Unstructured Post Construction Support under Structured Local Governance: Evidences from Rural Drinking Water Service Delivery

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Abstract
The evolution of the Rural Water and Sanitation Sector (RWSS) is marked by a paradigm shift from supply driven approaches to decentralized community management to improve ownership, service level and sustainability. Though the approach has gained dominance as a rural service delivery model in enhancing rural coverage globally, recent evidences suggest critical second generation sustainability concerns. There is also widespread scepticism about decentralization as a means to attain sustainable service delivery. The paper is an analytical revisit to one of the rural Grama Panchayaths which is the lowest layer of local government, served by community managed drinking water supply as a model for more than a decade, in a progressively decentralized State of Kerala, India. The objective is to test the evidences, document learning and to identify critical post construction (PCS) gaps in achieving sustainable service delivery, everyone for forever.

Keywords
Rural Drinking Water; Decentralization; Community Management; Sustainability; Post Construction Support

Introduction

In many countries including India, community management of water resources was a way of life from time immemorial. However, across the globe, community ownership and management of rural water supply systems and assets attracted substantial investments only since 1980s. The International Decade for Drinking Water and Sanitation (IDDWS 1981-90) adopted community participation and management as key strategies (McCommon *et al.* 1990).Since then, the U-turn from supply driven to decentralized community centric demand driven models triggered by donors and multi-laterals have been embraced at an accelerated pace by national governments resulting in community based management (CBM) emerging as a single dominant model of Rural Water Supply and Sanitation (RWSS) service delivery. The trajectory of water sector reforms in India has also been aligned broadly with the global trends.

Background

Over 90% of the world's population now has access to improved sources of drinking water. Sector investments however are highly skewed towards hardware leaving very little for O&M leading to high rate of scheme mortality and sub-optimal performance(Reddy et *al.* 2010).

Recent studiesacross different countries and technologies confirm a repeated pattern of failure and breakdown rates somewhere between 30-40% (Reddy et *al.* 2010). The Life Cycle Cost Approach (LCCA) study in India has also validated the pattern of poor asset management, high rate of capital decay and consequent dis-functionality. Yet another multi-country studycovering India (Lockwood and Smits 2011), under Triple–S (Sustainable Services at Scale) found that though rural drinking water sector is dominated by community management, there are emerging critical second generation sustainability concerns.

There is also widespread scepticism about decentralization as a means to attain sustainable service delivery and poverty reduction (Jha 2010). According to the World Development Report (WDR 2004; Parker *et al.* 2000; Taylor 2009), many challenges remain in scaling up the community management model, viz., communities require technical support in the medium to long run to manage water systems; communities pay for current operating costs, but replenishing capital investments and meeting rising O&M costs are not easily managed and there are problems of increasing complexities in managing water supply.

The emerging RWSS scenario in India is one of high aspirations and increasing demand for improved service level. In tune with the demand pattern, Government of India (GoI) has come out with ambitious strategy to achieve 80% rural piped water supply coverage by 2022(GoI 2010). Considering also the fact that decentralized governance of wash service delivery under the decentralised Panchayath Raj Institutions (PRIs) is a constitutional mandate, it would be of high import to explore and analyse evidences as to the capacity of CBM to deliver sustainable service delivery.

Decentralization and Drinking Water Service Delivery - A Review

Globally, decentralized community based management has emerged as a dominant model for rural drinking water service delivery. In a recent 13 country study (Lockwood *et al.* 2011) of the status of rural water reinforced the results.

However, the institutional modalities have ranged from delegation- de-concentration - democratic devolution, where community based user groups are embedded formally or informally as service providers. The distinction between service provider and regulatory functions are in general not well defined and in many cases the local government themselves act as providers. These variations in the form and content of decentralisation have an important bearing on service delivery outcomes, and on processes of participation, accountability and responsiveness. Local government is often weak, ill-equipped and poorly resourced to carry out the mandate of ensuring water services. Structured support for local government and communities is seldom in place and not adequately budgeted for. Lack of meaningful fiscal decentralisation remains a core barrier, often slowed down by political influence and other disincentives.

