

# COMMUNITY MANAGEMENT OF RURAL WATER SUPPLY

Community Water <sup>plus</sup>



**Centre of Excellence for Change, Chennai**

**Understanding the resource implications of the 'plus' in community management of rural water supply systems in India: Kathirampatti Village Panchayat, Tamil Nadu Rural Water Supply**



**Dr Rema Saraswathy**

**April 2015**



Community Water <sup>plus</sup> 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

This case study forms part of a national level documentation of successful community-managed rural water supply programmes and approaches across India. Tamil Nadu is one of the few states where most of the Village Panchayats (VPs) are provided with Piped Water Supply, covering 93% against the national coverage of 40%. Standalone systems with deep tube wells are the commonly observed water source. Combined Water Supply Schemes (CWSS) with water sourced from distant river beds or reservoirs are also on the increase. The Kathirampatti Village Panchayat rural water supply system is a typical case of Tamil Nadu Rural Water Supply services. The piped water supply system evolved over a period of three decades and fully covers all the villages in the Panchayat today. The transition from surface water based drinking water sources to piped water supply made available at the doorstep is indeed perceived as a sign of development by the Panchayat and the community. However, dependence on ground water and its over exploitation are apparently realised as threat for the community's water security by Panchayat. Now, they have started using multiple sources; the Panchayat has started tapping water from the Combined Water Supply Scheme to ensure regular and reliable supply of sufficient potable water to the community in the long run. The Panchayat maintain a high level of service with reliable potable water of more than 80 lpcd, and 80% Household Service Connections as well as a higher level of community participation with 90% user-charge collection. This research focus on the enabling support services and the indicative cost of such support services in enabling the successful community management of the water supply.

This report is based on intensive field work carried out during September – December 2014 in the study area. First level, four Village Panchayats were analysed with two, Kathirampatti and Pichandampalayam, taken for detailed study. In all, 8 Key Informant interviews, 3 Focus Group Discussions, and 120 household interviews were carried out besides infrastructure snapshots, water quality testing, tap stand observations and detailed analysis of secondary data and Panchayat records. Three villages of the Panchayat, Kathirampatti, Nanjanapuram and Manalmedu and one village Vannankaattuvalasu of *Pichandampalayam* were taken up for detailed study.

Enabling Support Environment services for the Panchayats studied are provided by various Government agencies. Under the umbrella of the State Government, the Block Development Office of the Rural Development and Panchayat Raj Department and the office of the Assistant Executive Engineer of the TWAD Board (Tamil Nadu Water and Drainage Board) are the two different entities of the State Government providing support for Panchayats in drinking water services. The TWAD Board, with a supply driven approach, ensures that the potable water from the Combined Water Supply Schemes reaches a tapping point at the Panchayat by taking care of all aspects such as finance, infrastructure design & implementation, and quality monitoring. The Panchayat pay for the water drawn from the CWSS at the (significantly subsidised) rate of INR 3 per m<sup>3</sup>. Beyond the bulk water tapping point, it is the Panchayat's responsibility to operate and maintain the distribution system. The BDO of RD&PR Department provide a mixed model of support, holding more responsibility in capital maintenance, major repairs, etc. However, their engagement is limited to facilitating the administrative sanctions for the work, and for disbursing the grant to meet the operation and maintenance expenditures rather than providing any technical assistance, as they are overloaded with multiple responsibilities.

The Panchayat engages a Plumber to work exclusively for them so that any complaints can be addressed immediately.

The case of Kathirampatti demonstrates that the prudent management by the Panchayat under the headship of a committed and efficient leader, along with the participation and contribution of the community can ensure successful drinking water management. Nevertheless, there are a few other contextual factors of which the influence cannot be underestimated in making the Kathirampatti case a success. They are: (i) the TNRWSSP water sector project piloted in the 2004-05 period (ii) effective leadership, and (iii) increasing standard of living/purchasing power of the households.

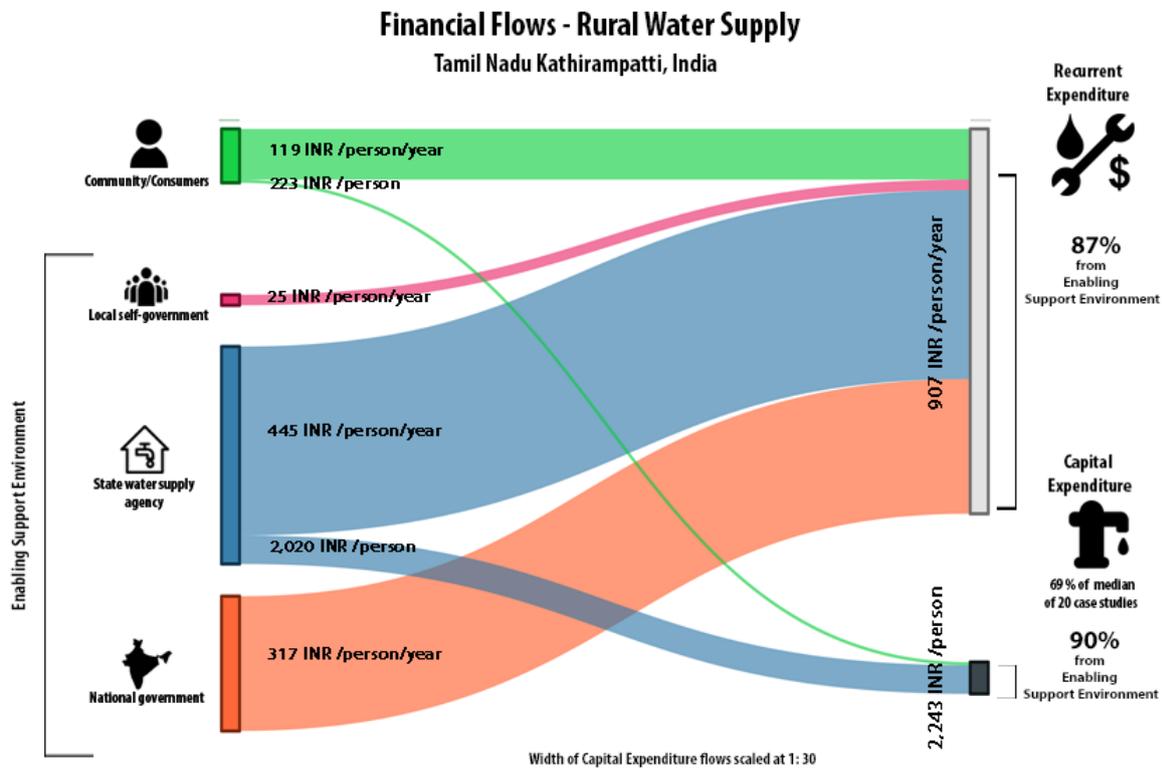
The Kathirampatti Panchayat was part of the Pilot project in water and sanitation sector, the Tamil Nadu Rural Water Supply and Sanitation Programme (TNRWSSP), in which not only the community participation had a strong emphasis but also a shift in the water engineers' role from service 'provider' to 'facilitator' perspective was experimented. The software inputs at the planning and implementation stages of the schemes under the TNRWSSP have made perceptible change at the community level. Community ownership thus created sustained over time and perpetuated to other villages, under the efficient Panchayat leadership. In addition, the purchasing power of the community also plays a major role in encouraging the community in making their contribution and sustaining the good practices.

**Tamil Nadu Kathirampatti Summary Cost Table - calculated as the average cost/person, that is averaging across the 3 'successful' villages**

Source of funds	Use of funds - implementation			Use of funds - annual recurrent					RECURRENT EXPENDITURE TOTAL
	CapEx hardware	CapEx software	CAPEX TOTAL	OpEx labour & materials	OpEx power	OpEx bulk water	OpEx enabling support	CapManEx	
Community/consumers	INR 223	-	INR 223	INR 52	INR 64	INR 4	-	-	INR 119
Local self-government	-	-	-	INR 25	-	-	-	-	INR 25
State government entity	-	-	-	-	-	-	-	-	-
State water supply agency	INR 2,007	INR 13	INR 2,020	INR 15	-	-	INR 43	INR 387	INR 445
National Government	-	-	-	INR 26	INR 231	INR 18	-	INR 42	INR 317
NGO national & international	-	-	-	-	-	-	-	-	-
International donor	-	-	-	-	-	-	-	-	-
TOTALS	INR 2,230	INR 13	INR 2,243	INR 119	INR 295	INR 22	INR 43	INR 429	INR 907
Median of 20 case studies			INR 3,231						INR 207
'Plus' %age	90%	100%	90%	56%	78%	83%	100%	100%	87%
Median of 20 case studies			95%						57%

# Community Water <sup>plus</sup>

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.



## Acknowledgements

On behalf of Centre of Excellence for Change Management, Rema Saraswathy has led the research team comprising Mr J Kirubakaran, Er N Meenakshisundaram, Mr D Raja, Mr Vaidyanathan, and Mr Jagan. The research team would like to sincerely thank all the Informants, officials and community representatives and household members for patiently participating in the interviews. The team would also like particularly mention Er Thirunavakarasu, A E E –TWAD, Mr Padmanabhan BDO-Erode, and Mr S Mahalingam- President Kathirampatti Village Panchayat for their cooperation and whole hearted support for the entire period of field work. Dr Snehalatha Mekala was the national research coordinator.

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.



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



### 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.

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## 1 Introduction

The constitution of India made water a State subject and the provision of adequate potable water was made the responsibility of the State. In Tamil Nadu the State government has given top priority to drinking water, in line with the National Water Policy, and in 1971 the State established a dedicated Board for water supply and drainage services, the Tamil Nadu Water Supply and Drainage (TWAD) Board for the implementation of water supply and sewerage facilities to the entire State, except the Chennai Metropolitan Area. Rural water supply has been one of the basic needs considered for special provision under the Minimum Needs Programme from the Fifth five year plan period, 1974-79. However, the State water sector has gone through transformation with the implementation of various reform measures such as moving to a 'demand driven approach' followed up by an ongoing 'community management' function, a role shift of government officials from 'provider' to 'facilitator' of services, downsizing of the TWAD Board, emphasis on water security, stress on water safety measures and a focus on sustainability of services.

This transformation also conforms with different stages portrayed for the national level scenario by James A J (2011) in five phases; (I) initial phase (1950-1967), (II) expansion phase (1968-81), (III) mission phase (1982-1990), (IV) reforms phase (1991-2002) and (V) sustainability phase (2003-Present).

Besides, the 73rd and 74th Amendments of Indian constitution, the Local Bodies, Panchayat Raj Institution in this case, gained a much more prominent role in ensuring basic services to the population, becoming responsible for the governance of rural water supply. Presently, the task of providing safe drinking water and sanitation facilities for the rural areas in the State is shared by the Department of Rural Development & Panchayat Raj and Tamil Nadu Water Supply & Drainage Board (TWAD). The funding comes from the State, under the Minimum Needs Programme, and the Central Government, under National Rural Drinking Water Programme, besides internationally sourced project funding. The State's flagship programme 'Tamil Nadu Village Habitations Improvement scheme (THAI), wherein 'Habitation' is taken as the basic unit for allocation of funds and implementation of the programmes has further decentralised development planning, financing and implementation from the 'Village Panchayat' level to the 'Habitation' level (State 12th Plan Document, TN State Planning Commission) and thus enabling better service delivery to the community.

The latest available statistics shows that out of 100,018 habitations in the State, 87.3% (87,333) are fully covered habitations achieving the target provision of 40 litres per person per day and the remaining are deemed to be 'partially covered' habitations. Today, Tamil Nadu is one of the few states where most of the Village Panchayats (VPs) are provided with piped water supply (PWS), covering 93% against the national coverage of 40%. Standalone systems with deep tube wells are the commonly observed water source. Combined Water Supply Schemes (CWSS, often known as 'Multi-village schemes' elsewhere in India) with water sourced from distant river beds or reservoirs are also observed in few cases. A shift in the approach at the national level (11th Indian Five Year Plan) where multiple sources through conjunctive use of surface water, groundwater and rainwater harvesting are given priority, as against dependence on single source, could be the reason for the increasing number of CWSS.

## Box 1

### The State Context

Tamil Nadu State forms the southernmost part on the east coast of the Indian peninsula. It is administratively, divided into 32 districts, 385 blocks, 10 corporations, and 144 Municipalities and 565 Town Panchayats. There are 12,524 village panchayats of the state comprising 98,179 habitations as on March 2013. The population of Tamil Nadu state as per 2011 census is 72.138 million, with a decadal growth rate between 201 and 2011 of 15.5% and nearly 49% of them living in urban areas.

The State receives an average annual rainfall of 970 mms, of which 48% from North-East monsoon, 33% from South West monsoon and the rest from winter and summer rains. The State has a surface water potential of 24160MCM and this includes the capacity of 39,000 tanks and 79 reservoirs among other resources. Poor maintenance of these water bodies resulting in water reserves well below the potential and an increasing demand arising from growing population and changing life style resulted in over exploitation of ground water resources in the State. As per the reports of Central Groundwater Board of Government of India, of the 385 blocks only 38% are safe and another 37% are over exploited (Ground Water Year Book – India 2010-11). Nature of land and soil in the State, 73% of the area covered under hard crystalline formations and the remaining 27% comprises of unconsolidated sedimentary formations, affects the ground water resource resulting in scarcity in the hard rock environment and salinity in sedimentary areas. Thus, making quality and quantity alike major issues to confront.

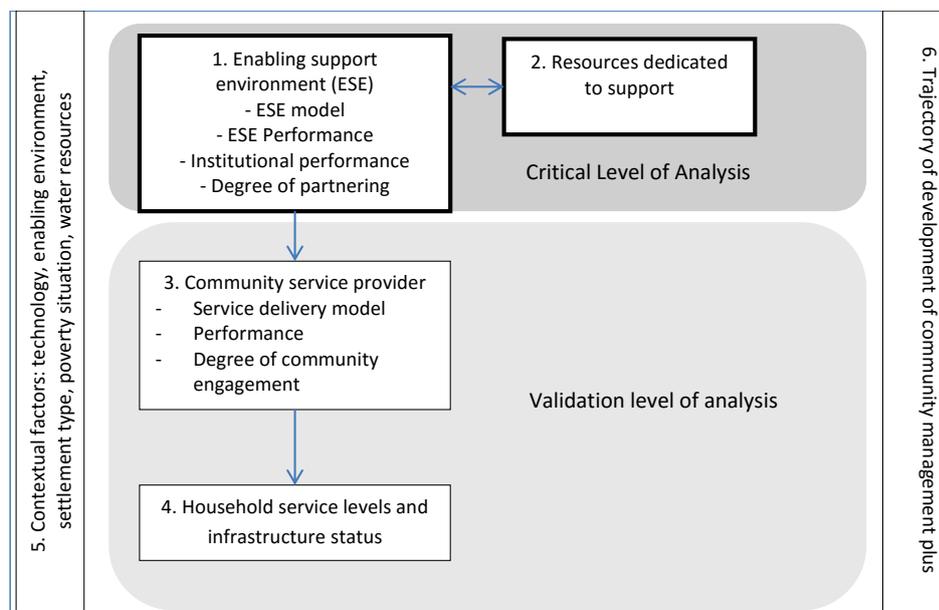
## 1.1 Research background and approach

### Elements of research

Community Water <sup>plus</sup> (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 Water<sup>plus</sup> 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 Elements of Research**

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Given this context, a scanning of successfully managed drinking water supply systems was carried out based on secondary data, reports of studies conducted, interviews with experts, and the researcher’s experience in the State water sector. Four Panchayat Raj Institutions shortlisted from the exercise are given in Table 1.

**Table 1 Panchayats shortlisted for case study**

Panchayat	Block	District
Malayadi	Melpuram	Kanyakumari
Vellamcode	Melpuram	Kanyakumari
Kathirampatti	Erode	Erode
Odanthurai	Karamadai	Coimbatore

In order to understand the situation in preferred case study Panchayat Kathirampatti better, a preliminary analysis of the surrounding village panchayats from the same Developmental Block was carried out

Pilot visits and analysis based on key parameters undertaken as part of the selection process helped further narrow down the choice to three habitations in Kathirampatti in Erode District for the detailed case study, Kathirampatti, Koorapalayam and Mettunasuvam palayam. A 'control rural service provider' was also selected in Pichandapalyam Panchayat.



**Figure 2: Location of Kathirampatti**

Data collection was conducted in September – December 2014. In total, 3 key informant interviews were undertaken at enabling support environment level, 8 at community service level, 3 focus groups with consumers and 120 household surveys were collected as well as material from secondary sources (such as organisational reports). All prices quoted are given in Indian Rupees (INR).

For more information on the conceptual framework and research methodology please see *Community Water plus Concepts and Research Methods (2015)*.

## 2 Enabling Support Environment

The State Drinking Water supply responsibility is shared by TWAD Board and the Department of Rural

Development and Panchayat Raj and hence they are studied in detail here as the enabling support entities for Kathirampatti Village Panchayat.

### 2.1 The TWAD Board, its origin and mode of operation:

The Tamil Nadu Water Supply and Drainage (TWAD) Board, the dedicated Board under the State Municipal Administration and Water Supply Department for the implementation of water supply and sewerage facilities to the entire State, (except the Chennai Metropolitan Area), has the following mandate for its activities:

Planning, Investigation, Design, Implementation and Commissioning of Water Supply and Sewerage Schemes in Rural and urban areas

1. Operation and Maintenance of Combined Water Supply Schemes
2. Water Quality Monitoring and Surveillance Programme
3. Sustainability of Drinking Water Sources
4. Training Activities

Rural Water Supply Schemes are implemented with State Government Funds under the Minimum Needs Programme (MNP) and with the Central Government Funds under the National Rural Drinking Water Programme (NRDWP). The RWS include implementation of Individual Power Pump schemes for the prioritized Rural Habitations involving creation of water sources (bore-well / open well), construction of Service Reservoir and laying pipe line for transmission and distribution. When the beneficiary is an individual local body, the scheme is handed over to the local body for maintenance on completion of the scheme and when the scheme is meant for more than one local body, the scheme is maintained by TWAD Board (Policy Note 2014-15, Dept of MAWS, GoTN).

The State level body TWAD Board has the Secretary to Government, Municipal Administration & Water Supply Department as the Chairman and the Board activities are guided and monitored by the Board of Directors comprising senior level Administrators and Engineers of Government of Tamil Nadu. The Managing Director is an officer of the Indian Administrative Service cadre.

The Engineering Director in the cadre of Chief Engineer monitors the Engineering Wing. The Finance Director monitors the accounts wing. The Secretary cum General Manager looks after the administrative function. There are four Chief Engineers head-quartered at Vellore, Thanjavur, Coimbatore and Madurai, and one Project Chief Engineer at Dharmapuri for the Hogenakkal Water Supply and Fluorosis Mitigation Project. There are 17 circle offices headed by Superintending Engineers, 93 Divisional Offices headed by Executive Engineers and 313 Sub Division Offices headed by Assistant Executive Engineers functioning at the Districts.

There is one Communication and Capacity Development Unit headed by a Director in the cadre of Chief Engineer headquartered at Chennai.

There are four training centres, for imparting training to the employees of TWAD Board and the public. In all there are nearly 9,000 employees.

There are 83 water quality testing laboratories throughout the State including the one in Chennai, a ISO9001 certified State-level Water Testing Laboratory, to ensure the supply of safe and potable water to the public.

The Hydrogeology wing of TWAD Board is vested with the responsibility of scientific source identification and assessment of water sources. The EDP unit is implementing Information Technology based applications in TWAD Board for all its administrative as well as project management functions. All offices of TWAD Board, up to Divisional level, are connected in a state-wide area network.

In line with the NRDWP guidelines, a State Level Water and Sanitation Mission was formed in the State in the year 2009. In addition, one major outreach programme is the one week Safe Water Campaign as part of the water safety measures, conducted twice a year throughout the State. Creating awareness on water quality, by involving the community in testing water at the water points in the villages is the major activity under the campaign. The programme has monitoring committees at State, District and Block levels.

Further, Kathirampatti was one among the 145 Village Panchayats in the State where a pilot project namely Tamil Nadu Rural Water Supply and Sanitation Project<sup>i</sup> (TNRWSSP) was implemented by the

State Government in the year 2004-05. The shift from 'provider' to 'facilitator' role of the water engineers were a major focus in this pilot programme.

As per the functions of TWAD Board, when the water supply system is meant for one Village Panchayat, on completion of construction the system is handed over to the Village Panchayat for its Operation and Maintenance. If it is meant for more than one Village Panchayat, the TWAD continue to operate and maintain the scheme along with the transmission mains up to the tapping point/s at each Panchayat. Under this system, within the village operation and maintenance of the distribution network is the responsibility of the VP.

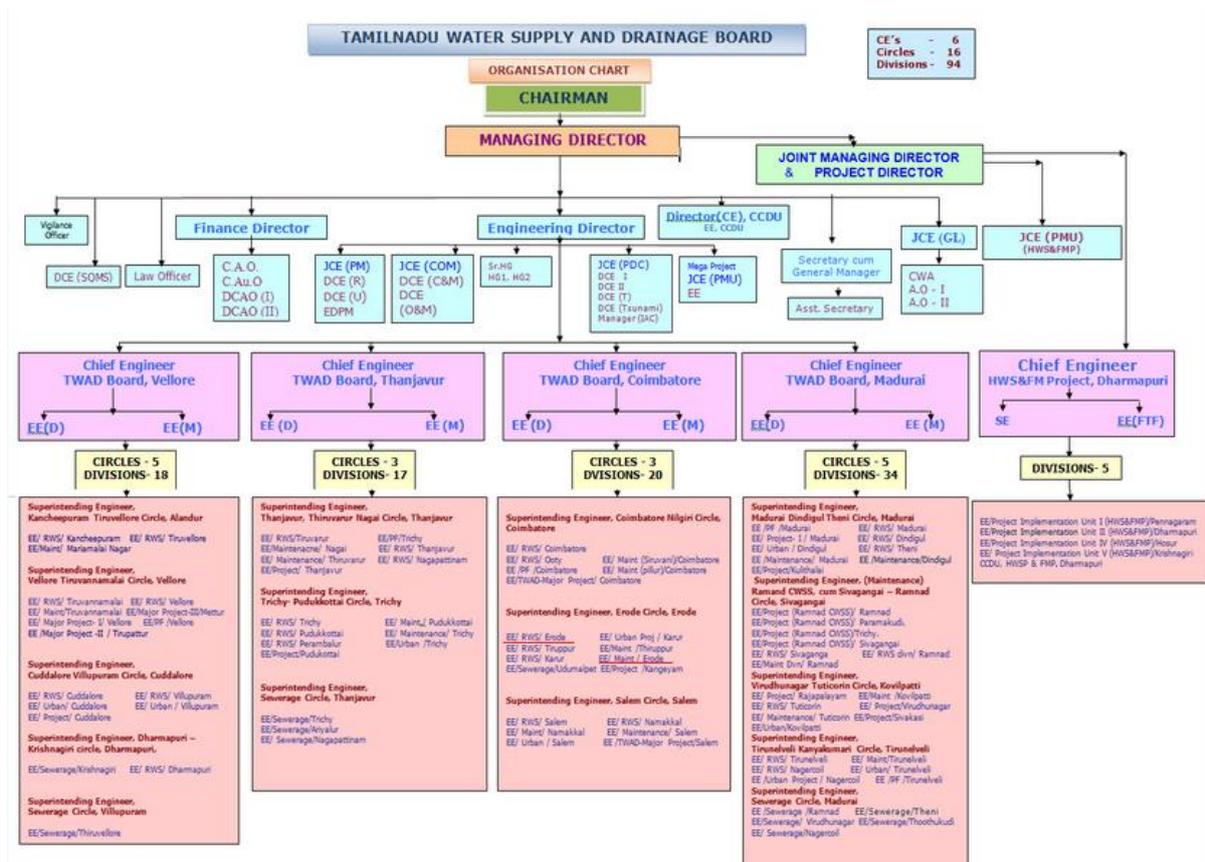


Figure 3 TWAD Board Organogram

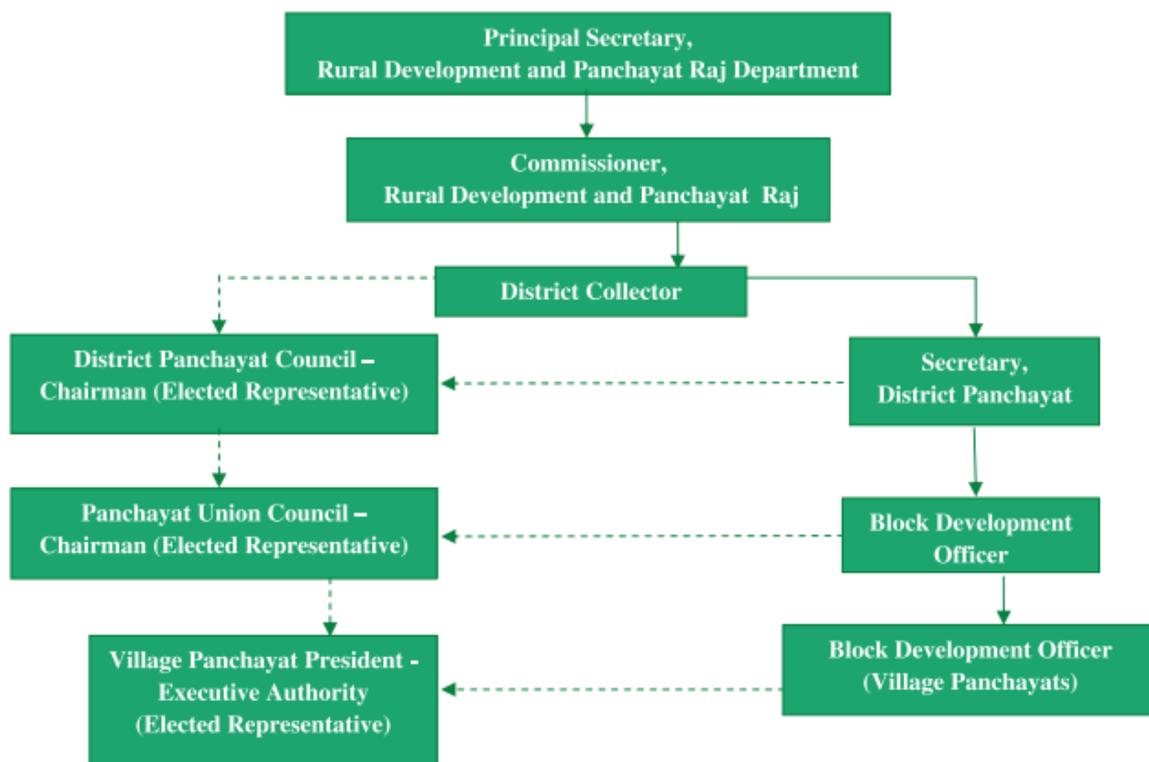
Source: TWAD Board

## 2.2 The Rural Development and Panchayat Raj Department:

The Rural Development and Panchayat Raj Department is responsible for the implementation of various Centrally sponsored, State-funded, and externally aided schemes in rural areas for poverty alleviation, employment generation and area development. The Department is also entrusted with the responsibility of enabling the various Panchayat Raj Institutions (PRIs) to function as effective units of Local Self Government. The Rural Development and Panchayat Raj Department provide support services to the Village Panchayat through its Block Development Office. (The terms Block and Panchayat Union are interchangeably used in common parlance, both represent the same geographic area.) In the three tier system of rural local administration, the Block Development Office

support the functions of Block/Panchayat Union Council. According to section 112 of the Tamil Nadu Panchayats Act, 1994, Panchayat Union Council performs the following important functions:

1. Implementation of various Centrally Sponsored and State Schemes.
2. Construction, repair and maintenance of classified Panchayat Union roads and bridges, culverts and causeways on such roads.
3. Construction and maintenance of Elementary and Middle Schools.
4. Preventive and remedial measures for any epidemic.
5. Fairs and festivals classified by the Panchayat Union Council.
6. Classified Panchayat Union Markets.



