBA are to be made only after these conditions have been met.

As Table 1 shows, with output-based aid, payment of the subsidy is mainly linked to service delivery. This contrasts with input-based schemes in which payment of the subsidy is based on meeting construction milestones. In this scheme, if WHI does not perform, Naandi will not be paid the subsidy by GPOBA and thus will not be able to pay the loans it has taken out to pre-finance the projects. To protect itself against this risk, Naandi can call on the operational guarantee provided by WHI.

### Selecting eligible households

The project uses various techniques to target the GPOBA subsidy to the poorest households. The three project districts were chosen because of their high poverty rate and lack of access to quality water services. Within this geographical area, villages were selected based on the presence of a water source that can be purified by ultraviolet technology<sup>4</sup>, and the willingness and ability of the village to adopt a fee-for-service scheme. To

target individual beneficiaries in the villages, the project uses the government's 'white ration card,' a system that entitles low-income individuals to obtain basic commodities (e.g. rice, flour) at a reduced price. Other indicators considered include family size, construction of a house from low-cost material, limited or no possession of durable goods such as a TV, and time spent by women and children of a given household in fetching water. As project manager, Naandi does the targeting in close collaboration with the village Panchayat. The process is verified by the independent verification agent.

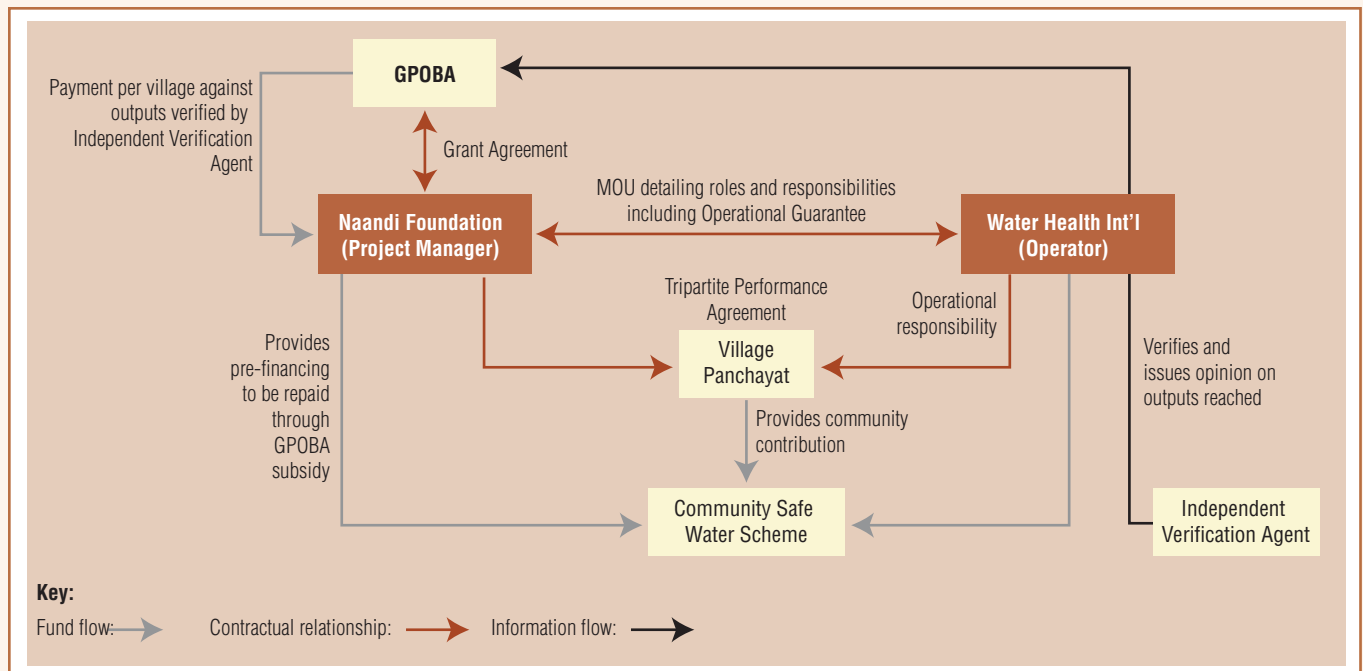
### Sharing the investment costs

The total project cost is US\$1.25 million. The cost per CSWS (US\$50,000) covers investment, community awareness, and running costs. Tariffs are set at an affordable rate and cover the initial investment (net of subsidy) and operation and maintenance costs. Sustainability of the service is thus ensured through user fees which average US\$0.03 for a consumption of 20 liters. Since the three project districts are contigu-

<sup>3</sup> <http://www.wsp.org>

<sup>4</sup> After treatment by the CSWS, water quality must satisfy the Bureau of Indian Standards.

Figure 1. Project Arrangements



ous, the cost per CSWS is almost the same across all the project villages<sup>5</sup>. Table 2 shows the contribution by each partner.

The community contribution may come from user fees, and/or from local government funds, and/or from donations from philanthropists and charitable organizations. The commercial loan sourced by Naandi is payable over a period of approximately seven years. During this period the assets remain with the community and Naandi, and WHI has full operational responsibility. After the loan is re-paid, the Panchayat may choose to renew the operation and maintenance agreement with Naandi and WHI. The life of the plant system is expected to be at least 15 years.

## Results and conclusions

As of September 2008, four CSWSs have been constructed and verified, three in Krishna and one in West Godavari. The remaining 21 villages have been selected

and 10 are in the process of making their community financial contributions. The GPOBA subsidy has made it easier for Naandi to borrow funds from commercial banks. The OBA approach is also promoting participatory community involvement and building capacity in the villages for managing and delivering efficient services. The grassroots fee-for-service model coupled with a sense of community engagement and ownership will help ensure the long-term sustainability of the water supply schemes.

It is anticipated that the lessons learned and methodology developed for each CSWS can readily be applied to other villages in the State of Andhra Pradesh and ultimately in other parts of India<sup>6</sup>. GPOBA, Naandi, and WHI believe that scaling up is possible, as the demonstration effects of each pilot will motivate adjoining villages to engage in similar projects, accelerating demand and willingness to pay for clean water through user fees. Lessons from this project may also assist in the design of national programs aimed at achieving the Millennium Development Goals for water and sanitation.

**Table 2. Share of Overall Investment**

Source of funds	Per village (US\$)	Total Project (US\$)	Share of total (%)
Community contribution	10,000	250,000	20
GPOBA subsidy	32,000	800,000	64
Long-term commercial loans sourced by Naandi	8,000	200,000	16
<b>Total</b>	<b>50,000</b>	<b>1,250,000</b>	<b>100</b>

Special thanks to Amit Jain, Director, and Jitesh Odedra, Project Manager, of the Naandi Foundation for their support and determination in taking this project forward.

<sup>5</sup> A variation of ±1 to 2% of the CSWS unit cost has been observed due to certain local influences on input costs.

<sup>6</sup> Naandi has already identified 100 villages in Krishna district for expanding the program.

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