



# Community management of rural water supply systems

## Research Brief

### Research objective.

The aim of this ‘Community Water *plus*’ research project has been to give DFAT Australian Aid, other donors, IFIs and low-income country governments the evidence base to determine and justify the investment *and ongoing resources* needed to support community rural water services in low-income countries over the long-term.

### Communities can and do manage!

The research showed that there are communities successfully managing their own water supply. Two main approaches are apparent: managing as a sub-committee of the Gram Panchayat (a government resource empowered village council) where the Chair and Secretary (and Treasurer) of the council duplicate these roles in the Village Water and Sanitation Committee; and secondly

### KEY MESSAGES

#### This research found that:

- **Communities manage!**
- **Communities will pay . . . . . a little**
- **Communities require significant ongoing support**
- **Whilst recognising that national research capacity-building is an important output of development aid funded research – with significant resource implications**

where the sub-committee is given autonomous status under ‘The Societies Act’. In this setting the role of the charismatic leader (engineer) becomes more important.

The research had originally been predicated on the existence of successful community management handpump supplied rural water, albeit with an emerging trend towards piped schemes. The reality of successful schemes reported to the researchers, and then investigated, was that all (almost all) were now piped schemes, many with an increasing emphasis on piped supplies to individual households. The research found that this has changed the psychology of sustainability in that pipe networks and overhead reservoirs are inherently robust and long-lived. Communities, when empowered, are very good at reporting and expecting the early repair of leaks in pipes. And when the critical pump infrastructure fails and everybody is without their household water for a period then solutions for repair or repurchase are quickly found. A very different situation from the past when a handpump fails and users (women) are expected simply to carry on walking to the next nearest or back to the stream with little apparent societal incentive to repair.

### Communities will pay ... a little

The research found that for this improved level of household service consumers were prepared to pay for their access to water, both in obtaining the initial connection and in contributing to the ongoing expenses of running the service.

The results from our use of one ‘control village’, alongside

### METHODOLOGY

- The findings reported are based on the results of 20 detailed case studies of ‘successful’ community managed rural water supply systems across 17 States based on a stratified purposive sampling approach.
- This range covered low, middle and high-income States, enterprise focused and social development focused States and the range of hydrogeological conditions.
- The research approach required surveys with 30 households in 3 ‘successful villages’ with a ‘control’ village also similarly surveyed in each case (2,355 surveys). The role and resources of the community water service provider and the ‘enabling support environment’ were investigated through key informant interviews (272), focus groups (130) and document analysis.
- The research bridges the conventional divisions between ‘small-n’ qualitative and ‘large-n’ quantitative studies. For this reason it is described as a ‘med-n’ research study that brings together design-principles, methods and analysis techniques that have traditionally been associated with what some consider to be the separate meta-paradigms of quantitative-orientated positivist and qualitative-orientated interpretivist research

the three ‘successful’ community management villages in each case study, indicates that consumers are prepared to pay more where there is successful community management. It has not been possible to differentiate the extent to which this is due to a sense of community ownership or the level of service which good community management has delivered.

The research found that, on average, consumers are prepared to pay for ongoing operation and minor maintenance costs. In the higher service level systems there are moves towards saving for and paying for capital maintenance of pumps.

## Communities require significant ongoing support

The hypothesis of this ‘community water *plus*’ research was that communities need not only initial but also ongoing support to deliver good services. The results confirm this hypothesis overwhelmingly, the table indicating, on average, a fifty-fifty sharing of operating costs (often through little recognised power cost subsidies for ‘public water supplies’, an important issue for piped systems). The results also indicate a very substantial external support for capital maintenance (including enhancement and expansion) at approximately 85% of the total.

## Research capacity-building is an important output of development aid funded research

One of the complementary objectives of the research was to support capacity-building of national researchers. We found that the resources required to enable national research partners to deliver international quality research should not be underestimated

### Summary of Capital Expenditure per person for successful community managed water

INR60/USD PPP3.4 (2014)	Capital Expenditure (InterQuartileRange)			Recurrent Expenditure (InterQuartileRange)
<b>High Service Level Community Performance</b>	<b>\$184-\$247</b>			<b>\$6-\$32</b>
<b>Medium Service Level Community Performance</b>	<b>\$73-\$279</b>			<b>\$6-28</b>
<b>Low Service Level Community Performance</b>	<b>\$93-\$281</b>			<b>\$5-\$13</b>
	CapEx Hardware	CapEx Software	CapEx Community	Recurrent shares
<b>Mean (%)</b>	84%	11%	5%	table below
<b>Inter Quartile Range</b>	99%-87%	1%-7%	0%-7%	

### Summary of Recurrent Expenditure per person for successful community managed water

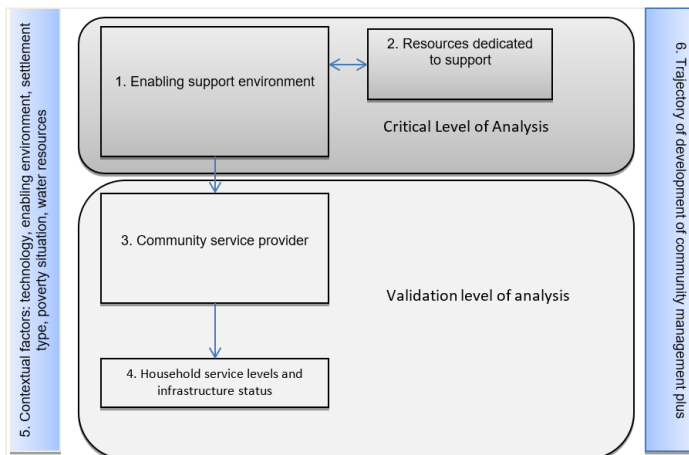
	OpEx direct support	OpEx enabling support	OpEx community	CapManEx support hardware	CapManEx support software	CapManEx community
<b>Mean (%)</b>	26%	21%	53%	82%	3%	15%
<b>Inter Quartile Range</b>	1%-30%	6%-18%	52%-93%	79%-89%	0%-0%	11%-21%

**Research team:** Cranfield University, UK with IRC, NL and ASCI, Hyderabad; CEC, Chennai; MNIT, Jaipur and XISS, Ranchi

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[www.dfat.gov.au](http://www.dfat.gov.au)

Research project website for further information: <http://www.irwash.org/projects/india-community-water-plus-project>



More ongoing researchers’ workshops and more supporting visits along with more international researcher support were required than first envisaged or budgeted for. Notwithstanding the commitment of the individual researchers we found that their institutional setting rarely allowed for appropriate engagement with the research at the level needed, due both to the reluctance of the host institutions to allow their principal investigators the time to initiate and undertake fieldwork and to the inability of the hosts to leverage the signed contracts into employing short term experienced researchers to overcome the PI time constraints.

## Further reading

The research overview will be available as Hutchings, P., Franceys, R., Smits, S. and Mekala, S. 2016 “*The future of rural water supply*”, Earthscan, London, forthcoming  
Journal articles published to date: “*Revisiting the history, concepts & typologies of community management for rural drinking water supply in India*”, Hutchings, P., Franceys, R., Mekala, S., Smits, S. & James, A., International Journal of Water Resources Development, 2016  
“*A systematic review of success factors in the community management of rural water supplies over the past 30 years*” Paul Hutchings\*, Mei Yee Chan, Lucie Cuadrado, Fatine Ezbakhe, Baptiste Mesa, Chiaki Tamekawa and Richard Franceys, Water Policy 17 (2015) 963–983  
The individual case study reports and summaries and research protocols can be found on the website as below: