

# Annual Report 2016-17 CDD Society

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Consortium for  
DEWATS  
Dissemination  
**Society**

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## 1. About CDD Society

93% of India's sewage finds its way to ponds, lakes and rivers – untreated and dangerous. This sewage is the leading polluter of our water sources and is causing grave damage to the environment as well as public health. However, we have more pressing problems, such as access to toilets itself, which the Government is trying to tackle through initiatives like the Swachh Bharat Mission. Though well-intentioned, these initiatives are limited in scope and impact as their focus starts and ends with providing toilets to the 48% of Indians who don't have one.

Building enough toilets alone will not solve India's sanitation woes. Toilets bring with them a larger set of problems – one of which is getting people to use them. The biggest challenge lies in providing post-toilet infrastructure i.e. containment, transportation and treatment of sewage.

This is the area that CDD Society focuses on - providing post-toilet infrastructure that is robust, effective, decentralised, and affordable - to enable mass implementation across India. We do so by adopting an integrated and holistic approach appropriate to the local context. In doing so, we believe, we are fortifying the efforts of the Government (and other organisations) to ensure these efforts do not go down the toilet.

Our team of technical experts has provided solutions across the spectrum - from single households and apartment complexes to rejuvenation plans for water bodies (rivers, lakes, nullahs) and even sanitation plans for mid to large-sized cities. In a bid to have more and more people implement decentralised solutions, we dedicate considerable resources and efforts to trainings, especially designed for practitioners and decision makers. We have even enabled the setup of a unified platform for wastewater and desludging operators to help get the services they provide much-needed awareness and recognition.

Through these collective efforts, we are doing our best to ensure 100% sanitation.

## **2. The BMZ Grant: Basic Needs Services (BNS) and Nexus**

Grants are non-repayable funds offered by a government department, foundation or trust, to nonprofit entities, educational institutions, businesses or even individuals. These grants are given for specific programmes and require pre-determined compliance and reporting.

Over the last decade, the Basic Needs Service (BNS) programme under the German Ministry for Economic Cooperation has been CDD Society's biggest grantee promoting adequate decentralised sanitation infrastructure to local communities, institutions and businesses.

The last three years though have shown a change in the approach, as the dependency on one programme has drastically reduced through grants for different programmes by the Bill and Melinda Gates Foundation.

## **2.1 BNS Project: Poverty Alleviation and Sustainable Protection of Natural Resources in South Asia (Phase V – 2015 to 2017)**

### **Overview**

Initiated in 2003, this project is aimed at improvement in the living conditions and protection of natural resources and the climate in underserved urban, peri-urban and rural settlements in South Asia. The project intends to achieve this through the provision of decentralised basic needs services like community based sanitation (CBS) models with community driven sanitation infrastructure and services for wastewater management (DEWATS-CBS) and solid waste management (DESWAM), wastewater management in small and medium sized enterprises (DEWATS-SME), cluster based approach for DELSA service packages, and citywide planning tools for integration of decentralised approaches in mainstream sanitation planning for larger impact. The project objectives will be achieved by undertaking a number of activities. These include conducting workshops/seminars to disseminate basic needs services, capacity building of various stakeholders engaged in the sanitation sector, implementing pilot projects at various scales, lobbying with the government for the inclusion of decentralised sanitation approaches in city-scale service delivery, research and development etc.

The target groups for this project are poor residents of densely populated urban and peri-urban agglomerations which have inadequate or no sanitation facilities, public institutions (eg. schools, hospitals) and small and medium size companies which generate waste and contaminate natural resources due to a lack of liquid and solid waste treatment facilities. A special target group for this project are women and children since they are most vulnerable to being affected by inadequate basic needs services. Other target groups from a cooperation perspective are multi-sectoral stakeholders, public and private service providers, and national and international development organisations working in the field of basic needs services, wastewater and solid waste management. The project has high relevance considering that the emphasis of local governments is usually on the construction of toilets whereas the next steps in the sanitation value chain, such as safe collection, transportation, treatment and disposal of faecal sludge/wastewater are grossly neglected. The conventional approach adopted by local governments towards wastewater management is implementation of extensive sewerage system and highly mechanised sewage treatment plants, which because of high costs and non-availability of technically skilled labor are not sustainable options and become defunct over a period of time. This project disseminates the "middle course" to fulfill the urban sanitation deficit - a path between the absence of sanitation and the "perfect" urban sanitation solution by proposing decentralised and simplified technical approaches for liquid and solid waste management.

The fourth phase of the project (2012-2014) mainly focused on organisational and financial scaling-up of the project team and its co-operational structures. Thanks to these efforts, CDD Society, its partner network and trained participants have the ability to implement small DEWATS on a large scale across various sectors and regions. The current phase of the project (2015-2017) will focus on shifting from privately-funded single systems to government-funded cluster systems and the team will focus on the development of the sector, especially with regards to creating a politically supporting environment and engaging private players in the sanitation sector. Also, the focus shall be on the implementation of cluster DELSA in specific cities for demonstration purposes. The project will impact the sector through project implementation.

## **Impact Overview**

### **Environmental Impact**

CDD Society, its network partners and trained participants have implemented 102 projects, which have helped in the protection of water bodies and other natural resources.

### **Social Impact**

The interventions by CDD Society and its partners have positively impacted lives of around 70,456 beneficiaries through the provision of better sanitary services mainly pertaining to domestic wastewater management.

## **Challenges & Learnings**

In the coming years, CDD Society aims to emerge as one of the key players for Faecal Sludge Management (FSM) against the background of the Indian Government's massive plans to improve toilet coverage till 2019. With this endeavour, CDD Society will have to focus on building internal capacities and lobby aggressively with governments to leverage the sector and play a leadership role. Further, it is perceived that the implementation of cluster DELSA packages will create larger impact at city or town level, however there could be resistance considering decentralised approaches may upset the current infrastructure and practices (of underground drainage and centralised systems being synonymous with development) followed by the towns.

Further, the norms for discharge of treated wastewater into the environment are getting stringent. The DEWATSTM has to be accordingly modified to achieve the discharge standards, else it would become difficult to sustain in the sector.

## **2.2 Nexus- Food Production and Settlement Hygiene in Poor Peri-Urban Regions in India**

The Project Nexus, also called 'Food Production and Settlement Hygiene in Poor Peri-Urban Regions in India', in the second year of its operation made several achievements in terms of planning, implementation and capacity building. The Project is funded by BMZ-BORDA and ends in December 2017. The following short description provides key highlights in the second financial year from April 2016 to March 2017.

Project Nexus, hereafter, 'Project', aims at closure of nature's loops through sanitation and agricultural interventions. While first year of the project aimed at building knowledge on safe reuse and resource recovery options from treated and untreated wastewater and planning the pilot interventions, the second year focused on implementation on field with application of learning derived from peer-reviewed literature and experts' guidance. The second year also focused on the last leg of sanitation value chain in Faecal Sludge Management, that is, resource recovery through co-composting of treated faecal sludge with Municipal Wet Waste.

To get a glimpse into major activities conducted during this year, it is important to note that the project focuses on four key result areas to enable holistic development in safe resource recovery from human waste and wastewater. All the major activities are categorised into these four key results areas, as given below:

- 1. Establishment of network by providing a platform and favourable environment for knowledge exchange and partnerships**

**Key highlights:**



- ❖ The team has made project presentations to propagate the concept of safe resource recovery in many forums and to representations of different professional institutions. Some of these include exposure visits and project updates to officials from SNV Netherlands, BORDA-Germany, Prakruthi in Bengaluru,
- ❖ Through participation and presentation in several conferences, the team has disseminated information on the Project and need for scaling up these interventions. These conferences are: ISWATS in Pune in April 2016; Development of Smart Cities in Bengaluru in September 2016; Water-Energy-Food (WEF) Nexus workshop in March 2017;
- ❖ The project partnered with several institutions for implementation and knowledge partnership including St. John's Medical College in Bengaluru; Town Municipal Corporation of Devanahalli for co-composting activities; University of Agricultural Sciences, Bengaluru; University of Agricultural Sciences, Raichur;
- ❖ Different marketing material has been developed including posters and brochures in English and local language- Kannada.
- ❖ A network meeting was conducted in collaboration with partner organisation 'EcoPro' in auroville on 'Mainstreaming agriculture in WASH discourse'. The aim was to create an interdisciplinary dialogue between progressive farmers, medical and public health community and experts from sanitation and architecture.

## **2. Development of plans and context-specific learning to enable effective field implementation**

### **Key highlights:**

- ❖ One of the critical steps forward has been the development and revision of portfolio concepts and reuse approaches under the project. The approaches involve different ways and means of dealing with human waste and wastewater and their subsequent reuse in agriculture. These concepts define goals, indicators and activities for each of the different approaches. These are:
  - a) Reuse of treated wastewater derived from Decentralised Wastewater treatment systems
  - b) Reuse of treated and composted faecal sludge derived from town-scale Faecal Sludge Treatment Plants
  - c) Reuse of urine and 'humanure' derived from Urine Diversion Dry Toilets (UDDTs)
  - d) Risk Mitigation with reuse of untreated wastewater from open streams
- ❖ Different pre-feasibility visits have been conducted in different sites and institutions to explore the possibilities of future reuse interventions. These include University of Agricultural Sciences, Bengaluru; Hubli-Dharwad to assess location's suitability to conduct a health risk assessment study; Chikkaballapur Sewage Treatment Plant in Chikkaballapur district near Bengaluru;

- ❖ 6 exploratory studies have been conducted by management graduates from Institute of Rural Management, Anand (IRMA), Gujarat and one by an intern from University of Estonia. These studies are currently being edited by project team and will soon be published in CDD Society.
- ❖ A “Situational Analysis study of Mugalur village with respect to wastewater reuse from DakshinaPinkainiriver by farmers” has been initiated and conducted by partner institution St. John’s Medical College in Mugalur district near Bengaluru from October 2016 to March 2017. The objective was to identify potential health risk associated with such reuse practices and looks forward to providing mitigation measures to minimise these risks from the perspective of Sanitation Safety Plans.
- ❖ Case study on interventions in Beedi Workers’ Colony titled ‘From Toilet to Table’ completed and published in ‘World Aqua Congress’ conference in New Delhi in October 2016. The study investigates the linkages between sanitation, food, water, energy and health based on the implementation experience at Beedi Workers’ Colony. The study reveals that food produced through treated wastewater with additional safety measures minimises health risks.

