COMMUNITY MANAGEMENT OF RURAL WATER SUPPLY

Community Water *plus*

Centre of Excellence for Change, Chennai

Understanding the resource implications of the 'plus' in community management of rural water supply systems in India: gravity based water supply, Sikkim

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Community Water *plus* is a 20 case study research project managed by Cranfield University, UK, on behalf of the Department of Foreign Affairs and Trade (DFAT) of the Australian Government

Executive summary

Spread across an altitude from 300 meters to 2,800 meters in the north-east border of India, Sikkim is one of the smallest and most sparsely populated states in the country. With one of the highest levels of wealth (as measured by GDP per person) among the States in India, Sikkim also has a proven track record in best practices of local self-governance as well as political stability. The State has achieved near 100% coverage in drinking water provision with piped supply systems of spring water, adopting the simplest technologies, and has been declared as a '100% open defecation free state' as early as 2008. Given the systems of local governance and the water sources prevailing across the State, this study found that there are Gram Panchayats (GP) and Water User Associations managing their drinking water supply systems extremely well. The best performing two Gram Panchayats, Melli Dara Paiyong and Gerethang Labing, and one Ward (Zitlang) Water User Association are studied in detail and presented in this report.

The Rural Management and Development Department of the State Government is the only enabling agency for water supply. As part of the Panchayat Raj Act 1993 and the decentralisation process in local governance, the Department has taken up many initiatives in institutional strengthening for the GPs in the State. Enabling the GPs to improve public service delivery, including that of rural water supply, has been on the agenda of the Department since the implementation of Panchayat Raj Act. The Assistant Engineer at Block level, and the Junior Engineer at the Panchayat level, provide technical support to the GPs and the Department has also ensured a local person (Barefoot Engineer) is trained on essential fitter/plumber techniques and water quality monitoring. The presence of a Village Water and Sanitation Committee as part of the GP conforms to the NRDWP guidelines of the GoI, however it is the GP that is active at all stages. The Department has also ensured that the GP Members as well as the VWSC members are trained on issues related to water management at their GP level. The State Institute of Rural Development under the Department provides the training. The presence of a political will to strengthen the local self-government institutions and a committed administrative set up to implement the programmes are found to play critical role in State success.

In addition to the prevailing enabling support environment, the community's participation helps the CSPs to manage a sustainable service delivery. Their involvement in planning, implementing, monitoring, and financial contribution through 100% tariff payments make sure that service is delivered without fail. With the revenue generated from the tariff, the CSP is able to deploy more human resources to operate and maintain the system. Besides the Junior Engineer and 'Barefoot Engineer', the CSPs appoint 3 to 4 fitters to monitor the water supply.

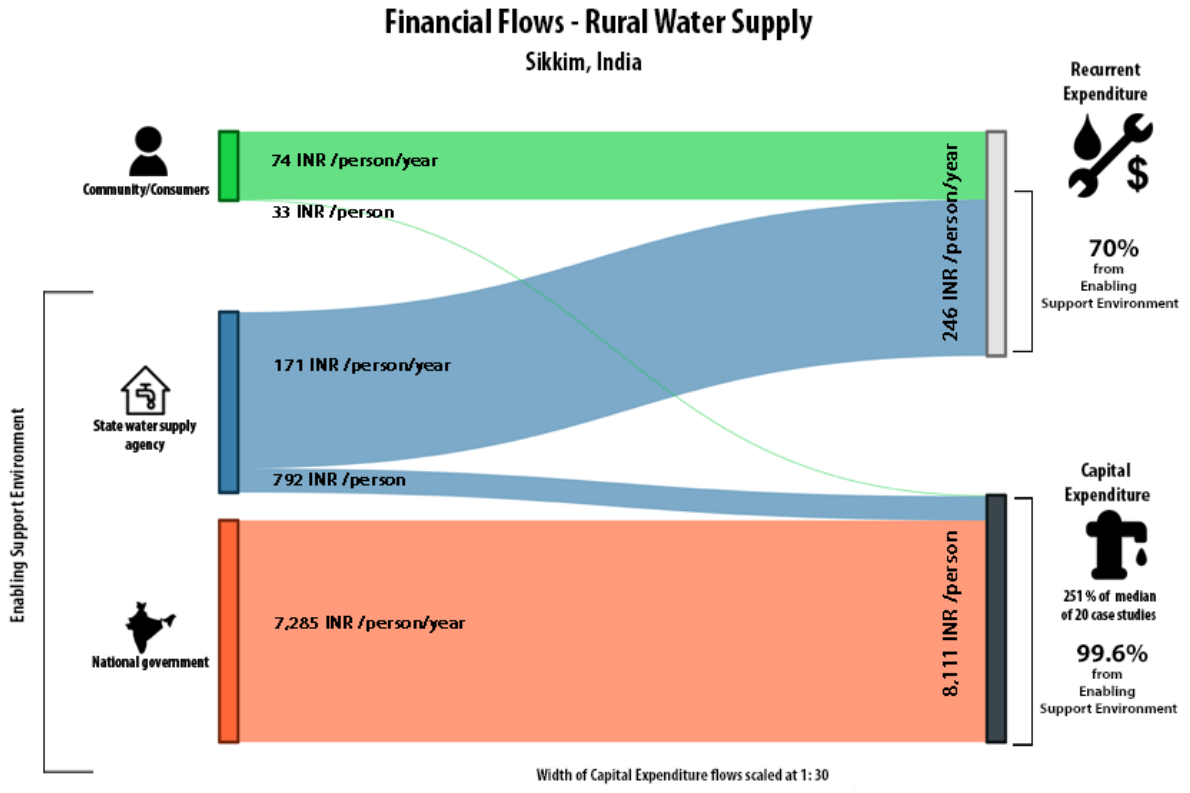
The data indicate that the CapEx hardware cost per head is around INR 8,000 and CaEx software cost per head INR 25. The annual operational expenditure at the CSP level is INR 71 per head and the revenue generated by the CSP is INR 71 per head. The ESE contribution to the CSP is INR 37 per head per year, with an annual grant of INR 100,000 to every GP for operation and maintenance, with additional support for chlorination and water quality testing.

The community ownership resulting from the decentralisation process, as well as the high level of socio-economic development in the State, appear to share the success in Sikkim best practices.

Sikkim Summary Cost Table - calculated as the average cost per person, that is averaging across the three 'successful' villages

Source of funds	Use of funds - implementation			Use of funds - annual recurrent					
	CapEx hardware	CapEx software	CAPEX TOTAL	OpEx labour & materials	OpEx power	OpEx bulk water	OpEx enabling support	CapManEx	RECURRENT EXPENDITURE TOTAL
Community/consumers	INR 33	-	INR 33	INR 59	-	-	-	INR 16	INR 74
Local self-government	-	-	-	-	-	-	-	-	-
	-	-	-	-	-	-	-	-	-
State government entity	-	-	-	-	-	-	-	-	-
State water supply agency	INR 768	INR 25	INR 792	INR 37	-	-	INR 128	INR 6	INR 171
National Government	INR 7,285	-	INR 7,285	-	-	-	-	-	-
NGO national & international	-	-	-	-	-	-	-	-	-
International donor	-	-	-	-	-	-	-	-	-
TOTALS	INR 8,086	INR 25	INR 8,111	INR 96	-	-	INR 128	INR 22	INR 246
Median of 20 case studies			INR 3,231						INR 207
'Plus' %age	100%	100%	99.6%	39%	-	-	100%	28%	70%
Median of 20 case studies			95%						57%

The Financial Flow Diagram, below, has been developed as an advocacy and communication tool. It aims to assist policy-makers and programme developers to visualise the 'plus' resource implications necessary for sustainable community-managed rural water supply services.



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This research project has investigated twenty reportedly successful community-managed rural water supply programmes and approaches across India, from which we have subsequently developed understanding on the support needed to make community-management service provision successful and sustainable. The project has been 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, The Netherlands with overall project coordination provided by Cranfield University, UK.

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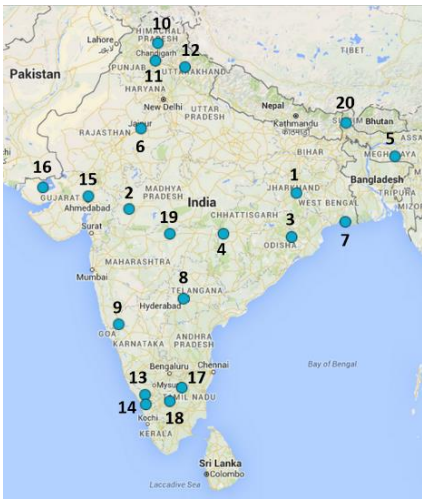

The twenty case studies

1	Jharkhand	11	Punjab
2	Madhya Pradesh	12	Uttarakhand
3	Odisha	13	Kerala (Kodur)
4	Chhattisgarh	14	Kerala (Nenmeni)
5	Meghalaya	15	Gujarat (Ghandinagar)
6	Rajasthan	16	Gujarat (Kutch)
7	West Bengal	17	Tamil Nadu (Morappur)
8	Telangana	18	Tamil Nadu (Kathirampatti)
9	Karnataka	19	Maharashtra
10	Himachal Pradesh	20	Sikkim

The twenty case studies are available also in four page summaries, both in Indian Rupees and in US Dollar (PPP) versions, accessible from the project website. A Policy Brief and a Research Brief There is also a synthesis report available, published by Earthscan, London.

Contents

Abbreviations

AE	Assistant Engineer
BAC	Block Level Action Centre
BE	Barefoot Engineer
GPU	Gram Panchayat Unit
IAY/CMRHM	Indira Awas Yojana /Chief Ministers' Rural Housing Programme
JE	Junior Engineer
MGNREGA	Mahatma Gandhi National Rural Employment Guarantee Act
RMDD	Rural Management and Development Department
SIRD	State Institute of Rural Development
VAC	Village Action Centre
VWSC	Village Water and Sanitation Committee

1 Introduction

Sikkim situated in the north-east part of India, shares its borders with three nations, Bhutan, Nepal and China, and is one of the smallest states in India. The State, which was under different dynastic rulers, became part of India in 1975. Spread across an altitude from 300 meters to 2,800 meters, it is one of the most thinly populated States of India with only 86 inhabitants per square kilometre (Census 2011). Sikkim has one of the highest levels of wealth (GDP per person) among the States in India, and has a proven track record in best practices of local self-governance. In terms of provision of drinking water supply, the State has achieved near 100% coverage with piped water supply systems. Given the thrust on decentralisation in the State, some of the Gram Panchayats are performing extremely well, as compared to the rest, with regards to the overall governance as well as in the management of drinking water supply systems. This is a detailed study of one such best practice in community-managed drinking water supply in Sikkim.

Box 1 Sikkim- the state context

"Sikkim is the 22nd state of India came into existence with effect from 26th April, 1975. Sikkim state being a part of inner mountain ranges of Himalayas, is hilly having varied elevation ranging from 300 to 8540 meters. But the habitable areas are only up to the altitude of 2100 metres, constituting only 20% of the total area of the state. The highest portion of Sikkim lies in its north west direction. A large number of mountains having altitudes of about seven thousand meters stands here with - Kanchenjunga (8598 m.), the third highest peak in the world. A number of glaciers descends from eastern slopes of Kanchenjunga into Sikkim where snow clad line is found above 5300 metres. The biggest of them is Zemu, from whose snout above Lachen monastery rises the river Teesta. Teesta known as the life-line of Sikkim has the main tributaries Zemu, Lachung, Rangyong, Dikchu, Rongli, Rangpo and Rangit which form the main channel of drainage from the north to the south. Ethnically Sikkim has mainly three groups of people viz. Nepalis, Bhutias, Lepchas. The local language is Nepali. English is the official language. This jewel- like mountain state of ethereal beauty with an area of 7299 sq. kms , nestles in the heart of Himalayas. Wrapped in mists and clouds, a garden state with an incredible variety of rhododendrons & a host of other flowers. Sikkim which had the history of dynastic rulers is now one of the frontrunner in implementing grass root democracy with adoption of decentralised local self-governance under Panchayat Raj." More information on Sikkim may be found at http://sikkim.nic.in/sws/home_int.htm

1.1 Background to the case study, the topic and the community water plus project

Community management has long been recognised to be critical for rural water supply services. Indeed, community management has contributed significantly to improvements in rural water supplies. However those supplies are only sustainable when communities receive appropriate levels of support from government and other entities in their service delivery tasks. This may consist of easy access to call-down maintenance staff from government entities, or support from civil society organisations to renew their management structures and they may need to professionalize—that is, outsourcing of certain tasks to specialised individuals or enterprises.

In spite of the existence of success stories in community management, mechanisms for support and professionalization are often not institutionalised in policies and strategies. Success stories then

remain pockets of achievement. Also, the necessary support comes at a price, and sometimes a significant one – though in many cases there is lack of insight into the real costs of support.

Community Water plus (Community management of rural water supply systems) is a research project which aims to gain further insights into the type and amount of support that is needed for community-managed water services to function effectively.

This research investigates 20 case studies of reportedly 'successful' community-managed rural water supply programmes across India in order to determine the extent of direct support provided to sustain services with a valid level of community engagement. The expected outcome – based on the empirical evidence from the 20 cases - of the project is to have a better understanding of the likely resource implications of delivering the 'plus' of successful community management 'plus', for different technical solutions, at a level of competence and bureaucratic involvement that is indicative of normal conditions across many low-income countries, and the possible trajectories for institutional development of effective support entities for community management.

In order to achieve that outcome, the project focuses on the following main research question:

What type, extent and style of supporting organisations are required to ensure sustainable community managed water service delivery relative to varying technical modes of supply?

This is further broken down in the following specific questions:

- What are the current modalities of successful community management and how do they differ in their degrees of effectiveness?
- What supporting organisations are in place to ensure sustainable water service delivery relative to alternative modes of supply?
- What are the indicative costs of effective support organisations?
- Can particular trajectories of professionalising and strengthening the support to rural water be identified?

This report presents the study results based on the community managed gravity based piped water supply scheme using the springs as resource in Sikkim. The Gram Panchayats empowered with the 3Fs i.e funds, functions and functionaries, and necessary capacity are managing the system. The user groups from the community take part in planning, implementing, and in operation and maintenance of the facility.

1.2 Structure of the report

The following chapters present the analysis and findings of the data: this chapter describes the conceptual framework and methodology of the research. Contributions to the Enabling Support Environment are discussed in Chapter 2. The Community Service Providers' detailed description, their performance assessment, partnering levels and household service levels achieved are analysed and presented in Chapter 3. Chapter 4 presents the cost incurred for delivering the ongoing enabling support environment to achieve best practice. The conclusions from the study are presented in Chapter 5.

1.3 Conceptual framework and Methodology

Community Water plus (community management of rural water supply systems) is a research project that aims to gain insights into the type and level of support and professionalisation that is needed, and the resource implications of this 'plus' (in terms of money, staffing, and other factors), in order to achieve sustainable community management. To achieve this, the research investigates twenty case studies of 'successful' (as initially reported) community-managed rural water schemes across India where the range of States, and their varying socio-economic as well as hydrological conditions, gives a good sample of technologies and approaches which are of relevance to many lower-income countries. Ultimately, the hypothesis underpinning the research is that some level of external support is needed to deliver on-going high quality water services through a community management model. Key to this support is what this research labels the 'enabling support environment' (ESE) that fulfils both 'service authority and monitoring' functions, such as planning, coordination, regulation, monitoring and oversight, and 'direct support' functions, such as technical assistance and financial contributions (Lockwood and Smits, 2011).

The research focuses on the level of water service people receive so as to validate the degree of success found under the different programmes. The way in which the community are involved in delivering this service is considered through what the study terms the 'community service provider' (CSP), which is the entity that takes on the responsibility for everyday operation and minor maintenance of the water supply service. It is recognised that an effective CSP should reflect both the local community and the complexity of the water system, leading to divergent models of management and participation. However, firstly we investigate the form, function and resource implications of the ESE, along with an analysis of the strengths and weaknesses of this particular model. The study finishes with a detailed consideration of the total cost of providing water services, with a focus on the costs incurred by the ESE – whether directly or indirectly.

Figure 1.1 provides an overview of the different elements, whilst a detailed research methodology and explanation of the underlying has previously been published as part of the Community Waterplus project: "Understanding the resource implications of the 'plus' in community management of rural water supply systems in India: concepts and research methodology", Smits, S., Franceys, R., Mekala, S. and Hutchings P., 2015. Community Water Plus working paper. Cranfield University and IRC: The Netherlands; please see http://www.ircwash.org/projects/india-community-water-plus-project

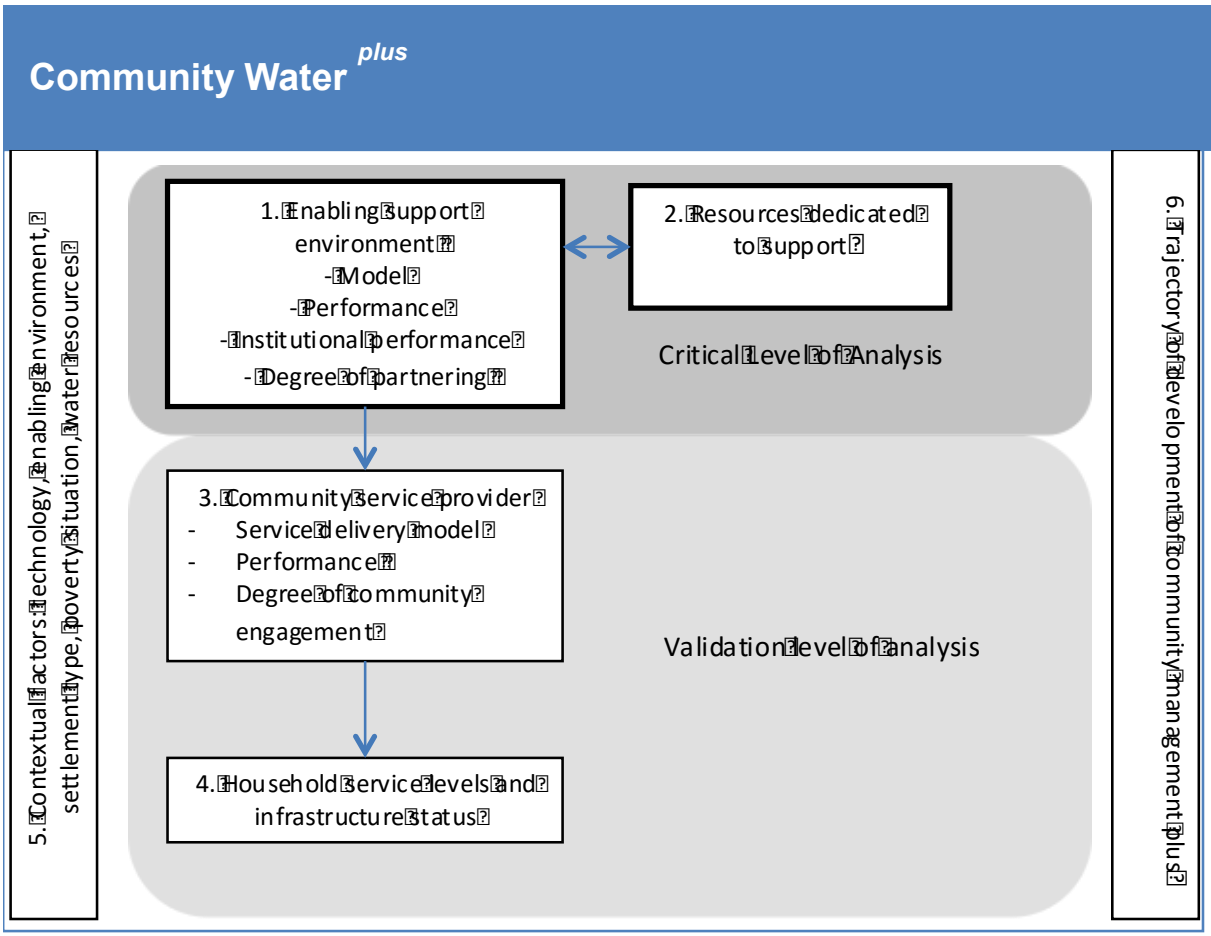

Figure 1.1 Relationship between the research elements

1.4 Case study selection

The research took place at two key levels of analysis: 1) the programme or support model and 2) the community level. A third level, the household, is a level at which data is collected to verify the level of 'success', but is not a level of analysis in itself.

The State of Sikkim is divided in to four districts, East Sikkim, South Sikkim, West Sikkim and North Sikkim, 29 Blocks and 165 Gram Panchayat Units with an average population of about 3,800 persons. The Sikkim Panchayat Act 1993, passed in the light of 73rd Amendment of the Constitution, brought in to effect the two tier Panchayati Raj system in the State, that is the Zilla Panchayat and Gram Panchayat. However, in the thinly populated North Sikkim, the traditional system of local governance, 'Dzumsas' under the headman (Pipon), is still practiced.

Overall, 2,075 of the 2,084 habitations (99.57%) are fully covered by piped water supply in the State. Three best practice villages were selected 1) Melli Dara Paiyong GPU of Namchi Block of South Sikkim District, 2) Gerethang Labing GPU of Yuksum Block in West Sikkim District, and 3) Zitlang Ward Water User Association of Central Pendum. *Sadam Suntley* of Namchi Block, South Sikkim District, was taken as a control unit for the study.

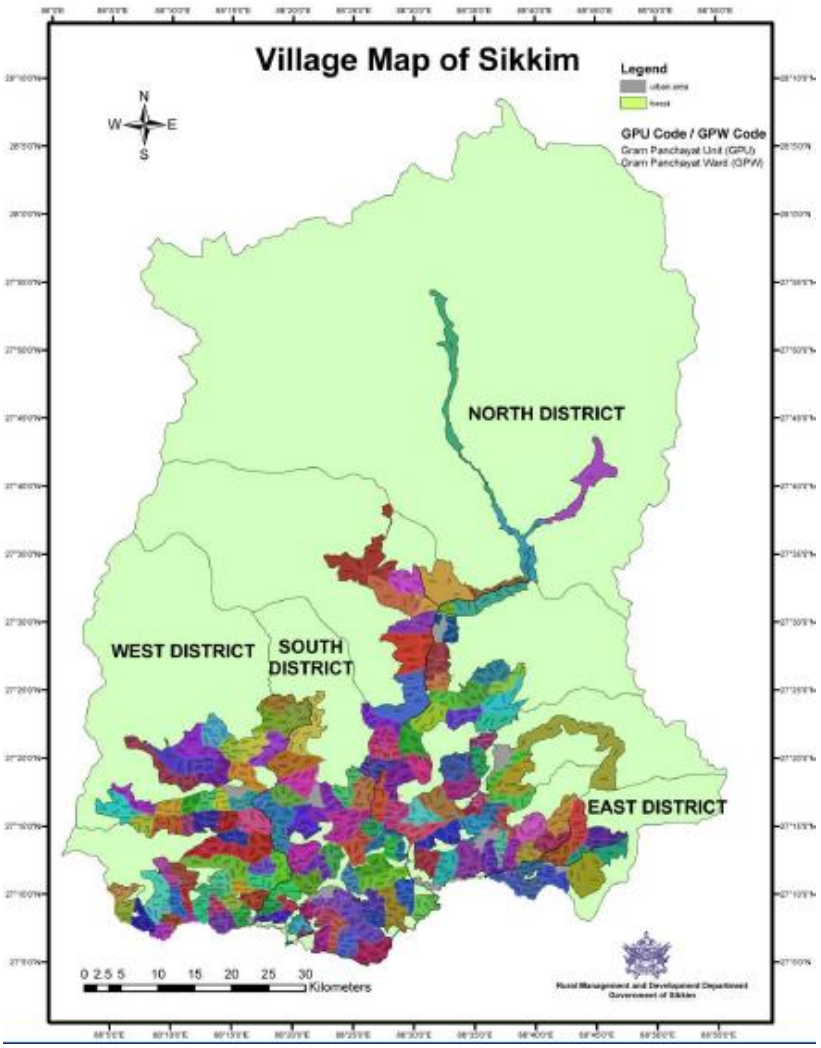

Figure 1.2 Village map of Sikkim

Table 1.1 State Information

Total Population	607688
No. of Males	321659
No. of Females	286027
Literacy rate %	73.94
Sex Ratio females/1000 males	889
Population Density persons/ sq kms	86
No of Districts	4
No of Blocks	29
Total Number of Gram Panchayats	165

Sources: 1. RMDD, Sikkim
2. Census of India 2011

The three best practice villages selected for this study had full coverage with piped water supply to the population, 100% user charge contribution and active participation in the operation and management of their drinking water supply system. The schemes are all gravity-based piped supply, using spring as source of water.

The field visits and data collection were conducted over the period July to October 2015. The team had interactions with 21 key personnel, held 7 Focus Group Discussions, and interviewed 120 households from the villages studied. Secondary information was collected from the State government as well as Central government resources. All the prices referred to have been adjusted to 2014 price levels.

2 Enabling Support Environment

The enabling support entity in the case of Sikkim rural water supply best practices is the Rural Management and Development Department of the State Government.

2.1 Background and origin of the ESE, and context in which it operates

The Department of Rural Management and Development (RMDD) originated with the State Government of Sikkim that was established in the year 1975 and is the designated responsible department for the implementation of rural water supply programme in the State. The RMDD implement various programmes and schemes for employment generation, decentralisation and infrastructural development. Though the State has only a two tier system of local governance (Gram Panchayat and District Panchayat), they have established Block Administrative Centres (BACs) to strengthen service delivery by providing administrative, accounts and technical support for a cluster of five to six GPs. There are 29 such BACs to cater to the needs of the 165 GPs in the State.

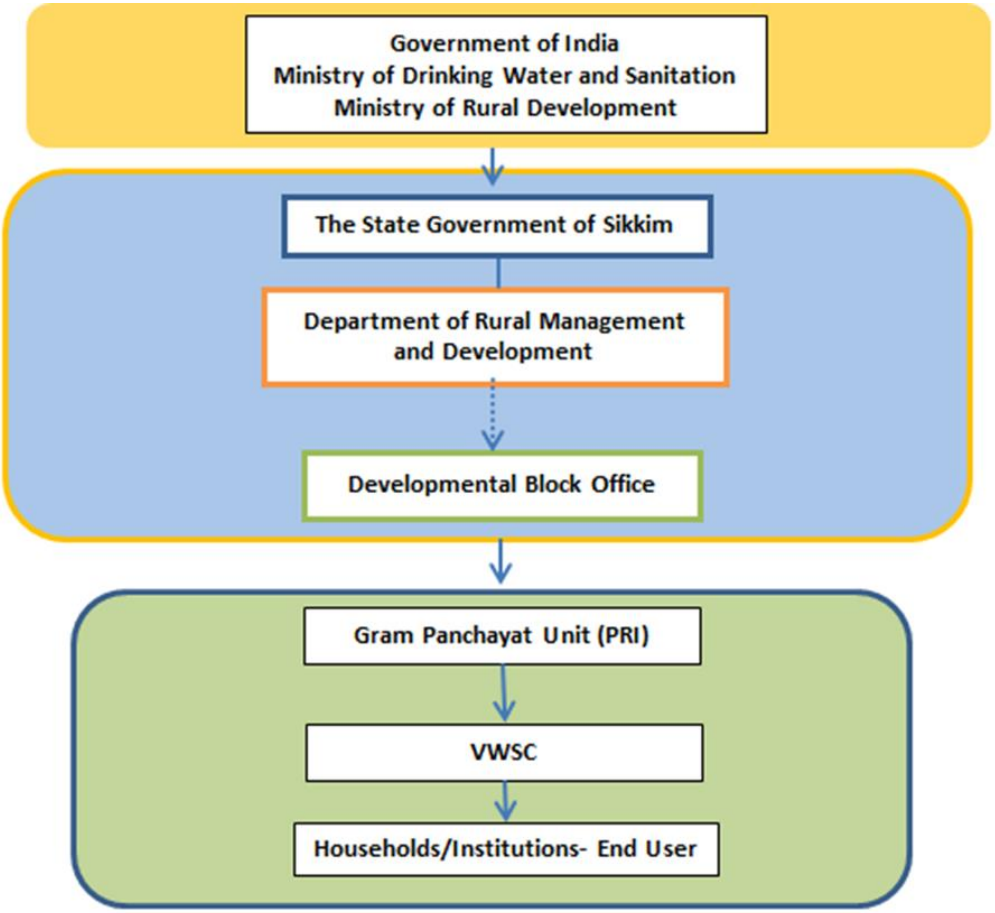

Figure 2.1 Enabling Support Entities in Sikkim

2.2 Enabling support environment description

The Sikkim Panchayat Raj Act 1993 has given well-defined legal entitlements to PRIs, that is local government, and has brought in to effect bottom-up planning with transferred functions and functionaries and finances to significant extent. Panchayat cluster-level support offices, namely Gram Vikas Kendras, have been established for institutional strengthening of local governance of GPs and improved public service delivery. The decentralised and democratic perspectives in development planning, with a multi-sectoral approach, can be observed from the Village Development Action Plan prepared for all the 165 GPs (these documents are available online at http://rdsikkim.org/VDAP.html for reference) involving communities at the grass-roots level.

Necessary capacity building programmes are also organised for institutional strengthening from time to time and there is a dedicated 'State Institute of Rural Development' to undertake the same. The innovative efforts taken by the RMDD in improving public service delivery systems, through convergence of various schemes, is laudable. Programs like MGNREGA (Employment Guarantee), IAY/CMRHM (Rural Housing) and 'eMuster Roll', Gram Panchayat Pro Poor Perspective Plan (G5P), Social audit, *Dhara Vikas* (spring development), large scale training of engineers and masons, etc. have all helped in improving the local governance and public service delivery with regard to all the rural development programmes, including drinking water supply. Such efforts of the RMDD have been recognised at the national level on different occasions, including the Prime Minister's Award for Excellence in Public Administration to the Department for the initiative titled, "Excellence in Rural Management and Development in the Challenging Physical environment of the Sikkim Himalaya" during 2011-12. It may be noted that Sikkim is one of the first state to declare being 'open defecation free' as early as in 2008, winning another national award, in addition to similar declarations in being a 'No Plastic' and 'Total Organic Farming' State.

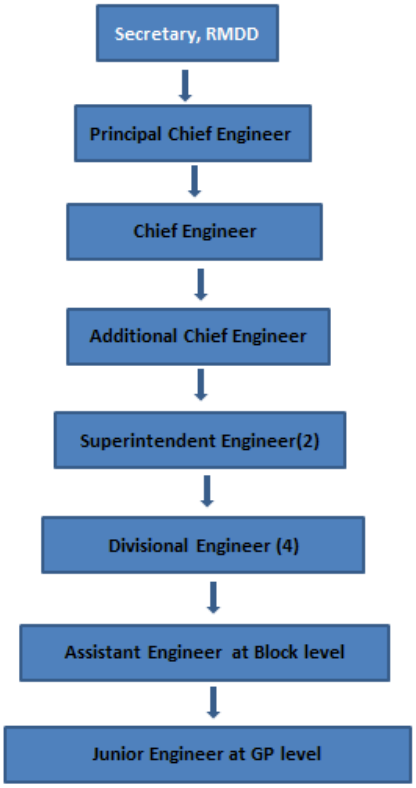

Figure 2.2 Organisational structure of RMDD

A strong will from the democratic as well as from the bureaucratic leaders is evident from the way things are working in the State. The awards and recognition instituted for the GPs proves the enabling environment created at the State level in order to create a healthy competition among the GPs.

Rural Water Supply is one of the various programmes under RMDD. The RWS programme has been conceptualised with an emphasis on participation of the user community in the different stages from

planning to implementation, operation and maintenance of the water supply schemes. The yardstick followed for rural drinking water supply services are as per the Government of India guidelines under NRDWP.

At block level, the person overall in charge of the rural water supply is the Assistant Engineer(AE) who is of lowest grade gazetted officer. AE is assisted by Junior Engineer(JE) who is posted in every GPU and looks after Rural Water Supply Schemes at the Gram Panchayat Level. At the GP level, a 'Barefoot Engineer' is working as a link between the RMDD and GPU/VWSC.

2.2.1 Overview of activities by the ESE

The Central government provisions, as applicable under the NRDWP, are channelled for drinking water supply programmes by the State Government. The State Government implements the programs through the RMDD, based on the detailed plan developed by the GPs. In order to ensure full coverage with minimum 40 lpcd of potable water through piped water supply and to ensure water security for all segments of the population, the State Government pools the resources including dovetailing funds from other programmes of the Central government. For instance, funds under the Employment Guarantee Scheme(MGNREGA) for the rural poor are effectively utilised to meet the labour component in constructing water harvesting structures, spring development programmes etc. The capital investments as well as the renewal of assets are met from Government funds. Service enhancements, categorised as part of recurrent expenditure in this research, are also supported by the State government.

Water is supplied by gravity flow, with no pumping needed, and therefore the technical support required is mostly during the infrastructure building stage. Such support is always provided with the presence of the Junior Engineer of RMDD who is placed within GP. The JE also supervises other works including the water harvesting structures constructed with the fund from MGNREGA.

The State government also selects young people from the community and through the RMDD trains them intensively to manage the water supply infrastructure, helping them to understand water quality issues, water testing, etc. so that they can then be placed in the GP as 'Barefoot Engineers'. They work based at the GP office and their salary is met from the RMDD grant to the GPs. The technical issues which often come up in this area is damage in the distribution line or in the main line due to the frequent landslides in this hilly terrain.

The GPs and VWSCs are therefore provided with the necessary capacity building to manage the facilities established for them. They have also been given the authority to collect water user charges and use it for the requirement at the GP level, to supplement the grant provided by the RMDD annually.

In Table 2.1, below, the various entities and stakeholders are shown along with their respective activities; a distinction is shown between those responsible for an activity to be properly carried out, those with an interest in that activity and those paying for it.

Table 2.1 Activity/Responsibility Matrix

Entities / Actors	Tasks / Activities																		
	Allocation of finance / Budgetary approval	Monitoring service levels & water quality	Project planning	Infrastructure design & implementation	Social intervention design and implementation	Operation and minor maintenance	Ongoing software support to community	Water resources management measures	Capital Maintenance and renewal	Major repair	Approval of user charges	User charge collection	Management of community involvement	Community capacity development & Training	Dispute resolution	Paying of water charges	Institutional & human resources development	Auditing	Evaluation/performance assessment
Central Government	PAY	PAY						PAY											
State Government	RES + PAY	RES + PAY	PAY	PAY	PAY	PAY	PAY	RES + PAY	RES + PAY	RES + PAY			INT	RES + PAY			RES + PAY		
Regulatory agencies- Rural Management and Development Department	RES + PAY	RES	RES	RES	RES	INV + PAY	RES	RES + PAY	RES	RES				RES			RES	RES	
Local government/ Gram Panchayat	INV	INV	INV	INT	INT	RES + PAY	RES	INV	INV	INT	RES	RES + PAY	RES + PAY	RES	RES		INT	RES + PAY	
Other PRI entities-VWSC	INT	INV				INV	INT	INV	INV	INT	INV	INV	RES	INV	INV	INV	INT		
Households		INT				INV		INV		INV	INT	INT	INV	INT		RES + PAY		INV	

Responsible – the actor or entity that is responsible for the completion of a specific task. • Involved – those actors or entities who directly contribute to the completion of a specific task. • Interested – those actors or entities that are likely to be affected by a specific task. • Paying – those actors or entities that cover the costs of an activity, but do not carry it out directly

2.3 Enabling support environment performance indicators

There is a clear mandate for the RMDD to support the Gram Panchayats in the drinking water supply service. The support is provided through the Block Level Administrative Centres which has functionaries from all the public service departments. The officials often visit the GPs and have close interaction with them. There is a formal channel for communication between the support entity and the service provider. However, there is no structured mechanism to monitor the clients' (GP's) satisfaction.

Table 2.2 ESE Performance Indicators

Indicator	Definition	Score
1. Degree of professionalization in the ESE		
1.1 Formality of the mandate for support	The RMDD is the government arm for support to service providers, based on ordinal score.	100
1.2 Working methods	Standard tools and instruments for support being applied in a structured manner, based on ordinal score.	100
1.3 Information management	Existence and use of structured mechanisms for tracking information on performance of the service providers attended by the service support and monitoring authority. Based on ordinal score	75
1.4 Communication between service support authority and service providers	Existence of structured mechanisms for communication with the service providers, based on ordinal score	100
2. Performance of the ESE		
2.1 Variety of support services being provided	Number of types of support services being on offer	6
2.2 Response time	Average time that passes between a request for support and the support being provided	72
2.3 Effectiveness	Number of the service providers that received support in the last year / total number of service providers to be attended	1
2.4 Efficiency	Number of systems attended in the last year / number of staff of the support agent	0.86
2.6 Frequency of support	Number of support visits / number of service providers supported	60
3. Client satisfaction		
3.1 Client satisfaction	Number of service providers indicating satisfaction with the support received / number of service providers supported, based on ordinal score	1

2.4 Enabling support environment institutional assessment

Leadership: The RMDD's leadership has a clear sense of the department's mission and involves people from all cadres so that a sense of ownership of the mission is found among the junior level officials. The fact that the RMDD has received the Prime Minister's Award for Excellence in Public Administration, the highest recognition for civil service in the country during the year 2011-12, is an indication of an efficient leadership and committed team.

Management and Administration: The officials have clarity in their roles and a sense of ownership for the work done by them. There exists a proper system of accounting and budgeting as well as management information.

Community orientation: A high level of community orientation was observed from the discussions as well as from the activities and programmes they conduct for GPs, the Service Providers. They interact mainly with the community representatives including GP President, Rural Development Assistant, other members etc. and sometimes with the community, as depending on the need. The

village development action plan is prepared with a participatory approach which is a good example of their efforts in involving the community.

Technical capability: The team is professional and updates their technical skills with appropriate skill development programmes. For the State, drinking water supply schemes are gravity based and do not use any technology that might require constant watch. However, in areas such as water quality assessment, and mechanisms to improve the drinking water quality with respect to biological contamination etc., the RMDD always updates and informs the GP service provider as well as the community. RMDD has now extended this support to the provision of a chlorinator at the service level and water filters at the household level.

Developing and Maintaining Staff: The staff appointments and management are as per the State Government policy. They benefit the salaries and other allowances applicable to the Government employees. As a kind of para-professional, the Barefoot Engineers are an innovation they have developed, managing the local technical requirements for drinking water supply, besides doing other tasks entrusted to them at the GP level.

Organisational Culture: There is a team spirit among the staff and they are proud of their organisation.

Interactions with Key External Institutions: The top management is well informed about the external policy, and financial and regulatory issues. They have developed programmes to influence the public in support of institutional goals. The institutions such as the GP are fully informed and involved in the process of support and monitoring. The GPs are directed to constitute different sub-committees for effective functioning and they are all trained in a well-functioning social audit system. Further, for scientific research, collaboration is established with Universities and the findings are put in to practice as well. The development of *Dhara Vikas* (Spring Development) and the isotope research study to substantiate the nature of water recharging etc. are examples for their interaction with external institutions.

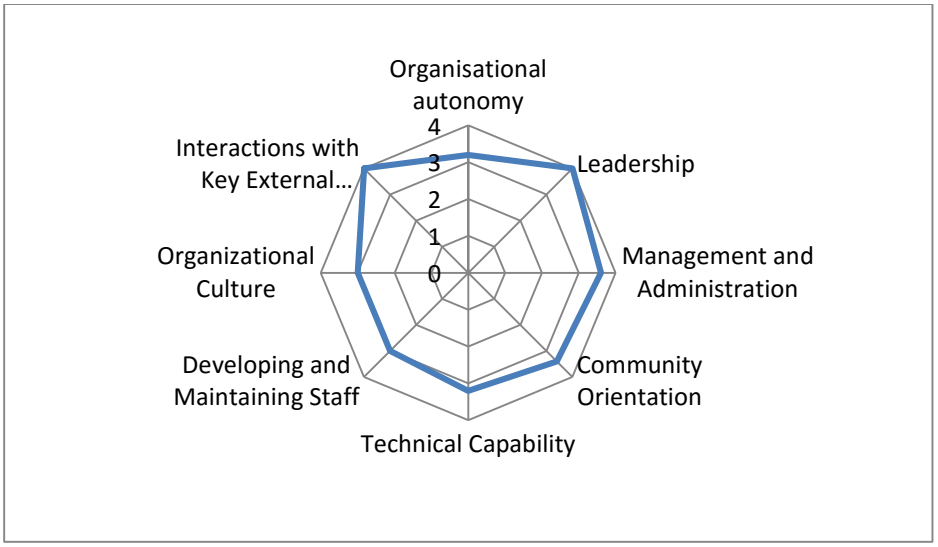

Figure 2.3 ESE Institutional assessment

2.5 Enabling support environment partnering assessment

This section describes the degree of partnering between the Enabling Support Entity (ESE) and the Community Service Provider (CSP).

The RMDD has conducted training for the GP Presidents, Ward Members and the VWSC Members about their role. Their role stipulates tremendous interaction at the community level in planning developmental initiatives including water supply. The plan that has to be developed by the VWSC goes to the State for funding through the District level Committee. The interaction starts from the stage of developing the plan, and goes up to the implementation stage. The State Institute of Rural Development under the RMDD conducts the trainings and provide support on behalf of the Department.

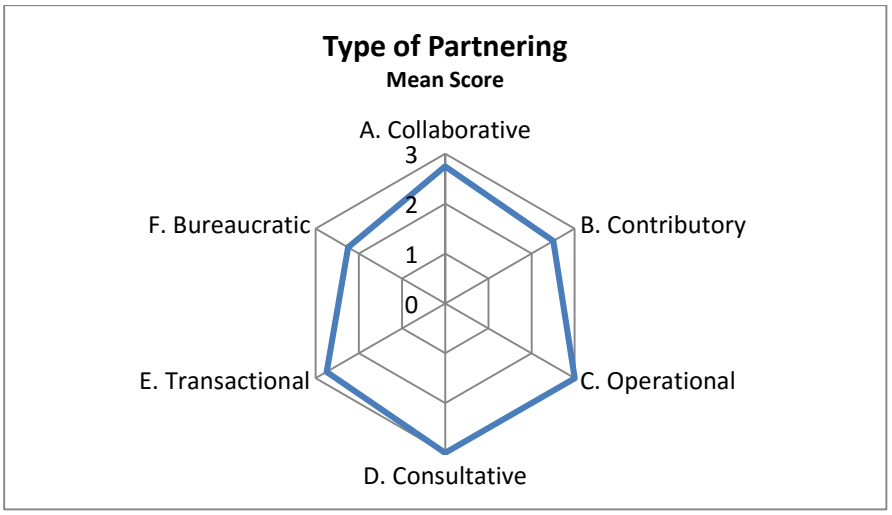

Figure 2.4 Partnering assessment

3 Community Service Provider Level

3.1 Context

The best practices of community service providers studied in detail here are Melli Dara Paiyong GPU, Namchi Block in South Sikkim district, Gerethang GPU, Yuksam/Gyalshing Block, West Sikkim district and Zitlang Ward of Central Pendum GPU in East Sikkim district. *Sadam Suntley GPU* (South Sikkim district) is taken as a control CSP. As part of the local governance decentralisation and institutional strengthening process in the State, the GPUs have exercised the autonomy at different levels to ensure participation of people in the planning as well as implementation processes of development programmes. The Melli Dara Paiyong GPU has constituted, as per the Government guidelines, the committees such as i. Gram Planning Forum, ii. Social Audit cum Vigilance Committee, iii. Village Water & Sanitation Committee (VWSC)and iv. Ward Level Development Committee. The Gerethang GPU has 16 sub committees including the Gram Planning Forum, Village Water and Sanitation Committee and Gram Vigilance and Social Audit Committee.

Box 3.1
Revenue generation at GP level (Melli Dara)

i. Drinking Water User Charge
ii. Garbage Disposal Charge
iii. Work Registration
iv. Single Window System
v. Utility Vehicle Hire
vi. Trade/Hawker License
vii. Parking Fee
viii. Construction fee
ix. Environment Tax
x. Dispute redressal
xi. Selling of "URVARA SHAKTI" Manure
xii. NOCs
xiii. Photocopy / Photography /Videography
xiv. Public Address System
xv. Bazar Tender

With the devolution of functions, functionaries and funds, the GP's role is very prominent in the rural development scenario in the State. Besides the representatives from line departments who are at the disposal of the GP and for whom the salary is paid the Government, the GP has a set of core staff for administrative support and for whom the salary is paid by the GP from the revenue they generate. There are number of avenues for revenue generation for the GP to meet these expenditures and they are effectively utilising the opportunities.

Box 3.2
The list of co-operatives in the GP (Gerethang)

i. Labour Co-operative Society, Lower Gerethang, Middle Gerethang and Upper Gerethang
ii. Women Labour Co-operative Society Tamatam, Upper Labing, Lower Labing
iii. Unemployed Labour Co-operative Society Gerethang Labing GPU
iv. Contractor Co-operative Society Gerethang Labing GPU
v. Women Unemployed labour Co-operative Society Gerethan Labing GPU

The presence of co-operative societies for different purposes and for different segment of population and their involvement in various community development activities appears to be playing a major role in an inclusive development. For example, many of the developmental works like laying road, constructing water harvesting structures etc. are contracted out to the cooperatives.

Box 3.3

Melli Dara has to their credit:

i. The GPU has been awarded with the "Rastriya Gaurav Gram Sabha Purashkar" by MoPR, New Delhi in the year 2011 for successfully conducting the Gram Sabha.
ii. Shri. Ganesh K. Rai President of Melli Dara has been conferred the "IT Person of The Year – 2011" by Deptt. of IT, Govt. Of Sikkim for his contribution/use of IT in the grassroot level.
iii. The Gram Panchayat has been selected and awarded as the "Best Performing Gram Panchayat Award – 2009" by the State Govt
iv. The Gram Panchayat has been selected and awarded as per the innovative initiatives undertaken by the Gram Panchayat under this scheme from Secretary, RM&DD, GoS

Gerethang reported about the awards they have received:

i. Best performing Gram Panchayat Award 2006 declared by Shri Mani Shankar Aiyar during his visit to Sikkim.
ii. Best performing Gram Panchayat Award from the hand of Shri Pawan Chamling Hon'ble Chief Minister of Sikkim.
iii. Best Performing Co-Operative Award By Gerethang MPCS.
iv. Nirmal Gram Puraskar at Guhati from the hand of Her excellency the President of India Smt. Pratibha Devi Singh Patil.
v. PanchayatSashaktikaranPuraskar from the hand of Shri Jai Ram Ramesh Hon'ble Union Minister for Rural Development during National Panchayati Raj Day on 24th April 2012 at New Delhi.
vi. Best Performing Gram Panchayat Award 2012.
vii. Felicitated by Melli Dara Pajang GPU, Rose Marry Club Rinchenpong.

The various awards and recognitions given at the State level for best performing GPs appears to promote a healthy competition among the GPs. The two GPs, Melli Dara Paiyong and Gerethand, have received many national as well as state level awards, including that for effective of use IT in local administration, sanitation (Nirmal Gram), etc.

Table 3.1 General Context of the Community Service Providers

Village	**Mellidara Paiyong**	**Gerethang Labing**	**Zitlang (Central Pendum)**	***Sadam Suntley***
Water Supply Service Provider	Gram Panchayat	Gram Panchayat	Informal Water User Association	Gram Panchayat
District	South Sikkim	West Sikkim	East Sikkim	South Sikkim
Block	Melli	Yuksam	Gangtok	Melli
Distance from Gangtok (State Capital)	70 kms	115kms	38kms	80kms
Altitude (feet above sea level)	2000-3000	2600-8600		1800-6000
No of HHs	1300	502	110	854
Occupation, based on discussions and observations	Majority farmers, mainly poultry farming, horticulture and spices, government sector, etc.	Farming, and tourism, less than a fifth engage in regular employment outside the village	One half of them work in regular jobs and others are farmers	About one third work outside, majority engage in farm employment
Type of water supply schemes	Gravity based	Gravity based	Gravity based	Gravity based

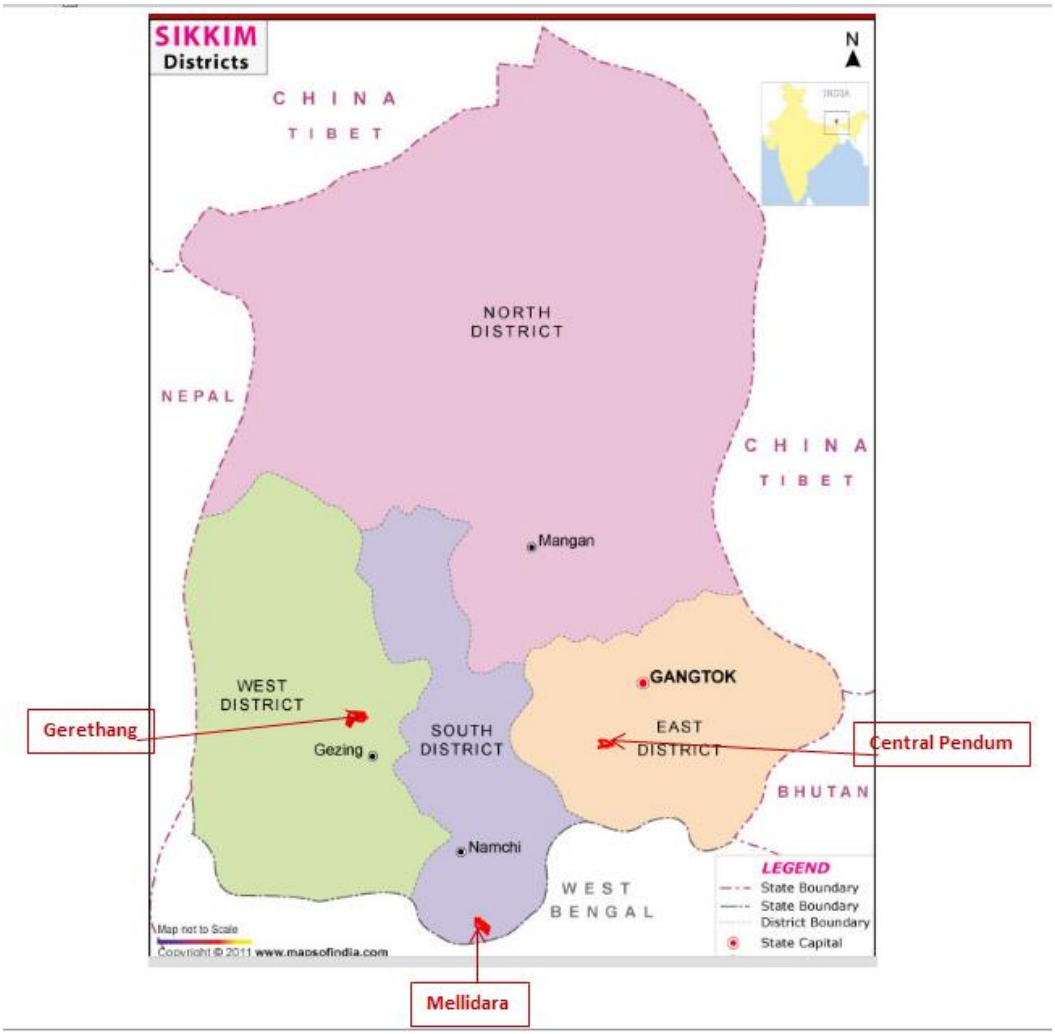

Figure 3.1. Location of villages studies

Photo: Mellidara Payung GP Office

3.1.1 Infrastructure snapshot

The springs and streams provide the source for the water. Depending on the flow of the spring they are called *Khani, Kholsa* or *dhara*. When the water flows down from the spring it is tapped at

different points close to each habitation. From the tapping point or catch pit it is drawn to a sedimentation tank, that is normally located in the close vicinity within 10 or 50 meters depending on the terrain. The sedimentation tank, with capacity of 2,000 to 3,000 litres is designed in such a way that the water gets filtered through the three chambers in the tank. The terrain coupled with the high rainfall leads to frequent landslides which often damage the structures. In many places it was observed that a poly-pipe of 1 or 1.5 inches diameter has been anchored with a concrete 'thrust block' at a point along the line but this fixing point can be lost if the flow is heavy or if anyone stands on the 'anchor' point. This necessitates physical verification, at the tapping or abstraction points, frequently, at least once a day and along the length of the pipeline at regular intervals.

From the sedimentation tank to the distribution tank GI pipe is used generally with the distance at some places being beyond 4 to 5 kilometres. The distribution tanks are of different sizes but average about 15,000 to 20,000 litres, in some few exceptions being of 100,000 litres capacity. The distribution pipelines are GI and the total length of distribution line is 20 kms and more for each GP.

Photos: Abstraction and anchor points

Only in *Sadam Suntley,* the control CSP, there was a mention about a borehole but at present only the spring and stream water is used.

Besides these government facilities, drinking water is commonly drawn from private springs or nearby sources for the owners' use through poly pipes. Such poly pipes hanging across the road are also a common scene in this area.

Photos: Distribution lines from distribution tanks

At the household level, most have storage tanks for rain water constructed with some financial allocation under MGNREGA, the rural employment guarantee scheme. These storage tanks are used for storing the water supplied by the GP. Where there are no such tanks, for example in Zintlang, households have poly-tanks to collect the water at home.

Table 3.2: Glimpse of infrastructure

	Mellidara Paiyong	**Gerethang Labing**	**Zitlang (Central Pendum)**	***Sadam Suntley***
Source points	5 Springs and streams, of which only 3 perennial, tapped at 27 points	Springs and streams numbering 22, majority are perennial	A perennial Spring Tapped at one point	Springs and streams numbering more than 25
Type of scheme	Single Village	Single Village	Single Village- small community	Single Village
Intake structure	27 in number, 1-20 years old, majority in good condition, few are partly damaged	22 in number, 2-15 years old, majority in good condition, few are partly damaged	1 in number, 8 years, partly damaged	25+ in number, 2-20 years majority in good condition, few are partly damaged
Main line	GI pipe varying distance 4-5 kms	GI pipe varying distance 4-5 kms	GI pipe for distance 4 kms	GI pipe varying distance 4-5 kms
Reservoir	27 in number, 1-20 years old, reasonable condition	22, 2-15 years old, reasonable condition	1, 8 years old, reasonable condition	25 and more,

Distribution network	GI pipelines from the reservoir to each HH	GI pipelines from the reservoir to each HH	GI pipelines from the reservoir to each HH	GI pipelines from the reservoir to each HH
Tap stands	household tap /storage connections	household tap /storage connections	household tap /storage connections	household tap /storage connections

3.2 Community service provider descriptors

Current Institutional Set-up: As a general practice the GP is the water supply service provider in the State and there are few exceptions such as the informal water committee of the water users Zitlang, the third unit of successful cases in this study. The VWSC is constituted under the Chairmanship of Panchayat President, the Rural Development Assistant as the Secretary and five other members. JE, Panchayat Inspector (both are officials from BAC), ASHA – Health Worker, SHG representative, and one other from public. The VWSCs are functioning only as part of the GPs.