As noted by Dillinger(1994: 8-9), '[T]he objectives of decentralization … appear only tangentially related to administrative performance … the decentralization now occurring is not a carefully designed sequence of reforms aimed at improving the efficiency of public sector performance. It more often takes the form of a reluctant and disorderly series of concessions by central governments attempting to maintain political stability.'

As a result, decentralised community based management is showing signs of unsustainability questioning the very arguments of widely differing criteria, ranging from expected improvements in allocative efficiency, welfare, and equity, through to increased participation,

accountability, responsiveness on the part of local authorities and the basic tenet of subsidiarity.

There is no systematic or comparative evidence (Robinson 2003) on whether increased participation in decentralised local governance generates better outcomes in terms of improved service delivery to the poor and marginalised, though there are anecdotal, temporally specific and highly localised results indicating comparative advantages in terms of cost efficiency customer satisfaction.

In India however, historically, rural drinking water supply was outside the sphere of influence of Government in India. Governmental role started on a significant way with the commencement of the Accelerated Rural Water Supply Programme (ARWSP) in 1972-73. The turn to community participation started systematically in the year 1999-2000 with the third generation programme under Sector Reform Projects evolving community in planning, implementation and management of drinking water schemes. The ARWSP has been now modified as National Rural Drinking Water Programme (NRDWP) with the implementation modality in alignment with the constitution 73rd and 74th amendments (April 1993) placing drinking water and sanitation as mandatory functional areas of the 3 –tier Panchayath Raj Institutions (local self-governments), comprising the district, block and the village. The new policy directions as contained in the National Rural Drinking Water Programme (NRDWP) guidelines and the strategic plan 2022 having emphasis on PRI lead decentralized governance mode in drinking water sector involving active participation, management and ownership of communities.

However, the rural water supply schemes once completed are handed over to the PRIs/communities who are not adequately capacitated to manage the complexities of such schemes. Compounded by gaps in structured post construction support, community based management is showing high degree of unsustainability. At sub-national level, wash service delivery is the constitutional mandate of the Panchayat Raji Institutions (PRIs), which are not capable of performing technically, financially and managerially. The accountability mechanisms of Government PHEDs and Water Boards are still vertical to State Governments and not horizontal to PRIs. Institutional harmonization and strengthening at grassroots level are critical for sustainable service delivery.

While rural communities are struggling hard to manage simple local source based schemes, the new challenge of managing complexities of piped water supply is another threat to sustainable service delivery in India unless backed by well-structured community centric institutional delivery models which dominate rural sector require professionalism and improved capacity; technical, financial and managerial (The World Bank 2008).

The State of Kerala is considered as a lead model (Dreze and Sen 1996; Rammohan 2000; Franke and Barbara 1992; Oommen 2008) in democratic decentralisation in India following a big bang approach of devolution supported by massive capacity building processes. Evidence from Kerala's Popular Planning Campaign launched in 1996 indicates that local council expenditures more accurately reflect local priorities but it is too soon to determine their equity impact (Isaac and Franke 2000).

Multiple Delivery Models

The state is having multiple service delivery models comprising KWA led supply driven piped water supply schemes (PWS), World Bank community owned-demand driven Kerala

Rural Water Supply and Sanitation Agency (KRWSA) called *Jalanidhi*, GoI funded PRI lead Sector Reform and Swajaldhara schemes, PRI owned and invested water supply schemes, NGO driven systems backed up by an overriding open well based self- supply. Except KWA schemes, all the models are demand driven based on the principle of community contracting, participation, partial capital cost sharing and O&M cost recovery with varying degree of differences. These schemes are implemented on the 'unfailing faith' in the capacity of the communities in operating and managing water supply.

Though the State is having outstanding global models in community driven development (CDD), apparently on account of increasing complexities of drinking water supply, erosion in social capital, deflation in voluntarism, absence of structured post construction and capacity support, there are manifested signs of slippage in community management.

In this background the paper examine critically the performance of community managed PRI centric rural drinking water supply schemes in Mundathikode Grama Panchayaths in the State, which pioneered decentralised service delivery including taking over and community based rehabilitation of Kerala Water Authority (KWA) managed schemes. The study also amounts to a revisit after a decade of implementation to assess key issues of sustainability and to examine critical post construction support gap if any.