### **3. Implementation of demonstration/ pilot projects with regular monitoring and evaluation**

#### **Key highlights:**

- ❖ At our first pilot intervention in Beedi Workers’ Colony, a total of four cropping seasons have been completed with the last one initiated in March 2017. Different vegetables including greens, legumes, fruit crops, leafy vegetables and others have been grown with treated wastewater and tested for possible contamination in terms of heavy metals and pathogenic organisms. All the vegetables have been rendered safe for consumption. The same have been fed to school children in local Anganwadi and to community households at regular intervals. The case study of Beedi Colony has also been published in Conference Proceedings in New Delhi, where the team presented the findings.
- ❖ The co-composting operations at the FSTP site in Devanahalli were kick-started in April 2016 with first phase of windrow composting completed before March 2017. The composting operations at the site with sample tests and monitoring and evaluation activities have continued to the third year.
- ❖ Our partner organisation, Ecopro, in Auroville is implementing UDDT toilets for tribal villages in Tamil Nadu through support from Project Nexus and has also demonstrated use of urine and humanure with appreciable results when compared to chemical farming in pilot locations.
- ❖ After from pilot demonstrations, it is imperative to conduct regular Information, Education and Communication (IEC) sessions for women and children to spread awareness about personal and settlement hygiene, menstrual hygiene and solid waste management. Over 500 women and children have been informed via different IEC sessions in Devanahalli and Beedi Workers Colony in the second year of the Project.

- ❖ The team has also developed different IEC tools including menstrual wheel, posters, brochures, games, group-work, videos etc. to enable effective learning across different groups like women and children.

#### 4. **Building capacities of sector professionals through customised trainings/workshops**

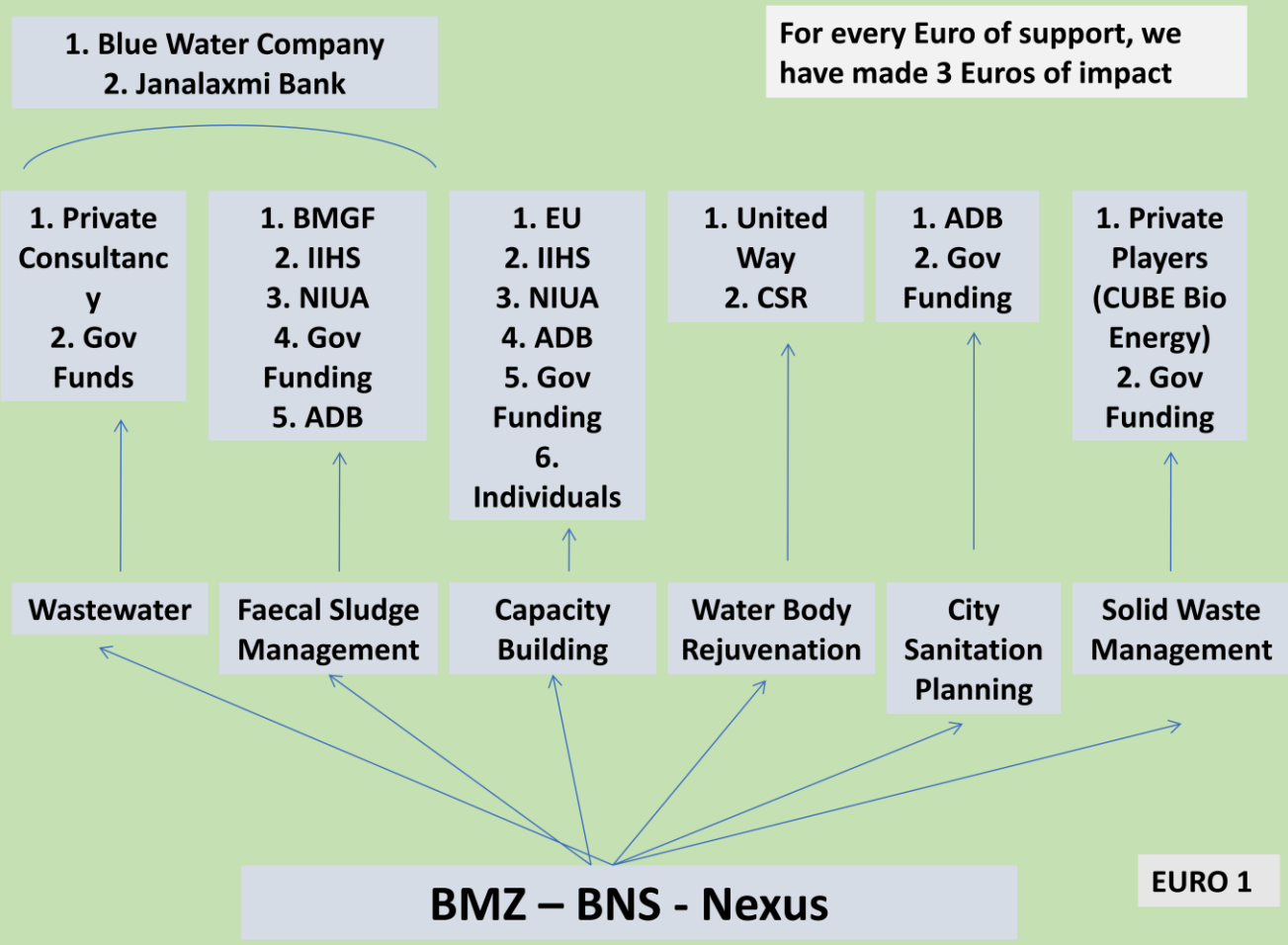
##### **Key highlights:**

- ❖ An international training on 'Nutrient Recovery and Reuse of Human Waste for Food Production' was conducted in November 2016 whereby 18 international and 5 Indian participants were present. The training focused on conceptual and practical implications of human waste reuse in agriculture.
- ❖ An in-house workshop was conducted in February 2017 on '**Reuse and Recycling of Sanitation Products in Agriculture**' for staff at **CDD Society**. The participants were acquainted with the topics of reuse and recycling, and elaborated on both the benefits and challenges of reusing human waste, in India and elsewhere.

An in-house workshop was conducted in March 2017 on 'Rethinking Reuse- Reuse in City Sanitation Planning' by project team. The objective of this workshop was to enable enhanced understanding of 'Reuse' of human waste/wastewater, from the perspective.

- ❖ of holistic urban planning. It aimed at sensitising CDD staff from diverse professional fields such as urban planning, sanitary engineering and social work on the topic of reuse and its applicability from the perspective of CSP.
- ❖ Farmers' meeting facilitated in Devanahalli with 200 farmers. The objective of team's participation was to get an initial overview of farmers in and around Devanahalli town currently using either raw faecal sludge or dried, treated sludge from the faecal sludge treatment plant (FSTP) Devanahalli. Based on farmers' feedback and questions, the team will design a workshop on the risks and potential associated with agricultural reuse of human waste.

Each of the abovementioned result areas seen progress in terms of fulfilment of various activities and deliverables as mandated under the Project framework for three years. The third and last year of the project, aims at concluding the pilot interventions, handing over the respective interventions to local communities and authorities and reaching out to wider group of sector professionals to disseminate knowledge gathered by the team over the course of Project's implementation.



### 3. Waste Water

#### 3.1 Our DEWATS Work this year:

Project Name	City, State
Azim Premji Foundation	Yadgiri, Karnataka
Bangladesh	Bangladesh
BARC Transit house accommodation	Bangalore, Karnataka
BARC Township	Chitradurga, Karnataka
Jain Temple	Talegaon, Maharashtra
MVJ College of Engineering	Bangalore, Karnataka
Myriam's Farmhouse	Bangalore, Karnataka
Cow dung prefabricated biogas digester	Ranikhet, Uttarakhand
Sankalp Homes for Aishwarya Empire	Bangalore, Karnataka
Hand in Hand NGO	Kancheepuram, Tamil Nadu
Mallya Aditi School	Bangalore, Karnataka

#### 3.2. Small-Scale Sanitation Scaling-Up

Small-scale sanitation Small-scale sanitation systems are currently at an inflection point, particularly in South Asia where there is a marked increase in the number of sewage treatment plants being installed. Yet, there has been little or no research on how to invest in and design and scale up small-scale sanitation projects.

CDD is partnering with EAWAG/Sandec, the Indian Institute of Technology (IIT) Madras and BORDA to carry out the first systematic assessment of small-scale sanitation systems in South Asia. The 4S project seeks to provide sound empirical evidence for future small-scale sanitation sector investments in South Asia, through the systematic study of approximately 400 systems. Its main goal is to develop evidence-based policy recommendations for improved sanitation system design, implementation, operation and maintenance. CDD is primarily involved with helping identify prevalent sewage treatment technologies in India and South Asia, identifying STPs that can be visited and conducting field visits.

More specifically the objectives are of the 4S project are

- To investigate the technical, financial, management and environmental performance of existing small-scale sanitation systems
- To carry out a simplified comparative cost-benefit analysis
- To determine in which contexts a small-scale approach is optimal and sustainable

- To translate research results into recommendations for project planning, programme development and future investments

### **3.3. Monitoring and Evaluation**

#### **Background:**

Bremen Overseas Research and Development Association (BORDA) has launched a Global Monitoring and Evaluation (MonEv) programme in the year 2011 in South East Asia (Indonesia and Cambodia) to assess the performance of all the implemented Decentralised Wastewater Treatment Systems (DEWATS™) units. The objective of MonEv is to assess the factors associated with technical, social, operational and institutional aspects in the existing DEWATS™ plants. The evaluation helps to identify the sustainability factors – This is about DEWATS sustainability in the long term. The lessons learnt help to formulate corrective measures to improve the performance of future projects thus, facilitating the process of sustainability of DEWATS™ projects.

After successful implementation of MonEv in South East Asia (Indonesia and Cambodia), BORDA introduced the program in South Asia i.e. India in the year 2012. The tools including the Global MonEv survey forms were modified to the Indian context and successfully validated through field testing.

#### **Evaluation Activities:**

In addition, measurement of pH of wastewater and sludge height, analysis of wastewater parameter, Chemical Oxygen Demand (COD) are carried out and compared to the designed assumptions. The chosen wastewater parameters like pH and COD give an overview whether the operational conditions are suitable for biological treatment especially in anaerobic modules of DEWATS™. Further it is also ascertained whether the final treated effluent complies with the Central Pollution Control Board (CPCB) effluent discharge standards.

#### **Outcome:**

Since the launch of the program in 2012, the MonEv team of CDD Society has successfully monitored 159 projects across Karnataka, Tamil Nadu, Maharashtra, Kerala, Gujarat and Nepal. In 2016, 20 DEWATS™ units have been monitored.

Out of 20 DEWATS™ units monitored, 19 units are being working in good condition and treat the wastewater complies with the objective of wastewater treatment. Remaining 1 DEWATS™ unit which is installed for a public toilet are structurally in good conditions, as the toilet is not being used the DEWATS unit is also not in use condition

## **4. Faecal Sludge Management**

2016-2017 was a big year with regards to FSM for CDD Society. With the help of the people of Devanahalli and the Town's Municipal Council, we took Devanahalli to new heights and expanded the scope of what we do by leaps and bounds. These efforts are being noticed – one of the first to do so was the CII, who short-listed the FSTP amongst their Top 25 Innovative Technologies for 2016.