Governance and accountability: The GPs, constituted as per Sikkim Panchayat Raj Act 1993, have to abide by the respective rules and regulations. This elected body has very formal statutes that define the structure, roles, responsibilities and rights and obligations. The different committees set up under the GP, namely Social Audit cum Vigilance Committee in Melli dara and Gram Vigilance and Social Audit Committee in Gerethang are some of the examples. There is a 'single window system' for facilitating public service delivery with a 'Gram Planning Forum' that helps in preparing the development plan and in monitoring the implementation. Ward Level Development Committees are part of the decentralisation process that enable better local governance with more accountability. There is a commendable level of transparency in the governance issues including financial matters among all the GPs. The transparency and trust in the community is manifested by the surprising fact that the Melli Dara Village Administration building has reportedly not been locked for years.
For the Zitlang ward Water User association, there are no such statutes to govern them, however, one can observe good governance practices like a Board of members elected democratically by voice vote, with strong financial transparency being apparent.

Activities – staffing levels: All the systems studied are gravity based pipelines from springs. Valve operation and repairs in the pipelines are the works often needing attention. There is no water meter requiring reading in any of these villages. The Barefoot Engineer is a full time person in all the GPs and, depending on the need, the GP appoint more plumbers/fitters. In the case of Melli Dara and Gerethang, there are 3 and 4 fitters respectively besides the Barefoot Engineer. For Zitlang, there is only one fitter appointed by the Association. Chlorination has been undertaken only when the tanks are cleaned, normally twice a year, but now the State government has introduced one Chlorinator per Block and the Assistant Engineer's office will distribute the Hypo Chloric solution to all the GPUs through the Junior Engineers. GPUs are not charged for this. The GPU uses the solution in the supply system.

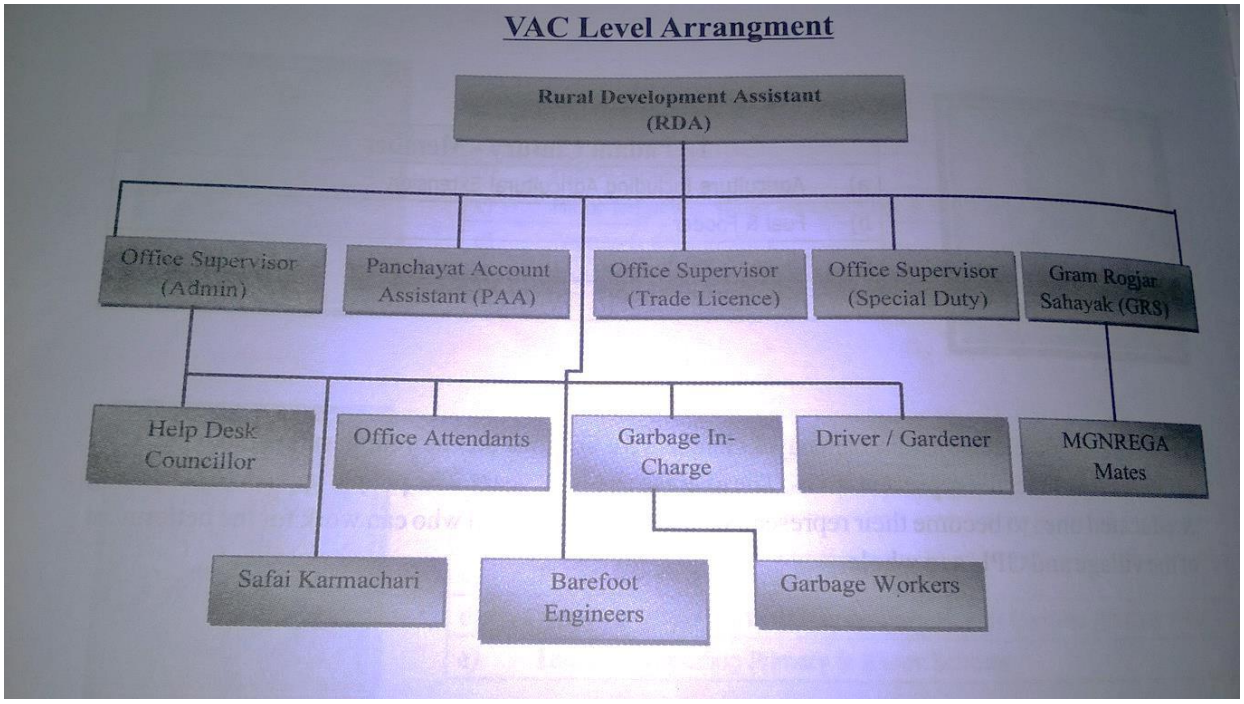

Photo: Village Administrative Centre organisation

The households have to come and pay the tariff at the assigned places; for example, at Melli Dara they receive at the Village Administrative Centre (GP office) where as in Gerethang the households can also pay at Mini Banks of the Cooperative Society besides the GP office. If the person/household needs to get a certificate from the Panchayat, for example a birth certificate, they must not have any pending dues of water charges, garbage taxes and other such mandatory charges to the GP. This condition makes all the households pay whatever fees are mandatory to pay to GP on time. In Zitlang the users send in their water charges through the Zonal Members and the payment is noted in an accounts book. Those who are not able to pay in time inform in advance to the Head Coordinator who manages the facility. There is fine imposed on late payment but everyone pays in time, by 10th of every month.

All the records are maintained at the VAC. There is an administrative set up with the Rural Development Assistant leading the team. In Melli Dara, each GP Member is responsible for certain assigned departments and so there is a member who is responsible for water supply.
Water resources management is also the responsibility of the GP with the support of the Government water resources department. The State Institute of Rural Development under the RMDD is responsible for monitoring the water quality with periodic testing; the Barefoot Engineers at the GP level help in monitoring the water quality. The fitters and the Barefoot Engineers physically check the spring points and surroundings in order to avoid contamination through any objects.
For *Sadam Suntley*, there are no other full time fitters other than the Barefoot Engineer, they avail the service of fitters on call. There is no tariff collection.

Support Received: The GP avail the services of external experts in water management where necessary; they have done it recently to study and measure the impact of *Dhara Vikas,* that is the water recharge structures for spring development. They are provided with Chlorine solution by the

AE/Block Office RMDD regularly and water quality testing is also carried out by the Block office/ RMDD.

Towards the future: The GPs, as well as the Water Users Association, are capable of delivering the services and managing the operation and maintenance. However, for the capital investments and service enhancement, they look out for financial support from Government. In Melli Dara, they are facing water shortages, they store water during the night which is then supplied during day time. Some parts of the GP face more water shortages during the dry season which they have to manage with the overflow from other sources/areas. They want to address all these issues in the future and will ask Government for support. In Gerethang, the GP want to make the piped water supply coverage 100% from the existing 90% but the dispersed location of the households is a problem which they can address only with the help of Government according to the GP representatives. In Zitlang ward, the water quantity is not sufficient in the dry season and the pipeline doesn't withstand the pressure in peak season. They want to replace the pipelines with increased diameter. However, they find it difficult to get the required funds. During the scheme implementation stage the Government has released a smaller amount than was estimated as being needed at planning stage. The community managed, through using poly pipes instead of GI to reduce the costs, so they have completed the work but are aware there might be pressure bursts in future. For small works, such as replacing a small portion of the pipe line, they can seek the support of a private company located in their area. However, for major works such as relaying the entire pipeline they look to the Government to support them.

Table 3.3 Description of Community Service Providers

Characteristics	Melli Dara	Gerathang	Zitlang	*Sadam Suntley*
Type of organisations	Gram Panchayat	Gram Panchayat	Informal water committee	Gram Panchayat
Staffing of governing body of CSP	6 members for GP and 7 members for VWSC	6 members for GP and 7 members for VWSC	6 members including 4 males and 2 females; and headed by a Head Coordinator. Once in Five years, the office bearers are elected by voice vote	8
Staffing of the CSP	15 including 4 fitters for whom the GP pays from their revenue. There are other 7 staff including the JE for whom the payments come from the State Govt	This 10 include three water fitters, all are paid by the revenue of the GP. Besides there are 61 Government employees at the GP level	one fitter paid by the Committee from the user charge collection	6
Size of population in service area	6604	2440	700	4300
Coverage	100%	100%	79%	93%
Households served by the CSP	1300	502	110	854
Coverage with household connections	100%	90%	100%	75%
Coverage with household connections among vulnerable groups	100%	94%	100%	60%
Tariff structure* *Where relevant indicate whether there are more advanced forms of differentiation such as progressive block tariffs (in comment section)	While INR 20 is the normal monthly tariff for drinking water, if the HH use water for poultry/diary/agri purpose there is a different tariff. INR 50 per month for poultry farmers INR 100 for commercial use	INR 20 per month	INR 75 per month	INR 20 pm
Connection costs INR	0	0	INR 500	0
Total capital expenditure INR	INR 341,00,000	INR 305,76,000	. INR 20,00,000*	INR 400,00,000

*The scheme estimate was 35 Lakh, but only 15 Lakh was sanctioned by the Government. In order to complete the work the community contributed some amount and they reduced expenditure like using poly-pipe instead of GI pipe, etc

3.3 Responsibilities and activities at community level

Community Service Provider/VWSC Focus Group

The GPs get support from the RMDD for technical, financial and institutional issues. The Barefoot Engineer- Junior Engineer-Assistant Engineer is the link to the RMDD. The common problem reported by the CSPs is the increasing demand for water with growing population. The damages due to landslides in the pipelines for the water supply structures happening often are another major issue the CSPs have to handle. The GPs can spend upto INR 1 lakh and get it reimbursed and if the expenditure is above that they have to get the prior sanction from the Government. The GPs perceive that the Department (RMDD) and the Government are very supportive. However, the Zitlang Water User Association finds problems in mobilising the support if they have to meet any major repair.

The water fitters and the GP Members are the water people according to the community. Problems are rare and even if there is a problem, they contact the GP office either directly or through the fitters. If the problems are in distribution line, they are attended immediately.

As per the plans made by the GP through its process of local consultation, from Ward level Development Committee to VWSC to Gram Planning Forum, the proposal for water supply schemes are submitted to the RMDD in its formal way. Depends on the financial allocations available from the State as well as the Central ministries, the State Government allocate the resources and the fund is channelized through the RMDD to the GP. The RMDD monitor the utilisation of funds by the GP. The GP can assign the work as per the prevailing regulations. The GP decides about the water tariff, penalties, provision of household connection, etc. and get the approval in the *Gramsabha*.

