Gravity-based piped water supply

Meghalaya

COMMUNITY MANAGEMENT OF RURAL WATER SUPPLY

Community Water *plus*

Three interesting features of this case

- The local governance structures have strong capacities and are transparent
- The community is a self-mobilised, environmentally conscious group, not only for water, but for other areas also and hence are involved in the implementation stage too.
- The traditional local governance system practiced in the region, in addition to the cohesiveness and voluntarism prevailing among this community have helped protect their abundant natural resources and contributed to the success of the schemes.

Community Water Plus, a research project, has investigated twenty case studies of successful community managed rural water supply programmes across 17 states in India. Through these case studies, the research has gained insight into the type and amount of support to community organisations that is needed, and the resources implications of this 'plus' – in terms of money, staffing, and other factors.

In this document we capture the inputs that contributed in improving water supply to households by gravity-based piped water supply in Meghalaya. Located in the North-Eastern part of India, Meghalaya has a very unique ethnicity, strong traditions of governance and is endowed with abundant water from mountain springs and streams. To provide safe drinking water to the households, the support agency has constructed gravity-based piped water supply schemes, promoted 'spring tapping chambers' or commonly called 'community wells'. The difficult terrain and the high labour cost in laying pipelines make the capital investment high in the piped water supply schemes here.

Key data in the Meghalaya context

All India data for reference in parenthesis
Water supply coverage: 65% (96%)
GDP per capita: $ $3,511 ($4,243)
HDI: 0.573 (0.467)
Devolution Index Rank: n.d

A sacred grove from where the river Myntudu originates and just outside the grove a community well facility is constructed.

The enabling support environment

The two Enabling Support Entities in the case of Meghalaya drinking water supply system are the Public Health Engineering Department (PHED) and the Soil and Water Conservation Department (SWCD). The PHED is responsible for providing drinking water and ensuring sanitation for the population and implementing programmes by adhering to the NRDWP guidelines of Government of India, whereas the SWCD addresses the drinking water issue in a holistic perspective. Programmes of both the Departments are implemented through the *Dorbar,* the traditional local self-government entity.

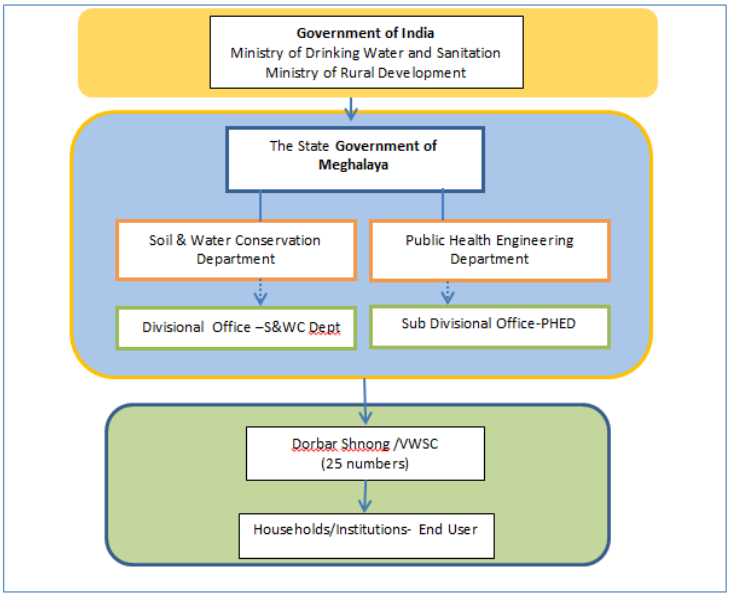

Figure 1 Enabling Support Entities

After the completion of the construction phase, the asset is handed over to the *Dorbar,* but with hardly any ongoing support from the PHED except in major issues. Being simple gravity-based schemes, the complaints or repairs were also very limited. Quality testing was carried out by the PHED as per NRDWP guidelines and it was reported that many community capacity-building programmes were organised in this regard. Community wells and spring tapping chambers which serve as a major source for drinking water were provided by the SWCD to all the villages studied. The need was identified by the community and the *Dorbar* represented the issue to the SWC Department and based on availability of scheme funding, the facility was constructed.

Leadership of the PHED and SWCD were found to be pro-active and provided a clear sense of mission while involving the people with the mission at the State and the District levels. Community orientation was very much prevalent among the different officials, which was due to the traditional system of local governance that demanded a lot of voluntarism at individual level.

Community service provider

The service provider functions are fulfilled by the *Dorbar,* i.e. they do the daily operation and maintenance of the facility. The *Dorbar* was found to be a strong local body with utmost control on the happenings at the community/village level. The community abides by the rules and regulations put forth by the *Dorbar.* The formal VWSC were found to be existing along with the *Dorbars* In terms of activities, the *Dorbar* was involved in overall supervision level, software activities such as demand building and community preparation and involvement in the implementation stage, and the eventual operation and maintenance. With little technical intricacies in the schemes, the *Dorbars* managed the O&M fairly well. This also regular cleaning of source and surrounding by mobilizing the community.

The *Dorbar* was not involved in the quality monitoring aspect of the schemes which came under the purview of the PHED. The *Dorbar* don't maintain record of all the repairs or expenditures. When there is a need the *Dorbar* collects money from the users and spend directly. Repairs and complaints are attended within 24 hours, and normally during 10 AM to 4 PM of the day when there is no water distribution in the line.

Service received by households

The service is characterised by the use of multiple sources of water. Due to the terrain and disperse location of the households, bringing water to each household with piped supply is a difficult task, so most of households have a water storage facility outside the house. Besides piped water supply, there are community wells/spring tapping chambers in every village and most of them were perennial sources for drinking water. In summer, both piped water and rain water were used.

The combination of these sources led to an overall high level of service, with water close to the home and of reasonable continuity and reliability. Except for a quality issue in one village the community was found to be satisfied with the service as there were no complaints.

Service Level for the best practice village

	Quantity	Accesibility	Quality	Continuity	Reliability	Overall
High	85%	82%	72%	70%	82%	57%
Improved	7%	8%	0%	5%	5%	8%
Basic	2%	2%	25%	20%	0%	17%
sub-stand	4%	4%	2%	2%	0%	4%
no service	4%	4%	0%	0%	14%	15%

Table 1 Household Service Levels

The entire population in the villages belonged to the Scheduled Tribe category, therefore was no inequality found in terms of water provision from the community level service provider. Due to improved quality of life and higher aspirations, most the families in the community prefer to have piped water supplied at home.

The costs

Capital costs - of a total of 1463 INR/person - are largely done by the national government, alongside a 15% contribution by the state water and sanitation agency. Community contributions to the initial implementation costs are minor at 3%. The capital costs, were to completely cover hardware costs, it did not include software support. In terms of recurrent costs, it is to be noted that more than half comes from the state water supply agency. Of the 97 INR/person/year, communities pay around 44%. These are roughly the costs of minor operation and maintenance that include cleaning, power, chemicals and spare parts.

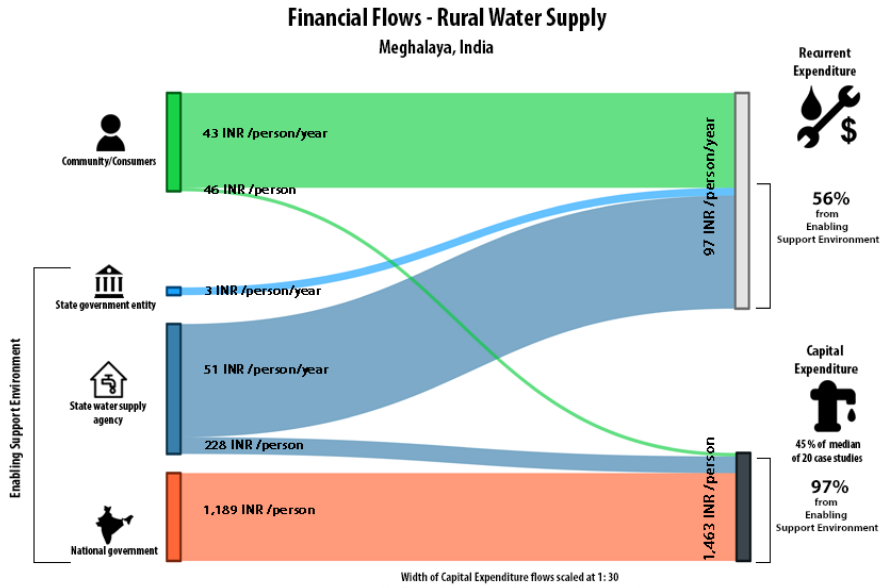

Figure 2: Capital and recurrent costs of service provision in Meghalaya

Conclusions

The success of the rural water supply system in the villages studied in Meghalaya could be largely attributed to the *Dorbars* –the traditional local governance system- and the community which was a self-mobilised and environmentally conscious group. Even though both the PHED and S&WCD work intensively at capital investment hardware and building the necessary infrastructure, however, there is no software input at the implementation or pre-implementation stage to involve the community or to educate them about the operation and maintenance of the facilities. This could pose to be a challenge if new technologies are adopted such as using an electric pump to lift water from the source. This would necessitate incorporating a software component at the preparation and implementation stages of the next level of capital investment. Also, the cohesiveness in the community could be better utilised if there was an enhanced software component at the preparation and implementation stages of the schemes.

About this note

This is a summary of a full case study as part of the Community Water Plus project. The original case study was written by Rema Saraswathy and G Vijayaram, Centre of Excellence for Change, Chennai, and the summary prepared by Ruchika Shiva (IRC). The full case study can be downloaded at **http://www.ircwash.org/projects/india-community-water-plus-project**

The project has investigated successful community-managed rural water supply programmes and approaches across India, and drawn out lessons on the support needed to make community-management successful. The project is funded by Australian Aid and is being implemented by a consortium of partners, including: the Administrative Staff College of India (ASCI), the Centre of Excellence for Change (CEC), Malaviya National Institute of Technology (MNIT), the Xavier Institute of Social Service (XISS) and IRC with overall project coordination provided by Cranfield University.

The research has been funded by the Australian Government through the Australian Development Awards Research Scheme under an award titled Community Management of Rural water Supply Systems in India. The views expressed in this summary sheet are those of the project and not necessarily those of the Australian Government. The Australian Government accepts no responsibility for any loss, damage or injury, resulting from reliance on any of the information or views contained in this summary sheet.