### **4.1 The BMGF Grants**

### **4.2 Devanahalli**

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After running the FSTP for a year, we officially handed it over to its rightful owners - the TMC of Devanahalli and its residents. Though we will continue to monitor and learn from the plant, its operations and maintenance along with ancillary systems have become the responsibility of the town from 19<sup>th</sup> November, 2016 onwards.

Our work in Devanahalli has enabled us to advocate FSM to decision makers, policy makers and governing bodies in towns and cities across India, at the state and central government level. The beginning of this journey began with Devanahalli unanimously passing policy resolutions for changing the town's by-laws regarding FSM. These resolutions give the ULB the power to outsource the operations and maintenance of FSM systems to a capable party. It gives them the power to ensure that on-site sanitation systems built in the future strictly adhere to CPHEEO standards. The resolutions also ensure sustainability of FSM in the town by adding a small cess in the property tax such that the systems are fuelled by the town's residents, ergo the benefactors.

### **4.3 Rapid Assessment of Sanitation Situation in 100 Towns of Rajasthan**

Outside of Karnataka, extensive work was done on field in 100 towns of Rajasthan. Our team travelled across the length and breadth of the state to assess the sanitation situation in towns which do not have any funding for sanitation from the state or the central government apart from the Swachh Bharat Mission fund. We first started studying the situation from a FSM point of view but realised mid-way that FSM alone can't be a solution. Wastewater is being managed poorly in almost all the towns, thus the assessment needed to include the situation of wastewater management as well. The results of the study have so far helped the state understand the (rough amount of) monetary investment that would be required for complete sanitation services to reach the people in these 100 towns.

### **4.4 Tamil Nadu Urban Sanitation Support Program (TNUSSP) supported by Indian Institute of Human Settlements (IIHS)**

Statistics show that one in six urban households or nearly 5.6 million people in Tamil Nadu defecate in the open. That one in every ten households in the state is dependent on public

toilets. Further, that only about 27% of urban household toilets in the state are connected to the underground sewer system – that too in larger cities. And that more attention needs to be given for the maintenance and regular cleaning of 45% of households that rely on onsite sanitation systems.

Tamil Nadu is one of the first states in the country to adopt a has been a sanitation policy that prioritises the full sanitation chain - including strengthening of septage management as an economical and sustainable complement to network-based systems. Government efforts to improve the situation include the roll out of the “Namma Toilet” (“Our own Toilet”) or Public Toilets initiative, followed by the issue of the GoTN’s Septage Management Operative Guidelines in September 2014.

To boost these efforts and to help the state achieve its Sanitation Mission, the Gates Foundation is supporting a Technical Support Unit (TSU) within the State’s Municipal Administration and Water Supply Department (MAWS). The TSU is mandated to support the state in improving urban sanitation and demonstrate innovations along the entire sanitation chain in two selected urban locations. These will serve as models to emulate, thus creating an enabling environment to help in the roll-out and scalingup of innovations across the state.

With this in mind, two different kinds of urban locations that represent the two most significant typologies in the state for scaling up have been selected - a cluster of Town Panchayats i.e. smaller towns that provide the testing ground and demonstration for scaling up to 500+ such urban centres; and a large class I (100,000+ population) city that can host testing of approaches that supplement sewer based solutions.

Led by the Indian Institute for Human Settlements (IIHS), CDD Society is one four organizations - the other two being Gramalaya and Keystone Foundation - constituting the TSU at the state and city levels. The support to be provided is holistic and efforts cover engineering and planning, implementation support, behavior change and communication, enterprise development and improved enabling environment and governance.

#### **4.5 Gulbarga**

The Devanahalli success has encouraged us to take our FSM efforts further. We have started working with other cities and states to build similar systems. One such town is Gulbarga, where we are working to implement end-to-end FSM entirely funded by the state. A DPR is currently under process for construction of a FSTP in the town on the same principles as that in Devanahalli.

#### **4.6 Bhutan: Preparation of Wastewater Management Plan for 3 towns of Samste Dzongkhag in Bhutan**

Post democratization in 2007, Bhutan’s cities began witnessing considerable growth - fuelled primarily by rural-urban migration. As a result, urban settlements started experiencing shortages in terms of basic services like water supply, sanitation and waste management.

In order to ensure planned development of towns, MoWHS undertook the initiative of preparing structured plans for various towns in the country. However, these plans lacked comprehensive detailing on the requirement of sanitation and waste management infrastructure. To address the same, MoWHS approached SNV to introduce the concept of City Sanitation Plan (CSP) in furtherance to their Urban WASH initiatives in the Bhutanese towns of Chukha and Thimphu.



Subsequently SNV approached Consortium for DEWATS Dissemination (CDD) Society to provide technical support in developing the CSPs. Especially since they were exploring decentralization as an approach in their CSPs – given limited funds, which only permitted intermittent investments – in pockets as cities expanded.

Bhutan was also showing a keen interest in DEWATS because of the low O&M that it involves. Especially because, in Bhutan, skilled labour can be hard to come by. In fact, lack of skilled manpower is one of the factors for failure of a previously implemented sewage treatment plant.

However, due to budget constraints, CDD's scope of work was limited to developing wastewater management plans for three towns in Samtse Dzongkhag - Samtse, Tashichhoeling and Gomtu.

Post preparation of these wastewater management plans, we submitted detailed plans (technology options, proper planning etc.) for 2 of these towns. It was then decided to proceed with the implementation of one DEWATS and one FSTP in Samste – which would serve as pilots for the rest of the country to follow.

Samste, a town of about 20,000 people, was selected because it is economically important – thanks to its proximity to the India border.

With Samste, Bhutan now has a replicable model that other towns/cities can emulate – a pivotal move as the country is currently developing detailed plans for each of its towns.

## 4.7 Stories from the field

Out of sight, out of mind is an adage that especially holds true when it comes to the waste sector. Not just for the waste itself – be it piles and piles of garbage or litres and litres of wastewater – but for the people who toil day in and day out to get this waste out of our sight.

Through this series, we intend to shed some light on their lives. This series comprises of stories of the men and women we interacted with whilst conducting a baseline survey across Tamil Nadu in a bid to understand the sanitation infrastructure in the state better.

Sometimes, the conversation went well beyond the format of the interview, bringing forward the heart and soul of these people. By sharing their stories, we only hope that you give a second thought to the men and women who keep your neighbourhood clean and disease free.

### **Stories from the Yellow Brigade:**

Most of us at some point in life would have interacted with a cesspool operator, a person who attains importance when our septic tanks get filled. After the short interaction we often forget his role in the society and start blaming him for polluting our rivers and ponds. Beyond most yellow tankers and bare chested men is a painful story, one that is punctuated with emotional and physical abuse. Stories that highlight the challenges he faces for keeping the sanitation value chain moving.

Today, we had one such opportunity to interact and listen to stories of Mr.Singh, a humble cesspool operator servicing the toilets of Warangal for the past three decades. Singh belongs to an economic class which have traditionally been removing night soil from service latrines, a practise that is not so common with modern day amenities and regulation. Singh's ancestors moved to Warangal from Haryana during the Nizam rule, he recalls his childhood

being spent in carrying night soil above his head for Rs.3 per household per month. He did not earn a chance to go to school, but rather spent his youthful days in cleaning people's mess.

1994 was a year of change in the life of Singh. It was when the Union government enacted the manual scavenging prohibition act, 1993. It was through one of the schemes in providing alternate livelihood for persons employed in these sectors, that Singh received a loan of Rs. 4 lakh to buy a mechanised desludging vehicle. He started operating the vehicle himself with little support from his relatives, in the year 2000 he went on to buy an additional vehicle through finances from a private lender, and as of today he has 4 vehicles of different capacities serving the population of Warangal.

Singh is among the few mechanised scavengers who take pride in the journey that made them; he is never shy of letting people know his social status or the humble upbringing. He does not have any formal education, but is neither unknowing of most business concepts we study in B-Schools. He has a very good watch over the market, spread over the entire district, knowing in detail his competitors, their background and especially their marketing techniques. He also has shown great sense of financial risk mitigation, for instance, he understands that his workers would at times enter containment units to manually remove sludge when paid higher tips by the household. In doing so he understands the threat to life they face and has insured each of them with a financial cover of Rs.10 lakh.

Singh might wear a happy face with all these achievements, but beyond this is a story that scares him to continue with the business. It is the unregulated or off late poorly regulated sector of onsite sanitation. He recalls an event in 2003 where he had been sued by the local authority for dumping faecal sludge in a pond. The legal case ran for 11 years costing him several trips to jail and lawyer fees of Rs.3.5 lakhs. Not just this, he claims he is often penalised by the local authorities for discharging faecal sludge at vacant lands or water bodies, these fines run up to Rs. 10000 per truck. He asks a valid question in return to the enforcing authorities "Where, then should I dispose the sludge?" for which he say they have no answer.



People like Singh are drivers of our society; they provide an essential service for the existence of our present day lifestyle. They face many difficulties and challenges in doing their job, from competition in business to incomplete regulation which does not provide alternate mechanism for disposal. In spite of this they seem to make huge economic incentives and prefer in expanding their business. In fact Singh had approached us seeking to establish a faecal sludge treatment plant with his own capital, something rare in the sanitation business of India. Probably the heavy fines, legal battles and a foresight of reuse potential is what has enthused him to set up a treatment plant. The story not only expresses the problems and opportunities faced by the less known people of sanitation industry, but it also shows how a proper regulation with strict enforcement can change the behaviour of desludging operators and create a demand for treatment plant.

#### **Selimbarasan from Kancheepuram:**

One such individual is Selimbarasan. Based in Kancheepuram, 28-year-old Selimbarasan has been working as a desludging service provider for the past 15 years. That's right – at the tender age of 13 he started accompanying his father, who used to work as a driver for a cesspool vehicle operator, on his daily rounds. He says, *“A decade ago, getting a job was not easy. Government jobs asked for bribes, which my family could not afford to pay. Else, you looked for something through your networks – which could take really long to fructify, if at all. The easiest route was to just follow my father.”* As he simply put it, *“A carpenter becomes a carpenter, a builder becomes a builder, a cesspool vehicle operator becomes a cesspool vehicle operator.”*

Not surprising given his social standing, I thought, till I learnt he had studied till the 12<sup>th</sup> standard. This is a sensitive topic in his family too, especially for his wife, who lives in Trichy with the rest of his family - his parents and an 8 year old son. She is upset that despite having completed school he has not been able to find *a different kind of job* and moreover, that he lives and works away from his family.

