Workshop Proceedings

Exchanges of Faecal Sludge Management Coalitions

By WaterAid and Alliances

19 February 2017
Le Royal Meridien, Chennai, India
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<table>
<thead>
<tr>
<th>Acronym</th>
<th>Definition</th>
</tr>
</thead>
<tbody>
<tr>
<td>BORDA</td>
<td>Bremen Overseas Research and Development Association</td>
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<tr>
<td>BUET</td>
<td>Bangladesh University of Engineering and Technology</td>
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<td>CEO</td>
<td>Chief Executive Officer</td>
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<td>CSE</td>
<td>Centre for Science and Environment</td>
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<td>DEWAT</td>
<td>Decentralised Wastewater Treatment Systems</td>
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<td>DWASA</td>
<td>Dhaka Water Supply and Sewerage Authority</td>
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<td>FSM</td>
<td>Faecal Sludge Management</td>
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<td>iDE</td>
<td>International Development Enterprises</td>
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<td>IRF</td>
<td>Institutional and Regulatory Framework</td>
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<td>JMP</td>
<td>Joint Monitoring Programme</td>
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<td>MDG</td>
<td>Millennium Development Goals</td>
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<td>NFSSM</td>
<td>National Faecal Sludge and Septage Management</td>
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<td>NGO</td>
<td>Non-governmental Organisation</td>
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<td>NIUA</td>
<td>National Institute of Urban Affairs</td>
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<td>ODF</td>
<td>Open Defecation Free</td>
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<td>PSU</td>
<td>Programme Support Unit</td>
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<td>SBM</td>
<td>Swachh Bharat Mission</td>
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<td>SCBP</td>
<td>Sanitation Capacity Building Platform</td>
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<td>SDG</td>
<td>Sustainable Development Goal</td>
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<td>SFD</td>
<td>Shit Flow Diagram</td>
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<td>SuSanA</td>
<td>Sustainable Sanitation Alliance</td>
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<td>ULBs</td>
<td>Urban Local Bodies</td>
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<td>WASH</td>
<td>Water Sanitation and Hygiene</td>
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<tr>
<td>WHO</td>
<td>World Health Organisation</td>
</tr>
</tbody>
</table>
Acknowledgement

WaterAid India acknowledges support from Programme Support Unit (PSU), WaterAid UK for organising the workshop. We also extend our sincere thanks to Bremen Overseas Research and Development Association (BORDA), Centre for Science and Environment (CSE), International Development Enterprises (iDE), Emory University, National Faecal Sludge and Septage Management (NFSSM) Alliance, India and Faecal Sludge Management (FSM) Network, Bangladesh for their valuable contributions. We would also like to thank Sakshi Gudwani from Bill & Melinda Gates Foundation and Depinder Kapur from National Institute of Urban Affairs (NIUA) for their whole hearted support in this endeavor.
<table>
<thead>
<tr>
<th>Time</th>
<th>Activity</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Session I</strong></td>
<td>Innovations and Faecal Sludge Management (FSM)</td>
</tr>
<tr>
<td>16:00 - 16:05</td>
<td>Welcome Address by Session Chair</td>
</tr>
<tr>
<td>16:05 - 16:20</td>
<td>FSM Status of Bangladesh and the Way Forward</td>
</tr>
<tr>
<td></td>
<td>Speaker: Dr Md Mujibur Rahman, Professor, Bangladesh University of Engineering and Technology (BUET)</td>
</tr>
<tr>
<td>16:20 - 16:35</td>
<td>FSM Status of India and the Way Forward</td>
</tr>
<tr>
<td></td>
<td>Speaker: Arumugham Kalimuthu, Programme Director, Swachh Bharat Mission (Urban), Technical Assistance Programme, WASH Institute, and Convener, National Faecal Sludge and Septage Management (NFSSM) Alliance, India</td>
</tr>
<tr>
<td>16:35 - 16:50</td>
<td>Sanitation Capacity Building Platform</td>
</tr>
<tr>
<td></td>
<td>Speaker: Depinder Kapur, National Institute of Urban Affairs (NIUA), India</td>
</tr>
<tr>
<td>16:50 - 16:55</td>
<td>Concluding remarks by the Session Chair and Moderator</td>
</tr>
<tr>
<td>16:55 - 17:00</td>
<td>Break</td>
</tr>
<tr>
<td><strong>Session II</strong></td>
<td>FSM and a City Wide Approach</td>
</tr>
<tr>
<td>17:00 - 17:05</td>
<td>Welcome Address by Session Chair</td>
</tr>
<tr>
<td>17:05 - 17:20</td>
<td>The Chronicle of Faecal Sludge Management</td>
</tr>
<tr>
<td></td>
<td>Speaker: Dr Abdullah Al-Muyeed, Programme Support Unit (PSU), WaterAid UK</td>
</tr>
<tr>
<td>17:20 - 17:35</td>
<td>FSM in Africa: A Journey</td>
</tr>
<tr>
<td></td>
<td>Speaker: Jutta Camargo, Regional Coordinator, Bremen Overseas Research and Development Association (BORDA), Africa</td>
</tr>
<tr>
<td>17:35 - 17:50</td>
<td>Shit Flow Diagram: An Integral Part of City Wide Sanitation</td>
</tr>
<tr>
<td></td>
<td>Speaker: Bhitush Luthra, Deputy Programme Manager, Water Programme, Centre for Science and Environment (CSE), India</td>
</tr>
<tr>
<td>17:50 - 17:55</td>
<td>Concluding remarks by the Session Chair and Moderator</td>
</tr>
<tr>
<td>17:55 - 18:00</td>
<td>Break</td>
</tr>
</tbody>
</table>
### Panel Discussion
18:00 - 19:15