**Figure 4: Organogram Rural Development & Panchayat Raj**

Source: Report of Comptroller and Auditor General of India, Report No 5 of 2014, GoTN

The Block Development Officer (Block Panchayat) is the executive authority of the Panchayat Union. S/he is assisted by administrative and technical wings. The rural water supply comes as one item under the Centrally Sponsored and State schemes among various other programmes at the BDO level. The grants channeled through the BDO include the Central Finance Commission Grant, State Finance Commission Grants and Schemes and the Pooled Assigned Revenue.<sup>ii</sup> As far as Tamil Nadu is concerned, the entire Central Finance Commission allocation is given to the Village Panchayats for maintenance of drinking water and sanitation. The State funding is used mainly for capital expenditure. A basic amount of INR 250,000 is given to each Panchayat and the remaining is given based on the population size.

## 2.3 Enabling support environment description

The enabling support entities studied here are the Office of Block Development Officer (BDO) representing Rural Development and Panchayat Raj Department and the Office of Assistant Executive Engineer (AEE) representing TWAD Board. Both the entities are arms of State Government.

The Panchayat Raj Department Block Development Office is located 13 kilometers away, in the city, and the Block Development Officer is assisted by administrative and technical wings. The rural water supply comes as one item under the Centrally Sponsored and State schemes among various other programmes at the BDO level. There are six Village Panchayats managed under this BDO, and there are Deputy BDOs and a full-fledged administrative office. The technical wing attached with the BDO has the Assistant Divisional Engineer (Panchayat), Panchayat Union Engineer, and Panchayat Overseer with other support staff. The office has a jeep with driver for the use mainly of the BDO. BDO's role is mainly disbursing the grants/funds to the local bodies; Block Panchayat and Village Panchayat. When there is a need, the Union Engineer and Overseer are the persons who interact with the VP President / Panchayat staff for issues regarding water supply.

The TWAD Board Assistant Executive Engineer (AEE) with his office at Sengodampalayam Headworks in Erode city is the responsible officer from TWAD for Kathirampatti. The office is located at about 10 kms away from the Kathirampatti Panchayat. The Water Supply Schemes looked after by this AEE cover 66 Village Panchayats including Kathirampatti, 9 Town Panchayats, part of Erode City Municipal Corporation and bulk supply for few private Institutions. The AEE is assisted by one Assistant Engineer (AE) for technical support and two clerical staff for administrative support. Besides, there are field level skilled persons numbering 44 to provide support services for the CWSS. There is one jeep with driver available for the service of this office.

The responsibility matrix indicates the different levels these support entities play in the drinking water management of Kathirampatti and the other surrounding Panchayats. In Kathirampatti Panchayat, the majority of the households are covered with Individual Power Pump schemes with a Combined Water Supply Scheme partially covering two habitations. However, it may be noted that whatever the support they provide, it is only up to the tapping point at the VP level and not for the distribution service within the VP. And for the TWAD Board support, the proportion of rural population they serve is much less compared to their urban beneficiaries. Hence, in the following sections in this report the Block Development Office support is analysed in more detail.

**Table 2  
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	PAY	PAY		PAY	PAY											
State Government entity- TWAD Board	RES + PAY		RES + PAY	RES + PAY										RES + PAY			PAY		RES
Regulatory agencies- RD & PR Dept (BDO)	RES + PAY	RES + PAY		RES + PAY		RES + PAY			RES + PAY	RES + PAY		PAY		PAY		PAY	PAY	RES + PAY	RES + PAY
Local government/ Gram Panchayat	INT	INT	INV	INT	INV	RES + PAY	RES	RES	INT	INT	INT	RES	RES	INV	RES	RES	INV	INT	INT
Other PRI entities (VWSC)	INT	INT	INV	INT		INV						INV							

**Table 3**

**ESE Descriptors**

	ESE 1 (BDO)	ESE 2 (AEE_TWAD )
1. Characterisation of the ESE		
1.2 Type of organisation	Other public body	Other public body
1.2 Modality of support	Mixed model, whereby communities request support when needed, but where the support entity also provides support on a scheduled basis	Supply-driven, whereby the support authority visits the community on a scheduled basis
1.3 Rural Population Served by ESE	42,000	325,000
1.4 Number of Service Providers Served by ESE	6	76
2. Organisational capacity		
2.1 Personnel of the ESE, assigned to rural water and sanitation	2	49
2.1.a Number of FTE staff dedicated to water and sanitation	1	49
2.1.b Rural population served	42,000	32,500
2.1.c Number of service providers supported	6	66
2.2 Annual operational expenditure	18,00,000	
2.2.a Total operational expenditure (transport, communication, etc) made by the support services authority related to water and sanitation	INR 1,44,000 Under the assumption that only 10% of their time spent on water supply issues	INR 18,00,000 Under assumption of salaries
2.3 Logistical capacity of the support agent		
2.3.a Number of cars	1	1
2.3.b Number of computers	1	1
2.3.c Number of motorcycles	0	0

## 2.4 Enabling environment performance indicators

The Block Development Officer has the formal policy mandate to support the water supply system. Though they have a clear understanding of what the mandate entails the ever increasing work load from new schemes, implemented by the State and Central Governments, dissuade them from performing their duty in full as far as water supply is concerned. However, whatever has to be done essentially they carry out. This is reflected in the working methods they follow as well, although there are tools and methods for all of the areas they find difficulty in adopting. In financial matters, and administrative sanctions etc., all the protocols are adhered to. However, going beyond that, for example; a system to monitor client satisfaction is absent.

**Table 4 - QIS Indicators for BDO enabling support entity**

Indicator	Score	Explanation
Indicator 1.1. Formality of the mandate for support	50	As per the Rural Development and Panchayat Raj Department Policy the BDOs have a clear mandate but citing over workload, they report that they are unable to perform to fullest expected level
Indicator 1.2 Working methods	75	Has tools and methods for all of the areas of support it provides but doesn't apply those systematically
Indicator 1.3 Information management	25	The ESE only keeps track of the service providers it supports in an informal and ad hoc manner
Indicator 1.4 Communication between service support authority and service providers	50	The ESE has one communication channel that is easily accessible to the service providers it supports. It is direct from ESE to CSP.
Indicator 3.1 Client satisfaction	25	There is no mechanism to monitor client satisfaction

## 2.5 Enabling environment institutional assessment

**Organisational autonomy:** As part of the State Government, the Block Development Office follows its own organisational policies and goals and changes them as necessary to provide guidance and direction in achieving the objectives of the institution. The agency has only implementation power and there is no autonomy to make own decisions at policy level. Regarding funding requirements for water service provision, the BDO allocates the funds earmarked for them and if the demand is more, then it is a joint responsibility of the Village Panchayat and the BDO to identify appropriate sources. If the source is within the Government funds, then further processing will be facilitated. For example; finding the resource for a new scheme from the Panchayat Union (Councillor's) Fund, MLA's Local Area Development funds or the like. As part of the State Government plans, if there are studies to be conducted, the BDO will also be part of such studies. The agency has the organisational structure including roles and responsibilities of major divisions determined by the State Government. Since the recruitments and appointments are carried out by the State Government, the BDO doesn't have any independent power in fixing the employee benefits.

**Leadership:** The Block Development Officer understands and articulates the mission and involves those who are connected with the mission at appropriate stages. He ensures that the performance standards provided by the Government is followed, and give suggestions wherever necessary. He guides the technical staff on need to ensure that appropriate technology, simple for operation and maintenance and easy to monitor, are used in the services.

**Management and Administration:** Managers, in this case BDOs in this case have a clear sense of their own and others' roles and responsibilities. They communicate roles and expectations clearly to others and involve them in the process of understanding their roles and responsibilities, as already defined. The staff are held accountable for getting the work done. Administrative systems for Accounting & Budgeting, Personnel, and Management Information are in place and are used in the implementation of schemes.

**Community Orientation:** The BDO staff work mostly with the CSP (VP) staff at every level, normally not directly engaging with the community. The VP staff demonstrate that they are oriented toward serving the community and ensure engagement with different groups within the community, including the most marginalized; when observed, their decisions and actions are clearly driven by what is best for the community. There are identifiable mechanisms for community service providers to interact with key areas of the institution over important matters (e.g., call-down for technical assistance, bill disputes, service problems). There is evidence that the institution responds to complaints, emergencies, and suggestions which community service providers make, but the swiftness of action is under question because it is a government agency. Normally the VP informs the problem/ emergencies to the BDO and proceeds for further action, expecting their approval. The work will be approved and necessary financial or administrative support will be given on compliance with the government protocols. Identifiable, ongoing and effective measures to educate communities / community service providers about institutional services and requirements are absent. There is hardly any effort made by the institution to invite and evoke an effective level of community / community service provider's participation (e.g., mechanisms for communities to bring concerns/complaints to the institutions).

**Technical Capability:** The BDO picks up the locally suitable solution from the State level guidelines given to them regarding technical decisions and executes them. Technical studies for local planning conducted by them are absent. They, however, ensure quality of the end product as well as all other technical operations. The agency uses or adapts technology which is suitable for the specific needs of the institution and avoids temptation to use more exciting-but not appropriate-technologies learned by staff who were trained in other settings. They have in-house technical skills adequate for routine technical responsibilities and sub-contract to outside specialists those tasks which are either beyond the institution's own capabilities or necessary to meet peak needs. It is only the State Body who conducts practical research and experiments to improve existing uses of technology for local conditions and needs.

**Developing and Maintaining Staff:** As part of the State level practice, process for determining skill needs exists and is the basis for designing training programmes which the staff of the BDO attend. In-service training programmes are in place for the staff. A system exists for developing competent managers and supervisors. But it was not clear if any of the staff from the BDO was part of such

capacity building. The institution provides incentives to maintain staff (i.e. salary levels, employee, benefits) as per the State Government rules. At this enabling support level, interestingly the scope for hiring of qualified personnel is limited. There is no social development specialist or community development specialist at the BDO level.

**Organizational Culture:** The work is carried out under the direction of the BDO by the team members but an observable team spirit does not seem to exist among the staff. The staff appear to like their workplace and they are proud of that. Being in a government and with powers to perform certain specific roles, like implementing various developmental schemes gives them a pride. The organisation’s physical infrastructure (offices, treatment plants, grounds) is maintained well and facilities look clean, well maintained, and attractive at the BDO office level.

**Interactions with Key External Institutions:** At BDO level, the top management stays informed about external policy, financial, and regulatory issues and actions. And the office maintains direct contact with key individuals at the higher official levels. Specific strategies are formulated to influence policies, legislation, and other activities to obtain necessary approvals and resources. However, The BDO could play a much stronger role in influencing policies, legislation, and planning locally relevant activities if they perform according to the Panchayat Raj system. They work with the VP, monitor and keep them informed about their process of support.

**Table 5 – BDO support entity Institutional Assessment**

Statements	Average Score
Organisational autonomy	2.6
Leadership	3
Management and Administration	3
Community Orientation	2.6
Technical Capability	3
Developing and Maintaining Staff	2.6
Organizational Culture	2.6
Interactions with Key External Institutions	3

## 2.6 Enabling environment partnering assessment

The relationship between the supporting BDO and the community service provider is assessed using the typology of partnerships (see Research Methodology paper for further detail), differentiating them for the different phases in the service delivery cycle as illustrated in Table 6.

Organisational partnering typology for relation between BDO and community service provider (CSP) during different phases of service delivery cycle indicates the following:

**Capital Investment phase:** Present scenario is that for the Kathirampatti VP, the supporting BDO and VP share responsibility for decisions regarding hardware and software development during implementation. For example, when there is a demand from the community for additional water service /facility the issue is taken up by the VP with the BDO and the options are discussed. The VP takes responsibility for a day-to-day supervision of the work and keeps the BDO informed about the development informally. Earlier, under the TNRWSSP programme for implementing five schemes,

the community shared the cost by contributing 10% from each and every beneficiary household under those schemes. Normally when the community contribution is a precondition for such schemes, it is raised from some other sources than from the beneficiary households. The VP also prepares the community at this stage with creating awareness about the post investment/construction phase.

**Service delivery phase:** The VP takes the responsibility for the day-to-day operation and maintenance of service delivery but certain decisions like tariff fixation are top-down from government through the BDO to the VP.

**Capital maintenance phase:** The BDO and VP share responsibility for decision making regarding asset renewal. The VP discusses the issues with the Union Engineer (representing the ESE) who suggests appropriate measures and the decisions are taken jointly.

**Service enhancement or expansion phase:** It is the VP which identifies the need for service expansion and puts up the request to the supporting BDO who discusses the issue with the VP to find the actual requirement. They then decide on the modality of the phase.

**Table 6 : Organisational partnering typology for relation between ESE and CSP during different phases of service delivery cycle And Response for the case of Kathirampatti**

Type of partnering	Phase in service delivery cycle			
	Capital investment phase	Service delivery phase	Capital maintenance phase	Service enhancement or expansion phase
Collaborative	ESE and CSP share responsibility for decisions regarding hardware (e.g. infrastructure) and software (e.g. capacity building) development during implementation -- <b>Strongly Agree</b>	ESE and CSP share responsibility for decisions regarding administration, management and operation and maintenance - <b>Strongly Agree</b>	ESE and CSP share responsibility for decision making regarding asset renewal - <b>Agree</b>	ESE and CSP share responsibility for decisions regarding service enhancement or expansion -- <b>Agree</b>
Contributory	ESE and CSP pool financial resources to meet the costs of capital investment in hardware and software provision during implementation -- <b>Agree</b>	ESE and CSP pool financial resources to cover costs of administration, management, and operation and maintenance - <b>Strongly Agree</b>	ESE and CSP save and pool financial resources to meet the costs of asset renewal -- <b>Disagree, it comes from ESE only</b>	ESE and CSP save and pool financial resources to meet the costs of service enhancement or expansion -- <b>Disagree, it comes from ESE only</b>
Operational	ESE and CSP work together contributing labour and/or resources to deliver hardware and software provision during implementation -- <b>Agree</b>	ESE and CSP work together contributing labour and/or resources to support administration, management, operation and maintenance -- <b>Disagree, it is only CSP does</b>	ESE and service provider contribute labour and/or resources for asset renewal -- <b>Agree</b>	ESE and CSP contribute labour and/or resources for service enhancement or expansion -- <b>Agree</b>
Consultative	ESE and CSP communicate regularly during implementation with structured opportunities for feedback and dialogue -- <b>Agree</b>	The ESE and CSP have a systematic and transparent system for sharing information regarding administration, management, and operation and maintenance -- <b>Agree</b>	ESE and CSP systematically share information regarding service levels and technology status enabling proper planning for asset renewal -- <b>Agree</b>	Information regarding service levels, technology status and population is systematically shared, enabling proper planning for service enhancement or expansion -- <b>Agree</b>
Transactional	ESE and CSP initially negotiate a implementation plan that is then delivered by the ESE -- <b>Agree</b>	The ESE and CSP fulfil different elements of the administration, management, and operation and maintenance functions as per negotiated arrangements -- <b>Agree</b>	Asset renewal is dependent on negotiations between ESE and CSP following a request from the CSP -- <b>Disagree, the requirement is done by ESE</b>	Service enhancement or expansion is dependent on negotiations between ESE and CSP following a request from the CSP -- <b>Disagree, the requirement is done by ESE</b>
Bureaucratic	ESE provides CSP with a standardised model of hardware and software provision during implementation -- <b>Disagree, the requirement is discussed between the CSP and ESE</b>	Bureaucratic standards dictate the system for administration, management, and operation and maintenance -- <b>Disagree, service delivery standards maintained by the CSP is beyond that</b>	Asset renewal is dependent on generic programme timelines (i.e. every X years) -- <b>Disagree, it is not dependent on years but on demand</b>	Planned asset replacement, expansion or renewal is dependent on generic programme timelines (e.g. every X years and/or with every X% of population increase) -- <b>Disagree, dependent on years but on demand</b>

### 3 Community Service Provider

Kathirampatti Village Panchayat belongs to Erode Block of Erode District in Tamil Nadu. Erode District has 343 Village Panchayats spread in 14 Developmental Blocks. Located along the State Highway Erode-Perundurai at about 13 kms, Kathirampatti is one of the six Village Panchayats in the Block. Generally, Erode district receives on average about 700 mms of rain a year. The district is in the river basins Cauvery River, Parambikulam and Aliyar River. There are 15 major water bodies also in the district. The geological structure is hard rock and has 50% of the Blocks classified under 'safe' (with below 70% of ground water resources exploited) as far as the ground water situation is concerned in 2009iii (TWAD Board).

To assess household service levels, three villages under Kathirampatti Panchayat (Kathirampatti village, Najanapuram village and Manalmedu village). As a case to compare, Pichandapalyam Village Panchayat was selected in order to ensure that all the villages represent similar socio-economic-geographic- conditions.

Both Kathirampatti and *Pitchandampalayam* Panchayats have a fast growing and fast urbanising population. The decadal growth of the population and increasing number of new habitations are evidence for that. According to the revenue records there are 6 habitations in Kathirampatti and 10 in *Pitchandampalayam* Panchayat. There are a number of new habitations / residential colonies in each of the habitations. There are also two Colleges, two government schools, and three Anganwadi centres in Kathirampatti Panchayat. From the Census counts of population of 2001 and 2011, one could observe a decadal growth of 36%. Presence of up-and-coming institutions and the area's proximity within 10 kms to Erode Corporation cause the significant development in this area and pose challenge to both Kathirampatti and *Pitchandampalayam* alike in providing the basic service to their respective residents.

Kathirampatti is the original old village and depends more on agriculture for its livelihood. Nanjanapuram and Manalmedu have relatively fewer households depending on agriculture for their main source of income, and this might influence their capacity and willingness to pay for water.

The population sizes in the service area of the two PRIs are approximately 3,875 and 5,000 as per the latest information available. Both the village panchayats have similar socio-economic background.

**Table 7 Households by selected characteristics**

Characteristics	Kathirampatti	Nanjana puram	Manalmedu	Vannankattuval asu (Control)
No of Households	225	177	126	194
Sampled households	30	30	30	30
% Pucca/Semi-pucca houses	97	100	87	100
% of HHs with Agriculture/ Agriculture labour as main occupation	77	53	63	73
Average HH size	4	3	4	3
Average annual HH income reported INR	27,200	54,500	13,367	11,533

### 3.1 Infrastructure snapshot

The entire water supply system in the Kathirampatti Panchayat covering all habitations is piped. Two of the habitations studied under Kathirampatti PRI, Nanjanapuram and Manalmedu are covered with 100% Household Service Connections (HSCs) for drinking water. The third village, Kathirampatti has 80% of the households with connections. The PRI aims to increase the coverage by household connections to 100% within two years. There are habitations with 100% household connections and without any public stand posts where the water supplies schemes are implemented under the state Rural Water Supply and Sanitation Programme, rather than the Panchayat Raj Department. The habitations with 100% household connections and without any public stand posts are where the water supply schemes were implemented under the TamilNadu Rural Water Supply and Sanitation (Pilot)Project ten years ago.



### 3.2 Community service provider descriptors

The enabling support environment is the necessary facilitator to village level community management of rural water supply. Kathirampatti Village Panchayat has a formal Village Water Supply and Sanitation Committee (VWSC) under the Gram Panchayat. There are 16 members including the Panchayat President and Secretary who are the Chairperson and the Secretary respectively for the VWSC as well. Besides the President, there are three more elected

representatives and 10 nominated members representing various institutions and community segments. This Committee has been constituted in the year 2004-05 under the guidelines they have received as part of the Tamil Nadu Rural Water Supply and Sanitation Project, a project piloted by the State Government with support from World Bank. The VWSC was initiated to manage the operation and maintenance of the five Piped Water Supply /Individual Power Pump Schemes under the TNRWSSP. It functions as an independent body though they do not have any separate legal status. They operate a separate bank account for the transaction of water supply operation and maintenance related expenditures. In the early stages, there were regular meetings of the Committee and they took a very active role in mobilising the 10% cost of the scheme community contribution from each beneficiary household as well as in making every household pay the water tariff. As part of capacity building to the VWSC, the TWAD Assistant Engineer who was in-charge of this Village Panchayat trained them in certain basic technical and financial issues in the O & M of the water supply service. The core team of the VWSC, including the President and the Secretary, made sure that they practiced what they were trained. In the course of time, the attendance of members to the meeting reduced and now they hold the meetings only on the days of Gramasabha, and soon after the same.

The fact is that after the formation of VWSC during 2004-05, implementation of scheme and handing over in 2006, the TNRWSSP was shelved and there was not much ongoing guidance or supervision from the TWAD Board for the VWSC. However, the VWSC continues to exist, though with limited functions. Having the Panchayat President as the Chairperson for the VWSC, with four more members common with the Panchayat, including the Secretary, enables smooth functioning without any major issues of disagreement.

For the *Pichandampalayam Panchayat*, the water supply is managed by the PRI and there is no other entity like the VWSC of Kathirampatti.

### **3.2.1 Community Service Provider/VWSC Focus Group**

The discussions had to start with a stock-taking of the situation in the Panchayat to enable an atmosphere for more sharing among the participants. Further, the groups that comprised members of PRI and its functionaries as well as VWSC were led to a common understanding that the drinking water supply system in the Kathirampatti VP is worth mentioning as a special case in terms of the commendable service it provided to the community. Then the discussion pointed towards the factors which make the water supply system of Kathirampatti perform better compared to other Panchayats. The discussions thus held indicated the presence of a nexus between the different stakeholders, and its complexity as well as simplicity, in achieving a commendable level in water service delivery. For example: When the community pointed their fingers to the efficient and effective leadership of the PRI in providing a satisfactory service, the President hails the support of the community, by way of adhering the norms/conditions given to them. Besides, the President had lauded the work of the functionaries of the PRI including the administrative staff who ensures the community contribution is mobilised and managed with very minimum defaulters, and the Pump Operators who play a vital role in ensuring a well managed system. On the other hand, from the discussion with the Pump Operators, it was found that they bank up on the President who is very

much accessible and available to solve any problems as and when they bring one from the field. Technical support is availed at the PRI level by engaging a local technician. The technical aspects in the supply /distribution system is looked after with the personal experience of the technician, Panchayat functionaries or the President. In the absence of such persons with experience, there doesn't exist a system, for example a diagram showing the distribution system, that can be relied on by any concerned persons.

While most of the work at the service provision level are managed like this at the PRI level, the President and the Secretary of PRI acknowledge their responsibility to be accountable to the hierarchy and the government system. Certain level of flexibility in functioning like meeting an immediate expenditure within a specified amount etc helps the PRI take immediate action when required. However, the President said that they lack clarity on the devolution of power that is envisaged by the Panchayat Raj Act.

The presence of common members, including the President and Secretary for the VWSC and PRI made almost the similar views in the discussion with the VWSC, other members being inaccessible. Presently they exercise the powers in sanctioning the household service connections, collection of user charges, and keeping an overall watch of the water supply system. Along with members of the community, the VWSC members keep a watch on the use and misuse of water at the household connections, and take action against any misuse immediately.

**Table 8 Descriptors of CSP**

1. Characteristics	Kathirampatti		Pichandampalayam
	Response	Explanation / Working / Comments	Response
1.1 Type of organisations	Gram Panchayat	There is a Village Water Supply and Sanitation Committee under the Gram Panchayat. For the VWSC also, the Panchayat President is the Chairperson and the Panchayat Secretary is the Secretary though there are 14 other members	Gram Panchayat
2. Organizational capacity			
2.1 Staffing of governing body of CSP	12	Panchayat President, Ward Members 9, Panchayat Secretary and one additional Clerk. The additional clerk is not a normal practice in other VPs. Only here, a person has been appointed by the VPP and paying her from the Panchayat source whereas the Panchayat Secretary is paid by Government	11
2.2 Staffing of the CSP	15	Pump Operators-15	8
3. Scale of operation of the CSP			
3.1 Coverage	One Panchayat covering 6 habitations		One Panchayat covering 12 habitations
3.1.1 Population supplied with water by the CSP	4000		4800
3.1.1. Size of population in service area	4000		4800
3.1 Coverage	1.00		1.00
3.2 Coverage with household connections			
3.2.1 Number of households with household connections	834	The VP aims to increase the number of HSCs within two years and make it 100%. It is only after 2006, the HSCs increased from a single digit number to this stage	535
3.2.2 Households served by the CSP	1050	there are another 75 shops and commercial establishments too	2050
3.2 Coverage with household connections	0.79	The VP aims to achieve 100% HSCs within two years	0.26

3.3 Coverage with household connections among vulnerable groups			
1. Characteristics	Kathirampatti		Pichandampalayam
	Response	Explanation / Working / Comments	Response
3.3.1 Number of SC/ST [and other vulnerable group] households with household connections	280		30
3.3.2 SC/St [and other vulnerable group] households served by the CSP	280	According to the VPP there was a high demand for HSCs among these sections	200
3.3 Coverage with household connections among vulnerable groups	1.00		0.15
4. Financial descriptor			
4.1 Tariff structure* *Where relevant indicate whether there are more advanced forms of differentiation such as progressive block tariffs (in comment section)	INR 600 /household /year	INR 50 per month, the charge is collected annually from each household along with house tax. The VPP propose to increase the tariff to INR 100 so that all the water expenditures can be met from the tariff collected	INR 30 per month for house owners and INR 50 per month for tenants
4.2 Connection costs	INR 1000	The PRI during interview informed that they have increased it to INR 2000, but from the last receipt we found only INR 1000. Along with this amount, they should have paid up to date house tax	1000 – There are many connections taken by the households by not paying the required deposit

### 3.3 Organizational capacity

For the Kathirampatti Village Panchayat there are 9 Ward Members and the Panchayat President, all are elected as per the prevailing local body administration act; TN Panchayat Raj Act, and the last election was held in the year 2011. The present President, Mr N.Mahalingam, is elected to the position for the third time in succession. Of the 9 Ward Members, three are women and three are from the minority group, Scheduled Castes.

The norm is there will be one Panchayat Secretary, earlier known as Panchayat Assistant, for every Panchayat to help the PRI in the administration. But the Kathirampatti PRI has appointed an additional person for clerical assistance as they find that one person alone cannot handle the workload they have. The additional work, according to the President as well as the Secretary, is the record maintenance, raising tax demands; issuing receipts etc and all the work are carried out manually. They plan to computerise the record maintenance shortly. The Panchayat Secretary is paid by the State Government whereas the second person is paid from Panchayat's own resources.

The President has attended training in Panchayat Governance issues, conducted by the State Institute of Rural Development and the Secretary also has attended a number of trainings in general administrative issues. As part of the TNRWSSP / VWSC, the Secretary and the President has been trained considerably on technical, financial and institutional issues of drinking water supply and management. Along with the training that they have received during 2004-06 during the implementation of the TNRWSSSP, they have built up their capacity by consulting the professionals including the Engineer Thirunavukkarasu who was Assistant Engineer during the TNRWSSSP period for this village and now Assistant Executive Engineer of CWSS Maintenance as and when required. The two persons, Engineer Thirunavakkarasu, the VP President Mr Mahalingam along with the efficient assistant Mr Sivakumar the Panchayat Secretary, were able to make a considerable difference for the Kathirampatti Water Supply system.

To support the Village Water and Sanitation Committee in its roles as community service provider, besides the Panchayat Secretary, there is the additional Clerical Assistant, 15 pump operators and one sweeper in the Kathirampatti Panchayat. They all are part time employees and for other technical help such as that of a fitter, the services of personnel are outsourced.

In *Pitchandampalayaam* similarly, there are 9 members in the Panchayat Council headed by the President. Their Panchayat Secretary has been working there for the past 4 years. To support the water supply programme there is only one official pump operator, meaning he is paid by the Government.

### 3.4 Financial aspects

The water tariff is fixed according to the guidelines of the Government of Tamil Nadu. There is no tariff for water collected from public stand posts available on the street. The monthly tariff for household connections is INR 50 per month. This was INR 30 until recently. The charge is collected annually from each household along with house tax. The PRI normally issues tax demand notice to each household during the month of January and they are given time until 31 March to remit the amount. There are only very few defaulters and they are reportedly residing away from the area for long period for work or other such reasons, and the house will be locked. They will pay the amount

whenever they come to the village. The PRI proposes to increase the tariff to INR 100 in order to enable them meet all the water expenditures from the tariff collected. The only problem the PRI faces in raising the tariff is that people will agitate, citing the reason that when the neighbouring villages are charging only INR 30 'why should they pay more here?'. Though it may not be a valid reason; the President feels that some political interest group will trigger such problem. According to the President, a government notification to that end would ease implementation of the revision.

At *Pichandampalayam*, the monthly tariff is INR 30 for connections if the household owns the house; if they are tenants they have to pay INR 50 per month. The water collected from public stand-posts is not charged. Collection of tariff is below 10% of the expected amount. No efforts have been taken from the PRI to persuade the community to pay the charges and there are no voluntary payments from the community.

### 3.5 Community service provider indicators

#### Selection of the Board of the service provider:

The Panchayat Raj Institution is the Community Service Provider which has a Council that is . The Panchayat Council is elected as per the TN Panchayat Raj Act (The TN Panchayats Act 1994 which form part of the 73<sup>rd</sup> /74<sup>th</sup> amendment to the Indian constitution) in the State-wide general elections held once in five years. By rule, adequate representation of the socially and economically vulnerable, and women are ensured.



There is a Village Water Supply and Sanitation Committee also established 2004-5, under the TNRWSSP to administer the Water Supply in the Panchayat. Here, the VWSC functions as a subcommittee of the PRI with the VPP as Chairperson and the Panchayat Secretary as its Secretary. The Treasurer is a Women Self Help Group representative. Other three of the 16 members are Ward Members representing each area within the VP. The composition of the VWSC is as follows:

**Information sharing and accountability mechanisms:** All the issues regarding water supply, particularly related to distribution within the VP, are presented before the *Gramasabha*, (the public forum) to inform, discuss and arrive at decisions. Provision of HSCs, extension of pipeline, water tariff etc are the main issues discussed. Further, the income and expenditure also are discussed. The VWSC also meet on the same day before the *Gramasabha*. The issues discussed are recorded in the minute's books of respective meeting.

They maintain the records such as

- (i) register of HSC, in which an entry of the household is made when they submit the application and register by paying the amount for 'deposit',

- (ii) water tariff demand, prepared once every year, along with the overdue if any
- (iii) tariff receipt, issued on receipt of the tariff to the household and a counterfoil is kept, and a corresponding note is made in the register
- (iv) bank accounts operated by the VWSC, one for deposit amount and the other for water tariff collection. The amount is deposited within a day or two of the collection and the accounts are maintained up to date.
- (v) file for complaints and redresses, this file starts with the complaint given in the prescribed format by the household or the public with regard to any problems in the drinking water supply system, and the work carried out in this regard, expenditure, bills of expenditure, etc
- (vi) ledger for all including drinking water supply

**Cash reserves:** The PRI manages petty cash reserves besides their cash in bank accounts. The cash at hand for the PRI comes the grant from Central Government provides the PRI for any repair and maintenance of the water supply system operation. Besides, they raise income from their various sources, viz; tax for commercial establishments, lease amount for public spaces, auction amount from wood/trees etc.

**Book keeping:** The CSP maintains all the required records for finance and administration like: minutes book, tax demand note, tax receipts, water household connection register, water tariff demand note, water tariff receipt book, etc. These records are up-to-date. However, certain information is filed and maintained. They include the day to day expenditures for repair and maintenance of water service delivery, and street lighting. They had other information also like the water distribution plan, building plans, estimate for each work etc. However, most of the information is filed in separate files and they make it available on request, though not available as a ready-to-refer form.

The Income and expenditure of the Panchayat is audited by the Government Local Fund Audit Department. Similarly, they maintain records for water security deposit, tariff collection, maintenance expenditure etc. The income and expenditure of the PRI in general and for the VWSC is presented at the Gramasabha to get approval from the villagers; but the income and expenditure of the VWSC is not audited by independent auditor / government.

**Technical folders and registry of operational information:** They have provided a photocopy of a map which shows the details of design/map of the system. But they do not have operational guidelines. They were given a copy of the DPR prepared for the schemes under the TNRWSSP. They do many works on their own at the distribution system, as the people involved are experienced in the same village, they are familiar with it. However, when a new set of people have to take charge, there is no material to guide them. The PRI in Kathirampatti has the Registry of users, records of break-downs and major maintenance works, and stock register. Of these, the first two are up-to-date.

**Water metering:** The water supply to the users is not metered. The supply is only for two hours maximum a day and the VPP feels that it is not fair to meter the water usage and charge. He also expressed his view that if they can increase the supply to 24X7, it is possible to fix meter and measure water consumption by households. Differential tariff can be fixed if there is supply throughout the day. However, the water availed by the Panchayat from the CWSS is charged at the rate of INR 3 per m<sup>3</sup>. The PRI has to pay to TWAD this amount and this is met from the Plan assistance received from the Central Government Grant.

**Waters security measures:** There is no Water Security Plan for the PRI as such. However, the PRI is part of the State and Central Government Programmes that ensure water security. Thus, the CSP has taken many measures to ensure water security. Three check-dams in a stream, use of alternate source from a river based CWSS, regulated supply, networked delivery system for the entire panchayat, use of automated power switch for the motor pumps (not working at present), and harvesting the over flowed excess water from the OHT to the wells are the measures observed.

**Water quality management:** With regard to water quality management it is part of the National and State level measures. However, there is no special programme or specific plan at the PRI level for quality management of the drinking water. Cleaning of OHT twice a month (as directed by ESE-TWAD RWS) and periodical chlorination are the quality management practices adopted here. The ESE (TWAD RWS under NRDWP) periodically check the quality. The PRI has been given a water testing kit by the TWAD RWS and it is used once a while, but not regularly. The Public Health Department test the water quality seasonally. Majority of the sources being deep tube wells, the PRI as well as the community perceive that the water is safe to drink and no need for any more purification. Many of the households met reported that they try not to use the water collected soon after the chlorination, as they did not like the water smell.

Water samples collected from the source and from the distribution points were tested using H<sub>2</sub>S vials during the field survey in October 2014 and the results showed that there is no biological contamination at source in the water distributed. Two samples from each OHT; one at head and another at tail end were taken for the test.

Under the Safe Water Campaign of the Government periodical quality test using the samples collected from the village are conducted and the results of last test conducted during August 2014 indicated absence of chemical or biological contamination and proved the quality of water to be potable and safe. As long as they don't find any problem there is no feedback or debriefing to the PRI, however, if there is a problem it is informed to them soon according to the ESE.



**Table 9 - QIS Indicators for CSP Best Practice 1\_Kathirampatti**

Indicator	Score	Explanation
1.3 Selection of the Board of the service provider	100	The Panchayat Raj Institution is the CSP. There is a Village Water Supply and Sanitation Committee also established 2004-5, under the TNRWSP, and this functions as a subcommittee of the PRI with the VPP as Chairperson and the Panchayat Secretary. There are other nominated members also among the 12 members of the VWSC
1.4 Information sharing and accountability mechanisms	100	CSP uses the Gramasabha, (the public forum) to inform, discuss and arrive at decisions. They maintain the required records such as register of HSC with their deposit, water tariff demand, tariff receipt, bank account etc and has financial transparency too.
2.2 Cash reserves	100	The PRI manages petty cash reserves and maintain bank accounts. The accounts of HSC deposits and water tariffs are maintained in the name of VWSC.
2.3 Book keeping	100	The CSP maintains all the required records for finance and administration like: Tax demand note, tax receipts, water deposit note, water tariff demand note, water tariff receipt book, etc. The Income and expenditure of the Panchayat is audited by the Government. Similalry, they maintain records for water security deposit, tariff collection, maintenance expenditure etc. The income and expenditure of the PRI in general and for the VWSC is presented at the Gramasabha to get approval from the villagers; but the income and expenditure of the VWSC is not audited by independent auditor / government
3.1 Technical folder	No data	A copy of the project document prepared for the TNRWSSP is available for the systems established under the TNRWSSP. They have provided a photocopy of a map which shows the details of design/map of the system. But not sure if they have an operational guidelines. Couldn't find any separate folder. They must have some documents, as they have done many work on their at the distribution system.
3.2 Registry of operational information	75	CSP has the Registry of users, records of break-downs and major maintenance works, and stock register. Of these, the first two are up-to-date.
3.4 Water metering	0	No metering of water to the users. The reason according to the PRI is that they are provided only with one to two hours of water supply. If they can increase the supply time, there is possibility for fixing water meters.
3.5 Waters security measures	75	Water Security Plan is not available, but the CSP has taken many measures to ensure water security. Three check-dams in a stream, use of alternate source from a river based CWSS, regulated supply, networked delivery system for the entire panchayat, use of automated power switch for the motor pumps (not working at present), and harvesting the excess water to wells are the measures observed.
3.6 Water quality management	100	There is no plan as such for the CSP. But, cleaning of OHT twice a month (as directed by TWAD RWS), chlorination only periodical, the ESE (under NRDWP) periodically check the quality. The PRI has been given a water testing kit by the TWAD RWS and it is used once a while, not regularly. The PHED test the water quality seasonally.

## 3.6 Community service provider participation assessment

The degree of community participation in Community Service Provision is assessed here. Building on the idea of a participation ladder (Arnstein, 1968; Pretty, 1994; Adnan et al., 1992), the work will assess the level of community participation at each stage of the service delivery cycle:

- Capital investment (implementation)
- Service delivery – administration, management and operation and maintenance
- Asset renewal
- Service enhancement or expansion

**Capital Investment (implementation):** Interaction participation in Kathirampatti. The community in partnership with the service provider and/or support entities engage in a joint-analysis of implementation options before developing a plan.

The Kathirampatti PRI President based on community's responses / demand initiates the plan for further schemes. This is discussed with the TWAD RWS or BDO, RD&PR. Of late as there are no schemes with individual power pumps from the TWAD RWS due to the shift in focus of TWAD, if they need an additional facility that has to be done with the help of RD &PR Dept only. Therefore the Panchayat Union Engineer or the Block Development officer is approached when they require some kind of capital investment. The request is further discussed and developed in to a plan. Then, with the participation of community and the PRI it is implemented. For five schemes implemented during 2004-06, the community and TWAD RWS worked together, discussing the schemes as well as the implementation plan. These schemes were implemented under the TNRWSSP and there was a mandate to mobilise 10% contribution to the capital cost from the community. This amount was raised from each member (household) of the community paying their due amount. Normally, in such cases in rural areas, the required contribution will be raised by the President from other sources and paid directly for speedy implementation of schemes. However, in the absence of such mandate the contribution is not raised for the recent schemes. Asked if they will be willing to do so, the President replied that if it is mandatory to do so the community will come forward to pay. This issue was raised in the discussion with the community who corroborated the willingness of the community to pay towards capital cost.

The participation in *Pichandampalyam* can be termed as 'Participation by consultation' where the Community's requirement is recognised but they do not have say in further implementation. For example, there is demand for more drinking water from the community and PRI President agrees to address the issue. But the community is not involved in discussing the plan or implementation and they would know about the facility/ construction only once it is in place.

**Service delivery:** The community of Kathirampatti takes responsibility for administration, management and operation and maintenance, either directly or by outsourcing these functions to external entities. For the day to day operation, the PRI pays the salary of the Pump Operators, numbering 15, and a part of the electricity bills for water supply from the water tariff collected from the households. For other technical help, technical persons are outsourced. The PRI has made

arrangements with local plumbers to address any breakdown in the service delivery system immediately. The PRI ensures that the service delivery is not disturbed even if there is a failure of any one of the 20 and more pumping motors in the system by interlinking the distribution system between one village and another. Any failures in pumping the water, including the motor and pipeline, are monitored by the Pump Operators on day to day basis. The user community also responds immediately if there is breakdown or burst in the water supply delivery lines. They have once formed user group and fixed user charges for the public stand-posts also in selected habitations. Now all the households have connections, that arrangement is no longer in place. They have not made that kind of arrangement in other villages / habitations. At the household level it is the responsibility of the end user to maintain the system properly, without any leakage or break.

The PRI and VWSC members take significant role in monitoring any misuse or water theft anywhere within the Panchayat. There are cases of disconnection of HSC of those who misused it to tap more water using power pumps, according to the Panchayat Secretary.

In *Pichandampalayam*, it is only a 'Passive Participation' of the community in the service delivery of the water supply. Here the community doesn't seem to be much concerned about the functioning of the system. The PRI ensures that the water is supplied during a fixed time every day. The households with connections don't bother to pay their dues and the PRI have not taken any effort to bring in the community participation, at least in terms of paying the water tariff. Certain measurers like *ferule* for flow control are there, but any community effort in monitoring the water service delivery is not in place. As long as there is no problem in the availability of water, except when there is a failure and disruption in water supply, the community also remain silent.

**Asset Renewal:** For asset renewal in the drinking water system the community practices self-supply and invests in asset renewal, or identifies need and seeks external support for asset renewal.

The PRI along with the community identifies the need and the PRI seeks support from external sources primarily from the Government through the Block Development Office. The request is further analysed by the Panchayat Union Engineer who forward the same approval. Expecting approval, the PRI will carry out the work and get the expenditures reimbursed later. This procedure is the same for all the PRIs.

**Service enhancement or expansion:** The community brings the need for service expansion or enhancement to the attention of PRI and the PRI seeks support from external sources mainly the Government through the Block Development Office. Then the Panchayat Union Engineer takes it up for further processing. The PRI will complete the work and the expenditures are reimbursed from the BDO from the Central Government grants they receive.

As an example of asset renewal and service enhancement in Kathirampatti VP, the total capital expenditure for the last financial year (April1, 2013-March 31, 2014) is INR 1581914. This includes the different costs as given below and while taking in to consideration the designed life span of the

infrastructure (30 years for the OHT and 15 years for the borewell, pump, pipeline etc) the cost is prorated for the year 2013-14 as INR 95679.

**Table 10 Capital Maintenance Expenditure incurred during 2013-14**

Item	Actual Expenditure	Expenditure prorated for an year
New Over Head Tank construction:	INR 293,451	INR 9,782
Digging New Borewell:	INR 396,732	INR 26,449
Electrical fittings for New Borewell:	INR 122,022	INR 8,135
Pipeline for new borewell:	INR 419,762	INR 27,984
Pipeline Extension:	INR 349,947	INR 23,330
	INR 1581,914	INR 95,679

### 3.7 Supplementary Level of Analysis

There are few other factors worth considering while analysing the better performance of Kathirampatti VP. They are: (i) the fact that Kathirampatti Panchayat was part of the Pilot project in the state water and sanitation sector, (ii) well motivated leadership, and (iii) better standard of living/purchasing power of the households, all as explained further below.

The Kathirampatti Panchayat was one of the 145 villages where the Government of Tamil Nadu implemented a pilot project, Tamil Nadu Rural Water Supply and Sanitation Sector Programme (TNRWSSP) during 2004-06. One of the main focuses of the Project was a shift in the role of officials/engineers working with the Government from 'provider' to 'facilitator'. In order to affect the shift, the engineers were trained through a Change Management Programme. The Engineers, motivated by the change management process through intensive workshops facilitated by UNICEF supported consultants, had a dramatic effect on their attitudes and behaviour including improved community interactions, which in turn impacted on the performance of rural water supply service delivery on the ground (Pragmatix and ISD, 2007; James AJ, 2011).

The efficient leadership of the Panchayat President, who has been elected to the position for the third consecutive term due to his service to the community, plays a major role in searching for better solutions in providing basic services to the community. The President, when he got the opportunity of the TNRWSP Project, made effective use of the Programme. Along with the Engineer, he has taken initiatives in mobilising the community and educating them about the value of water. He was able to provide regular and reliable supply of drinking water.

Regular and reliable supply of water motivated the households to come forward to pay their dues. The majority of the households depend on jobs outside the village for their survival with the children going for school or college education. So it has become imperative for them to leave the house early

in the morning. Waiting at public stand-posts to collect water would cost them heavily at their work and consequently the wages they get. Therefore, the community is ready to take a household connection and when they are told it is on a cost basis, they are ready to bear the cost. The purchasing power of the people has increased or they value high for time as many of them have to go out and work.

**கதிரம்பட்டி கிராமக் குடிநீர் மற்றும் சுகாதாரகுழு கூட்ட அழைப்புதல்**

**அன்புடைமீர்**

வருகின்ற 06.11.2005 ஆம் தேதி ஞாயிற்றுக்கிழமை காலை 10.00 மணியளவில் ஊராட்சி மன்றத்தலைவர் தலைமையில் கதிரம்பட்டி கிராமக் குடிநீர் மற்றும் சுகாதார குழுக்கூட்டம் கதிரம்பட்டி ஊராட்சி ஒன்றிய துவக்கப்பள்ளி வளாகத்தில் நடைபெற உள்ளது. இக்கூட்டத்தில் கீழ்க்கண்ட பொருள்கள் சம்பந்தமாக கலந்து ஆலோசிக்கப்படும். எனவே கிராமக் குடிநீர் மற்றும் சுகாதார குழு உறுப்பினர்கள், மற்றும் உடயோகிப்பாளர் குழு உறுப்பினர்கள், அனைத்து மகளிர் சுயஉதவிக்குழுக்கள், அனைத்து ஊராட்சி மன்ற உறுப்பினர்கள், ஆடவர் சுய உதவிக்குழு உறுப்பினர்கள் மற்றும் பொது மக்களும் கலந்து கொள்ளும்படி அன்புடன் கேட்டுக்கொள்கிறேன்.

**பொருள் :1**

கதிரம்பட்டி கிராமக் குடிநீர் மற்றும் சுகாதார குழு (V.W.S.C) திட்டத்தின் செயல் முறைகள் விளக்க கூட்டத்தில் வைத்து ஒப்புதல் பெறுதல்.

**தலைவர்**  
கதிரம்பட்டி கிராமக் குடிநீர்  
சுகாதாரக் குழு



Community Mobilisation Programmes conducted in 2005 by the AE- TWAD

**Table 11: Community Participation CSP Best Practice**

Stage of delivery cycle	Kathirampatti		Pichandampalayam	
	Score	Explanation	Score	Explanation
<b>Capital Investment (implementation)</b>	2. Interaction participation	For the five schemes implemented, the community and TWAD RWS worked together, discussed the schemes and the implementation plan. The community contribution also was discussed with the larger community in the village. For the latest schemes also the CSP discuss with the community.	4. Participation by consultation	Community's requirement is taken care but they do not have say in further implementation. For example, there is demand for more drinking water from the community and PRI President agrees to address the issue. But the community is not involved in discussing about the plan or implementation and they would know about the facility/ construction only once it is in place.
<b>Service delivery</b>	1. Self-mobilisation	The community represented by the PRI President is taking responsibility for the service delivery, its operation and maintenance directly with the help of technical persons whenever necessary	5. Passive participation	Community members are aware of how the administration, management and operation is carried out but do not take any interest to involve themselves. And the PRI doesn't also take an effort to involve them
<b>Asset Renewal</b>	1. Self-mobilisation	The community, represented here by the PRI identifies the need and seeks support from external sources mainly the Govt. Then the UE/PO takes it up for further approval	5. Passive participation	Only the PRI takes care of this issue and the community members are sometimes informed about the renewal plan, but not as a practice.
<b>Service enhancement or expansion</b>	1. Self-mobilisation	The community, represented here by the PRI identifies the need and seeks support from external sources mainly the Govt. Then the UE/PO takes it up for further approval.	5. Passive participation	The community members are informed about the enhancement or expansion plan .

## 4 Household service levels

**Table 12 Selected characteristics for the four adjoining Village Panchayat community service providers**

Selected indicators	Kathirampatti	Koorapalayam	Mettunasuvam palayam	Pichandam palyam
No of habitations	6	7	20	10
Households	1,050	900	4,800	2,050
Population	3,600	2,700	17,210	5,000
PWS Coverage	100	100	100	100
HHs with PWS as the only source	84%	40%	10%	90%
HHs with PWS as the primary source for drinking water	90%	75%	90%	90%
Duration of daily water supply	2 hrs	5 hrs	14 hrs	2 hrs
HSCs	80%	29%	54%	26%
Monthly tariff (INR)	50	30	50	30-50
Tariff collection	90%	50%	80%	50%
Service Provider	Village Panchayat + VWSC	Village Panchayat	Village Panchayat	Village Panchayat

Pilot visits and analysis based on key parameters undertook as part of the selection process helped further narrow down the choice to three habitations in Kathirampatti in Erode District for the detailed case study. A ‘control rural service provider’ was also selected in Pichandapalyam Panchayat.

Networking the distribution lines effectively is one step that helps in ensuring regular and reliable drinking water supply to the community. None of the habitations is affected even if there is system breakdown. In such a case, alternate arrangements for supply are made whilst also enabling speedy and smooth restoration of the breakdowns within 24 hours.

**Table 13 Coverage with household connections**

Village Panchayat	Habitations	Total HHs	Household Service Connections	%
Kathirampatti	Kathirampatti	225	176	78
	Nanjanapuram	177	177	100
	Manalmedu	126	126	100
	Pavalthampalayam	355	263	74
	Chinnameedu	120	50	42
	Kathirampatti AD Colony	47	42	89
	Total	1050	834	79
Pichandampalayam	Vannankattuvalasu	194	70	36
	Total	2050	535	26

The Scheduled Caste colony where a scheme was implemented last year also has 100% household connections and according to the President, the community demanded for household connections citing their readiness to avail the service and pay.

Those households who would like to avail the household connection facility are required to give an application and deposit INR 1,000. One precondition is that the household shouldn't have any

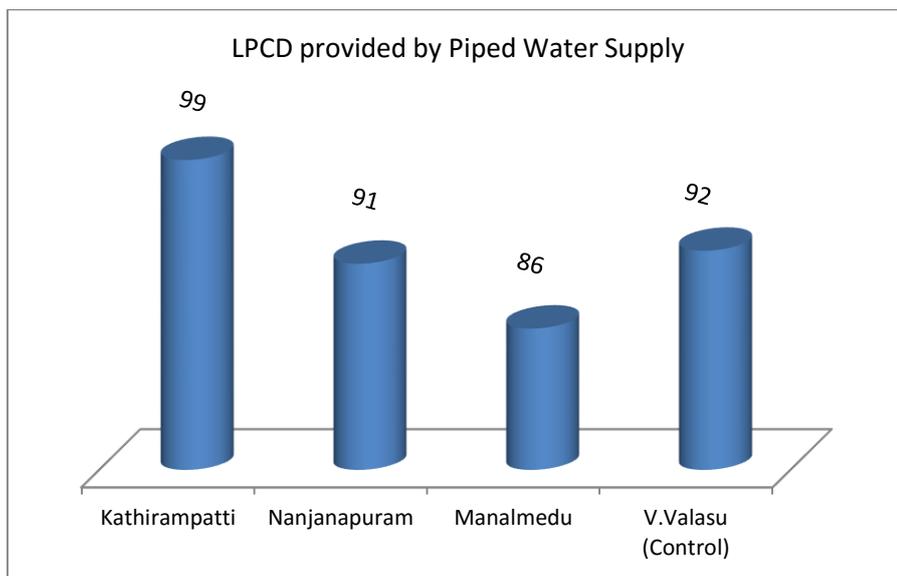
pending tax bills with the Panchayat. The deposit is refundable if they desire to disconnect their water connection. They also have to agree to pay the monthly tariff of INR 50. All applications are placed in the *Gramasabha* and VWSC meeting for their approval, after which the connections are provided. The PRI makes the arrangement to provide the water connection within the gate or compound of the house, usually within three meters of the house. There is a regulation for the height of the tap stand, and diameter of the pipe used and the tap connection according to the location. Height of the tap stand varies from 0.5 to 0.75m depending on the land level as well as the distance from the overhead water tank (the resulting pressure losses therefore affecting the flow of water from the tap). The diameter of the pipe used for the tap has to be ½ inch to ¾ inch. Every connection has *ferule* to regulate the flow pressure. The household is not allowed to draw the pipe line inside the house and the water has to be collected using pots to fill up bigger containers where required. However, at a few households, underground storage tanks have been constructed which collect water whenever there is supply; tank size varies from 1,000 to 10,000 litres.

The household connections are under strict vigilance for any misuse. Members of the VWSC/PRI pay special attention in monitoring them. The team comprising Pump Operators and the Panchayat Secretary, and sometimes joined by the President, undertake surprise checks during the supply hours. They had some time ago found few households sucking the water directly from the supply pipe using motorised pumps and took immediate action by removing them and disconnecting the connection. Measures such as switching off the power supply during the water distribution period to avoid misuse have been employed previously.

**Table 14 Households by water supply characteristics**

Characteristics	Kathirampatti	Nanjana puram	Manalmedu	Vannankattuval asu (Control)
%HHs with Piped Water Supply as main source	83	100	100	90
%HHs with Household Service Connections	80	100	100	30
Quantity (lpcd) provided by Piped Water Supply	99	91	86	92

The service levels assessed using the research tool indicates that in terms of quantity all the assessed villages have 'high or improved' levels with more than 80 litres per person per day.



**Figure 5 Water quantity (lpcd) provided by Piped Water Supply**

The supply time is regulated and it varies from habitation to habitation; from 45 minutes to 90 minutes, and starts at around 6 AM. The majority of the households collect water using pots to fill up their larger storage containers. It was observed during the field visits that during the time of supply, households are bustling with day-to-day activities like filling up the containers, washing clothes, bathing etc. So that, they will fulfil most of their consumption when there is supply and save sufficient for the rest of the day that would normally be much less.

The kind of regulation and monitoring the PRI has adopted helped them in maintaining relatively uniform supply from the head to the tail end in the distribution line in the villages, thus ensuring equity in the supply. The tap-stand observations made by the field team showed that the time taken to fill up an 18 litre pot varied from 50 seconds in one habitation to 175 seconds in another. However, the difference between the head and tail end water points were hardly to 3 to 10 seconds in the three habitations of Kathirampatti.



**Table 15 Time taken to fill up one pot of water**

Time in seconds to fill up 18 litre pot at	Kathirampatti	Nanjanapuram	Manalmedu	Vannankattuvalu
Head end	175	86	50	108
Tail end	172	76	43	84

**In the focus group discussions people said ....:**

*We plan all our work according to the timing of water supply...*

*We get ready by 5.30 – 6 in the early morning with all empty vessels to collect the water... and within ¼ hour all the required water will be collected...*

*If there is some balance of yesterday's water, use that for washing clothes, bathing etc. and collect fresh water for the day's need...*

*There is no question of wasting the water.. we know the value of it.. it is hard to get... and for us the Panchayat is providing it promptly.... we never waste it...*

*The morning time will be just right (sufficient) for collecting water, doing the household chores, and sending the children to school before we leave for work at 8 o'clock ... one day if there is delay in water in the pipe everything will be in problem..... but that happens only very rarely...*

*Sometimes they clean the tank and put bleaching powder.. we don't take the water that is coming next day for drinking as we don't like the smell*

*Even if there is some problem like broken pipes etc, .... they repair that on the same day and if it is a pump repair no problem for water for us- ... in fact we never know of such problems as they(Panchayat Pump Operators) divert water from the nearby tank....*

*600 rupees for a year is not a problem for us to pay for the water because we are ensured of regular water every day in time...*

*Pipeline damage – first we complain to the pumpoperator of our area, he will immediately respond, and we make the complaints in paper at the Panchayat office and the get the repair done.. normally on the same day*

*Had they given water for little longer time it was better...*

*Water from the borewell sometimes tasteless, so we have asked for river water... President agreed that we will get it soon...*

Besides the households, there are two Government Schools, three *balwadi/anganwadi* (pre-school child care centres), temples, two sanitary complexes including the Integrated Women and Children Sanitary Complex, around 75 shops and commercial establishments also availing the water supply from the Panchayat.

In the *Pichandampalayam Panchayat* in which the *Vannankattuvalasu* forms a habitation, there is a coverage of 80% for potable piped drinking water supply service. The water collected at the public stand-posts is free of charge. There are 535 household connections serving around 26% of the population. In *Vannankattuvalasu*, 36% of the households have connections. Those who take service connections have to pay INR 1,000 as a refundable deposit.

## Community Water <sup>plus</sup>

In Kathirampatti, the socially and economically backward class is 100 percent covered under the piped water supply system and all have individual household connections for collecting water. The community service provider has no different level of service for this segment; they have to pay the deposit, and pay the full water tariff, thus contributing to the community management of the services. According to the VP President, the households in the Kathirampatti AD Colony are demanding household connections, expressing their willingness to pay the one time deposit and the recurring water tariff.

The equity in service was also apparent from the observation of time taken to fill-up one pot along the distribution line. The households at tail end of the distribution line were able to collect their required water with the same time, or even less, as the other households at the head end.



**Table 16: Percentage of Households reported in the High and Improved Service Levels for the four villages**

Parameters	Quantity		Accessibility		Water quality: perception		Continuity		Reliability	
	Summer	Non-summer	Summer	Non-summer	Summer	Non-summer	Summer	Non-summer	Summer	Non-summer
Villages										
Kathirampatti	97	97	13	10	97	97	0	0	30	30
Nanjanapuram	70	87	20	27	53	60	0	0	50	50
Manalmedu	97	100	40	10	87	50	0	0	33	33
Vannankattuvalasu	86	86	13	13	90	90	0	0	50	50

For a household with four persons, the water collected is about 360 litres. With a pot of 18 litres it is 20 pots. The filling up time for a pot is about 90 seconds. The time for filling up the pots is about 30 minutes and if the carrying time is added it must be around 40 minutes, given the distance of about 3metres to the HSC-stand post. For a rural situation this is one of the most accessible services, yet if the classification given in this methodology is followed it is of 'sub-standard' accessibility. The classification may be rechecked.

## Water source resilience

There are 20 deep tube wells with overhead tanks for piped water supply to cover all the habitations of the Panchayat in Kathirampatti. There are also 14 handpumps including one fixed in 1985. All are in working condition but are not used by the community due to the availability of piped water supply. In a few of the hand pumps, water quality also has deteriorated. Given below are the present structures available for Water Supply Service in the Panchayats. In *Pichandampalayam* also a few hand pumps are used at present.

**Table 17 Water Supply infrastructure available**

Infrastructure	Kathirampatti	<i>Pichandampalayam</i>
Deep Bore-well with motor	23	32
OHTs for PWS with Deep Bore-well with motor	20	18
Bore-well with hand pump	14	17
Ground level service reservoirs	2	2
Open Well	5	9

For all the habitations surveyed under this study, the main source of water is the Piped Water Supply provided by the PRI. In Kathirampatti village, one in six households used their own source such as open wells or tube wells as the main source, the piped supply being used as supplementary source. One reason for this is that Kathirampatti is one of the original villages where many households had their own source of water even before the piped water supply came in to effect. A tenth of the households used supplementary sources like own open wells, farm wells or own bore wells with hand pumps. The households reported that they use the piped water only for drinking.

The deteriorating water situation in this area is a threat, the water table dropping from 30 metres to 300 metres deep. The deep tube wells dug for the purpose of drinking water, as well as irrigation and commercial uses, has resulted in the deepening of the water table. Added to this over-exploitation of the groundwater is the lack of any measures to conserve or save water, such as rain water harvesting, groundwater recharge, adoption of better irrigation management practices, controlling water pollution etc, all of which make things worse.

The infrastructure snapshot for the piped water supply of Kathirampatti shows that all the 19 Overhead tanks, pumping stations, and the distribution lines are functional and monitored for any damage. If found any problem, it is replaced or rectified immediately. All the handpumps numbering 14 are also functional but not used due to the availability of PWS besides the reason of deteriorating quality of water in these tube wells.

**Table 18 Infrastructure status QIS tables CSP Best Practice 1**

Indicator	Score	Explanation
Infrastructure status snapshot scoring (piped water supply)	100	The system is working very well, all the components are functional, some motorised pumps were replaced due to decline in the level of water as well as damage to the pump sets; for the 19 OHTs
Infrastructure status snapshot scoring (handpumps)	75	All the handpumps, except two, are functioning and in good condition.

## 5 Enabling Support Environment Costing

### 5.1 Capital expenditure, including software capital expenditure

The capital expenditure incurred for the Piped Water Supply System in Kathirampatti is given below in Table 19

**Table 19: CapEx and CapEx Software**

	Amount INR	Explanation
Capital Expenditure- Hardware-TWAD implemented	76,49,735 Original price  86,40,494 2014 Price	This CapEx is for all the schemes implemented by TWAD from the beginning of PWS obtained from NRDWP MIS <a href="http://indiawater.gov.in/imisreports/Reports/BasicInformation/rpt_RWS_AbstractData_List.aspx?Rep=0&amp;Ty=P&amp;R P=Y&amp;APP=IMIS">http://indiawater.gov.in/imisreports/Reports/BasicInformation/rpt_RWS_AbstractData_List.aspx?Rep=0&amp;Ty=P&amp;R P=Y&amp;APP=IMIS</a> . The schemes implemented from Panchayat Fund are not listed there and there are three schemes implemented from Panchayat fund- Approximately around 15 lakh INR
Capital Expenditure- Hardware- Panchayat Union Fund	15,00,000	
Capital Expenditure - Total (TWAD+Panchayat)	91,49,735 Original price  1,01,40,494 2014 Price	
Capital Expenditure- Software	22,000 Original Price  49,852 2014 Price	This is during the TNRWSSP 2004-05, the ESE TWAD conducted various programmes for community mobilisation, that has raised the community's awareness and made them own the schemes. Further, the Panchayat functionaries were given training with special reference to O&M of those schemes implemented under the TNRWSSP. This has helped in making the community pay for capital contribution and further in paying for the O&M through tariff. The community started paying tariff from those schemes and now for all the schemes implemented after that paying tariff has become a normal practice in Kathirampatti unlike in other VPs

## 5.2 Recurrent costs

**Table 20 Operating Expenditure for Kathirampatti Piped Water Supply for the two support entities**

	BDO Village Panchayat	AEE, TWAD-CWSS (Including Rural and Urban)	Explanation
Population Served	42,000	325,000	
Number of Service Providers supported	6	76	
Annual Operational Expenditure INR	1,800,000	1,800,000	Based on approximate values for salary and other expenses: Assumption that BDO total monthly of 1.5 lkh INR, incl 60000 for BDO, 40000 for AE, 15000 for Overseer, 20000 for travel, 15000 for Admin Assistance, etc TWAD 150000 pm incl salary of AEE 60k, AE 50k, clerical, travel 20k
Annual Operational Expenditure Prorated for Water Supply INR	180,000	1,800,000	BDO spends 10% of the time for Water Supply TWAD AEE is dedicated to Water Supply
OpEX / Population Served INR	4.29	5.54	
OpEX / Service Providers Served INR	30,000	23,684	



**Table 21 Direct Support expenditure for Kathirampatti Piped Water Supply**

Directly accountable annual materials and supplies costs incurred VP level by CSP	Amount INR	Source	Explanation
<b>Labour</b>			
Scheme attendants	INR 2,02,800	VWSC Account	There are 15 Pump Operators and are collectively paid INR 16900 a month. Payment to them is made from the tariff collection amount maintained in the VWSC account by the Panchayat
Administrators	INR 12,000	Government Grant	The Panchayat Secretary is paid INR 10000/ a month and from the Government Grant. Of his time only a 10% is used for water supply related work and hence took only a tenth of his salary
<b>Community service provider annually incurred costs on supply</b>			
Fuel/Electricity charges	INR 11,43,064	Government grant	This amount of electricity charges is the sum of INR 2,99,969 paid from the Panchayat Fund maintained in First account (as per the guidelines to the PRI) and INR 8,43,095 from the grant given by the Government specifically meant for electricity and water bulk charges (2 <sup>nd</sup> Account as per the guidelines to the PR. This was the practice till last year 2013-14; this year onwards, a part of the electricity bill is paid from the VWSC account.
Materials and labour for cleaning	INR 72,400	Government grant (Account 1)	
Spares	INR 17,804	Government grant (Account 1)	
Purchase and/or delivery of bulk water	INR 84,000	Government grant (Account 2)	The price paid by the PRI is only INR 14,000/- @ INR 3/KL, a subsidised rate by the State Governemnt. However, the actual price is about INR 18/- per KL.
Contracted on-going maintenance fees	INR 1,65,067	Government grant (Account 1)	
Contracted repair or capital maintenance	INR 1,61,067	Government grant (Account 1)	
<b>Total</b>	INR 18,58,202		
<b>Recurrent cost per capita</b>	INR 465		

Source: Records of the VP

**Directly accountable annual materials and supplies costs incurred VP level by CSP:** According to the VP President, the VP/PRI face difficulties in its administration and performing their duties effectively.