But Selimbarasam thinks very differently. He says, *“My job allows me to help people with a basic need. She doesn't understand that.”* Impressed with this realisation of his, I went on to ask if he would encourage his son to go down the same line. To which he smiled and shook his head and coyly said *“There are other ways to give back to society.”*

He went on to explain to me that though he appreciated the opportunity to serve society, there are many pains in the job. No holidays – as folks call him for desludging only when their septic tanks/pits overflow – which turns out to be a Sunday many times. Then the obvious smell and ickiness that comes with dealing with faecal sludge. Issues with the local municipality - until a few years ago, run-ins with officials were common as there was no designated area to dump the faecal sludge that they collected from households. Most importantly, growth opportunities are limited, or rather, difficult. There is scope to earn a lot more if you become an entrepreneur i.e. own and run a fleet of cesspool vehicles but the CapEx investment required is high and takes several years to earn back.

It is for these reasons that he wants his son to do something else. To ensure his son has more opportunities that he had, he sends him to a private school. Of course, this eats into

his monthly salary of Rs. 10,500 but he believes it is a worthy investment. *“Else, like me, my son will pass out of the 12<sup>th</sup> standard not be able to find a good job.”*

Interestingly, the pains of the job do not deter Selimbarasam from aiming higher – despite the high investment, he does want to buy and run his own vehicle so that he can make more money. He says, *“I have done the calculations and it scares me. I haven’t mustered up the confidence to make the investment yet. But it will happen soon.”*

As I went on to thank him for his time and honesty, I casually mentioned that if he were the owner of a vehicle, I would have had more questions for him. To which he confidently said, *“Madam, come back and interview me in January 2017. I will have my own truck then.”*

I sincerely hope to do so in the new year!

## **5. Capacity Building and other Dissemination Activities**

### **5.1 Strengthening and Empowering Urban Local Bodies in the Delivery of Decentralised Sanitation Services – supported by the European Union**

In 2012, with a grant from the European Union, in partnership with the Municipal Corporation of Shimla (MCS) and 3 other ULBs in Himachal Pradesh, we set out to train and equip

ULB functionaries in the state to deliver decentralised sanitation solutions - wastewater, solid waste, and health and hygiene. A series of trainings, workshops, and exposure visits around 4 key pilot implementations for wastewater treatment, faecal sludge management, and access to toilets were also planned; along with the preparation of city sanitation plans jointly i.e. by CDD Society, BORDA and MCS staff to ensure hands-on learning.

The goal was to enable MCS staff to prepare sanitation plans for the remaining wards independently. These ward level plans would help MCS identify and deliver on the gaps in their sanitation delivery, in turn leading to improved sanitation, especially in un-served areas, which house the urban poor.

FY 2016-17 unfortunately saw this very ambitious project come to an end, despite an approved extension. From operational issues like stationing a full-time staff member to the short work day ( because of less light, hence less operating hours) to logistical issues of travelling across hilly regions to low prioritisation because of an already packed political calendar – the obstacles faced were numerous. However, what we take away are some key learnings for providing sanitation infrastructure in mountainous regions.

Another plus is that most of the groundwork to take sanitation to the next level in the state has also been done. This includes preparation of DPRs (for DEWATS at HIPA), technical and financial tenders for the construction of an FSTP, selection of an appropriate site as well as finalising contract with the bidder, CSPs for three ULBs - Hamirpur, Nahan and Mandi, and a final ward sanitation plan report for the ULBs. Implementation work on a biogas digester and e-toilets with bio-digester system has also been initiated.

In the process, ULB officials did receive much training and exposure too – an effort that can never go wasted through the planned FSTP did not see light of day. This includes a training on DEWATS planning and design for PWD engineers and sanitation inspectors, an exposure visit to the FSTP in Devanahalli for the Assistant Engineer appointed as Nodal Officer, and an exposure visit for MCS officials in Bangalore - to the FSTP in Devanahalli, to BWSSB’s

water metering and monitoring systems, and to the Biogas Digester at the Art of Living Center. 20 delegates from MCS also attended the National Summit in Delhi in November 2016.

All these efforts will enable the MCS to dive straight into implementation mode as they are able to surpass the operational and logistical obstacles the project brought to light.

## 5.2 CASS Trainings

<b>Name of Training</b>	<b>Number of Participants</b>	<b>Project</b>
Training on CBS - DEWATS April 5-6, 2016	25	EU Project
Training on DESWAM April 4, 2016	27	EU Project
Plumbers' Training on Dual piping, Improvised Septic tanks, DEWATS (BWSSB), March 29, 2016	60	Customized
Plumbers' Training on Dual piping, Improvised Septic tanks, DEWATS (BWSSB), March 30, 2016	60	Customized
Plumbers' Training on Dual piping, Improvised Septic tanks, DEWATS (BWSSB), March 31, 2016	109	Customized
Swachh Warangal Capacity Building Initiative : Training Program for Toilet Builders (ASCI), Warangal, Telangana (April 31, May 1, 2016)	30	Customized
Training on Urban Sanitation-Integrated approach for Faecal Sludge Management (IIHS-Coimbatore), May 6-7, 2016	24	IIHS Project
Training for Operators O&M on Sewage Treatment Plant (ADSIS) May, 23 at CASS	29	
Swachh Warangal Capacity Building Initiative : Training Program for Toilet Builders (ASCI),Warangal, Telangana(July 4-5,2016)	31	
Training cum Exposure visit on "Faecal Sludge Management" for Practical action, July 21- 23, 2016	17	Customised
Introductory Workshop and Exposure visit on FSM ,NIUAAugust 22 - 23, 2016	10	NIUA - SCBP
FSM Master Class for ADB August 2 - 4, 2016	24	ADB
Engineers' Training on DEWATS September 19 - 23, 2016 (CASS)	29	BMZ
FSM Master Class for ADB -Nepal October 5-7,2016	8	ADB
Training for Desludging Operators ,October 19, TMC Devanahalli	25	BMGF
Training on Nutrient Recovery and Re-use of Human Waste for Food Production - Closing Sanitation, Agriculture and Nutrient Loops (15-18 Nov 2016 at CDD/CASS)	18	Reuse
Masons training in Trichy November ,18,2016	32	IIHS Project
AMRUT Training Programme on Management of Water Supply, Sewerage, Septage and Drainage in Urban Local Bodies from December 5-7,2016 at Regional Centre for Urban & Environmental Studies (RCUES), Lucknow	35	NIUA - SCBP
Engineers' Training on DEWATS for BORDA KRI December 4-8,2016 at Erbil	19	Local
Masons training programme in Trichy Date :December 19,2016, (IIHS project)	32	IIHS Project
DEWATS O & M training programme at HIPA, Shimla, Date : 27 -29,2016 ,EU Project	23	EU

Orientation workshop on Faecal Sludge Management for ULB officials ,Bhagalpur, Bihar – January 18-19 ,2017	21	NIUA - SCBP
Regional Training Programme on "Swachh Bharat Mission, Septage and Faecal Sludge Management" - January 23-24,2017 at Jabalpur ,M.P. - 20 participants (NIUA)	20	NIUA - SCBP
Personal hygiene ,Menstrual hygiene and solid waste segregation for 11th standard students at Anjanadri PU College on February 1st	70	
Orientation cum Exposure Visit for ULB Officials and Elected representative of Model Towns From Rajamundry and Vijayawada ,Date :February 2 to 3,2017 at CASS	28	
Second Capsule Training Programme on AMRUT – Sewerage and Drainage For the State of Madhya Pradesh, Feb 6 - 8, 2017	17	
Second Capsule Training Programme on AMRUT – Sewerage and Drainage For the State of Madhya Pradesh, Feb 14 - 16, 2017	20	
Trg on City Sanitation Planning and Faecal sludge Management at afghanistan, 4-8 March, 2017	24	
Women Hygiene Training , 8th March	31	
Women Hygiene Training , 21 March at Beedi Worker Colony	31	
Awareness on “children's right to high quality healthcare, clean water, nutritious food, and a clean and healthy environment, 25th March 2017- Devanahalli	189	
Strategic Visioning Workshop Regional Agencies onImplementing SWM Rules 2016 Complaint Capacity Building, Institutional Building & Information Education Behaviour Change Communication, 9th March	37	SWM AP Project Workshop

### 5.3 Support to Other Organisations

S No	Organised By	Training Title	Training Date	Place	No. of people trained
1	Gramavidya Bangalore	Alternative and Energy Efficient Building Technologies	Apr 14 - 16, 2016	CASS, Bangalore	23
2	State Institute of Urban Development (SIUD), Mysore	Training of Trainers (ToT) to AMRUT Program	21-May-16	SIUD, Mysore	30
3	State Institute of Urban Development (SIUD), Mysore	Orientation program for the ULB functioneries - Common Capsule for participants from all department under AMRUT	June 2 - 4, 2016	SIUD, Mysore	20

4	State Institute of Urban Development (SIUD), Mysore	Orientation programme for the ULB functionaries - Common Capsule for Health Inspectors under AMRUT	June 13 - 15, 2016	SIUD, Mysore	22
5	State Institute of Urban Development (SIUD), Mysore	Orientation programme for the ULB functionaries - Common Capsule for Junior Health Inspectors under AMRUT	June 20 - 22, 2016	SIUD, Mysore	30
6	Gramavidya Bangalore	Alternative and Energy Efficient Building Technologies	7 - 9 July 2016	CASS, Bangalore	33
7	National Law School of India University, Bangalore	Nordic Summer School Programme	11-Jul-16	CASS, Bangalore	19
8	Gramalaya, Trichy	Menstrual Hygiene Management (MHM) for Health Educators	27 - 29 July 2016	NIWAS, Kollakudipatti	14
9	IIHS Office, Bangalore	Training sessions on AMRUT and Town Planning for officials from Odisha		State Institute of Urban Development (SIUD), Mysore	17
10	Finish society	Exposure visit to Technology Options for Decentralised Faecal sludge and Wastewater	12-Aug-16	CASS, Bangalore	12
11	Gramavidya Bangalore	Alternative and Energy Efficient Building Technologies	Sept 22 -24, 2015	CASS, Bangalore	16
12	IIHS Office, Bangalore	FSM under the AMRUT guidelines for officials from ULBs in Jharkhand		Ranchi	33
13	State Institute of Urban Development (SIUD), Mysore	FSM under the AMRUT guidelines for officials from ULBs in Jharkhand	July 27 -29, 2016	SIUD, Mysore	30