The Case Study

We selected Mundathikode Gram Panchayath (GP) in Thrissur district of Kerala State for our evaluation study. The GP was selected as the best local government inthe State consecutively for 2001 and 2002. Mundathikode was also one of the pilot batch GPs pioneered the World Bank funded community managed demand driven Jalanidhi Rural Water & Sanitation (RWSS) programme of Government of Kerala (GoK) during 1999-2002. After over a decade it would be an ideal revisit to explore the sustainability issues.

Under Jalanidhi 26 micro piped water supply schemes with house connections were implemented in the GP, which include 3 rehabilitation schemes taken over from the public sector KWA. Institutionally and legally, the project had a quadrilateral agreement among Beneficiary Groups (BGs),local government (GP), supporting NGO and Jalanidhi which is the facilitating Project Management Unit (PMU). Encouraged by the success of Jalanidhi, the GP has also managed to facilitate implementation of additional 13 new schemes under the same principle of community management and cost recovery. Now there are about 39 rural community managed drinking water schemes in the GP fully managed and maintained by communities through cost recovery. To supplement, the GP also has an excellent network of self- supply through traditional household open dug wells. Basically agrarian, the Panchayath is severely water stressed during summer months.

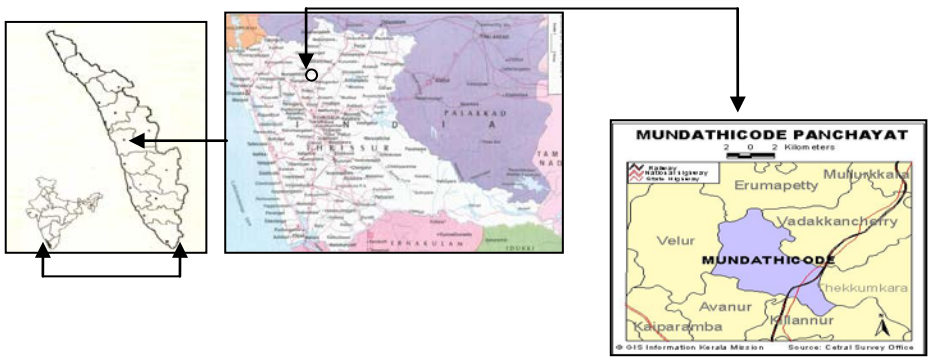

Figure1Location Map of Mundathicode Grama Panchayath, Thrissur, Kerala

Objectives of the Study

The key objective of the study is to revisit the GP after a decade of community led wash services to understand the sustainability status, with special focus on critical gaps if any in post construction support if. Specifically,

1. Conduct sustainability evaluation and to assess functionality and service levels of small piped water supply schemes
    a. Technical and environmental Sustainability – mainly source, water quality and distribution system and service levels.
    b. Financial sustainability in terms of cost recovery and O&M
    c. Institutional sustainability which include capacity for repairs and maintenance, O&M, conflict management and managing change and complexities
2. To identify and chart critical gaps if any in post construction support for sustainability

Methodological Framework

The methodology comprised of reconnaissance, detailed questionnaire based survey of water supply schemes, Focus Group Discussions (FGDs) and consultation workshops as given in the Chart 1.