The RMDD provide all the necessary support for drinking water supply management at the GP level. Funding from State and Central governments are channelized, technical support is provided and various community capacity building programmes are conducted by the RMDD through its State Institute of Rural Development. There is one Junior Engineer for the GP who is in charge of drinking water and other issues as well. There is one Barefoot Engineer to provide support for drinking water supply related issues. Quality Testing laboratories established at two places in the State provide water testing facility, besides the routine testing taken up by the RMDD twice a year. Besides, the households are provided with Terra water filters taking in to consideration the quality of water in this area. The springshed development programmes and rainwater harvesting programmes benefit this GP.

Table 3.4 Activity Matrix at Community Service Provider level

Type of support activity	Does the CSP receive this type of support?	Who provided the support	*Other, please specify	Modality of support
Monitoring and control (incl. auditing)	Yes	Other Government agency	Rural Management and Development Dept	Both on request and supply-based
Water quality testing	Yes	Other Government agency	Rural Management and Development Dept- SIRD	Supply-based
Water resources management	Yes	Other Government agency	Rural Management and Development Dept	Supply-based
Technical assistance	Yes	Other Government agency	Rural Management and Development Dept	Both on request and supply-based
Conflict Management	No			
Support in identifying investments needs	Yes	Other Government agency	Rural Management and Development Dept	On request
(Re)training of service provider	Yes	Other Government agency	Rural Management and Development Dept	Both on request and supply-based
Information and communication activities	Yes	Other Government agency	Rural Management and Development Dept	Both on request and supply-based
Fund mobilization	Yes	Other Government agency	Rural Management and Development Dept	On request

3.4 Community Service Provider indicators

While formal structure exists for communicating with the Department and the State Government, the use of 'mobile SMS service' and 'household log books' are used as channels of communication with the community. The Ward Members, the VWSC Members and the fitters also work as links for exchange of information with the community of users.

The reservation for women in Panchayats is 50% in the State. Gender participation is very much visible in every GP and CSP functions, not only in records. They take their respective positions and dispose the roles the responsibilities on par with their male counterparts. Presence and participation of women members in the informal water committee of Zitlang is an evidence of real women's empowerment.

The GPs have the technical information and folders about the scheme, distribution layout, and other such relevant information for reference. They maintain records of complaints and repairs. The expenditures are recorded properly and annual expenditure is audited and presented in the Gramasabha. The Zitlang Association does not have a folder but they are aware about the layout of the supply system; and the essential records are maintained. Complaints are addressed immediately on the same day and repairs are carried out.

At *Saddam Suntley*, the control village, although the structure of administration exists, it is not that operative. Participation of the community is not elicited in an effective way, for example, a layout of the drinking water distribution system is available with them but not many are aware about it; there is frequent disruption in the pipeline which is then repaired on a reactive, adhoc basis; some amount is collected from the community to buy the materials or to pay the local plumber but nothing is recorded.

3.4.1 Consideration of overall service provider capability

It is democratically elected body as per the Panchayat Raj Act. The decentralisation and devolution of powers under the Panchayat Raj Act give a lot of scope for evolving good leadership. The capacity building trainings and reservation on rotation for the positions, all add up to evolving a good leader.

Technical persons include the Barefoot Engineer (Trained plumber) and fitters numbering 3 or 4 depending on the Gram Panchayat.

The GPs have a well-structured administrative set up with a core staff to support the administrative and managerial functions of the GP and with almost all the line departments making their presence there. If they require high level technical expertise they are seeking that from external sources. This was evident from the Melli Dara as well as Gerethang GPs.

To put in the words of a Ward Member Ms Bina Sharma of Melli Dara who is in-charge of drinking water supply, "*the President is equivalent to the Chief Minister for Melli Dara, the Rural Development Assistant is the Chief Secretary, and we (Ward Members) all are ministers with different portfolios.. and each of us have to take up our respective issues at the GP level, at the Council meeting or through any other way"*. The extent that they have accepted the responsibilities show their capacity as efficient service providers.

3.5 Community service provider participation assessment

Table 3.5 Community Service Provider participation assessment

Stage of delivery cycle	Capital Investment (implementation)	Service delivery	Asset Renewal	Service enhancement or expansion
1. Self-mobilisation	The community practices self-supply and seeks to improve this, or have developed an implementation plan and seek external support	Melli Dara, Gerethang, Zitlang The community take responsibility for administration, management and operation and maintenance, either directly or by outsourcing these functions to external entities	Zitlang The community practices self-supply and invests in asset renewal, or identifies need and seeks external support for asset renewal -	Melli Dara, Gerethang, Zitlang The community practices self-supply and invests in service enhancement or expansion, or identifies need and seeks external support for service enhancement or expansion -
2. Interaction participation	Melli Dara, Gerethang, Zitlang The community in partnership with the service provider and/or support entities engage in a joint-analysis of implementation options before developing a plan-	*Sadam Suntley* The community in partnership with the service provider and/or support entities engage in joint-decision making regarding appropriate arrangements for administration, management and operation and maintenance-	Melli Dara, Gerethang, *Sadam Suntley* The community in partnership with the service provider and/or support engage in joint-decision making regarding asset renewal	The community in partnership with the service provider and/or support engage in joint-decision making regarding service enhancement or expansion -
3. Functional participation	The community is provided with a detailed implementation plan that they discuss and they have a chance to amend limited elements	The community is provided with administration, management and operation and maintenance arrangements that they discuss and they have a chance to amend limited elements	The community is provided with an asset renewal plan that they discuss and they have a chance to amend limited elements	*Sadam Suntley* The community is provided with an service enhancement or expansion plan that they discuss and they have a chance to amend limited elements -
4. Participation by consultation	*Sadam Suntley* Community members are asked whether they want a predefined implementation scheme but have no formal decision making power to demand alternatives-	The community discusses administration, management and operation and maintenance functions but have no formal decision making power to demand alternatives	Community members are asked about asset renewal but have no formal decision making power to demand alternatives	Community members are asked about service enhancement or expansion but have no formal decision making power to demand alternatives

3.6 Community Service Provider Costs

Revenue of the CSP: The GPs are provided with an annual grant of INR 1 lakh towards O & M by the State Government. The user charges are collected at the rate of INR 20 per household per month. In Melli Dara, they charge for commercial use at a higher tariff. For the Zitlang Water User Association, there is no such grant from the Government, being only a user association, and they collect a higher tariff, INR 70 per household per month. For all the three CSPs, the tariff collection is 100%. In *Sadam Suntley,* the control CSP, the user charge collection is near nil.

Expenditure of the CSP: The salaries of plumbers/fitters including the Barefoot Engineer have to be paid by the GPs. The repair expenditure would be a considerable amount as damages take place frequently in the pipeline. Materials purchased for repair also form a major part in the expenditure. There is no power consumption since all are gravity based schemes.

Table 3.6 Revenue and Expenditures per year at the CSP

Details		Melli Dara	Gerethang	Zitlang	*Sadam Suntley*
Number of users		1,300	502	110	600
Population served		6,604	2,440	700	4,000
	Water Tariff	INR 20 per month INR 50 per month for poultry farmers and other such uses	INR 20 per month	INR70 per month	INR 20 per month
	Grant from State Govt	INR 100,000	INR 100,000		INR 100,000
Total Annual Revenue (user charges, government subsidy, any other income)		INR 410,000	INR 208,000	INR 92,400	INR 100,000
	Salary of Barefoot Engineer and fitters	INR 219,715	INR 150,000	INR 84,000	INR 92,400
	Minor repair	INR 119,397	INR 29,000	INR 8,000	INR 8,000
	Chemicals/ materials for cleaning		INR 16,000		
	office admin expenditure (estimated)	INR 14,320	INR 12,000	0	INR14,320
Total Annual Expenditure (OpEx, CapManEx etc)		INR 353,432	INR 207,000	INR 92,000	INR 114,720
Financial balance of recurrent revenue and expenditure		INR 56,568	INR 1000	INR 400	INR -14,720

4 Household Service Levels

The Gram Panchayats are large in area and the houses are distantly located and at varying elevations. The distance and the different elevations make the service delivery through pipe a difficult task. The Socio economic background of the households indicate that majority of the households are agrarian families and average household size of 5 persons per household including one child on an average.

Table 4.1 Household Coverage

	Melli Dara	Gerathang	Zitlang	*Sadam Suntley*
Size of population in service area	6604	2440	550	4300
Coverage	100%	96%	100%	93%
Households served by the CSP	1300	502	110	854
Coverage with household connections	100%	90%	100%	75%
Coverage with household connections among vulnerable groups	100%	94%	100%	60%

Table 4.2 General background of the Community

Village	**Mellidara Paiyong**	***Sadam Suntley***
% HHs with pucca houses	22	20
% landholding Hhs	97	100
% HHs with ration card	100	100
% ST HHs	7	22
Average HH size, and the range number of members	5, 2-16	5, 2-9
Average no of children per HH	1	1

4.1 Coverage

The water supply is through household connections and almost all the houses have storage tank to which the water gets collected. The tank is of varying capacity and these are provided by the Government to harvest the rain water for household consumption. The stored water is used with direct tap connection at the storage as well as extended pipelines to the kitchen or bathing/washing spaces. Supply is 24X7 normally except in certain parts of Melli Dara where they store water during night and supply during day. During lean season, October to March /April, they regulate the supply timings due to water shortage.

The water is used for all the domestic purposes and to irrigate the kitchen garden and for domestic animals too, exception was only in Zitlang where they have water only for household uses, not for irrigation or for animals.

The water quality as such there wasn't any complaints from the community and the samples tested also did not show any contamination.

Complaints are addressed normally within 24 hours and the GP/CSP takes care of the payments for the repair.

Tank constructed under Roof Rainwater Harvesting Programme- also used as storage tank for drinking water

A poly-pipe carrying water from a nearby source to the house

4.2 Quantity, Accessibility, Quality, Continuity, Reliability

The household survey was carried out only in Melli Dara and *Sadam Suntley*. Due to the availability of storage tank for most of the houses, the quantity collected on a daily basis was difficult to calculate. However, it is well above the norms of 40 lpcd and as per the discussion with the community it may above 75lpcd. Besides drinking and other domestic needs, the water is used for animals as well as for irrigating the cultivation around the house. At some houses, besides the Piped Water Supply, they collect water directly from the nearby *kholsa* , small springs using a poly pipe. Length of the pipe in few cases observed was about 1 km. This pipe also would be connected to the storage tank.

Water is easily accessible as the tank is located within the compound of the house. Quality was also perceived as good water and availability is almost 24X7 except in lean seasons.

Table 4.3 Household service levels

CSP	Service Level in Summer	Quantity	Accessibility	Quality	Continuity	Reliability	Overall
Melli Dara	High	88%	88%	86%	0%	90%	67%
	Improved	1%	0%	0%	0%	0%	1%
	Basic	0%	0%	7%	0%	3%	10%
Sadam Suntley	High	90%	90%	87%	0%	80%	60%
	Improved	0%	0%	0%	0%	0%	0%
	Basic	7%	7%	7%	0%	0%	13%

4.3 Equity

All the best practice CSPs have taken in to consideration the equity issue and the vulnerable group of population are equally, if not with more priority, are covered by the scheme. It is only the geographically dispersed distribution of the households a problem in few places in Gerethang where few houses are left out from the PWS.