14	IIHS Office, Bangalore	Training sessions on AMRUT and Town Planning for officials from Rajasthan	Oct 6 - 8, 2016	IIHS, Bangalore	16
15	IIHS Office, Bangalore	AMRUT Kerala EPH	17 - 19 Oct 2016	IIHS, Bangalore	31
16	IIHS Office, Bangalore	AMRUT Kerala EPH	20 - 22 Oct 2016	IIHS, Bangalore	34
17	IIHS Office, Bangalore	AMRUT Rajasthan EPH 1	6 - 8 Nov 2016	IIHS, Bangalore	30
18	IIHS Office, Bangalore	AMRUT Rajasthan EPH 2	9 - 11 Nov 2016	IIHS, Bangalore	12
19	IIHS Office, Bangalore	AMRUT Rajasthan EPH3	16 - 18 Nov 2016	IIHS, Bangalore	20
20	IIHS Office, Bangalore	AMRUT Kerala EPH3	Nov 17 to 19 ,2016	IIHS, Bangalore	30
21	IIHS Office, Bangalore	AMRUT Rajasthan EPH4	Nov 23 to 25,2016	IIHS, Bangalore	18
22	Zilla Panchayat, Ramanagar	Solid and Liquid Waste Management	28-Oct-16	Meeting hall,Zilla Panchayat, Ramnagar	30
23	Swami Vivekananda Youth Movement (SVYM), Bangalore	Introduction to DEWATS & Sanitation Exposure visit at CASS	24-Nov-16	CASS, Bangalore	52
24	Swami Vivekananda Youth Movement (SVYM), Bangalore	Introduction to DEWATS & Sanitation Exposure visit at CASS	25-Nov-16	CASS, Bangalore	56
25	Swami Vivekananda Youth Movement (SVYM), Bangalore	Introduction to DEWATS & Sanitation Exposure visit at CASS	29-Nov-16	CASS, Bangalore	65
26	Koushalya Shale	"Training on Planning and Management of IAY	Decemebr 5 - 7,2016	CASS, Bangalore	40
27	Regional Centre for Urban & Environmental Studies, Lucknow	AMRUT Training Programme on Management of Water Supply, Sewerage, Septage and Drainage in Urban	December 5-7,2016	Regional Centre for Urban & Environmental Studies, Lucknow	35



		Local Bodies,			
28		Orientation cum exposure for Habitat for Humanity India Mumbai Program staff	06-01-2017		8
29		Orientation on DEWATS and CASS exposure visit to Community volunteers under WASH project of Swamy Vivekanada Youth Movement ,Bangalore	12-01-2017		53
30	IIHS Office, Bangalore	Orientation cum exposure visit for elected representatives in Rajasthan supported by Ministry of Urban Development under AMRUT (Session on Septage Managment and FSTP ,Devanahalli visit)	Jan 17, 2017	IIHS ,Bengaluru	19
31	IIHS Office, Bangalore	Orientation cum exposure visit for elected representatives in Rajasthan supported by Ministry of Urban Development under AMRUT (Session on Septage Managment and FSTP ,Devanahalli visit)	24-01-2017	IIHS ,Bengaluru	21
32	IIHS Office, Bangalore	Custom capsule training on Engineering and public health for Rajasthan officials at Hotel Tulip Inn - supported by Ministry of Urban Development under AMRUT (Session	January 30,2017	IIHS ,Bengaluru	29

		title : Faecal Sludge Management across value chain and FSTP ,Devanahalli visit).			
33		Training Programme on Sewerage and Septage Management under AMRUT for Urban Development Department Officers of Madhya Pradesh at Dr.Mari Chenna Reddy Resource Development Institute ,Government of Telangana	06-02-2017		17
34		Training Programme on Sewerage and Septage Management under AMRUT for Urban Development Department Officers of Madhya Pradesh at Dr.Mari Chenna Reddy Resource Development Institute ,Government of Telangana	17-02-2017		20
35		Workshop on FSM by CDD Society for BORDA South Asia at BNS Meet	17-02-2017		40

#### 5.4 Orientation for Academia

Sl.No	Orientation for Academia	Total participants	Date
1	Orienaiaon on DEWATS and FSM for Civil engineering students of Christ University ,Bengaluru	68	16-Jan ,2017

2	Orientation on DEWATS and FSM for engineering students of SRM college, Chennai.	27	2-March ,2017
3	Orientation on DEWATS and FSM for engineering students of Vellore Institute of Technology ,Vellore	57	14-March ,2017
4	Orientation on DEWATS and FSM for engineering students of Sastra University ,Tanjore	31	31-March ,2017

### 5.5 Special Focus: City Sanitation Planning and FSM Training in Afghanistan

In August 2016, the Gesellschaft für Internationale Zusammenarbeit (GIZ) published a Shit Flow Diagram (SFD) Report for Kabul, Afghanistan as part of its SFD Promotion Initiative. Data from this Shit Flow Diagram Report reveals that the rate of open defecation within the town is about 1% only. With 99% of households using toilets regularly, clearly, sanitation awareness is high amongst Afghans.

In fact, dry toilets have been the age-old practise in the country and still dominate in the rural areas. However, with rapid urbanisation and increased household incomes, urban areas are seeing a general shift away from dry toilets towards water-based systems..

Moreover, the country also has a long standing tradition of reuse of treated Faecal matter. However, this too, because of increasing urbanization and resultant diminishing agricultural land is leading to fewer quantities of treated faecal sludge being used.

Rapid urbanisation, fuelled primarily by returning refugees and migration on economic grounds, was clearly disrupting sanitation levels in the country.

Afghanistan's governmental institutions need capacity building support to address the sanitation challenges in terms of better and integrated sanitation planning for urban cities. This assignment will strengthen the capacity of relevant stakeholders in sanitation planning specifically Faecal sludge management.

In order to do so, CDD Society was invited to deliver an introductory training on City Sanitation Planning and FSM to the relevant stakeholders (about 20 persons). This was held 4<sup>th</sup>-8<sup>th</sup> March, 2017. Post the 2 day classroom session, our team spent 2 days on field handholding officials, explaining to them how to conduct household surveys as part of the feasibility study.

Our team also conducted a training on Faecal Sludge Management and the methodology to conduct a feasibility study for a Faecal Sludge Treatment Plant.

Post the training, Afghanistan officials will do the survey. Data will be analysed by CDD Society and a final report prepared, which will focus on a details technical assessment across the sanitation value chain (user interface, containment, collection and transportation, treatment and reuse) and aims at the proposal of a treatment concept for Kabul.

In May, the team returned to do Wastewater sampling in Kabul: during May 2017  
5. Data analyses and Treatment Concept development – Development of Feasibility study

report: During end of May 2017.

Annual potential evaporation exceeds rainfall in all seasons, which is leading to a very low recharge of rainwater to the groundwater.

Depending on seasonal rain, the Kabul River is almost dry from June to August. Sometimes the river dries completely. The river bed is used as a solid waste dump site and as a receiving water body for illegally discharged septage from vacuum tankers.

The oldest one was built in 1972, the youngest in 2017. Out of all the questions answered by households, 58% of the containment units were constructed after 2011, only 9% were made before the year 2000.

The health situation of the population is according to international standards well behind the average.

The German Federal Institute for Geosciences and Natural Resources (BGR) came to the conclusion that 70% of all wells in Kabul basin are polluted by faecal bacteria. They further report that the groundwater pollution constitutes a major reason for the high child mortality rate. (Hassib, Y., Etemadi, H., 2016))

Even though 72% of the interviewed households state that no sanitation related diseases occurs, still 28% of the households have to deal with Diarrhoea, Typhoid and other diseases that could be avoided by the improvement of hygienic conditions in Kabul. One improvement area would

Cesspool operators in the area are quite modernized, with the oldest truck surveyed being bought in 2002. 48 out of 58 trucks have been purchased between 2011 and 2017 and 57 truck operators claimed to check the cesspools weekly for leakages and other problems

Per a report of “Emergency Infrastructure Reconstruction Project, Sanitation Improvements in Kabul City” funded by World Bank, there are three other sewage treatment plants for the Kabul university, ISAF camp and a military school. However, those facilities are categorized as private and not capable to serve the public. There are some sewer lines for apartment complexes available in the town, but usually they lead to communal septic tanks. Only the Makroyan Area has a complete sewerage with treatment plants. Two sewage treatment plants exist, one each for its northern and southern areas. The systems suffer from unstable electricity supply and 30-year-old facilities.

## **5.6 Special Focus: Enhancing capacity of officials working to improve sanitation for war refugees in the Autonomous Region of Kurdistan**

Since the conflict in Syria in 2011, it is estimated that more than 9 million people have fled the country. While 6 to 7 million have fled within the country, about 3 million have fled to neighbouring countries – Turkey, Iraq and the Autonomous Region of Kurdistan.

Estimates show that the Autonomous Region of Kurdistan, which has a population of nearly 4 million people, is providing refuge to 224,000 Syrian people, nearly 40% of them children. Most of these refugees reside in the three administrative regions of Kurdistan - Duhok, Erbil, and Sulaymaniyah -due to proximity, language, safety aspects, and economic factors.

This large influx of IDPs is putting huge pressure on the host communities and economy of Kurdistan. The high costs of living, especially in Erbil, are a concern for the displaced population. The costs of renting housing is a major problem for those staying in rented accommodation; while those residing in camps or religious buildings often lack access to water, sanitation, health facilities and food. Further, most rented accommodations are

unfinished buildings or other informal housings, where again access to water, sanitation and heating is problematic.

In October 2014, BORDA began working in the region to respond to the needs of this increasing number of refugees. The main focus of BORDA's work is to improve sanitation in refugee camps and surrounding communities who accommodate refugees as well as knowledge transfer in the area of basic sanitation. Hence, the intention of introducing decentralised wastewater treatment solutions as an appropriate approach for wastewater treatment.

With this aim in mind, a training programme was conducted in Erbil, in December 2016, to disseminate knowledge about DEWATS™ among technical staff and consultants through capacity building interventions; for which they reached out to CDD Society for support.

Organised in collaboration with Cewas Middle East and the Swiss Development Agency, our team of engineers spent a week in Kurdistan training 20 engineers, managers and craftsmen from the region's sanitation and waste management sector. The participants were from national and international NGOs, public authorities (Erbil Sewerage Directorate, Erbil Joint Crisis Coordination Center, Directorate of surrounding water), and from the private sector (Human Relief Foundation, THW, Eslah Association For Social Development, Cihan Group).

Having completed the training, participants will be able to independently plan, design, implement, operate and manage DEWATS projects in their respective locations. Infact, feedback received at the end of the trainings, indicated their intention of doing so (funds permitting)!

### **5.7 Sanitation Capacity Building Platform (SCBP) supported by National Institute of Urban Affairs (NIUA) )**

In August 2016, we partnered with National Institute of Urban Affairs (NIUA), a premier institute for research, capacity building and dissemination of knowledge for the urban sector in India. Along with other partners, the project envisions a Sanitation Capacity Building Platform (SCBP). Supported by the Gates Foundation, SCBP is a platform dedicated to capacity building.

The purpose of the project "is to build the capacity of cities and other stakeholders working in urban sanitation to ensure improved delivery of sanitation services through decentralised approach." One core activity of the platform CDD Society is contributing actively in is to demonstrate FSM solutions for tier 3 cities in northern India – two of them being Unnao in Uttar Pradesh and Bhagalpur in Bihar.