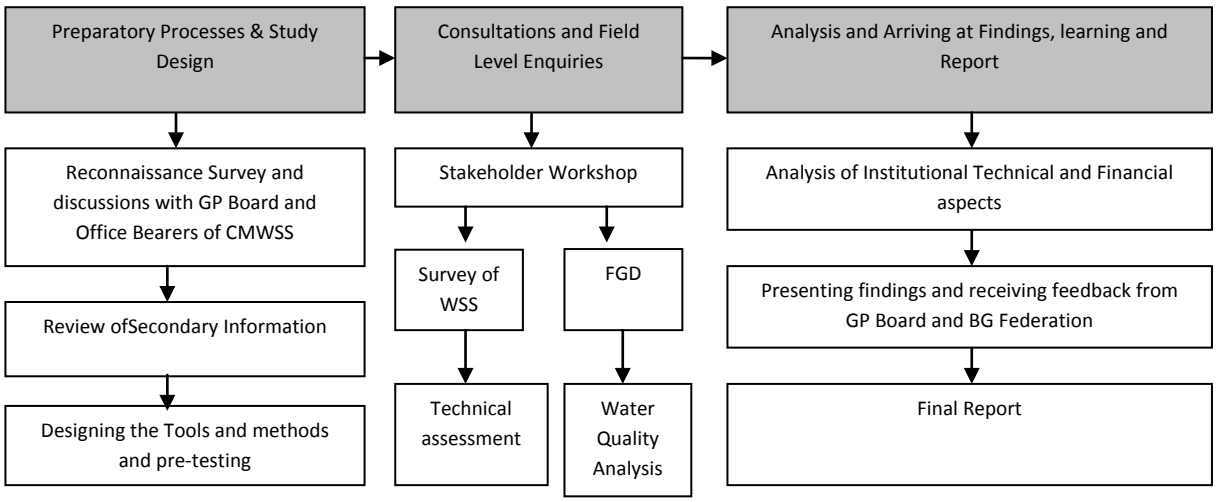

Figure 2 Methodological Framework

Source /Environmental Sustainability

All the 26 schemes commissioned under Jalanidhi in 2002-03 have been subjected to the detailed survey. The GP schemes are of 1 to 3 years old and hence not amenable well for long term sustainability evaluation. At the time of revisit all the schemeswere functional and were supplying water to member households.

The community water supply schemes are managed by people's institutions, known as beneficiary groups – (BGs). These BGs are registered legal entities and allow exit and entry of members. This expansion or contraction of membership is found to have positively correlated with source adequacy as a significant determinant.

Analysis of technology options show that there is significant dropout of households from schemes having open well sources. Out of 26 schemes, 14 had open well sources. The open

well sources could not supply water at the designed level especially during lean months.The beneficiary committees (BCs)have been finding it difficult to mobilize finance to augment or to construct alternate sources to supplement, except in two schemes already having alternate sources. Many schemes have also failed to provide adequate supply in the elevated areas as the BCs are finding it difficult to technically and socially regulate supply. Consequently, they quite often end up by pumping more water to ensure availability at the tail ends, leading to environmentally unsustainable over extraction.

Of the 26 Jalanidhi schemes, 12 of them pump excess quantity of water. Surprisingly, the average service level in 7 schemes are as high as 150 lpcd as against the design level of 70 lpcd. The survey team came across instances of over-pumping when faced with complaints of poor service levels from households - a manifestation of the lack of technical capacity for balancing the schemes.

Quality Sustainability

The biggest toll in the service delivery chain is the lack of attention attributed to water treatment, quality adherence, periodic monitoring and reporting. Of the 32 schemes, 26 (20 in Jalanidhi and 6 in GP funded schemes) are supplying raw water without any treatment. There were 14 schemes under Jalanidhi practicing chlorination at the time of commissioning, however the number has come down to 6 now.

Out of 32 schemes in the GP, 24 schemes had not conducted a water quality analysis at an accredited water quality lab of the Government or a public utility. Eight schemes only claimed to have done the water quality analysis, though they could not present evidence in the form of test results. BGs do not take advice from any expert/agency regarding the results of water quality tests and the GP is not involved in monitoring or regulating.It is found that generally people attach importance only to the physical quality of water (taste, odour and colour) and there is a pronounced preference of communities to drink well water and they quite often use piped water for other uses.

The water quality analysis shows that the water is potable against 12 out of 15 parameters. The value of parameters tested is within desirable or permissible limits. However, the value for iron presence in water samples tested exceeded in 25 of 26 schemes and is a cause for concern. E-coli bacteria are present in 21 of 26 samples. There is no residual chlorine in any of the samples. Therefore, claims of chlorination may not be factual. Though the system of community based water quality monitoring and surveillance was introduced in initial years, it has never been successful.