Reason he cites is the ineffective Devolution of Funds, Functions and Functionaries to the rural local bodies under the Panchayat Raj Act. One way it is reflected is in how they spent the grants and how they account for the expenditures to the Government. The local bodies cannot divert funds to any other activities how-so-ever necessary the requirements are. In addition, he finds that the grant for various development / welfare programmes they receive from the State Government has also decreased and he attributes this to the increasing matching contribution the State Government has to make to the Central Government Programmes, such as the Rural Employment Guarantee Scheme MGNREGA. Given the fact that the Local Fund Auditing Department has to audit and approve their account, VP has to necessarily adhere to the general guidelines given at the State level in managing their funds. In effect, the expenditures audited under the specified head may not be the actual amount spent under that head, thus presenting a distortion. This indicates that the actual expenditure for the water supply system is different, presumably lower than what has been presented as per the records.

**Table 22 Summary Cost Table (INR)**

Tamil Nadu Kathirampatti Summary Cost Table - calculated as the average cost/person, that is averaging across the 3 'successful' villages

Source of funds	Use of funds - implementation			Use of funds - annual recurrent					RECURRENT EXPENDITURE TOTAL
	CapEx hardware	CapEx software	CAPEX TOTAL	OpEx labour & materials	OpEx power	OpEx bulk water	OpEx enabling support	CapManEx	
Community/consumers	INR 223	-	INR 223	INR 52	INR 64	INR 4	-	-	INR 119
Local self-government	-	-	-	INR 25	-	-	-	-	INR 25
State government entity	-	-	-	-	-	-	-	-	-
State water supply agency	INR 2,007	INR 13	INR 2,020	INR 15	-	-	INR 43	INR 387	INR 445
National Government	-	-	-	INR 26	INR 231	INR 18	-	INR 42	INR 317
NGO national & international	-	-	-	-	-	-	-	-	-
International donor	-	-	-	-	-	-	-	-	-
TOTALS	INR 2,230	INR 13	INR 2,243	INR 119	INR 295	INR 22	INR 43	INR 429	INR 907
Median of 20 case studies			INR 3,231						INR 207
'Plus' %age	90%	100%	90%	56%	78%	83%	100%	100%	87%
Median of 20 case studies			95%						57%

**Table 23 Summary Cost Table (PPP USD\$)**

Tamil Nadu Kathirampatti Summary Cost Table - calculated as the average cost/person, that is averaging across the 3 'successful' villages

Source of funds	Use of funds - implementation			Use of funds - annual recurrent					RECURRENT EXPENDITURE TOTAL
	CapEx hardware	CapEx software	CAPEX TOTAL	OpEx labour & materials	OpEx power	OpEx bulk water	OpEx enabling support	CapManEx	
Community/consumers	\$ 12.71	-	\$ 12.71	\$ 2.98	\$ 3.62	\$ 0.21	-	-	\$ 6.81
Local self-government	-	-	-	\$ 1.41	-	-	-	-	\$ 1.41
State government entity	-	-	-	-	-	-	-	-	-
State water supply agency	\$ 114.39	\$ 0.73	\$ 115.12	\$ 0.87	-	-	\$ 2.43	\$ 22.06	\$ 25.36
National Government	-	-	-	\$ 1.50	\$ 13.19	\$ 1.03	-	\$ 2.37	\$ 18.10
NGO national & international	-	-	-	-	-	-	-	-	-
International donor	-	-	-	-	-	-	-	-	-
TOTALS	\$ 127.10	\$ 0.73	\$ 127.83	\$ 6.77	\$ 16.81	\$ 1.24	\$ 2.43	\$ 24.43	\$ 51.68
Median of 20 case studies			\$ 184.16						\$ 11.78
'Plus' %age	90%	100%	90%	56%	78%	83%	100%	100%	87%
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

The Kathirampatti Village Panchayat rural water supply system is a typical case of Tamil Nadu Rural Water Supply and the Rural Local Body's /PRI's successful management of drinking water supply with high level of participation from its residents. The piped water supply system evolved over a period of three decades fully covers all the villages in the Panchayat today. The transition from surface water based drinking water sources to piped water supply made available at the doorstep is indeed perceived as a sign of development by the Panchayat and the community. However, dependence on ground water and its over exploitation are apparently realised as threat for the community's water security by Panchayat. Now, they have started using multiple sources; the Panchayat has started tapping water from the Combined Water Supply Scheme to ensure regular and reliable supply of sufficient potable water to the community in the long run.

The major points emerging from this study are as given below:

### ESE Services:

The Block Development Office of the Rural Development and Panchayat Raj Department and the office of the Assistant Executive Engineer of the TWAD Board (Tamil Nadu Water and Drainage Board) are the two different entities of the State Government providing support for Panchayat in the drinking water service. The TWAD Board with a supply driven approach ensures that the potable water from the Combined Water Supply Schemes reaches a tapping point at the Panchayat by taking care of all aspects such as finance, infrastructure design & implementation, and quality monitoring. The Panchayat pay for the water drawn from the CWSS at the rate of INR 3/m<sup>3</sup>, and beyond the tapping point, it is the Panchayat's responsibility to operate and maintain the distribution system. The Panchayat has only one distribution system and that combines the water from CWSS as well as from IPPs.

The BDO of RD&PR Department provide a mixed model of support, holds more responsibility in capital maintenance, major repair, etc. However, their engagement is limited to facilitating the administrative sanctions for the work, and for disbursing the grant to meet the operation and maintenance expenditures than providing any technical assistance as they are overloaded with multiple responsibilities.

The Panchayat engages a Plumber to work exclusively for them so that any complaints can be addressed immediately.

### Household Service Level:

There is no 24X7 water supply; however the Panchayat recorded a LPCD of 86 to 99 litres in its different villages. The duration of supply varies from 45 minutes to 2 hours in the villages.

With the gradual increase over the past seven years in the number household connections and willingness to pay the user charges for the household connections, the Panchayat record 80% coverage in household connections and 90% in tariff collection. Two villages have achieved 100% household service connections. The Panchayat President has fixed a target of 100% household service connections and 100% tariff collection to achieve within two years for the entire Panchayat.

### Contextual factors:

Few other factors found to be influencing the performance of Kathirampatti VP are: (i) The fact that Kathirampatti Panchayat was part of the Pilot project in water and sanitation sector, the Tamil Nadu Rural Water Supply and Sanitation Programme (TNRWSSP), (ii) Efficient Leadership, and (iii) Better standard of living/purchasing power of the households.

Individual Power Pump schemes with deep tube wells as source are the major infrastructure for the Panchayat water supply. As the normal practice, the schemes on completion of construction phase were handed over to the Panchayat; exceptions in few cases where there were schemes implemented under the TNRWSSP a World Bank aided pilot project in which not only the community participation had a strong emphasis but also a shift in the water engineers' role from service 'provider' to 'facilitator' perspective was experimented. The software inputs at the planning and implementation stages of the schemes under the TNRWSSP have made perceptible change at the community level. Community ownership thus created sustained over time and perpetuated to other villages, under the efficient Panchayat leadership. In addition, the purchasing power of the community also plays a major role in encouraging the community in making their contribution and sustaining the good practices.

### Support environment

The community is successfully funding the direct operating expenses. However, the 'plus' element to recurrent expenditure from government agencies represents 87% of ongoing recurrent costs, primarily due to the delivery of bulk water sold on at a highly subsidised rate. With the ever-increasing challenge to groundwater resources, it is likely that the change from single village sources to multi-village combined sources will continue across India. To help communities understand the value of the water they are receiving it is recommended, at the least, that external suppliers of bulk water should explain to communities the actual cost of supplying that water, relative to the subsidised price being charged.

## References

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## Appendices

### Note A1. Note on Fund for the Village Panchayat

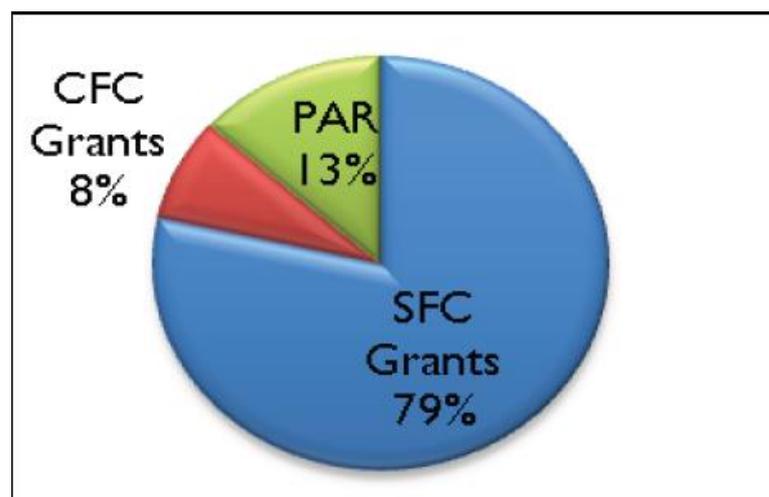
The grants channeled through the BDO include the Central Finance Commission Grant, State Finance Commission Grants and the Pooled Assigned Revenue<sup>iv</sup>.

As far as Tamil Nadu is concerned, the entire Central Finance Commission allocation is given to the Village Panchayats for maintenance of drinking water and sanitation.

State Finance Commission Grant (10% State's own tax revenue) from the State's tax revenue is shared between urban and rural local bodies in the ratio 48:58 percent. Since Village Panchayats are entrusted with most of the basic functions such as maintenance of village roads and streets, Provision of drinking water supply, street lights, etc., the allocation is shared in the ratio 60:32:8 among Village Panchayats, Panchayat Unions and District Panchayat. Grant to the Village Panchayats is released on a monthly basis. A floor amount of INR 2.50 lakh per Panchayat has been set apart to meet current consumption charges towards street lights and drinking water supply which is operated through a separate account by the VPs. The remaining amount is distributed to the Village Panchayats on the basis of population and 5% out of the above 60% is designated as infrastructure gap filling fund (TN State 12<sup>th</sup> Five year Plan Document, TWAD Policy Note 2014-15 GoTN).

Pooling of assigned revenues to local bodies such as Local Cess, Local Cess Surcharge, Stamp duty and Entertainment tax receipts (that were previously adjusted to the rural local bodies concerned at district level by the District Collectors) are now pooled at the State level and apportioned to the rural local bodies.

Diagram A1 Share of Grants to Rural Local Bodies



Source: TN State 12<sup>th</sup> Plan Document

Table A2: Safe Water Campaign Committee at Block level

Block Level Committee		
Name	Organization	Position
Block Development Officer	Rural Development	Block Chairman
Asst. Executive Engineer concerned RWS Division	TWAD Board	Convener
Additional BDO	Rural Development	Member
The NGOs working for WQM&S works in the District	TWAD Board appointed NGO	Member

Note A2 TNRWSSP

Public Disclosure Authorized

**PROJECT INFORMATION DOCUMENT (PID)  
CONCEPT STAGE**

Report No.: AB203

<b>Project Name</b>	Tamil Nadu Rural Water Supply and Sanitation
<b>Region</b>	SOUTH ASIA
<b>Sector</b>	Water Supply and Sanitation (100%)
<b>Project ID</b>	P078210
<b>Borrower(s)</b>	GOVERNMENT OF INDIA
<b>Implementing Agency</b>	
	Government of India Department of Economic Affairs Ministry of Finance New Delhi 110001 Tel: 91-11-23092500
	Government of Tamil Nadu Municipal Admin. & W.Supply Dept. Secretariat Chennai 600009 Tel: 91-44-25679866
<b>Environment Category</b>	<input type="checkbox"/> A <input checked="" type="checkbox"/> B <input type="checkbox"/> C <input type="checkbox"/> FI <input type="checkbox"/> TBD (to be determined)
<b>Safeguard Classification</b>	<input type="checkbox"/> S <sub>1</sub> <input checked="" type="checkbox"/> S <sub>2</sub> <input type="checkbox"/> S <sub>3</sub> <input type="checkbox"/> S <sub>F</sub> <input type="checkbox"/> TBD (to be determined)
<b>Date PID Prepared</b>	December 2, 2003
<b>Estimated Date of Appraisal Authorization</b>	May 26, 2004
<b>Estimated Date of Board Approval</b>	October 5, 2004

Public Disclosure Authorized

1. Key development issues and rationale for Bank involvement

**Key Development Issues:** India had achieved significant progress in providing basic minimum service level for drinking water supply (40 liters per capita per day) to most of its rural population. Public investment in RWSS is about Rs.42.5 billion (US\$ 900 M) annually -- of which about 40 % comes from Government of India (GoI). However, for various reasons it has yet to achieve operational and financial sustainability of Rural Water Supply and Sanitation (RWSS) services. Depleting ground water table and deteriorating ground water quality are threatening source sustainability. Lack of reliable household level database, monitoring and benchmarking systems make it difficult to realistically assess if sector goals are being achieved. The RWSS program has been almost totally government run without participation of other stakeholders. Thus, users consider water a free (service) commodity with the government having the entire responsibility for running the operation. Additionally, the level of environmental sanitation in rural areas is extremely low (less than 20% households have latrines). The rural population generally lacks an understanding of the linkages between lack of sanitation, unsafe hygiene practice and diarrhea-related diseases. The resultant morbidity and mortality, particularly in young children, significantly affects their growth, educational attendance and achievement and productive activity. India's RWSS program faces serious

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<sup>i</sup> For more information about the TNRWSSP, please refer the Project Document annexed.

<sup>ii</sup> For more information about the funding to VP, refer the note annexed

<sup>iii</sup> [http://www.twadboard.gov.in/twad/erode\\_dist.aspx](http://www.twadboard.gov.in/twad/erode_dist.aspx) accessed on 12.01.2015

<sup>iv</sup> Refer the note annexed regarding the funds for Village Panchayat