4.4 Community and household views

Focus Group results- few view points

"We are able to save time by collecting water at our door step, thanks to the pipe supply. Earlier we had to carry water from that far….."

"We haven't faced a problem with the water supply, but some people misuse the source point by washing clothes there…. that makes water dirty…"

"There is a need to protect the source with wall"

"When the water supply was from the GP, we always used to have shortages, and there used to be quarrels between neighbours about 15 years ago. Then we were only 25-30 houses. The plumber also did not come to this area to help us. So, we decided to do it ourselves. From 2007 this responsibility came to us. Now we do manage the facility … Now there are 110 houses taking water from this piped water supply including our house… "

"If we need more water for a family function or so, we discuss with our neighbours and they all will give more time for us by closing intake taps at their houses so that we can get more water. Same way we also adjust when someone else asks…."

"Now, we don't have any problem with water; before, during December and January, and sometimes up to April, there wouldn't be adequate water "

5 Enabling Support Environment Costing

5.1 Capital costs

The major costs incurred in the water supply systems are the capital costs in this State and that included the cost of distribution lines that is relatively high due to the typical nature of the terrain. The data gathered at the GP was verified with data available through IMIS Reports available at the website of Ministry of Drinking Water and Sanitation, Government of India. The CapEx software include the costs of training provided to GP and VWSC once or twice during their term and to the BEs who gets trained at the initial stage and some add-on trainings at later stage.

Table 5.1 Capital costs

	Melli Dara	Gerethang	Zitlang	*Sadam Suntley*
5.1 Capital costs				
CapEx hardware (2014)	341,00,000	305,76,000	2,000,000	400,00,000
CapEx software (2014) Training to GP,VWSC and BE	30800	30800	0	30800
Community contributions	0	0	0	0

5.2 Recurrent costs & revenue – Opex, hardware & software

The user charges collected and the annual grant from the RMDD are the recurrent revenue for the GPs whereas the Zitlang being a scheme based service provider they do not get the grant from RMDD. The user charge collected by the Zitlang is relatively high and they fix the charge based their financial requirement. Besides the grant, the GPs get support from the AE's /RMDD 's Block level office by way of Chlorine solution and on an average the cost is taken as INR 1,000 per year. This solution is made at the AE's office with a Chlorinator established at a cost of about INR 80,000. Further, the RMDD does water quality testing, on an average 15 test for a GP every year. This is worth INR 2,500 at market price but the GPs are not charged. The charge INR 37,500 per year for a GP is thus arrived. The officials, JE and others, visit the GPs on a regular basis, however the cost that can be attributed to the drinking water supply related is considered here. For Zitlang, visit of officials to the system are not frequent as in other cases, hence a tenth is taken in to consideration.

Table 5.3 Recurrent costs and revenue

	Melli Dara	Gerethang	Zitlang	*Sadam Suntley*
5.2 Recurrent costs & revenue – Opex, hardware & software				
Annual revenue from community to CSP	310,000	108,000	92,400	0
Annual cash receipts from GP/VP and ESE	100,000	100,000		100,000
Annual operational expenditure from CSP	353,432	207,000	92,000	114,720
Annual support received in kind, staffing, materials and supplies from GP/VP and ESE Cost for chlorine solution	1,200	1,200	0	1,200

ESE Staff cost	306,000	306,000	30,600	306,000
Service monitoring function annual costs	37,500	37,500	5,000	25,000

5.2.1 Recurrent costs & revenue – Opex, hardware & software per head(INR)

Table 5.4 Recurrent costs

	Melli Dara	Gerethang	Zitlang	Average of best practices	*Sadam Suntley*
5.2 Recurrent costs & revenue – Opex, hardware & software					
Annual revenue from community to CSP	46.94	44.26	132	74.4	0
Annual cash receipts from GP/VP and ESE	15.14	40.98	0	18.71	23.26
Annual operational expenditure from CSP	53.52	84.83	131.43	89.93	26.67
Annual support received in kind, staffing, materials and supplies from GP/VP and ESE Cost for chlorine solution ESE Staff cost	 0.18 46.36	 0.49 125.41	 0 43.71	 0.22 71.83	 0.28 71.16
Service monitoring function annual costs	5.68	15.63	7.14	9.48	5.81

5.3 Capital maintenance costs – hardware and software (INR)

There is always frequent repairs in the distribution line due to landslides or issues connected with the terrain, and not necessarily from wear and tear of the system. The costs for which couldn't be separated for this from the overall minor maintenance expenditure reported at the GP level but this will form part of the cost given in the table below.

Table 5.5 Capital Maintenance costs hardware and software

	Melli Dara	Gerethang	Zitlang	*Sadam Suntley*
5.3 Capital maintenance costs – hardware and software				
Any recent reported capital maintenance – hardware	INR 119,397	INR 29,000	INR 8,000	INR 8,000

5.4 Cost summary

Table 5.6 Summary Cost Table (INR)

Sikkim Summary Cost Table - calculated as the average cost per person, that is averaging across the three 'successful' villages

Source of funds	Use of funds - implementation			Use of funds - annual recurrent					
	CapEx hardware	CapEx software	CAPEX TOTAL	OpEx labour & materials	OpEx power	OpEx bulk water	OpEx enabling support	CapManEx	RECURRENT EXPENDITURE TOTAL
Community/consumers	INR 33	-	INR 33	INR 59	-	-	-	INR 16	INR 74
Local self-government	-	-	-	-	-	-	-	-	-
	-	-	-	-	-	-	-	-	-
State government entity	-	-	-	-	-	-	-	-	-
State water supply agency	INR 768	INR 25	INR 792	INR 37	-	-	INR 128	INR 6	INR 171
National Government	INR 7,285	-	INR 7,285	-	-	-	-	-	-
NGO national & international	-	-	-	-	-	-	-	-	-
International donor	-	-	-	-	-	-	-	-	-
TOTALS	INR 8,086	INR 25	INR 8,111	INR 96	-	-	INR 128	INR 22	INR 246
Median of 20 case studies			INR 3,231						INR 207
'Plus' %age	100%	100%	99.6%	39%	-	-	100%	28%	70%
Median of 20 case studies			95%						57%

Table 5.7 Summary Cost Table (PPP USD$)

Sikkim Summary Cost Table - calculated as the average cost per person, that is averaging across the three 'successful' villages

Source of funds	Use of funds - implementation			Use of funds - annual recurrent					
	CapEx hardware	CapEx software	CAPEX TOTAL	OpEx labour & materials	OpEx power	OpEx bulk water	OpEx enabling support	CapManEx	RECURRENT EXPENDITURE TOTAL
Community/consumers	$ 1.90	-	$ 1.90	$ 3.35	-	-	-	$ 0.89	$ 4.24
Local self-government	-	-	-	-	-	-	-	-	-
	-	-	-	-	-	-	-	-	-
State government entity	-	-	-	-	-	-	-	-	-
State water supply agency	$ 43.77	$ 1.40	$ 45.17	$ 2.10	-	-	$ 7.31	$ 0.34	$ 9.76
National Government	$ 415.24	-	$ 415.24	-	-	-	-	-	-
NGO national & international	-	-	-	-	-	-	-	-	-
International donor	-	-	-	-	-	-	-	-	-
TOTALS	$ 460.91	$ 1.40	$ 462.31	$ 5.45	-	-	$ 7.31	$ 1.23	$ 14.00
Median of 20 case studies			$ 184.16						$ 11.78
'Plus' %age	99.6%	100%	99.6%	39%	-	-	100%	28%	70%
Median of 20 case studies			95%						57%

The INR Indian Rupee conversion to the USD United States Dollar has been undertaken at the mid 2014 exchange rate of INR60/USD$ with a Purchasing Power Parity (PPP) multiplier of 3.42 applied) in order to give the best interpretation of India costs in global terms (http://data.worldbank.org/indicator/PA.NUS.PRVT.PP.

6 Conclusions

Based on the analysis of performance the different water supply service providers, Melli Dara Paiyong GP and Gerethang Labing GPand one Ward (Zitlang) Water User Association in Sikkim the following conclusions emerged:

The Rural Management and Development Department of the State Government is the only enabling agency for the water supply. The institutional strengthening process as part of the Pachayat Raj Act 1993 and the decentralisation process helped GPs improve their performance in all their functions. Enabling the GPs to improve the public service delivery including that of rural water supply has been in the agenda of the Department since the implementation of Panchayat Raj Act.

The technical support to the GP with the Assistant Engineer at Block level and the Junior Engineer at the Panchayat level and Barefoot Engineer a local person who is trained in essential fitter/plumber techniques and water quality monitoring ensured required help as and when required. The Department has also ensured that the GP Members as well as the VWSC Members are trained in issues in water management at their GP level. The State Institute of Rural Development under the Department provides the trainings.

The presence of a political will to strengthen the local self-government institutions and a committed administrative set up to implement the programmes are found to be the advantages in the State.

The presence of a VWSC as part of the GP conforms the NRDWP guidelines of the GoI, however it is the GP that is active at all stages.

In addition to the prevailing enabling support environment, the community's participation help the CSPs to manage a sustainable service delivery. Their involvement in planning, implementing, monitoring, and financial contribution through 100% tariff payments make sure that service is delivered without fail. With the revenue the CSP generate from the tariff, they are able to deploy more human resources to operate and maintain the system. Besides the JE and BE, the CSPs appoint 3 to 4 fitters to monitor the water supply.

The data indicate that the CapEx hardware cost per head is around INR 8,080 and CaEx software cost per head INR 25. The annual operational expenditure at the CSP level is INR 96 per head and the revenue generated by the CSP is INR 74 per head. The ESE contribution to the CSP is INR 37 per head per year, with the annual grant of INR 1,00,000 to each GP. Relative to the other 19 case studies investigated across India CapEx for the gravity flow schemes in Sikkim is considerably more expensive, by a factor of around one and a half times – this being due to relatively long pipelines serving a relatively small population. However, once established, the water system costs a similar amount to the 20 cases median to maintain.

A certain amount of exceptional leadership about a decade ago has initiated the process in the case of Melli Dara and helped to raise to this extent. However, the fact that the leaders in position at present are able to sustain the spirit, and deliver the service to the public is an indication of a sustainable community management. If Melli Dara and Gerethang are legally bound institutions, the

Water User Association in Zitlang, an informal body maintaining a higher level of community managed service delivery is an indication of the high standards of human development in the State.

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Appendices

All the tables that are produced

Table A1 Partnering at different stages of Project Cycle

Type of partnering	Stages of Project Cycle				
	Capital investment (implementation)	Service delivery: administration, management and operation and maintenance	Capital renewal score	Service enhancement or expansion	Mean Score
A. Collaborative	Agree (3)	Disagree (2)	Agree (3)	Agree (3)	2.75
B. Contributory	Disagree (2)	Agree (3)	Disagree (2)	Agree (3)	2.5
C. Operational	Agree (3)	Agree (3)	Agree (3)	Agree (3)	3
D. Consultative	Agree (3)	Agree (3)	Agree (3)	Agree (3)	3
E. Transactional	Agree (3)	Agree (3)	Agree (3)	Disagree (2)	2.75
F. Bureaucratic	Agree (3)	Disagree (2)	Disagree (2)	Disagree (2)	2.25