Equityand Metering

Equitable distribution of water at the design level to households in the Beneficiary Group is a real challenge in Kerala's uneven terrain. Though, metering and volumetric tariff structure would be a key solution to the problem of inequitable consumption, only one BG has adopted it so far. Fully financed by internal resources, this BG has been regulatingconsumption with great success.

Evidences of Sustainability – Financial

Schemes established under Jalanidhi are based on a capital cost (CapEx) sharing pattern of 75:15:10 by Jalanidhi, BG and GP respectively and full O&M cost recovery.The BGs are not provided any grant to cover repairs and maintenance (R&M) or O&M expenses. The range of O&M charges that the households pay ranged from Rs.30 to 50 per month per household in

2002-03. Data is available for 16 schemes out of 26 regarding their baseline and current rate of monthly user charges, as given in the table4.

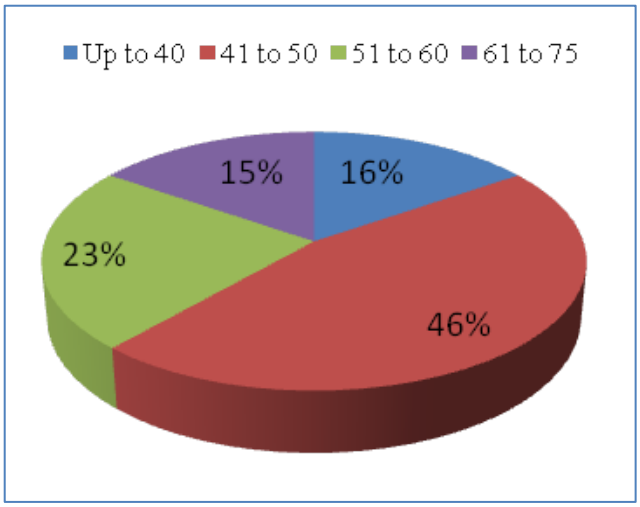

Figure 3: Grouping of schemes according to user fee in INR

Surprisingly, over the last 10 years, 5 BGs have not increased their tariff at all.Seven BGs have increased tariff in the range of 25 to 50% and 2 BGs between 51 to 75% and 2 BGs have increased tariff by 100%. Despite a hefty hike in O&M (Opex) costs, tariff has not been increased proportionality, leading to financial crisis at the costs of timely capital repairs and maintenance (CapManEx). Asset maintenance or replacement is done on an *ad hoc* manner using a mix of reserve, borrowing or external grants only when there is serious breakdown.

The study found that only 6 BGs out of 26 (23%) had surplus funds, ranging between INR50,000 – 100000 (US$ 1100 – 2200). Jawahar BG, which is a KWA rehabilitated scheme top the list with INR 0.35 million as reserve fund. Eight BGs do not have any information whether there is surplus with them or not and 4 BGs declared that they do not have surplus funds, leaving nothing to fall back.

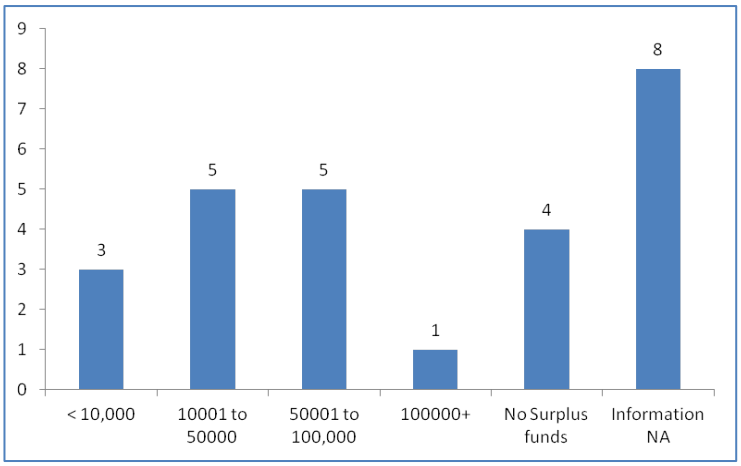

Figure 4: Jalanidhi-Position of Surplus Fund

However, it does not mean that the BGs will stop functioning in the event of any serious breakdown. Evidences are that they immediately borrow, or financed initially by the BG leadership to be recouped later by one time collection, or at times receive support from the GP. All such sources of financing risk and capital management expenditure (CapManEx) are purely ad hoc increasing significantly the chances of failure, especially when there is a conflict, as evidenced in one BG.

