Annual Report

2017-18

Consortium for DEWATS Dissemination **Society**

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Foreword

Mr. Israel Gnanaraj, President

About CDD Society

CDD Society is a not-for-profit organisation registered in 2005. The 'C' in CDD Society stands for Consortium - as the organisation was (informally) formed in 2002 by 16 organisations and 2 individuals who came together to collectively tackle wastewater. Making a larger dent in the sector is the main purpose behind working as a consortium. The network also partners with other like-minded organisations to promote basic sanitation services and sustainable water management practices across the country.

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. According to a World Bank report, the cost of environmental damage in India through poor sanitation shaves off 6.4 percent of the country's gross domestic product. Lost productivity from death and disease (water-borne diseases, such as Diarrhea are India's leading cause of child mortality) are the primary culprits.

In fact, access to toilets itself, which the Government is trying to tackle through initiatives like the Swachh Bharat Mission is a challenge itself. 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, which includes in-house staff, consultants, partners, and trainee participants, 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.

"What happens after the flush?"

Where does it all go? Is it going into a sewer system. Is it being treated or is it being dumped into the environment? With a growing number of people moving to India's cities and with expansion becoming unmanageable, the answers to these questions become critical to understand how we can work towards a healthy environment.

Release of untreated liquid and solid waste pollutants to the immediate surroundings of a community directly threatens the life and wellbeing of the entire ecosystem – humans, animals, and plants. CDD Society's mission is to provide robust and sustainable post-toilet infrastructure with the aim of improving health and hygiene, preserving the environment and securing water resources.

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 Corporation 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.

FY2017-18 (31 December, 2017) saw the closure of phase 5 of the BMZ funded Basic Needs Services project as well as the closure of the BMZ funded Nexus project.

Co-treatment of faecal sludge and organic solid waste to generate compost at the faecal sludge treatment plant at Devanahalli.

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 sized 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 last phase of the project (2015-2017) focussed on shifting from privately-funded single systems to government-funded cluster systems and the team focussed on the development of the sector, especially with regards to creating a politically supporting environment and engaging private players in the sanitation sector. The focus was also on the implementation of cluster DELSA in specific cities for demonstration purposes. The project impacted the sector through project implementation.

Impact Overview

Activities

Construction of 35 DEWATS and 4 FSTP projects was completed by CDD Society in this phase. CDD Society's network partners and trained participants have implemented 46 projects, which have helped in the protection of water bodies and other natural resources. Our engineer's also worked on 3 water remediation projects for the first time:

(a) With the NGO Reflow to prepare the report on "Drains Remediation in Dwarka: for 4 drains in Dwarka, Delhi; which was presented to the Delhi Development Authority

(b) In East Bangalore, a 1 MLD DEWATS is being set up for the rejuvenation of the Mahadevapura lake

(c) Under The Coimbatore Smart Cities Project for the rejuvenation of 8 of the city's lakes

Environmental Impact

The 35 DEWATS projects treat 337m^3 of wastewater daily. The 4 FSTPs have been designed to treat faecal sludge generated by 50,000 people; and have treated 11,00,000 litres of faecal sludge till date. It is estimated that 1 truckload of faecal sludge is equivalent to 5,000 people defecating in the open. So the impact on the environment by these DEWATS and FSTPs is noteworthy.

Social Impact

The interventions by CDD Society and its partners have positively impacted lives of close to 1 lakh beneficiaries through the provision of better sanitary services mainly pertaining to domestic wastewater management.

DEWATS at Pristine Temple Tree apartment, Kengeri, Bengaluru

CDD team on field

Social Impact

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 endeavor, 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 DEWATS™ has to be accordingly modified to achieve the discharge standards, else it would become difficult to sustain in the sector.

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

Project Nexus (Food Production and Settlement Hygiene in Poor Peri-Urban Regions in India) aims at closure of nature's loops through sanitation and agricultural interventions.

This was the final year for the project and activities thus focussed on meeting the goals defined under the project.

The 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 major activities of the project fall under four key result areas. For year three, the achievements are as follows:

Establishment of network by providing a platform and favourable environment for knowledge exchange and partnerships

Partnerships:

- MoU drafted and under review by Veterinary College in Bangalore, ongoing for helminth egg analysis for treated and dried faecal sludge
- Initiated discussions with CEEW in New Delhi for collaboration on policy analysis reports.
- Letter of Interest received from 3 network members expressing their interest to be associated with reuse oriented community projects.
- Cube bio Energy - New partner brought on board.

CDD team on field

Outreach:

- Presented Nexus Project to 30 students and professors at Indian Institute for Science in Bangalore, in order to collaborate in future with IISc
- Two papers done by Project team members were presented by BORDA representatives to approx. 100 individuals at the Dresden Nexus Conference in Germany (17-19 May 2017)
- Presented Nexus Project to approximately 50 individuals at Bay Area WASH Symposium at UC Berkeley. Networked with 10 people working exclusively on Sanitation and reuse aspects related to human waste.
- Co-hosted 'Future Earth Conference' with Indian Institute of Science in Bengaluru (21 July 2017), with project team hosting a 2-hr session with 3 expert invitees from ENPHO, EAWAG and Biome Environmental Services Ltd.; Organised a workshop on 'The Nexus Perspective as Driver of Sustainable Development' at the conference.
- Attended 'Smart Green Sanitation for Smart Green Cities' Conference in New Delhi on 9th June 2017
- Conducted a workshop for 37 farmers on “Safe Reuse Practices of Human Waste and Wastewater in Agriculture” at Gurubhavan, Devanahalli, on 4th April 2017.
- Workshop delivered to 51 participants on 'Linking Urban Sanitation and Agriculture through FSM approach' organised by Tata- Dhan Foundation in Sep 2017.
- Paper on Devanahalli composting operations presented to nearly 200 participants at 'International Conference on Environment, Health and Policy Nexus (ICEPHN)' in July 2017.
- Conducted meetings with the Association and Govt. officials on SWM at the colony

Papers:

- Prepared a document on Sector-Political Hurdles focusing on different Reuse approaches
- A Policy brief is being prepared on 'Challenges associated with human waste as organic manure' (not a project deliverable)

Development of plans and context-specific learning to enable effective field implementation

- 1st draft of Sector Learning document focussing on local practices and consolidation of literature review was prepared
- Prefeasibility studies for Solid Waste Management in 8 towns in Andhra Pradesh completed

Implementation of demonstration/ pilot projects with regular monitoring and evaluation

Training Programs:

- Training conducted for 37 farmers in Devanahalli on safe reuse practices with faecal sludge and introduction to FSTP and co-composting operations via field visit and demonstration.
- A Farmers' workshop on the topic of 'risk mitigation with reuse of untreated wastewater from DakshinaPinakiniriver' was conducted for 30 farmers in Mugalur. This workshop was organised in collaboration with CDD Society, St. John's Medical College, University of Agricultural Science, Bengaluru and Biome Environmental Trust.
- Exposure Visit of farmers in Kalrayani Hills to “Tribal Health Initiative” conducted on 29th May 2017 by partner organisation, EcopRo in Tamil Nadu

Co-composting Operations at Devanahalli:

- 2 cycles of windrow co-composting faecal sludge with municipal wet waste carried out at the FSTP at Devanahalli. Samples were tested and reports compiled regularly.
- Coordination and formal procedures completed with Town Municipal Corporation in Devanahalli for roofing of co-composting unit
- Harvesting of crops completed as part of agricultural trials at the FSTP in Devanahalli. Data was collected and assessed to help understand the effect of different treatments - Faecal sludge, Co-compost, Farmyard manure, recommended dose of fertilizers and control on crop growth, development, yield parameters and on soil parameters.

Beedi Workers' Colony:

- Agroforestry planning for 4th season of cultivation at Beedi Colony completed with perennial crops including fruit crops and some vegetable crops.
- Land preparation and sowing completed with the above mentioned crops at Beedi Colony with daily operations ongoing.
- Case Study of Beedi Colony updated with information from last 3 cropping seasons and monitoring data. One-page document on Beedi Colony Wastewater Reuse Operations prepared.
- Baseline survey conducted and data assessed for Solid Waste situation in Beedi Workers' Colony.; Wet waste characterization was carried out as part of a Solid Waste Management study at the colony.

Other:

- Partner organisation, EcoPro, in collaboration with Auroville Dental Centre. conducted camps for dental health check-up and educational programmes on nutrition in Matapattu school for 25 students in March 2017 and in Mundiyur school for 59 students in July 2017 in Kalrayan Hills. The main objective of the programme was to educate school children on oral health and on the importance of nutrient rich food, specially minerals like calcium, phosphorous in developing strong and decay resistant teeth.
- Items for supplementary nutrition supplied to the three schools in Kalrayan hills. Two taps of drinking water filters were repaired.
- Monitoring Dashboards created and updated for 4 different Reuse approaches
- 9 EcoSan toilets built were monitored for regular use and cleanliness. Farmers motivated to use the collected urine in their fields.
- Pilot farmland was identified in Tamil Nadu by EcoPro team, soil tests were conducted, seeds were sown.

Building capacities of sector professionals through customised trainings/workshops

Documentation:

- Various revisions of SoPs completed for wastewater irrigation, co-composting and its application and usage of UDDTs and it products.
- Reuse document with an insight into feasibility analysis, operating procedures, monitoring mechanisms, and 'Do's and Don'ts' with reuse operations prepared.
- Trainers' manual prepared for 'Enabling safe reuse of treated and untreated wastewater and faecal sludge for food production for farmers'

Events:

- Training conducted on ' Resource Recovery and Market Potential Study of Reuse Products - Faecal Sludge Management'
- Organic farming workshop conducted in Melthoradipattu by EcoPro team
- Dental check-up and nutritional education carried out for the Mundiyur and Metapattu school students by EcoPro team in Tamil Nadu

Study Tour : Decentralised sanitation solution and its management training

Waste Water

Our DEWATS Work this year

60 DEWATS contracts were signed with clients across 3 states (Karnataka, Orissa, Tamil Nadu) in India. Details provided in . In addition, we took up work on 1 biogas digester in Uttarakhand. Work on all these projects is ongoing and in different stages. Once completed, these DEWATS systems will treat 1,316 m3 of wastewater daily, keeping the same out of the environment and directly benefitting 8,645 people residing in the communities in which these systems have been set up.

Small-Scale Sanitation Scaling-Up

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 partnered 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. A small scale sanitation system would be 5-700 KLD in size, serving 10-1,000 households (50-5,000 persons equivalent). 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 Society 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.

DEWATS at Mahadevapura Lake, Bengaluru

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

DEWATS at Pristine Temple Tree apartment, Kengeri, Bengaluru

The team has completed work on this project and will share findings from it over the next month. A detailed report summarizing the main findings (technical, financial and institutional) is available; as are factsheets with key information. Key recommendations from the project are also being made via a Project Brief, to enable suitable scaling up of small-scale sanitation systems.

Monitoring and Evaluation

The objective of Monitoring and Evaluation (MonEv) of Decentralised Wastewater Treatment Systems (DEWATS™) projects is to recognize associated problems with technical, social, operational and institutional aspects in existing DEWATS™ plants. The outcome of such monitoring studies will help to evaluate the overall functioning efficiency of DEWATS™. The lessons learnt will also help to plan for corrective measures to improve the performance of future projects that facilitate the process of sustainability. Successful DEWATS™ projects will help to replicate and upscale the same.

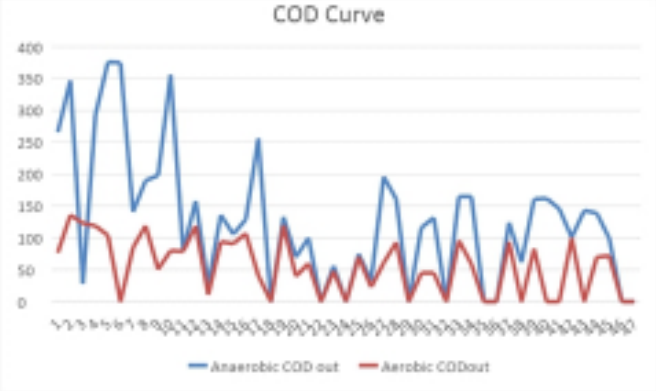
Bremen Overseas Research and Development Association (BORDA) had an interest to develop a global common database on the functioning efficiencies of all the implemented projects. Therefore, the Global MonEv program was launched in 2011. It was intended to implement the MonEv program in all of its functioning / operating regions.

During FY2017-18, MonEv was conducted for more number of DEWATS built by CDD Society and its partners/other organisations. MonEv was conducted in India (48 projects) & Nepal (17 projects) - details provided in .

Most of the visited projects were DEWATS at community and public toilet, which had maintenance issues; further, as some communities are connected to the sewer line, DEWATS was not functional. This year, BORDA had revised the Global Monitoring Form (GMF) so for the wastewater samples, the MonEv team measures pH, Chemical Oxygen Demand (COD), Turbidity, Ammonium & Phosphate for wastewater and pH, Alkalinity and Electrical Conductivity for Water. Further it is also ascertained that the final treated effluent complies with the Central Pollution Control Board (CPCB) discharge standards.

To have all regional DEWATS in single platform, BORDA had developed the MonEv database, unfortunately that database didn't work well. So this year BORDA developed a new tool called mWater in which the interview and observation data can be entered offline directly into the tool. The standard GMF will be used onsite to conduct the interview, observations and analysis of samples. Few parameters like pH, Conductivity, Turbidity & Alkalinity will be conducted onsite and analysis for other parameters like COD, Ammonium & Phosphate will be conducted in the lab by getting the preserved samples from the site. mWater is designed according to the GMF so that it will be easy to fill the data onsite and no data will be missed.

Below is the COD curve for different projects. Here the COD value from secondary effluent is compared with the final treated wastewater that meets CPCB standards.



Major challenges faced were accessibility to site and sampling at different modules because of lack in maintenance.

Glimpses of Monitoring and Evaluation activities being conducted by the CDD team.

Faecal Sludge Management
The BMGF Grant

Name of Project: Strengthened technical and managerial capacity of CDD to provide advisory and implementation support services to the government, ULBs and development partners on Faecal Sludge Management and Non-Sewered Sanitation.

Key Highlights (not covered in other parts of this report):

- 122 concept notes/FSM proposals have been given to Urban Local bodies.
- CDD is supporting states by reviewing DPRs in AMRUT towns: 9 cities in Odisha, 30 in Andhra Pradesh.

Planning and Policy:

- The FSM tool box developed by AIT in collaboration with C-STEP was tested in more than 100 towns of India. The feedback given enabled the evolution and development of a smarter, simpler easily customizable tool box.
- On the policy front, after helping compile the National Primer in 2016, we have engaged with numerous State Governments. These include Jharkhand, Rajasthan and Karnataka. Recently, in Karnataka, the cabinet passed the FSM policy managed by KUIDFC and implemented by KUWSDB.

Technical Infrastructure/Research and Development:

- CDD's R&D lab was upgraded and has been operational since July, 2017. The expanded lab now houses a distillation unit, a spectroquant, centrifuge, thermoreactor, a TKN unit, upgraded microscopes powerful enough to observe helminth eggs, and equipment which can blend faecal sludge.
- New technology is being tested in and around the CDD building campus and so far prototypes of Vertical PGF and trickling filter have been set-up. Much of this technology is being featured in the upcoming design concepts of FSTPs being designed by CDD. The vertical PGF, for example is a part of the FSTP being built in Trichy.
- Research is being carried on to improve the treatment of Faecal Sludge, including speeding up the process in order to make it more efficient. Research includes addition of coagulants, improvement of sludge drying beds, non-biodegradable COD tests and other innovations in Devanahalli and at the CDD campus.
- We established a partnership with Freshroom Lifesciences Ltd. for the demonstration of black solider fly larva-based sludge treatment. The trials are currently in process in their labs.
- We are working with vendors for solar pasteurization and solar enhanced drying technologies to reduce land requirement and dependency on availability of solid waste in current FSTP design approach.

The new upgraded CDD-CASS Analytical Laboratory

Devanahalli and the Oracle Corporation USA Grant

2016-2017 was a big year with regards to FSM for CDD Society. With help of the people of the town and the Town's Municipal Council, we took Devanahalli to new heights and expanded the scope of what we do by leaps and bounds. The goal for FY2017-18 for the town was not limited to faecal sludge management but extended to effective reuse interventions as well making the town ODF+.

With this in mind, we started the year by implementing a full scale co-composting unit under the Nexus project and there on carrying out successful agronomic trials. Trials with 5 varieties of vegetables have been harvested and successful testing has been completed. We were able to carry out this activity successfully as we streamlined the process of acquiring raw materials along with the operations protocols. The tested results revealed no harmful microbes present in the vegetables.

Moving forward with the vision to make the town ODF+ (Open Defecation Free plus), Oracle USA came forward to partner with CDD society and TMC Devanahalli to make Devanahalli one of India's first few towns to achieve this title. Working on the same, toilets were built for households without a toilet, who could not afford to build one on their own. To identify the same, a detailed town-scale survey was conducted with the help of 20 students and TMC Devanahalli staff to identify and map beneficiaries in need of toilets. The project started on ground in July 2017 and ended in March 2018 with more than 500 people having benefited from the 150 individual toilets that were built and the 40 insanitary toilets that were converted to sanitary ones. During the project's progress, it was realized that to meet the set objectives of ODF+, no human waste should be let into the open and hence we started with the conversion of insanitary toilets i.e. toilets that are not connected to pits/septic tanks. For the same, TMC Devanahalli staff did a pan Devanahalli campaign, going door-to-door to identify houses who have not connected their to pits/septic tanks and issuing notices to people to do so.

Meanwhile, Devanahalli continued to attract many visitors (approximately 1,200 visitors in calendar year 2017 versus approximately 600 visitors in calendar year 2016). These visits served the purpose of creating awareness amongst decision makers by showcasing the effective and sustainable FSM system in place.

Currently, Devanahalli is not just about FSM but rather the goal is to create a model town for India with zero human waste discharge with effective treatment and reuse options along with a self-sustaining strategy.

The TMC also came forward requesting CDD Society to develop a comprehensive solid waste management intervention for the town of Devanahalli. Under the same, a detailed baseline study was conducted quantifying and analyzing the existing trends, gaps in the solid waste management system in the town. An initial study report has been submitted to TMC and is still a work in progress.

Key Highlights of FY2017-18:

- Installation of a new feeding tank at the FSTP of 10,000 litres capacity fabricated at CDD Society's Prefab centre
- FSM tender agreement: After a long wait of more than 1 year after drafting 4 key FSM policies and implementing them, in 2017, the tender was floated for outsourcing the FSTP and truck operations to a private operator for which the contract agreement was signed with the TMC.
  A consortium of 3 organisations – Kamavida (Lead financial partner), Cube Bio-Energy (implementation partner) and CDD Society (monitoring partner) was formed and bidded successfully in the tender. The work order for outsourcing operations is yet to be submitted by the ULB.
- Built 150 toilets, benefitting 500 people without toilets
- Conversion of 40 insanitary toilets benefitting 150+ people directly
- Devanahalli declared ODF on March 5th, 2018, under Swachh Bharat Mission making it one of the few towns in India to be ODF+
- TMC Devanahalli was awarded the Best Municipality Award under Best Practices of Faecal Sludge Management amongst all 119 ULBs by CMAK Karnataka supported by State Government of Karnataka and DMA Karnataka.
- A comprehensive baseline study completed for the town
- SBM director Mr. Praveen Prakash and Mr. Param Iyyer, PS, GOI visited the FSTP

For FY 2017-18, Oracle Corporation USA has approved another grant of Rs. 38 lakhs.

Leh

This year, we set up our second FSTP in India - at Leh, Ladakh. Set up amidst the mighty Himalayas, it is probably the highest (and prettiest) FSTP in the world. The altitude coupled with the terrain made this a challenging project to work on. But despite the difficult circumstances, we were able to complete the project in under 60 days – a feat that we're proud off. We were also able to customise the FSTP for the region's difficult terrain and extreme weather – minimum temperatures of -30 degrees C, low air pressure and very little rain or snow.

This project also demonstrates how important strong political will is to overcome hurdles a town-scale project of this kind (in a country like India) could entail – identification and clearing of land requirements in this particular case.

Another first for the project is the Planted Drying Bed (PDB) technology that has been used for the first time in India – to accommodate for the unpredictable weather which can disrupt scheduled cleaning services and thus daily volume of faecal sludge collected. In fact, the FSM business model at Leh is also unique. It is the first time a private company (The Blue Water Company in this case) has taken complete responsibility for implementing and operating both the trucks and the treatment plant – maximising accountability. The ULB has invested zero money and will pay only when services are successfully delivered – a pay-for-performance model for FSM.

All these steps have been taken to ensure successful implementation of FSM in the region - a matter that has assumed urgency over the past decade thanks to modern habits and an influx of tourists that have disrupted the region's traditionally sustainable and self-sufficient way of life. Septic tanks and soak pits that are largely in use today are poorly designed. As the underground water table is high (only 30 feet in some places), the risk of water contamination is high – more so since borewells are extensively used for drinking water.

FSM has helped Leh put in place a quick and affordable solution – helping prevent potentially serious health and economic consequences. We hope that the Leh model of FSM will be a good example for other towns looking for similar solutions.

Leh FSTP construction site

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

With CDD Society's support, the country of gross happiness inaugurated its first FSTP in August 2017.

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 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 Society'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.

FSTP in Bhutan

Jhansi

Background:

This year we began work on a 6 KLD pilot treatment plant for the town of Jhansi, Uttar Pradesh (India). According to the 2011 census, Jhansi has a population of 5,05,717 living in 1,61,804 households. 80% of these households rely on onsite sanitation systems such as single pits and septic tanks. With the ULB working towards ODF and improving their ranking in Swachh Bharat Mission (SBM), this FSTP will be a lead scorer in the Swachh Sarvekshan evaluation for 2018.

Key highlights of the Planted Drying Bed Treatment for Faecal Sludge

- Treatment Capacity of 6 KLD per day (or) two truckloads of faecal sludge
- Caters to current desludging need of the city. In future can cater to up to 30,000 person equivalent (PE)
- Re-cycles 1.2 million litres of clean treated water and 60 metric tons of nutrient rich bio-solids per annum
- Public Private Partnership. Land owned by ULB, I nvestment and O&M by Private Operator

The faecal sludge treatment plant at Jhansi is a one-of-a-kind model in the country, with a private entrepreneur investing in the treatment at a city scale. Mr. Naveen Gupta, Managing Director of Purna Pro Pvt. Ltd. has been associated with Jhansi Nagar Nigam (i.e. the town's ULB) in providing desludging as a private model. Under this, the ULB empanelled Purna Pro Pvt. Ltd. for desludging households at a prescribed fee.

Having been exposed to the Devanahalli FSM model, Mr. Naveen Gupta showed a keen interest in forward linking the desludging to treatment and providing a comprehensive solution to the ULB. To complement his effort, the ULB provided a land parcel on the outskirts of the city, where an FSTP could be established.

Treatment modules were chosen by CDD Society to ensure O&M with minimal skill and cost. The FSTP consists of 6 sets of planted drying beds, where the sludge is disposed directly from the tanker. While the solids get retained in these beds, the percolate (liquid) passes through the filter media and is further treated by passing it through a sedimentation tank, anaerobic filter and horizontal planted gravel filter.

The final treated water is collected and stored in a polishing pond, which serves as tertiary treatment, by reducing pathogens using solar radiation. The solids from the planted drying bed will be removed at intervals of 12-18 months and auctioned to farmers, adding to the revenue source (of the FSTP). All the end products are designed to meet the Pollution Control Board norms.

Environmental Impact:

With this faecal sludge treatment plant, CDD Society has helped Jhansi to upgrade its situation in providing improved sanitation service to its citizens.

Upcoming FSTP in Jhansi, Uttar Pradesh, India

Rapid Assessment of Sanitation Situation in 100 Towns of Rajasthan

In FY16-17, 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 Swachh Bharat Mission funds.

As part of this Rapid Assessment Survey, we analysed the Sanitation Value Chain in 100 towns in Rajasthan and thus, identified gaps in the same.

After identifying the sanitation gaps, we recommended solutions for the same apart from assessing the investment needed for the implementation of wastewater and FSM projects in the state.

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. The study also led to the signing of an MoU between the Local Self Government Department (LSGD) of Government of Rajasthan and CDD Society for Project Management Consultancy for FSM Planning in these 100 towns.

In FY2017-18, CDD Society has also started working with Rajasthan Urban Infrastructure Development Project (RUIDP) for FSM planning and implementation in 8 project towns which are part of RUIDP Phase III and Phase IV.

- CDD Society has been working towards strengthening the FSM scenario in Rajasthan and the following has been the key achievements this financial year:
- CDD Society has established touch points in 109 towns in Rajasthan
- 40 towns have been visited for land feasibility studies
- 38 towns have been selected for land assessment based on environmental vulnerability and preparedness of ULBs
- 19 No-Objection Certificate(NOCs) have been received for the construction of FSTPs
- 7 towns have passed Policy Resolutions for implementation of effective FSM solutions
- 5 DPRs have been technically approved
- Construction and O&M of 1 FSTP has been tendered out

Apart from the FSM DPR preparation, CDD Society has undertaken various capacity building and IEC activities on FSM and Sanitation in the state. As part of these capacity building and IEC initiatives, CDD Society has conducted a number of ULB level workshops, 6 Divisional level workshops, 2 mason's trainings, 3 street plays done for awareness on use of toilet and FSM, and transformed 1 public space.

Outreach Impact: 450+ officials from ULBs and state governments were made aware of FSM as a concept through trainings and workshops, 112 Masons were trained and certified on construction of containment systems, 800+ stakeholders have been surveyed for understanding the sanitation situation assessment.

Other Impact: We have also reviewed the Rajasthan State Level Policy on FSSM.

CDD's role in shaping the FSM situation in Rajasthan over the last one year has been holistic. Efforts include engineering and planning, implementation support, behavior change and communication, enterprise development and improved enabling environment and governance.

Our team conducting an FSM survey in Rajasthan

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

The Tamil Nadu Urban Sanitation Support Programme (TNUSSP) entered into its last year of the project phase, where the focus was to wrap up the project's activities and documentation. This year saw many troubles around the implementation of a Faceal Sludge Treatment Plant (FSTP) at Trichy. We worked towards generating a strong demand for FSM with the local communities, however some differences on the location of the treatment site lead to slow progress of the project.

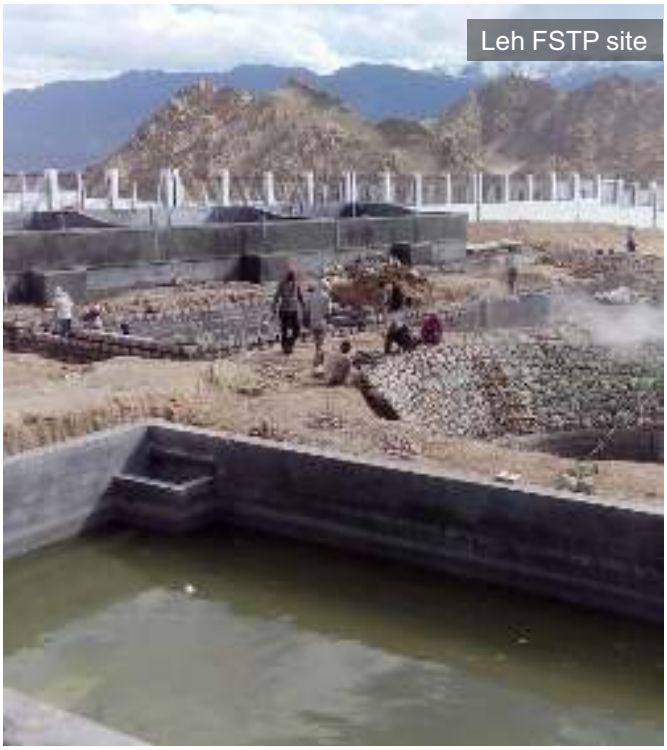
In addition to the treatment plant, various orientation and training programs were conducted. Key decision makers and practitioners were brought to the Devanahalli FSTP and taken through the FSM journey. This has led to generating a state-wide eagerness towards FSM. Engineers and technical staff were further trained in planning and design of treatment systems for FSM. This way, ULB engineers could understand and integrate FSM into their wastewater management strategy with ease. Since the project was in its final year, many previous documents were reviewed for publishing; we improved and updated the compendium of technology options in FSM value chain that was prepared in 2016.

Apart from regular project activities, we also provided technical support in troubleshooting and preparing an action plan for renovation of the East Devadanam DEWATS.

Aftermath of Cyclone Ockhi at the Trichy FSTP site

List of ongoing/discontinued FSM projects

In FY2017-18, we moved from two to four FSTPs on the ground – with the inauguration of FSTPs in Samste (Bhutan) and Leh (Ladakh, India). Efforts are also ongoing (at different stages of FSTP implementation) in 18 different towns across the country. In addition, the implementation of FSM in 8 other towns has been discontinued. Though discontinued, the efforts by our team in these 8 towns can and should not be discounted - Details provided in (Status as of March 31st, 2018)



Leh FSTP site

FSM in Jharkhand

With the burgeoning urban population, provision of equitable and efficient sanitation systems is turning to be one of the biggest challenges for administrations today. As per the latest information available, 14% of households are connected to the Underground drainage (UGD) system while 73.9% of them are connected to on-site sanitation (OSS) systems. The remaining 12% are currently practicing open defecation which is bound to reduce further due to the ongoing work under the Swachh Bharat Mission (Urban).

On analyzing the Census 2011 data for the State of Jharkhand, we observed:

- The vast majority of toilets are connected to pits or septic tanks. This number will only increase with toilets being built under SBM.
- Only about 6.51% of sewage gets safely transported and effectively treated while about 93.52% is unsafely disposed in the agricultural land or domestic environment.

The publication inventorization of Sewage Treatment Plants (CPCB, 2015) in India states that only about 4 ULBs have sewerage/underground drainage (UGD) network with sewage treatment plants (STPs). There are a total of 15 STPs in 4 towns in the state, with a capacity of 117.24 MLD. Total wastewater generated in the state, on the other hand, is 577.95 MLD, which means only 20% of the actual wastewater generated is getting treated.

The alternative solution to the above problems would be implementation of FSSM projects in these uncovered ULBs. The State Urban Development Agency (SUDA) for Jharkhand is keen on implementing a Faecal Sludge Treatment Plant for un-sewered towns in Jharkhand. These are primarily the towns that have a population less than 1,00,000, have less than 135 LPCD water supply and are not funded by any of the Central mission projects. SUDA in collaboration with CDD Society through a Memorandum of Understanding took the first step to make this happen. Twenty six towns were selected for implementation of FSSM in this project, which don't have any dedicated state or central funding for septage treatment.

The approach being taken in this project is however very different from the projects done so far. The process of designing solutions for towns is a mix of Top-Down and Bottoms Up approach, as opposed to the conventional Top-Down approach. The Urban Local Bodies play a major role in the design decisions, they participate actively in the process of designing solutions for septage management in their towns, starting from data collection, to planning for implementation of FSM. The state also plays a much larger role in this project through a dedicated FSSM Steering Committee for the project ensuring involvement. The state has also centralised survey and consultancy processes to speed up the process and control quality for the entire state operations.

Impact:

The project will ensure that 26 towns of Jharkhand have a sustainable septage management system in place, which are contextualised, durable and adaptable to the way the town grows as every town or city does in a developing country.

Topo survey & soil test being conducted in the town, Gumla

Capacity Building and other Dissemination Activities

CASS Trainings:

In FY 2017-18, 32 trainings for 790 participants were conducted. 22 of these were on the topic of Faecal Sludge Management. Other training topics included DEWATS, Decentralised Sanitation Solutions, Solid Waste Management and Reuse. Details provided in .

Support to Other Organisations:

The Indian Institute of Human Settlements (IIHS) Bangalore and State Institute of Urban Development (SUID) Mysore were the 2 primary organisations we supported with our resource people delivering sessions at their trainings. A number of exposure visits were conducted to the FSTP at Devanahalli by other organisations. Details provided in .

Orientation for Academia:

Orientation on DEWATS and FSM was conducted at 3 institutes. Proposals were sent to 3 more institutes. Details provided in.

School Orientation:

Over 500 students from 25 different schools were oriented on the topic of sanitation. Details provided in.

IEC Sessions:

In FY2017-18, under the Nexus project, 9 IEC sessions were conducted for 2,350 students, 228 Anganwadi workers, 120 women and adolescent girls. Topics included Personal, Household and Menstrual Hygiene, Handwashing and Solid Waste Management, An exposure visit to the FSTP at Devanahalli was also conducted for school children on the occasion of World Environment Day (5th June 2017). Details in .

Other Dissemination Activities

The National Summit on Sustainable Water & Sanitation

Along with Nispana Innovative Platforms, we organized the National Summit on Sustainable Water and Sanitation (NSSWS) on January 18-19, 2018 in Bengaluru, India in association with the Ministry of Urban Development (MoUD) (GoI), Ministry of Drinking Water Supply & Sanitation (MoDWS) (GoI), Swachh Bharat (Urban &Gramin) and Rajiv Gandhi Rural Housing Corporation Limited (RGRHCL).

Safe and sustainable access to water and sanitation infrastructure is a national need despite discrepancy between urban and rural areas, government and private sector. The National Summit on Sustainable Water & Sanitation (NSSWS) brought together various governments departments and stakeholders on one platform to deliberate the discussions on how to achieve CLEAN India by 2019. The focus was to create awareness about the existing water and sanitation issues in India.

Impact:

At the 3rd National Summit on Water and Sanitation, chief guest Shri Eshwara B. Khandre, Minister for Municipal Administration, Government of Karnataka announced that the state will invest Rs. 200 crores in FSM in all towns without underground drainage (UGD) within the year. This will certainly make Karnataka a leader in the country for FSM. Our effort indirectly helped in this announcement.

Participation in Forums/Exhibitions:

32,840 people were exposed to CDD Society and its services at 8 different forums/exhibitions. The largest amongst these was the Karnataka State Government event at Chitradurga Government Science College, which alone attracted 30,000 participants. Details provided in .

Water Body Rejuvenation

This year, our Water Body Rejuvenation work extended to the following:

(a) Coimbatore

(b) Mahadevapura, Bangalore

(a) and (b) have been detailed below.

(c) Nagavara, Bangalore We ended the year with: Preliminary work begins at Nagavara Lake after work order was received from the Karanataka Lake Conservation and Development Authority for eco-restoration of the lake's wetland area.

(d) Allepey For rejuvenating the canal network of Allepey which are plagued by poor solid and liquid waste management, a pilot project has been launched by CDD for a 250m stretch of one of the canals. The objective of this approach is to develop a natural and decentralized solution for the situation. We ended the year with: Cleaning of drains begins. 40 Alleppey council members visited the Bangalore office to understand FSTP processes and the working of DEWATS. Studies of site conditions and testing of water samples have been carried out. Concept note for treatment strategy has been submitted.

DEWATS construction at Mahadevapura Lake

Coimbatore

For the past 1,200 years, Coimbatore has been getting a regular and steady supply of water from the Noyyal River. All thanks to the kings of the Chola regime, who in the 8th and 9th centuries, constructed 30 lakes/ponds in the watershed expanse of the river's basin. The nature of the river to get flooded downstream, near the Noyyal village, coupled with the scanty rainfall typical of this region is what had prompted them to setup this ingenious system of lakes and anicuts.

This system was designed in a manner to also serve as an active flood buffer — to contain and channelize the fury of the monsoon — as well as for irrigation. The direct impact has been seen in the 20,000 acres of land that it has helped irrigate, greatly improving the agricultural wealth of this region. Further, over time, these lakes/ponds have come to house many species of birds, fish and other life forms.

Unfortunately, in the past 30-40 years, most of this natural beauty that had been built over a century, started to bear the brunt of urbanisation. An increasing population and indiscriminate construction have resulted in the lake being fed more from sewage than rainfall today.

As part of The Smart City Project for Coimbatore, an opportunity to revive 8 of its lakes (that fall under the jurisdiction of the city) has emerged. Like a typical smart city project, the goal is not just to revive the lakes but to develop the lakefront as a beautiful public space in order to build community ownership.

As water consultants for the project, CDD's role is to ensure clean water is available in the lake for the maximum time during the year. However, a sign of a healthy lake, is not just the quantity and quality of its water but also its biodiversity. A rich biodiversity enables nature to continue to keep the lake healthy. With 40 years of contamination to make up for, building a self-sufficient natural cleaning system is the only way to ensure enduring systems.

We ended the year with: Water balance analysis completed for all the 8 lakes in Coimbatore. Preparation of EIA report, final masterplan for the last 4 lakes and Hydrogeology studies in progress.

CDD team on Field in Coimbatore

Mahadevapura

The destructive effect of rapid growth and urbanization seems to be more apparent in Bangalore than any other city in India. A drastically reduced green cover and dying waterbodies have resulted in higher temperatures through the year, robbing the city of its hill-station-like weather. The city's lakes, in particular, having been bearing the brunt - with a number catching fire because of chemicals from wastewater that is making its way into these lakes.

While the story of urbanization seems to be following the usual storyline, the fate (of atleast a handful) of the city's lakes seems poised to change. One such lake is the Mahadevapura Lake in East Bangalore. Spread over 26 acres, it is located adjacent to the immaculate Bagmane Tech Park. Over time, as developments have grown around the lake, water hyacinth – the most telling sign of deteriorating water quality - have started to slowly choke its waters.

United Way of Bangalore brought together four tech firms to fund a solution for the lake, as part of their CSR. They selected CDD to help with a solution that would prevent further pollution.

A survey undertaken by our team confirmed that sewage from the neighboring areas is the cause of this deterioration. The DEWATS that we are planning to set up will treat this sewage and pump 1 MLD of treated wastewater into the lake every day. Moreover, many constructed wetlands, both shore-based as well as floating, will ensure that with time, the natural ecosystem and accompanying biodiversity of the lake will get restored eventually.

We hope that this intervention serves to strengthen United Way of Bangalore's Wake The Lake programme encouraging more CSR funds towards lake restoration in Bangalore.

We ended the year with: Upstream earthen drain and diversion structure commissioned. Concreting of treatment plant walls completed.

Mahadevapura Lake, Bangalore

City Sanitation Planning

The City Sanitation Planning team was involved in a variety of projects this year. The variety came about in both kinds of projects of as well as geographies of work. Projects ranged from integrated city-wide sanitation plans to city-level solid waste management plans in Orissa, Devanahalli, Kabul and Afghanistan.

An integrated city-wide sanitation project was undertaken in Orissa for 4 towns in the state - Bhubaneswar, Puri, Cuttack and Baripada. The development of solid waste flow chain and flow studies and sample studies of water flowing through storm-water drains were the unique features of these plans. These analyses helped establish the interlinkages between different sectors of sanitation in these towns.

The year also witnessed the team move into the terrain of solid waste management. A town-wide detailed solid waste management plan was developed for the town of Devanahalli. Solid waste characterization studies and route-mapping of solid waste collection systems were key highlights of this plan. A detailed project report has been submitted to the city and talks are underway for implementation.

The learnings from both these projects were used in another major project: hand-holding the BORDA-Afghanistan team in the preparation of a model integrated sanitation plan for an unplanned settlement in the city of Kabul, Afghanistan. Support was provided through all the stages of the project: baseline assessment (including 100% household surveys and stakeholder interviews), gap analysis and formulation of an action plan. As a part of this project, training was delivered in Kabul to bureaucrats and government officials on the process of citywide sanitation planning. The project has been successfully completed.

Dumping ground for solid waste in Andhra Pradesh

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.

Workshop for Pourakarmikas (waste collectors)

CDD: Staff and Staff Development

All Employees – 2017-2018:

Details provided in Annexure 10.

Guest Lectures

7 Guest Lectures were held during FY17-18 on different topics. Details provided in Annexure 11.

Inhouse Trainings:

Multiple technical and non-technical in-house trainings over the last year have increased staff's capacity and skill set. Training topics include: FSM, sanitation technologies, behavior change in sanitation, DEWATS, basic engineering skills, critical thinking and how to deliver effective sanitation training. Details provided in Annexure 12.

5 of our engineers attended the online course for Faecal Sludge Management 2017, organized by the Centre for Science and Environment.

Weltwaerts volunteers

Annika Hock

Annika was born in a small city called Speyer in the south-west of Germany. Growing up in the Palatinate Region, she moved to Stuttgart after finishing school to study architecture and urban planning, focusing on urban planning interfering with the natural environment, and landscape planning. She is very interested in gaining knowledge about wastewater treatment and solid waste management during here year here in India. She is passionate about sports, especially running and yoga, and I enjoys sketching while visiting interesting places in India.

Johanna Buss

Johanna recently finished her Masters in Water Science with a focus on analytical chemistry related to water and wastewater treatment. At CDD, she works with the R&D team. In her freetime, she likes to play all kinds of sports - especially football. She is enjoying the warmth and the large variety of food and wants to explore India further.

Janik S

Janik is part of the R&D team at CDD. He comes from south-west Germany and has graduated in Environmental Engineering with a focus on Wastewater Treatment. He enjoys Indian culture, especially the variety in people and food. In his free time, he enjoys music and Yoga, and is also interested in other spiritual paths.

Marina Bauer

Marina holds a bachelor's degree in communication and political science. During her studies, she chaired a student club which worked towards decreasing educational inequalities by connecting socially disadvantaged youths with students. Marina also worked for a student radio station. She is part of the Dissemination Cluster.

Svenja Roloff

A self-described optimist, Svenja was born in Munich and grew up in Celle. She holds a Bachelor's degree in Water Engineering. Her focus on restoration of rivers lead her to spend her practical semester in Cuba. Her interest in natural ways of construction and sustainability motivated her to do a Masters in Ecological Engineering. Her hobbies include painting, yoga and spending time with friends. Currently she is learning to play the Ukulele, a small Hawaiian guitar.

General Body:

All General Body members and office bearers are honorary. Details provided in annexure 13.

Recognition:

On 27th April, 2018, CDD received “The Best Innovation in Sanitation” Award for the Devanahalli FSTP from The Federation of Indian Chambers of Commerce and Industry (FICCI) and the India Sanitation Coalition (ISC). The award was shared with the Orissa-based sanitation nonprofit Svadha.

Press Articles:

CDD Society was featured in 23 articles in different publications in FY17-18. Details provided in Annexure 14.

Annexures

Annexure 1
DEWATS projects:

S No.	Project	State	City	Wastewater Quantity, m3/day	No of People served	
1	Amania Patna Bhoi Sahi	Orissa	Cuttack	6	132	
2	Balipatna Bhoi Sahi	Orissa	Cuttack	4	189	
3	BARC Transit house accommodation	Karnataka	Bangalore	7	60	
4	Berhampur Basti (Near Deer Park)	Orissa	Cuttack	4	156	
5	Birsha Munda Basti	Orissa	Bhuvaneshwar		225	
6	Chauliaganj Matha Sahi	Orissa	Cuttack	8	156	
7	Dagarapada	Orissa	Cuttack	6	45	
8	Damana Hata Basti	Orissa	Bhuvaneshwar	6	20	
9	Damana Square Toilet – Nila Padia Basti	Orissa	Bhuvaneshwar		460	
10	Deer Park Basti	Orissa	Cuttack	4	276	
11	Dhirikuti	Orissa	Bhuvaneshwar	6	20	
12	Elcita (Electronic City)	Karnataka	Bangalore			
13	Fire Station Basti (Near Rajdhani College)	Orissa	Bhuvaneshwar		85	
14	Ghodagali, Ranihat	Orissa	Cuttack	4	45	
15	Godakara Sabarna Sahi	Orissa	Bhuvaneshwar	6	95	
16	Hand in Hand NGO	Tamil Nadu	Kancheepuram	40		
17	Implementation of improved septic tank at Nua Nima Sahi near OSFC	Orissa	Cuttack	6	125	
18	Implementation of improved septic tank at Sikharpur Nadikula Sahi	Orissa	Cuttack	2	102	
19	Implementation of improved septic tank for Bidanasi Shauchalaya, Cuttack	Orissa	Cuttack	12	66	

20	Implementation of improved septic tank for Brajarambha Dispensary	Orissa	Cuttack	4	117
21	Implementation of improved septic tank for Jobramalha sahi	Orissa	Cuttack	12	303
22	Isaneswar Bastil	Orissa	Bhuvaneshwar	6	280
23	Jagatpur Hadi Sahi	Orissa	Cuttack		75
24	Jobra Rehman Chak	Orissa	Cuttack	4	144
25	Krushak Bazar Basti	Orissa	Cuttack		189
26	Kumaraguru College of Technology	Tamil Nadu	Coimbatore	1 MLD	
27	Laxmanpur Harijan Sahi	Orissa	Cuttack	4	132
28	Laxmanpur Saantal Basti	Orissa	Bhuvaneshwar		180
29	Machhua Bazar Shauchalaya	Orissa	Cuttack	12	243
30	Mahaveer Basti	Orissa	Bhuvaneshwar		350
31	Mahendipur Refugee Colony	Orissa	Cuttack	4	30
32	Malgodam Depot Basti	Orissa	Cuttack	4	78
33	Mallya Aditi School	Karnataka	Bangalore	17 MLD	
34	Mangala Sahi Old Jagannath Road	Orissa	Cuttack	4	177
35	Munda Sahi C.S. Pur (Dhirikuti)	Orissa	Bhuvaneshwar		455
36	Nageswar Tangi Basti	Orissa	Bhuvaneshwar		105
37	Naldiri Vihar Toilet – Harekrishna Nagar	Orissa	Bhuvaneshwar	4	50
38	Near Girls high School, Thatenisahi	Orissa	Cuttack		24
39	NiladriVihar (Harakrushna Nagar)	Orissa	Bhuvaneshwar	10	200
40	Nilakantheswar	Orissa	Cuttack	4	117
41	Nimpur Sabar Sahi	Orissa	Cuttack	6	162
42	OMFED	Orissa	Bhuvaneshwar	8	100
43	Panda Kudia	Orissa	Bhuvaneshwar	4	65

44	Pandara Hi-Tech Basti	Orissa	Bhuvaneshwar		120
45	Patia Jali Munda Sahi	Orissa	Bhuvaneshwar	6	345
46	Patia Tala Upper Bhoi Sahi	Orissa	Bhuvaneshwar	4	85
47	Pattapola Shauchalaya	Orissa	Cuttack	8	348
48	Prasanti Vihar Chirgal Tola	Orissa	Bhuvaneshwar	12	200
49	Puruna Kacherimala Harijana Sahi	Orissa	Cuttack	4	111
50	Radhakrushna CS Pur	Orissa	Bhuvaneshwar		300
51	Santoshi Nagar	Orissa	Cuttack	4	147
52	Saradha Palli	Orissa	Bhuvaneshwar	6	20
53	Shampur	Orissa	Bhuvaneshwar	12	100
54	Sion Sramika Basti	Orissa	Bhuvaneshwar	4	20
55	Sitanath Nagar (Niladri Vihar)	Orissa	Bhuvaneshwar	12	100
56	Socio Economic and education Development Trust	Karnataka			
57	Subhadrapur Harijan Sahi	Orissa	Cuttack		111
58	Tapavan Basti Toilet	Orissa	Bhuvaneshwar	4	110
59	Trinath Adivasi Basti, Jagathpur	Orissa	Cuttack		213
60	Tuhikutu Basti-1	Orissa	Bhuvaneshwar	4	50

Biogas Digester projects:

Pan Himalayan Grassroots Foundation/Design and implementation of cow dung prefabricated biogas digester	Uttarakhand	Ranikhet	0.15	6

Annexure 2

Sl No.	City	No. of Projects	Implemented By
1	Bangalore	24	CDD Society (16) Ecoparadigm (6) and others (2)
2	Doddaballapur	2	CDD Society (1) and others (1)
3	Hoskote	1	CDD Society
4	Chickmagalur	1	CDD Society
5	Mysore	3	Ecoparadigm
6	Coimbatore	3	CDD Society
7	Theni	10	Kynarou
8	Hyderabad	1	CDD Society
9	Nagpur	5	CDD Society
10	Gujarat	1	CDD Society
11	Nepal	17	ENPHO

Annexure 3

Project Name	Status
Devanahalli	Completed
Leh	Completed
Lubhu, Kathmandu	Completed
Samste	Completed
Angul	Discontinued
Gulbarga	Discontinued
Narsapur	Discontinued
PNP	Discontinued
Shimla	Discontinued
Sinnar	Discontinued
Tiruchirappalli (Trichy)	Discontinued
Umred	Discontinued
Bagru	Ongoing
Balkhi	Ongoing
Bheemli	Ongoing
Chirkunda	Ongoing
Chotisadri	Ongoing
Chunar	Ongoing
Dhenkanal	Ongoing
Jhansi	Ongoing
Kalmeshwar	Ongoing
Keshoraipatan	Ongoing
Khandela	Ongoing
Kherli	Ongoing
Lalsot	Ongoing
Madikeri	Ongoing
Phulera/Sambhar	Ongoing
Raisinghnagar	Ongoing
Sadulshahar	Ongoing
Sircilla	Ongoing

Annexure 4

Title	No. of Days	No. of participants
Training on "Safe Reuse Practices of wastewater and faecal sludge in agriculture" - 4th April, 2017	1	37
Exposure visit on Decentralised Wastewater Treatment & Faecal Sludge Management on May 9 & 10, 2017 for 21 ULB officials, Uttar Pradesh as part of NIUA Knowledge Hub	2	21
Customised Training on DEWATS and FSM at Kathmandu, Nepal from May 17 to 23	6	17
State Level Orientation Workshop on "G.O.MS.No.279" - 19 May 2017	0.5	6
Training cum Exposure visit on FSM, Practical Action, 22 & 23 June 2017	2	8
Training on Sanitation for HR trainers and Hostel Wardens, 18 August	1	28
Training on Challenges and Possible Solutions in Using Wastewater in Agriculture, 30th August	1	30
International Engineers' Training on DEWATS (September 11-15, 2017)	5	21
Exposure visit (FSM) for Government Officials, 13-14 September (NIUA)	1.5	25
Training programme on Design and Implementation of Faecal Sludge Treatment Plants for officials of MUDH, AUWSSC, GIZ-Water Sector Improvement Program and BORDA Date : October 16-22, 2017	7	19
International Engineers' Training on DEWATS –21 participants (Date: October 23-27,2017)	5	21
Introduction on Wastewater Treatment System in association with Hill Development Council for officials from the Government, Army and NGOs in Leh Date: November 7 to 8, 2017	2	25
Round-table Orientation workshop on Solid Waste Management practices for Govt. officials from Departments and representatives from different institutions in Leh Date: Nov. 9, 2017	1	30
Exposure Visit on "Decentralised Sanitation Services" by Bangladesh MCRHRD on 13th November 2017 at CASS	1	15
Masons Training programme on standard designs and construction practise of containment system (as part of FSM) in Bagru Date: November 18, 2017	1	58
Advanced faecal sludge management training program for AMRUT engineers of Madhya Pradesh at MCRHRD campus in Hyderabad Date: November 21-22, 2017	2	19
Training Programme on Faecal Sludge Management Date: November 28-30, 2017, CASS, Bengaluru	3	23
Faecal Sludge Management Training Program for AMRUT engineers of Madhya Pradesh at MCRHRD campus in Hyderabad (part of capsule 2) 6-7, December 2017	2	32

Title	No. of Days	No. of participants
Faecal Sludge and Septage Management Exposure Visit on 7 & 8 Dec 2017 at CASS for NIUA	2	17
FSM, Decentralised Wastewater Treatment & Integrated Sanitation December 12&13, 2017 at CASS	2	15
Training on Faecal Sludge Management (State Institute of Urban Development (SIUD), Mysore) - January 8 to 9	2	21
Masons training on FSM (Centre For Advocacy and Research (CFAR), New Delhi) (Jan 18, 2018)	1	58
Workshop on FSM (State Urban Development Agency (SUDA)), Jharkhand (Feb 13, 2018)	1	40
FSM Stakeholder workshop - NIUA (Feb 14, 2018)	1	20
Orientation Workshop on Faecal Sludge and Septage Management (City Managers Association of Rajasthan (CMAR), UNESCO - IHE, Manipal University, Jaipur) (Feb 20, 2018)	1	38
Training on DEWATS (Tata-Dhan Academy, Dhan Foundation, Madurai) - March 7-10, 2018	3	11
Orientation Workshop on Faecal Sludge and Septage Management (City Managers Association of Rajasthan, UNESCO-IHE, ManipalUniversity,Jaipur) (March 7, 2018)	1	24
Study Tour on Decentralised Sanitation Solutions and its Management (Oxfam Tajikistan) (March 12-15, 2018)	4	12
Orientation Workshop on Faecal Sludge and Septage Management (City Managers Association of Rajasthan, UNESCO-IHE, Manipal University, Jaipur) (March 20, 2018)	1	29
Orientation Workshop on Faecal Sludge and Septage Management (City Managers Association of Rajasthan, UNESCO-IHE, Manipal University, Jaipur) (March 23, 2018)	1	30
Orientation Workshop on Faecal Sludge and Septage Management (City Managers Association of Rajasthan, UNESCO-IHE, Manipal University, Jaipur) (March 27, 2018)	1	22
Orientation Workshop on Faecal Sludge and Septage Management (City Managers Association of Rajasthan, UNESCO-IHE, Manipal University, Jaipur) (March 28, 2018)	1	18
	Total	**790**

Annexure 5

Name	No of people	Date
Training program on "Alternative and Energy Efficient Building Technologies" by Gramavidya	12	21-Apr-17
Session on Septage Management and visit to FSTP, Devanahalli for the orientation cum exposure visit for elected representatives from Jharkhand at IIHS, Bengaluru supported by Ministry of Urban Development under AMRUT	6	6-Apr-17
Exposure visit on FSM, Trichy Municipal Corporation	7	12-Aug-17
DEWATS exposure visit by Nordic students	12	17th July 2017
CSE ULB Officials exposure visit	14	31st July & 1 August
Training programme on Management of water supply, sewerage, septage and drainage in ULBs		21-23 August-17
Delivered session on "Basics of Sanitation and Technology options" at “Building Capacities on FSSM, Rajasthan” conducted by NIUA and RCUES, AIILSG at DLB office ,Jaipur for Chairman and Executive Officers of ULBs	23	29-Aug-17
Delivered session on Introduction of FSM and Design of Septic tanks, Pits in one day training programme organised by CFAR for Women community workers from Jaipur, Jodhpur and Kota	30	9-Sep-17
“Urban Sanitation Capacity Building Program” for ULB officials of Jaipur, Dausa, Alwar, Sikar, and Jhunjhunu attended the session at Agricultural Research Institute, Jaipur	100	11-Oct-17
Training on FSM at SIUD, Mysore, for Environmental Engineer, Senior & Junior Health Inspector (two full days)	23	3 & 4-Oct-17
Orientation cum CASS and FSTP visit - for Bangladesh for Deputy Secretary, Executive & Assistant & Sub Assistant Engineers representing Local Government Division & Cooperatives at CASS, Bengaluru	13	11-Oct-17
Sanitation Safety Plan for Sanitary workers - BWSSB in collaboration with DMA, Bengaluru	150	Nov 2017
Orientation cum CASS and FSTP exposure visit for KMAS Probationary Gazetted Officers of Induction Training programme at SIUD, Mysore	14	7-Nov-17
Rajasthan EPH2 at Tulip Hotel organised by IIHS, Bengaluru for Officials of Rajasthan	9	24-Nov-17
Rajasthan EPH2 (at Tulip Hotel), organised by IIHS, Bengaluru for Officials of Rajasthan		30 Nov - Dec 1

Rajasthan EPH3 (at Tulip Hotel) organised by IIHS,Bengaluru for Officials of Rajasthan	Postponed	7-9 Dec
Rajasthan EPH4 (At Tulip Hotel) organised by IIHS,Bengaluru for Officials of Rajasthan	Postponed	14-16 Dec
Individual Capacity Building Programme under AMRUT (Capsule - 2) Town Planning, Hotel Trident Inn, Ranchi, (IIHS)	0	30th Nov -2nd Dec 2017
Faecal Sludge and Septage Management, SIUD Mysore	13	12 & 13 Dec
	426	

Annexure 6

Orientation for Academia on DEWATS & FSM -2017				
Sl.No.	**Title of the topic**	**Institute /College**	**No.of Students**	**Date**
1	Orientation on DEWATS and FSM for engineering students	SRM College, Chennai	**27**	2-Mar-17
2	Orientation on DEWATS and FSM for engineering students	Vellore Institute of Technology,Vellore	**57**	14-Mar-17
3	Orientation on DEWATS and FSM for engineering students	Sastra University ,Tanjore	**31**	31-Mar-17
		Total	**115**	
Academic Institutions contacted and proposals submitted during II Quarter				
1	DEWATS Curriculum shared and communicated	SJCE College of Engineering, Mysore		
2	DEWATS Curriculum shared and communicated. Proposal submitted for training	RV College of Engineering,		
3	DEWATS Curriculum shared and communicated. Proposal submitted for training.	BMS College of Engineering		
4	DEWATS Curriculum, Certificate course proposed, 1 day workshop proposed (Follow up from 1st quarter)			

Annexure 7

School Outreach Program				
Sl No	**Date**	**Name of School**	**No of Students**	**No of Schools**
1	20/09/2017	Government School, Thanisandra	53	1
		Government School, Belthur		1
		Government School, Hasaluru		1
2	21/09/2017	Government School, Muthusandra	71	1
		Government School, K- Malsandra		1
		Government School, Bairasandra		1
3	22/09/2017	Government School, Koppagatta	31	1
		Government School, Rammurthy Nagar		1
		Government School, Chikkadevasandra		1
4	25/09/2017	Government School, Kaverinagara	53	1
		Government School, GarudacharPalya		1
		Government School, Seegehalli		1
5	9/11/2017	G.H.S, Makali	54	1
		G.H.S, Raveethandi		1
		G.H.S, Kadabagi		1
6	14/11/2017	VivikaVidhyalaya, Andrahalli	55	1
7	15/11/2017	Sri Gangadhareshwara School	46	1
8	16/11/2017	Government Bodhanahosahalli School	17	1
		Government Doddadunnasandra School	21	1
		Government Varthur High School	16	1
		Government Kadugodi High School	17	1
9	17/11/17	Sri Gangadhareshwara primary School	11	1
		S.G English School	16	1
		Sri Gangadhareshwara High School	18	1
	20/11/2017	World Toilet Day PainitngCompetetion ,SanskarBarthi College, Bagru,Rajasthan -For students of 6th, 7th and 8th class.	30	1
		Total	**509**	**25**

Annexure 8

Date	Topic	Participants	Ward
12th April 2017	Menstrual Hygiene Management	87 Anganwadi workers	Ward-2 and Ward-22 in Devanahall
20th April 2017	Personal hygiene, household hygiene and washing practice	64 Anganwadi workers	Ward-12 in Devanahalli
25th April 2017	Personal hygiene, household hygiene and washing practice	77 Anganwadi workers	Ward-8 and Ward-20 in Devanahalli
29th May 2017	Menstrual Hygiene	120 women and adolescent girls	Streeshakti Bhavan and Southegowdanahalli Ward in Devanahalli
5th June 2017 (World Environment Day')	Exposure visit to FSTP	School children in Devanahalli	
15th June 2017	Sanitation and hygiene, menstrual hygiene, solid waste management	1,500 school children from 1st to 10th grade	Oxford English School in Devanahalli
27th June 2017	IEC Session	350 students from 8th-10th standard	Government Junior College in Devanahalli
July 2017	Sanitation and Hygiene and Menstrual Hygiene Management	150 8th-10th grade students	Rural High School, Devanahalli
August 2017	Personal Hygiene, Solid waste Management, Handwashing, and Menstrual Hygiene	350 students	Government PU College, Devanahalli

Annexure 9

Level	Title	Start Date	End Date	Type of forum	Organised By	No of participants
State	World Environment Day celebrations jointly organized by the department of forests and environment, and the Karnataka State Pollution Control Board (KSPCB) (Dr BabuRajendra Prasad International Auditorium at GKVK campus of the University of Agricultural S)	06.05.2017	06.05.2017	Exhibition	Department of forests and environment, and the Karnataka State Pollution Control Board (KSPCB)	2,000
National	Smart Cities Summit (conducted panel discussion on "Closing the Water Loop - Wastewater management and reuse for Smart Cities")	10.05.2017	12.05.2017	Conference	Sector specialist (smart Cities)	40
State	State Government event- Bangalore Division; 4 years achivements (ChitradurgaGovernament Science College)	13.05.2017	13.05.2017	Exhibition	State Government	30,000
National	Municipalika 2017	18.05.2017	20.05.2017	Exhibition	Fairfest	300

National	Bhutan FSTP Inaugration (PR event)	07.08.2017	07.08.2017	Event		50
City	Leh FSTP Inaugration (PR event)	10.08.2017	10.08.2017	Event		300
	NIRD Zero Waste Management Conclave	17-Aug		Conference		150
	WasTe&SaniTech India 2017 (at Hotel The Ashok, New Delhi)	14.09.2017	15.09.2017	Exhibition/Conference	RTI International (Knowledge Partner); Also supported by Ministry Of Urban Development (MoUD), Ministry of Drinking Water & Sanitation (MDWS) &Swachh Bharat Mission(SBM)	
					Total	**32,840**

Annexure 10

STAFF LIST (2017 -2018)		
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 Diwale	
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	(Uptil 23/02/2018)
21	G. S. Santhosh	
22	Ravikumar A. G.	
23	Sachin Tajne	
24	Manjunath K.	
25	Anusha N.	
26	Nithya B. P.	(Uptil 08/12/2017)
27	Regi K. J.	
28	Susheel Sagar B.S.	
29	Philip Castelino	(Uptil 05/07/2017)
30	Rajashekara K. S.	
31	Nandeesha D.	
32	Kumar N.	
33	Rajesh D. S.	
34	Ravi Kumar	(Uptil 30/06/2017)
35	Shrinivas	(Uptil 29/01/2018)
36	Ravindra Chambhare	(Uptil 31/08/2017)
37	Avinash Yadav Kumar	
38	Karthik R	
39	Tanvi Sahni	(Uptil 03/11/2017)
40	Reema Padia Parikh	

41	Santhosh Tapovan	(Uptil 31/07/2017)
42	Praveen Nagaraja	
43	Lincy Paravanethu	
44	Emon Dastidar	(Uptil 14/07/2017)
45	Nithin A	
46	Uchila Divyashree Shridhar	
47	Amresh Sinha	
48	Indrireddy Pavan Kumar Reddy	
49	Anik Dutta	
50	Sarani S	(Uptil 21/04/2017)
51	Sasanka Velidandla	
52	Varshini J Reddy	
53	Darshan B. N.	
54	Ajith Edathoot	(Uptil31/07/2017)
55	Swadha Das Mohapatra	(Uptil11/07/2017)
56	Ritesh Kumar Suman	
57	Kanakeshwar Kanakraj Devangan	
58	Prabhu N.	(Uptil 04/05/2017)
59	Debisha Sharma	
60	Nikhil Gampa	
61	Isha Dash	
62	Ashisar Gandadhar Vani	
63	Tanay Sandesh Timblo	
64	Tarika Vaswani	
65	Shailesh Kumar Yadav	
66	Clifford Godwin S.	
67	Ratna S.	
68	H. B. Siddegowda	
69	Prerna Prasad	
70	Preethi Grace	(Uptil 26/09/2017)
71	Pavan Kumar	
72	Sushma Chandrashekar Bhat	
73	Irfan Ulla Shariff	
74	Krishna Swaroop	
75	Mohammed Idris	
76	Sujatha Gaddipatti	(Uptil 30/06/2017)
77	U. Anantha Moorthy	
78	Anand Kumar K. N.	
79	Sadhana Reddy S R	
80	Sandhya Haribal	(Joined on 10/04//2017)
81	Praveeen Raje Urs	(Joined on 01/07//2017)
82	Kamlesh Sharma	(Joined on 10/07//2017)
83	Ragasamyutha A	(Joined on 10/07//2017)

84	Karthik Narad Kamath	(Joined on 10/07//2017)
85	Haneet Kumar	(Joined on 10/7/2017- Uptil 14/07/2017)
86	Rishikesh Rath	(Joined on 24/07//2017)
87	Aakash Malik	(Joined on 24/07//2017)
88	Archana Merlin	(Joined on 01/07//2017)
89	Kavya Anil	(Joined on 01/08//2017)
90	Archana P Abraham	(Joined on 11/09//2017)
91	Bilwa Doddamani	(Joined on 10/10//2017)
92	Mohan K	(Joined on 02/11//2017)
93	Pratibha D	(Joined on 05/12//2017)

Annexure 11

Name	Designation	Topic	Date
Paul Scott	BAS -Tetra Tech Company in Los Angeles, California	Landfill Design & Construction	1-May-17
Joseph Mathew	Sanitation Engineer	Nutrient removal (N and P) using algae bacteria consortia in photo sequencing batch reactor	15-Jun-17
Stefan Reuter	Director, BORDA	Sustainable Development Goals	4-Aug-17
Ruth Webber and Ewoud Kok		IHE Delft and its programmes	6-Sep-17
Vasant Jajoo		Therapeutic aspects of Yoga	20-Oct-17
Prof.Narayananan	Faculty - Centre for Technology Alternatives for Rural Areas (CTARA) IIT, Mumbai.	Sharing of experience - Research Studies on FSM in Kerala and Introduction to Winter School -2017 focussing on FSM in AlapuzaDistrict,Kerala	24-Nov-17
Christoph Lüthi	Eawag, head of the department Sandec	Lessons learned from City Sanitation Planning and the way forward	8-Dec-17

Annexure 12

Title	Funded by	Staff who attended	Date	No.of Days	No.of persons	Total Person days
Training on "Faecal Sludge Treatment Technologies"	BMGF		10 - 13 April, 2017	4	19	76
Workshop on “Quantity Estimation and Cost Analysis for DEWATS"	BMZ		April 8,2017	1	8	4
Workshop on "Surface Water Quality Monitoring: Key issues, Challenges and the way forward" at ATREE	BMZ		18-May-17	1	2	1
Delivering Effective Wash Training conducted by CAWST	BMGF		August 28 to September 1st , 2017	5	24	
Total Station Pentex for Technical Staff	BMZ			1	21	
International Engineers' Training on DEWATS at CASS			October 23-27, 2017	5	6	
Workshop on "Critical Thinking”	BMZ		November 2, 2017)	1	11	
Experience sharing session on distribution system for ABR at CASS			November 13, 2017	2hours	15	Indireddy Pavan Kumar
Session Planning Workshop at CASS	BMZ		November 7, 2017	1	9	
Training on FSM	BMZ	Weltwaerts and staff	November 28-30, 2017	3	2	

Annexure 13

Sl. No.	Name of the Organisation/Individual	Name of the representative	Designation of titles
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. Stanzin Tsephel	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	IIYW, 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, rep.	Mr. Muthulingam	Member
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

Annexure 14

Date	Name of Publication	Title of Article	Link
28th March, 2018	The Times of India	8 eco-friendly waste water treatment systems to come up in city	https://timesofindia.indiatimes.com/city/coimbatore/8-eco-friendly-waste-water-treatment-systems-to-come-up-in-city/articleshow/63494923.cms
14th March, 2018	NDTV	Faecal Sludge Treatment Plant In Devanahalli Near Bengaluru Earns Praise From Ministry of Drinking Water and Sanitation	http://swachhindia.ndtv.com/faecal-sludge-treatment-plant-in-devanahalli-near-bengaluru-earns-praise-from-ministry-of-drinking-water-and-sanitation-18161/
4th March, 2018	OZY.com	Why cities are starting to shun sewers	
22nd February, 2018	Next City	How India Could Help Solve America's Sewage Woes	https://nextcity.org/daily/entry/how-india-could-help-solve-americas-sewage-woes
14th February, 2018	Prajavani	60 lake development : Rs 200 Crore	
22nd January, 2018	The Times of India	Save Singanallur Lake	https://timesofindia.indiatimes.com/city/coimbatore/save-singanallur-lake/articleshow/62596651.cms
25th January, 2018	DainikBhaskar	Sadulshehermein 1.04 crore se lagayajayegamal gaadnistaranstayantra	https://www.bhaskar.com/rajasthan/sadulshahar/news/RAJ-OTH-MAT-latest-sadulshahar-news-065502-982237-NOR.html
		Septic-tank-ki-gandgi-ke-treatment-ke-liye-sabhi-shehero-mein-FSTP-banane-	

September 2017		of Devanahalli FSTP, plans to set up more	success-of-devanahalli-fstp-plans-to-set-up-more/article19711797.ece
12th September, 2017	NDTV	Leh Gets One Of The First Faecal Sludge Treatment Plants In The World At An Altitude Of 11,400 Feet	http://swachhindia.ndtv.com/leh-gets-one-of-the-first-faecal-sludge-treatment-plants-in-the-world-at-an-altitude-of-11400-feet-11737/
21st July 2017	The Hindu	Human Waste Can Fuel Farming	http://www.thehindu.com/news/cities/bangalore/human-waste-can-fuel-agriculture/article19318787.ece
18th June 2017	Deccan Chronicle	Masons get tips to help waterborne diseases	https://www.deccanchronicle.com/nation/in-other-news/180617/masons-get-tips-to-help-reduce-waterborne-diseases.html
13th June, 2017	The Better India	Where Does All Your Poop Go? Comic Book Hero Buland Babu Is Here to Tell You All About It!	https://www.thebetterindia.com/104803/buland-babu-a-sludge-story-cdd-society-bengaluru/

M. A. Braganza & Associates
CHARTERED ACCOUNTANTS

INDEPENDENT AUDITORS' REPORT

To the Members of the General Body of Consortium for Dewats Dissemination (CDD) Society

Report on the Financial Statements

We have audited the accompanying financial statements of Consortium for Dewats Dissemination (CDD) Society ("the Society"), which comprise the Balance Sheet as at March 31, 2018, and the Income and Expenditure Account for the year then ended, and a summary of significant accounting policies and other explanatory information.

Management's Responsibility for the Financial Statements

Management is responsible for the preparation of these financial statements that give a true and fair view of the financial position and financial performance of the Society in accordance with the accounting principles generally adopted in India. This responsibility includes the design, implementation and maintenance of internal control relevant to the preparation and presentation of the financial statements that give a true and fair view and are free from material misstatement, whether due to fraud or error.

Auditor's Responsibility

Our responsibility is to express an opinion on these financial statements based on our audit. We conducted our audit in accordance with the Standards on Auditing issued by the Institute of Chartered Accountants of India. Those Standards require that we comply with ethical requirements and plan and perform the audit to obtain reasonable assurance about whether the financial statements are free from material misstatement.

An audit involves performing procedures to obtain audit evidence about the amounts and disclosures in the financial statements. The procedures selected depend on the auditor's judgment, including the assessment of the risks of material misstatement of the financial statements, whether due to fraud or error. In making those risk assessments, the auditor considers internal control relevant to the Society's preparation and fair presentation of the financial statements in order to design audit procedures that are appropriate in the circumstances. An audit also includes evaluating the appropriateness of accounting policies used and the reasonableness of the accounting estimates made by management, as well as evaluating the overall presentation of the financial statements.

We believe that the audit evidence we have obtained is sufficient and appropriate to provide a basis for our audit opinion.

M.A.BRAGANZA & ASSOCIATES
BANGALORE
560 025
CHARTERED ACCOUNTANTS

No. 13/1, 1st & 2nd Floor, Alfred Street, Richmond Town, Bangalore - 560 025.
Phone : 22105040, 22217384 / 481, Fax : 22245189 Email : mark@mabacas.net

Opinion

In our opinion and to the best of our information and according to the explanations given to us, the financial statements give a true and fair view in conformity with the accounting principles generally accepted in India:

(a) In the case of the Balance Sheet, of the state of affairs of the Society as at March 31, 2018; and

(b) In the case of the Income and Expenditure Account, of the excess of Income over Expenditure of the Society for the year ended on that date.

For M. A. BRAGANZA & ASSOCIATES
Chartered Accountants
Firm Registration No. 000507S

Ravishankar Hegde
Partner
ICAI Membership No. 232520

Bangalore
Date: 20th August 2018

No. 13/1, 1st & 2nd Floor, Alfred Street, Richmond Town, Bangalore - 560 025.
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Consortium for
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Dissemination
Society

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