Unnao and Bhagalpur were selected because of the extensive burden their populations exert on natural resources especially land and water bodies. With 680 persons per sq. kilometre and 1,182 persons per sq. kilometre respectively - compared to the national average of 382 - both cities have high population densities. The two cities, by virtue of being in the Gangetic plains, draw their potable water supply from ground water, which faces a high risk of contamination because of poor anitation.

According to the 2011 Census, over 60% of households in Unnao have onsite sanitation facility and 16.7% do not have access to individual toilets. The town has no treatment facility to treat the 23.9 MLD of sewage it generates.

Bhagalpur, on the other hand, does have a treatment plant (of 11 MLD). But the city manages to collect and treat only 4 MLD of the estimated 44.29 MLD that it produces. The remaining is discharged, untreated, into the River Ganga. CDD Society's role is to provide

end-to-end sanitation solutions for the two towns that will include immediate interventions (now to 5 years), a mid-term solution (5-10 years) as well as a long term solution (10-20 years).

## 6. Other Dissemination Activities

### 6.1 ADSIS

Set up in early 2015, Association for Decentralised Sanitation Infrastructure and Services (ADSI) is a platform for small and medium scale service providers engaged in installation, operation and maintenance of sewage treatment plants (STPs) to come together and collectively address the existing challenges (of the sector/they face) through an institutionalised forum.

#### Highlights:

- 36 members (sign/join/come on board)
- 4 consultation meetings held.
- Governance structure finalized and registration process completed

### 6.2 The National Primer on Faecal Sludge and Septage Management

Another big step was being selected to work on the national primer on faecal sludge and septage management with other experts from CSE, CEPT and other institutions experienced in septage management in India . This primer has been made available on the MoUD website and has been circulated to ~130 selected ULBs across the country –paving the way for the National Policy on Faecal sludge and septage management.

Yet another small step (for FSM but a big step for CDD) was the consultation report, strategizing the implementation of FSM state wide, that was prepared for **Dr. R. Vishal**, the Directorate of Municipal Administration, Karnataka – at his request, post his visit to the FSTP.

- The national level primer on FSM implementation covers the basics of FSM in the country today and serves as a comprehensive reference for designing state level FSM regulations/guidelines.
- It's the first time a document worked on by CDD Society will officially be distributed amongst government officials - the primer has put up on the MoUD website and circulated to ~130 selected ULBs.
- It also contains a foreword by the Minister of Urban Development, Shri M Venkaiah Naidu and a preface by the MoS for Urban Development Shri Rao Inderjit Singh

### 6.3 The National Summit on Sustainable Water & Sanitation

The 2<sup>nd</sup> Annual National Summit – Sustainable Water & Sanitation was held on the 1<sup>st</sup> and 2<sup>nd</sup> December in New Delhi to create a platform for the development of a fresh and collaborative approach to tackle India's sanitation crisis. The participation of stakeholders and visionary speakers catalyzed possible collaboration between the public & private water utilities, technology providers, financiers, industrial end-users, associations in addition to water and sanitation agencies.

The first conference day focused on sustainable water and water solution. It covered topics such as the water footprint of communities, discharge standards of water as well as water management. The second day of the NSSWS conference was predominantly focussed on

sanitation. Topics covered ranged from capacity building, synergising Swaccha Bharat Mission and AMRUT priorities, implementation of FSM in India, open defecation and behavioral change and gender mainstreaming in the sanitation sector. The event was also peppered with several vendor presentations focused on newest technologies related to water.

The two day conference was a good platform for international WASH practitioners to exchange ideas, discuss successes and challenges and collaborate. The CDD stall too received a lot of footfall with attendees enquiring about FSM approaches and FSTP's.

#### 6.4 Participation in Forums/Exhibitions

S. No	Level	Title	Venue	Type of Forum	Start Date	End Date	Organised By	No of participants
1	State	Consultation Workshop on Liquid Waste Management for Kerala	Hotel Chaithram, Thampanoor, Thiruvananthapuram	Workshop	12.04.16	12.04.16	Suchitwa Mission, Kerala	35
2	State	Training for CSP Preparation	ESCI in Gachibowli, Hyderabad	Convening meeting	21.04.16	21.04.16	GIZ & CSE	21
3	International	International Conference on Innovations in Sustainable Water and Wastewater Treatment Systems (ISWATS-2016)	Yashwantrao Chavan Academy of Development Administration (YASHADA), Pune, Maharashtra	Conference	21.04.16	23.04.16	NaWaTech, SWINGS, Saraswati, ECO-India, and Water4Crops	500
4	National	4th Annual Conference on Sewage and Wastewater Treatment	Le Meridan, New Delhi	Conference	26.04.16	27.04.16	Indian Infrastructure/ MoUD Ministry of Urban Development at New Delhi.	200
5	State	Approach for wastewater recycling using PPP	INNOTEL Hotel, Vijayawada	Workshop	17.05.16		Swach Andhra Corporation (SAC)	50

		Models						
6		Staff Capacity building	Hotel ramada		20.05.16	21.05.16	Awareness solutions, Delhi	10
7	State	Training of Trainers (ToT) to AMRUT Program	State Institute of Urban Development (SIUD), Mysore	Convening meeting	21.05.16			30
8	National	Ppt on DEWATS before Technical Committee formed by MoDWS	Paryawaran Bhawan, CGO Complex, Delhi	Convening meeting	26.05.16		Ministry of Drinking Water & Sanitation, Govt. of India	18
9	City	Orientation program for the ULB Senior Health Officers	State Institute of Urban Development (SIUD), Mysore	Workshop	14.06.16			22
10	State	Mainstreaming Agriculture in the WASH Discourse	Multimedia Centre Auditorium Auroville, Pondicherry	Convening meeting	17.06.16	18.06.16		76
11	State	Sensitise to Sanitise	IBIS City Centre, Chennai	Workshop	17.06.16			20
12	State	Orientation Programme for newly appointed AMRUT Consultants for the State Uttarkhand	State Institute of Urban Development (SIUD), Mysore	Convening meeting	28.07.16			25
13	National	Waste and Sanitech	Hall 12 A, Pragati Maidan, New Delhi	Exhibition	17.08.16	19.08.16	UBM	150



14	National	EAWater Expo	Hall 18, Pragati Maidan, New Delhi	Exhibition	22.08.16	24.08.16	Everything About Water	250
15	City	IEC Session on Hygiene and Sanitation to Women Self-Help Groups	Devanahalli Municipal Corporation conference hall, Bengaluru	Workshop	25.08.16			32
16	International	World Water Week 2016	Stockholm, Sweden	Conference	28.08.16	30.08.16	SIWI Stockholm International Water Institute.	350
17	National	INDOSAN 2016	Vigyan Bhawan, New Delhi	Exhibition	29.09.16	30.09.16	Ministry for Drinking Water and Sanitation	500
18	National	Ngo Box India CSR Summit and Exhibition	Bombay Exhibition Centre, Mumbai	Exhibition	27.09.16	28.09.16	NGO Box	300
19	National	IFAT	Mumbai	Exhibition	28.9.16	30.9.16	Messe Munchen	200
20	International	10th World Aqua Congress 2016 (Water - Smart Solutions for Growing India International Conference)	Delhi	Conference)	24.11.16	25.11.16	Aqua Foundation	200

21		Assam Conference on Sanitation-2017 (ASCOSAN - 2017),	Guwahati	Exhibition	16.02.2017	17.02.2017	Government of Assam	500-700
22	International	FSM4	Chennai	Conference	20.2.2017	22.2.2017		1,000

## 7. Water Body Rejuvenation: Palam Drain

Palam drain is a natural storm water drain in Dwarka (near Delhi) that, over time, has been used to discharge sewage generated by the upstream villages and other development along its length. Originally meant for seasonal storm-water discharge and flood control, the drain now carries a perennial flow of sewage. Its present condition makes it prone to further garbage dumping.

The good news is that the Delhi Development Authority (DDA) recognizes the threat the drain poses to public and environmental health; and envisages a clear stream of water running through the drain as part of a larger urban rejuvenation program aimed at creating a more liveable city.

Against this backdrop, a field visit was undertaken with representatives from DDA and the Delhi Jal Board (DJB), Centre for Green Mobility Ahmedabad (CGM), and CDD Society to understand ground realities. Based on the field visit and further consultations, a need for a comprehensive plan to address the rejuvenation of the Palam drain into an urban space was articulated amongst stakeholders. They felt that the drain should be revitalized following some of the best examples of the world - Seoul, Manila and Guangzhou - to provide an 'Urban Greenway' that serves as much-needed public space whilst also treating the water in a sustainable manner.

We are currently working with the CGM on a solution effectively treats storm water and wastewater and serves as a beautiful public space too – enhancing the quality of urban life and the tourism potential of the area.

The overall Project is divided into 3 phases.

- The 1st Phase involves Data collection, analyses and processing, Preliminary design, Concept and strategy formulation, Reporting and presentation to DDA and related Government agencies.
- The 2nd Phase involves Setting up of a coordination cell, conducting detailed surveys and analysis, coming up with detailed designs and costing, and initiating the Tendering process.
- The 3rd phase involves Implementation, quality control and fine-tuning, commissioning, training for operation and maintenance, presentation to the Authorities and the public and lastly workshops on river remediation

As part of the 1st phase in realising this vision, we have prepared a comprehensive 'Vision and Strategy Document' which articulates a detailed plan for creating a healthy and appealing urban space around these drains in Dwarka sub-city.

The document which has been created after a detailed feasibility study by our team provides a plan of action:

- To provide wastewater treatment facilities guaranteeing that the quality of the water flowing through the Palam drain meets prescribed standards alleviating health and environmental hazards. is optimal, in respect of human health and the environment.
- To ensure that stormwater is drainage is ensured optimally.
- To integrate wastewater treatment systems into in the context of a public spaces by remediating the drains' water in an effective and ecologically sound way.
- To provide solutions in the form of an integrated stormwater & wastewater management that sets a scalable and holistic example.

The idea is to provide a solution that will serve as a scalable and holistic example of many more such initiatives to be taken up. More importantly, to show that a wastewater treatment system can beautifully be integrated into public spaces and need not be a separate, demarcated (and smelly) area.

We aim to offer a framework for all natural drains and water bodies - not just in Delhi but across the country.

## **8. City Sanitation Planning: Sanitation Action Plan and Technology Demonstration(s) for 30 Pourashavas in Bangladesh**

The Asian Development Bank (ADB) through its program “Third Urban Governance and Infrastructure Improvement Project” (UGIIP-III) is supporting the Government of Bangladesh to strengthen urban governance and improve urban infrastructure and service delivery in 30 Pourashavas (Urban Local Bodies) to develop them into model towns of the country. One approach in this process is to develop a sanitation action plan and demonstrate sustainable technology options for sanitation service delivery in the 30 Pourashavas which can be further replicated or ‘program managed’ in other urban areas in Bangladesh.

ADB floated global tenders for the selection of a consulting firm for the project’s execution. BORDA with its consortium partners CDD Society, iDeCK and DSK successfully acquired the project by outbidding other internationally renowned organizations in the sanitation sector. This is a BORDA project – CDD supported BORDA in this project.

The BORDA-CDD-DSK-iDeCK consortium brought together a comprehensive combination of domain expertise, geographical coverage and contextual experience in decentralized sanitation infrastructure, community based interventions, advocacy and capacity building. The consortium’s expertise in designing and implementing decentralized sanitation infrastructure, especially for low-income communities and citywide sanitation planning to on-ground implementation were instrumental in being selected for the assignment. The four organizations together covered the entire value chain of sanitation as well as all components of a good sanitation program – planning, technology, financing and community mobilization.

The sanitation action plan aims at identifying solutions addressing all components across the sanitation value chain that are technically, financially and institutionally viable. In the context of the project, the sanitation value chain refers to access to toilets (user interface) followed

by collection, conveyance, treatment, disposal and reuse of faecal sludge/septage and wastewater, while addressing solid waste management and storm water management as cross cutting sectors.

The scope of work for preparation of sanitation action plan included review and analysis of existing sanitation situations across the sanitation value chain and cross-cutting themes mainly focusing on faecal sludge management, review of existing institutional and governance framework for sanitation service delivery, assessing the demand and supply for sanitation infrastructure and services, strategies (short, mid and long term) aiming at reducing the demand-supply gap and preparing an action plan and investment plan for each Pourashava.

## 9. Solid Waste Management: Andhra Pradesh

This year, we finally broke into the Solid Waste Management sector by securing a project to enable capacity building of all stakeholders - from the *Pourakarmikas* (waste collectors) on the street to Mayors of 110 towns. We see this as an exciting new opportunity to extend CDD's impact in the Sanitation sector.

We received this contract towards the end of this financial year and progress on this project will be made in the coming financial year.

## 10.CDD: Staff and Staff Development

### 10.1 All Employees – 2016-2107

STAFF LIST (2016 -2017)		
S.No	Name of the Employee	Period, if applicable
1	Shamala S.	
2	Laxman Gowda	
3	Rahul Sachdeva	
4	Thimmesha R	
5	Anwaar Ashraf	
6	Antony Charles Monk	
7	Sachit Bhandarkar	
8	Pravinkumar Choudhari	
9	Shailendra Brahmey	
10	Rohini Pradeep	
11	Andrews Jacob	
12	Swarna Lakshmi N.	
13	Shekhar Digambar Divale	
14	Molly D'Mello	
15	Roopa Bernardiner	
16	Madhwaraj Shrinivas	

	Belgaumkar	
17	Prashantha Y. K.	
18	Dene Godinho	
19	Venkatachala Reddy K. V.	
20	Khwairakpam Raina Devi	
21	Santhosha R.	(Uptil 30/04/2016)
22	G. S. Santhosh	
23	Ravikumar A. G.	
24	Sachin Tajne	
25	Manjunath K.	
26	Anusha N.	
27	Nithya B. P.	
28	Regi K. J.	
29	Susheel Sagar B.S.	
30	Philip Castelino	
31	Sravani Singamsetty	(Uptil 18/01/2017)
32	Rajashekara K. S.	
33	Nandeesh D.	
34	Kumar N.	
35	Rajesh D. S.	
36	Ravi Kumar	
37	Shrinivas	
38	Jayalakshmi S.	(Uptil 03/02/2017)
39	Susheelamma K	(Uptil 03/02/2017)
40	Ravindra Chmbhare	
41	Avinash Yadav Kumar	(Uptil 30/06/2016- Rejoined on 2/1/2017)
42	Karthik R	
43	Tanvi Sahni	
44	Reema Padia Parikh	
45	Santhosh Tapovan	
46	Praveen Nagaraja	
47	Lincy Paravanethu	
48	Emon Dastidar	
49	Subodh Kumar Sasmal	(Uptil 30/04/2016)
50	Nithin A.	
51	Uchila Divyashree Shridhar	
52	Sreevidya Satish	(Uptil 28/04/2016)
53	Amresh Sinha	
54	Indrireddy Pavan Kumar Reddy	
55	Ananya Ghosh	(Uptil 07/10/2016)
56	Anik Dutta	
57	Sarani S	
58	Sasanka Velidandla	
59	Varshini J Reddy	

60	Darshan B. N.	
61	Ajith Edathoot	
62	Swadha Das Mohapatra	
63	Ritesh Kumar Suman	
64	Kanakeahwar Kanakraj Devangan	
65	Prabhu N.	
66	Anurag Saha	(Joined on 4/4/2016 - (Uptil 29/09/2016))
67	Debisha Sharma	(Joined on 9/5/2016)
68	Nikil Gampa	(Joined on 9/5/2016)
69	Isha Dash	(Joined on 9/5/2016)
70	Ashisar Gandadhar Vani	(Joined on 9/5/2016)
71	Tanay Sandesh Timblo	(Joined on 16/5/2016)
72	Tarika Vaswani	(Joined on 16/5/2016)
73	Shailesh Kumar Yadav	(Joined on 13/6/2016)
74	Clifford Godwin S.	(Joined on 13/6/2016)
75	Ratna S.	(Joined on 1/8/2016)
76	H. B. Siddegowda	(Joined on 1/8/2016)
77	Purna Prasad	(Joined on 12/9/2016)
78	Preethi Grace	(Joined on 17/10/2016)
79	Pavan Kumar	(Joined on 09/11/2016)
80	Sushma Chandrashekar Bhat	(Joined on 06/12/2016)
81	Irfan Ulla Shariff	(Joined on 19/12/2016)
82	Krishna Swaroop	(Joined on 19/12/2016)
83	Mohammed Idris	(Joined on 02/01/2017)
84	Sujatha Gaddipatti	(Joined on 03/01/2017)
85	U. Anantha Moorthy	(Joined on 24/01/2017)
86	Anand Kumar K. N.	(Joined on 06/01/2017)
87	Sadhana Reddy S R	(Joined on 06/03/2017)

## 10.2 Guest Lectures

Name	Designation	Topic	Date
Rajeev Munankami, Reza Patwary, Md. Sahidul Islam	Senior Advisor/ FSM Programme Leader, Inclusive Growth Expert and WASH Advisor, SNV Netherlands	FSM including interesting topics like co-composting of faecal sludge, occupational safety and health, impacts of treated sludge on fish growth	6-04- 2016
Pradeep Kuttuva	Researcher	An analysis of decentralised wastewater reuse from Bengaluru	12-04- 2016
Jeannette Laramée	Research associate, BORDA Germany	Life cycle assessment of decentralized dry and waterborne sanitation	22-04-2016

		systems Evidence from Zambia	
Günter Langergraber	Deputy Head- Institute of Sanitary Engineering and Water Pollution Control, University of Natural Resources and Life Sciences, Vienna	Developments in Constructed Wetland technology in Austria	26-04-2016
1. Sun Kim 2. Jon Shaw 3. Francis L.de los Reyes	1. Sun Kim -Program Officer, BMGF, USA - Working on Omni ingestor program 2. Jon Shaw - Engineer, Jon Shaw and Associates, Boeing ,USA- Design of fluid transport equipment /emptying onsite sanitation systems 3. Francis L.de los Reyes ,Prof.of Environmental Engineering, BMGF Grantee, North Carolina State University, USA- Design of fluid transport equipment /emptying onsite sanitation systems	Sharing - Motivating factors to shift to sanitation sector	16-06- 2016
Allie Davis	PhD Research scholar	Sustainable Community Based sanitation : Improving Resource recovery Acceptance and Ilfe cycle Performance	16-06- 2016
Sanjay Molur	Executive Director & Founder Secretary, Zoo Outreach Organization (ZOO) Trust Freshwater Species:Indicators of ecosystem health	Freshwater Species:Indicators of ecosystem health	20-06- 2016
Mathew Sebastian & Joseph	Mathew Sebastian ,CEO, Living Waterefine Pvt. Ltd.	Ultra Filtration, Disc Filters, Advanced biological system, Volute dewatering Press, automated oil and grease trap	28-06- 2016
Sanjay Molur	CRVI Joseph ,Technical Head, Mesti Enviro Tech Inc.	Executive Director of the Zoo Outreach Organization (ZOO) Trust and the Founder (Secretary) for Wildlife Information Liaison Development (WILD) Society	20-Jun-16

Vinoth Rayar	Founder & President, Freshrooms Lifesciences, Chennai.	Sustainable business model for scaling-up FSM using Black Soldier Fly Larvae - A demand-driven approach	01-Jun-16
Heinz Habegger	Regulator in the Water Sector in Switzerland	CEO and Owner of Water Excellence Ltd, CH- Hilterfingen	18- Nov- 2016
Prof. V. Srinivas Chary	Director of Centre for Energy, Environment, Urban Governance and Infrastructure Development, ASCI	Disruptive ideas	04-01-2017
Zachary Burt	Post-doctoral candidate at Columbia University	Faecal Sludge Management and related aspects	17-01-2017
Heidi Bergsli	Researcher, Centre for Welfare and Labour Research, Norwegian Institute for Urban and Regional Research, Oslo	Public Space in a Democratic Perspective	20-01-2017
Dr. Meena Nair	Head of Participatory Governance Research Group (PGRG), Public Affairs Centre Bangalore	Introduction to Public Affairs Centre Bangalore	17-02-2017
Dr. Laxman Joshi, Rajendra Shrestha and Krishna Ram Yendou	Team of Technical experts from ENPHO	Introduction to ENPHO and its services	24-02-2017
Dr. Santiago Septien Stringel	Research Engineer, University of KwaZulu- Natal, Durban, South Africa	LaDePa Process for the Drying and Pasteurisation of Faecal Sludge	28-02-2017

### 10.3 Special Recognition

It's was a proud moment for CDD Society and BORDA with two recognitions this year. Rajesh Pai was recognised as the *Tech Icon of the Year* at the India Today Safaigiri Awards and The Global Knowledge Management Congress & Awards 2016 recognised Susmita Sinha as one of the *50 Most Most Influential Knowledge Management Professionals for the year 2016*.







## 10.4 Weltwaerts volunteers

Our Weltwaerts Volunteers for 2016-2017 are:

### Clara Nicolai

Clara was born and raised in Berlin. While she majored in Earth and Environmental Sciences, her interdisciplinary B.Sc. program allowed her to study subjects like theory of science, anthropology and social psychology. Similarly, her work at CDD is not limited to the environmental component of reuse alone - rather, she is curious about the links between different teams, projects and skill sets. Her hobbies include outdoor sports, music and dancing. She feels very much at home here in India and is really enjoying (spicy!) Indian food.

### Clara Isabella

Clara is a Weltwaerts volunteer with the City Sanitation Planning (CSP) team. She was born and raised in Vienna, Austria, where she lived for most of her life before coming to India in October last year. She holds a Bachelor's Degree in Cultural and Social Anthropology and Spatial Planning from the University of Vienna and the Technical University of Vienna. Clara loves weekend getaways and has been exploring Incredible India.