Evidences of Sustainability – Institutional

Rural water stressed communities organized themselves into registered BGs in 1999-2000 to demand Jalanidhi project expressing their willingness for partial capital cost sharing and 100% O&M cost recovery. The study revealed that in 17 out of 26 communities(65%), the Beneficiary Groups (BGs) have rather become functionally sluggish except when there is a crisis. The initial enthusiasm and participation in BG meetings during the planning and implementation phase has now fizzled out. Over the years, a typical consumer-provider relationship has emerged in the Jalanidhi BGs. The management committees have transformed under duress to assume the role of providers and the BG members are the 'consumers'. This transformation is the result of a silent change in occupational shit in the GP as more and more people move away from primary sector to services, economic growth and conventional social capital and voluntarism giving way to rational economic behavior of individuals. Apparently, the concept of participation is getting redefined and manifested in willingness to pay, a typical behavior of consumers in the market. The obvious impact of this shift is in the need for professionalizing community management backed up by adequate economic incentives for sustainability. Yet another interesting feature is the sticky management committees with little or limited turn over as there are only very few takers of responsibility without adequate incentives. All said and done, the management committees are commanding leadership status as they function voluntarily during post construction phasefor a social cause. Many of them have been elected to local government positions as well, which is yet another incentive.

Conventionally, the dynamism in the Beneficiary Group (BG) meeting is yet another indicator of participation and sustainability of communities. The study has shown that 7 BGs (27%) have meetings only during grave crisis, 10 BGs (38%) only during annual meetings. Only 4 BGs (15%) have monthly meeting. The frequency of the meetings has no more been an indicator of participatory functioning of the BGs, as participation largely limited to monthly payment and also in raising finance to meet emergencies.

Women Representation in Management Committees

Women and water are closely related as they bear the brunt of inadequacy most. Since they have greater stake, better women participation facilitate improved sustainability. Accordingly, Jalanidhi project placed substantial importance to the role of women in the planning, operation and management of community based water supply schemes. This was quite true in the case of planning and implementation stages as well. After commissioning of the scheme, it looks as if, women have gone back to the conventional position of water users and not water managers. There seems to be a withdrawal of women from the Beneficiary Committees of the BGs, as their number and presence have dwindled in these bodies. The following diagram presents the women presence in the Beneficiary Committees

Training and Capacity Building

The study has also enquired whether the BG require further training and capacity building, ranging from technical to institutional aspects after commissioning. All the BGs unanimously

indicated that the pump operators, office bearers and also consumer households require training, motivation and orientation. It was opined that the presence of NGO /support organization (SO) during the planning and implementation period of the project was a very helpful facilitating BGs to take informed choices and decisions. However, when the SOs withdrew at the end of their contracts no alternative arrangements were put in place or linked up, on the assumption that BGs would be able to manage the complexities. Though, some efforts were made to form a BG Federation as an institutional anchor to mobilize the bare-foot expertise, it has not happened. this is still in its infancy. If managed well, a BG federation could be positive in many ways to act as a post construction support vehicle for rural communities

Satisfaction Rating

The study has shown that, despite many symptoms of crack in CBM, 81% of the schemes households have reported that the timing of water supply is convenient, in 50% of schemes supply is adequate and in 46% of the schemes households are happy about both quantity and quality.