### Karlheinz Rackl

Karl was born in Mainz (close to Frankfurt) and is 28 years old. During his Master Studies of International Economics, he spent a semester abroad in Puebla, Mexico. After his Masters, he decided to study more - to become a Coordinator in International Project Management. The focus of this program was on project management tools applied to the fields of Humanitarian Aid and Development Cooperation. His hobbies include learning as much as possible about everything happening within our universe(s?), practicing Yoga, listening to music, travelling and talking to friends.

### Stephanie Fritz

Stephanie is part of the Capacity Building team at CDD. Her hobbies include travelling and cooking.

### Dorothee Kurz

Dorothee has completed a Master of Science in Chemical and Biochemical engineering at the Technical University of Denmark. Having a strong interest in research, two projects ended up in

scientific posters presented at international conferences. Further, she has interests in Lacrosse, Badminton, playing French horn and foreign travelling.

### **Daniela Schmitz**

Daniela was born in Cologne and raised in a small town in the south-western part of Germany. After finishing school, she moved to the most western city in Germany (Aachen). She holds a Bachelor's degree in Environmental Engineering and is on a year-long break from her Master's degree study in Environmental Process Engineering. She is part of the technical team at CDD. Her hobbies include playing the flute, singing and music.

## **10.5 General Body**

(All General Body members and office bearers are honorary)

<b>Sl. No.</b>	<b>Name of the Organisation/Individual</b>	<b>Name of the representative</b>	<b>Designation</b>
1.	Design Collaborative, Puducherry	Mr. Israel Gnanaraj	President
2.	Waste Wise Trust, Bangalore	Mr. Anselm Rosario	Vice President
3.	Rural Literacy and Health Programme (RLHP), Mysore	Mr. Koshy Mathew	Treasurer
4.	Reflow, Ahmedabad	Mr. Anuj Malhotra	Secretary
5.	Inspiration, Kochi,	Ms. Latha Raman Jaigopal	Member, Governing Body
6.	DHAN Vayalagam (Tank) Foundation, Madurai	Mr. A. Gurunathan	Member, Governing Body
7.	Centre for Integrated Development (CfID)	Mr. Tapan Patel	Member, Governing Body
8.	Individual Member, Mr. StanzinTsephel, Bangalore	Mr. StanzinTsephel	Member, Governing Body
9.	Prakruthi , Bangalore	Ms. Lincy Pramod	Member, Governing Body
10.	Individual Member, Mr. J.S. D' Souza, Gurgaon	Mr. J.S. D' Souza	Member
11	IIFYW, Nagpur	Ms. Shilpa Mirashi	Member
12.	HunnarShaala, Bhuj, Kutch	Mr. Tejas Kotak	Member
13.	Center for Scientific Research, Auroville	Mr. Tency Baetens	Member
14.	International Academy of Environmental Sanitation and Public Health , New Delhi	A.K. Sen Gupta	Member
15.	Auroservice Consultants Pvt. Ltd., Pondicherry,	Mr. Muthulingam	Member

	rep.		
16.	ExNoRa International, Chennai,	Mr. T. Vijay Anand	Member
17.	Ladakh Ecological Development Group (LEDeG), Leh	Mr. Tundgup Tsewang	Member
18.	Eco Pro, Auroville	Dr. Lucas Dengel	Member
19.	Individual Member, Mr. Pedro Kraemer	Mr. Pedro Kraemer	Member
20.	Individual Member, Mr. B. R. Balachandran, Bangalore	Mr. B. R. Balachandran	Member

## 11. Financials



**CONSORTIUM FOR DEWATS DISSEMINATION(CDD) SOCIETY**  
**BALANCE SHEET AS AT MARCH 31, 2017**


*Amount in Rs.*

Particulars	Schedule	As at March 31, 2017		As at March 31, 2016	
<b>SOURCES OF FUNDS</b>					
Capital Fund	A		52,000		52,000
Capital Reserve	A		1,958,156		1,958,156
General Fund	A		17,873,404		22,594,757
Donors Funds	B		483,936		4,403,170
			<b>20,367,496</b>		<b>29,008,083</b>
<b>APPLICATION OF FUNDS</b>					
<b>Fixed Assets</b>					
Gross Block	C	18,375,677		15,109,258	
Less: Depreciation		11,417,758		9,368,923	
Net Block			6,957,919		5,740,336
Investments			10,000		10,000
<b>Current Assets, Loans &amp; Advances:</b>					
Cash & Bank Balances	E	2,201,983		7,417,881	
Loans, Advances & Deposits	F	12,526,864		16,207,989	
Inventory	D	4,852,967		5,129,422	
		<b>19,581,814</b>		<b>28,755,292</b>	
<b>Less: Current Liabilities</b>					
Statutory Recoveries	G	1,551,933		739,323	
Other Liabilities	H	3,853,906		4,302,450	
Programme Advances	I	776,397		455,772	
		<b>6,182,237</b>		<b>5,497,545</b>	
Net Current Assets			13,399,577		23,257,747
<b>TOTAL</b>			<b>20,367,496</b>		<b>29,008,083</b>
Notes to Accounts	U				

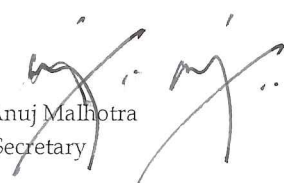
The Schedule referred to above forms an integral part of the Balance Sheet;

For Consortium for DEWATS Dissemination (CDD) Society

As per our report of even date attached  
For M.A. BRAGANZA & ASSOCIATES  
Chartered Accountants  
Firm Registration No 0005075



Koshy Mathew  
Treasurer



Anuj Malhotra  
Secretary






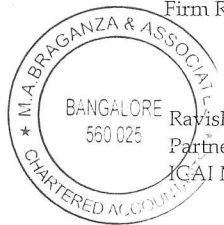


Ravishankar Hegde  
Partner  
ICAI Membership No. 232520

Place: Bangalore  
Dated: July 19, 2017

**CONSORTIUM FOR DEWATS DISSEMINATION(CDD) SOCIETY**  
**INCOME AND EXPENDITURE ACCOUNT FOR THE YEAR ENDED MARCH 31, 2017**

*Amount in Rs.*

Particulars	Schedule	Year ended March 31, 2017	Year ended March 31, 2016
<b>INCOME</b>			
Annual Subscription fees		60,000	53,000
Income earned during the year	J	19,689,882	19,999,726
Savings Bank Interest		177,601	175,091
Fixed Deposit interest		21,310	-
<b>Restricted Funds:</b>			
Grants - BMZ BNS		12,285,402	16,932,709
Grants - FC		-	568,422
Grants - NEXUS		12,835,703	13,367,118
Grants - BMGF I		-	13,061,612
Grants - BMGF		33,080,000	-
Grants - BMGF II		11,558,632	-
Grants - EU Shimla		1,157,190	3,500,000
Grants - IIHS		11,000,000	7,000,000
Grants - KRC		-	714,900
Bank Interest		834,605	328,135
<b>TOTAL (A)</b>		<b>102,700,326</b>	<b>75,700,713</b>
<b>EXPENDITURE</b>			
Sanitation - DEWATS unit and Other Expenses	K	26,854,771	21,748,377
Project Expenses - Foreign Contribution	L	81,799,260	52,486,713
Depreciation on Fixed Assets	C	2,048,836	2,099,667
Receivables written off		638,046	-
<b>TOTAL (B)</b>		<b>111,340,913</b>	<b>76,334,757</b>
<b>Surplus/(Deficit) (A-B)</b>		<b>(8,640,587)</b>	<b>(634,044)</b>
<b>Surplus/(Deficit) transferred to -</b>			
Donors' Funds		(3,895,826)	(3,424,719)
General Fund		(4,744,761)	2,790,675
		<b>(8,640,587)</b>	<b>(634,044)</b>
Notes to Accounts	U		
<p>The Schedule referred to above form an integral part of the Income &amp; Expenditure Account;                      Note: All expenses and income are on accrual basis of accounting;</p>			
For Consortium for DEWATS Dissemination (CDD) Society  Koshy Mathew Treasurer		As per our report of even date attached For M.A. BRAGANZA & ASSOCIATES Chartered Accountants Firm Registration No 000507S  Ravishankar Hegde Partner ICAI Membership No. 232520	
 Anuj Malhotra Secretary			
Place: Bangalore Dated: July 19, 2017			

**CONSORTIUM FOR DEWATS DISSEMINATION(CDD) SOCIETY**  
**RECEIPTS AND PAYMENTS ACCOUNT FOR THE YEAR ENDED MARCH 31, 2017**

*Amount in Rs.*

Particulars	Sch	Year ended March 31, 2017	Year ended March 31, 2016
<b>Opening Balance</b>			
Cash		52,287	93,781
At Bank		7,365,594	16,085,101
		7,417,881	16,178,882
<b>Receipts</b>			
Advances Recovered	M	485,902	713,441
Statutory Recoveries	N	814,786	267,014
Grant Received		81,916,928	55,144,761
Bank Interest		1,033,516	503,226
Sundry Creditors - yet to be settled		(289,825)	639,062
Income earned during the year	O	19,984,964	19,661,025
Programme Advance Received	P	320,625	268,083
Tax Deducted At Source		(1,180,345)	(169,715)
Capital Work in Progress		-	-
<b>TOTAL: (A)</b>		103,086,552	77,026,898
<b>Payments</b>			
Project Expenses	Q	81,799,260	51,655,061
Sanitation - DEWATS unit and Other Expenses	R	26,873,399	21,705,634
Exposure Visit Advance Spent		1,635,786	-
Fixed assets purchased	C	3,266,419	2,414,756
Advances Paid	S	(4,397,633)	11,157,797
Other Liabilities settled	T	(1,512,829)	(1,145,349)
Receivables written off		638,046	-
		108,302,450	85,787,899
<b>Closing Balance</b>			
Cash		229,592	52,287
At Bank		1,972,391	7,365,594
<b>TOTAL: (B)</b>		2,201,983	7,417,881

The Schedules referred to above form an integral part of the Receipts & Payments Accounts;

For Consortium for DEWATS Dissemination (CDD) Society

  
  
 Anuj Malhotra  
 Secretary

**Auditors' Report**

We have examined the above account with the books of account and vouchers maintained by Consortium for Dewats Dissemination (CDD) Society and have found the same to be in accordance therewith and the information and explanations furnished to us and gives a true and fair view of the transactions of the CDD Society for the year ended March 31, 2017.

As per our report of even date attached  
 For M.A. BRAGANZA & ASSOCIATES  
 Chartered Accountants  
 Firm Registration No 000507S

  
 Ravishankar Hegde  
 Partner  
 ICAI Membership No. 232520



Place: Bangalore  
 Dated: July 19, 2017