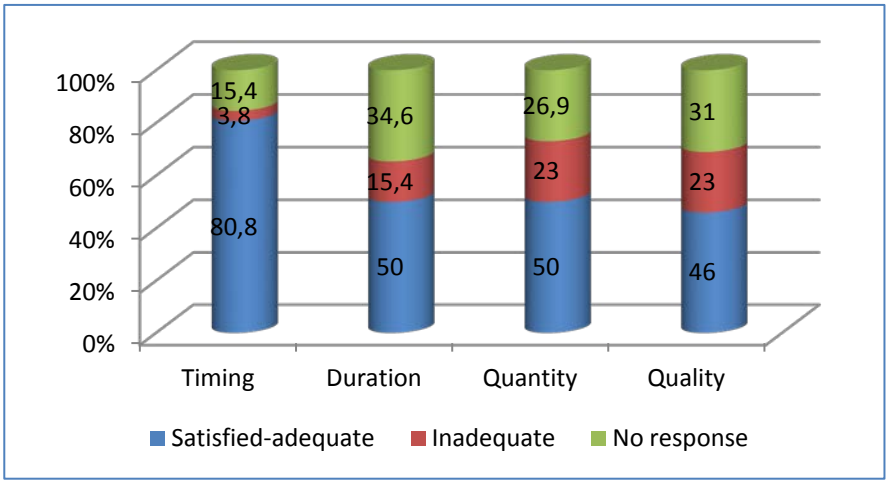

Figure 5Jalanidhi – Consumer Satisfaction Rating

All the 26 schemes are functional after a decade and recover 100% of O&M costs paid by consumer households on a normative basis. Given adequate access to the window of structured post construction support, both to service providers (the BC) and service authorities (GP), community management would be a viable, cost effective and sustainable model of decentralized wash governance.

Post Construction Support (PCS) Gaps

The study has brought forth a series of post construction gaps at the level of both service provider and service authority to ensure sustainable services forever. In fact PCS should be an integral part of CBM. If the water boards and departments are given continued support financially and technically for sustainability, there is no reason for not providing such opportunities for communities. The BCs need a level playing ground. The critical PCS gap identified in the case study are summarized in the table below:

Table 1 Jalanidhi -Post construction Support (PCS) Gaps

Sustainability Parameters	Service Provider (SP) BGs	Service Authority SA (GPs)
Technical	Lack of internal technical capacity and capacity to out-source Lack of arrangements for trouble shooting and correct design flaws.	Capacity constraints to facilitate technical backstopping to SP
Financial & Managerial	Weak Tariff administration and cost recovery Weak financial strength and surplus for CapManex and risk financing Lack of transparency Weak financial planning, management and poor capacity for resource mobilization	No control of financial sustainability Ad hoc arrangements to finance risk and contingencies – not ring fenced Ineffective systems of social audit
Source/ Environmental	Over extraction and over pumping Source unsustainability and disregard source protection	Weak regulatory capacity to control over-pumping and water pollution
Water quality	Weak capacity for quality assurance and checking/ treatment Weak monitoring system Lack of awareness	Absence of horizontal flow of quality monitoring data Poor capacity to regulate
Institutional/social	Jalanidhi BGs are separate registered entity legally not linked to GP Lack of capacity for asset management Frequent drop out of households Erosion of voluntarism and social capital Absence of continued handholding and capacity building No credible system for dispute resolution	Assets Not legally owned by GP – schemes to be included in the asset register of GP VWSCs /BGs to be made sub-committees of GP and mandated for technically and financially facilitate service delivery Capacity constraints Lack of role clarity

Conclusion: Wither Community Based Management?

The pertinent question here is whether community based management (CBM) as an institutional model is withering out? Apparently not, as long as the community recovers full O&M costs and participating households are paying user charges. They also mobilize themselves when there is a crisis. The sheer fact that, relatively *well empowered*communities are functional in constraints for the past one and a half decade with full cost recovery, while supply driven large utilities are grant funded for sustenance, itself demonstrate the viability of the service delivery model. Evidences suggest however a move towards market based participation manifested in the willingness to pay. Considering the sustainability challenges as evidenced, the BGs have to transform themselves either into professionalized management group or they require professional technical backstopping and handholding support to sustainability at scale in the long run. The increasing complexities of managing drinking water supply, atrophy in social capital and capacities over a period of time, necessitate unconventional solutions. Yet another key determinant of success is the role of empowered local governments organically anchored to networked service provider community groups to perform their, supportive and service regulatory functions effectively and to facilitate sustainability. Professional post construction support services could play a vital role to fill the gap and ensure sustainability of community water supply schemes.

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