<table>
<thead>
<tr>
<th>Speaker</th>
<th>Topic</th>
<th>Organisation/Role</th>
</tr>
</thead>
<tbody>
<tr>
<td>Hasin Jahan</td>
<td>The Roadmap of FSM: Where are we?</td>
<td>Country Director, Practical Action Bangladesh</td>
</tr>
<tr>
<td>Rajeev Munankami</td>
<td>FSM Network Bangladesh: Nexus efforts paving the roadmap towards achieving SDG</td>
<td>Senior Advisor and Team Leader, FSM Programme, SNV Netherlands Development Organisation, Bangladesh</td>
</tr>
<tr>
<td>Jutta Camargo</td>
<td>Policy-Advocacy Integration: Experiences of the 1st FSM Convention of Bangladesh</td>
<td>Regional Coordinator, BORDA, Africa</td>
</tr>
<tr>
<td>Avinash Kumar</td>
<td>Tracking FSM experiences of Africa</td>
<td>Director, Programmes and Policy, WaterAid India</td>
</tr>
<tr>
<td>Aftab Opel</td>
<td>How FSM is critical for everyone everywhere: Reaching the poor first</td>
<td>Head of Programmes, WaterAid Bangladesh</td>
</tr>
<tr>
<td>Alicia May</td>
<td>Exploring FSM commercialisation: The Cambodia experience</td>
<td>Innovation Advisor, iDE (International Development Enterprises)</td>
</tr>
<tr>
<td>Dr Christine Moe</td>
<td>FSM: Consequences for public health</td>
<td>Professor, Emory University</td>
</tr>
</tbody>
</table>

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Vote of thanks and concluding remarks by Dr Suresh Kumar Rohilla, Programme Director, Centre for Science and Environment (CSE), India
There are still 2.5 billion people in the world who lack access to improved sanitation and around one billion people who still defecate in the open. The number of deaths that can be attributed to sanitation-related diseases is still hovering around two million per year, of which children below five years are the most affected group. The Sustainable Development Goal (SDG) on sustainable water and sanitation management (SDG 6) aims at closing this gap by 2030. It is part of the new Common Development Agenda adopted in 2015, which now applies to all countries and brings together environmental, social, as well as economic goals. The new sanitation goal expands the focus of the earlier set Millennium Development Goals (MDG) and addresses sanitation beyond toilets, including aspects of excreta management and reuse. Since sanitation is a key component of sustainable development, the sanitation goal has strong interlinkages to all other SDGs. Therefore, the realisation of the sanitation goal represents a crucial contribution to much of the 2030 agenda.

Worldwide, 2.7 billion people rely on on-site sanitation. Yet, there is still no management system in place to deal with the resulting faecal sludge (e.g. septage and pit latrine sludge). The result is that the waste typically ends up being dumped directly into the urban environment, with significant health and environmental implications. Creating the infrastructure for faecal sludge management (FSM) and public services that work for everyone, and keeping faecal sludge out of the environment is a major challenge in achieving access to universal sanitation. The Sustainable Sanitation Alliance (SuSanA) is an established international alliance unifying a wide range of members working towards achieving sustainable sanitation systems promoting health, effective hygiene and implementation of appropriate technical solutions, which are both financially and economically viable, while being socially acceptable and institutionally
appropriate. These achievements should provide adequate sanitation and protect the environment and natural resources. WaterAid is one of the core group members of SuSanA. Such alliances provide an opportunity to build a strong network for knowledge management, discussion, collaboration and for establishing regional nodes on appropriate needs focusing on regional contexts. With an aim to share and brainstorm on potential solutions, to formulate policy recommendations that promote best practices and to identify the lessons learned in ways to make FSM an integral part of sanitation service delivery, the 4th ‘International Faecal Sludge Management Conference’ (FSM4) was organised in Chennai, India from 19-23 February 2017. FSM4 created an opportunity to bring together professionals working in the sector, including utilities, service providers, city and government representatives, academics, scientists, consultants, sponsors and industries, to support the global initiative of disseminating sustainable solutions for FSM. **WaterAid India took the opportunity to strengthen cross-learning and sharing between different countries in Asia and Africa by organising a workshop titled, ‘Exchanges of Faecal Sludge Management Coalitions’ on 19 February 2017.** In this workshop, WaterAid and Alliances exchanged their insights on FSM to learn and share current practices, problems, and new ideas and innovations being practised across the world. The workshop provided a platform to discuss what coalitions and alliances are doing for FSM, the challenges they face and the action plan to address these challenges. This should pave the way for further collaboration amongst countries and continents and enhance knowledge of FSM.
The workshop was convened by WaterAid and co-convened by the Centre for Science and Environment (CSE), India; National Faecal Sludge and Septage Management (NFSSM) Alliance, India; FSM Network, Bangladesh with participation from Bill & Melinda Gates Foundation; and National Institute of Urban Affairs (NIUA), India. The Programme Support Unit (PSU) of WaterAid UK provided the necessary organisational support. Puneet Srivastava, Policy Manager at WaterAid India welcomed all the participants and set the agenda for the event, after which, he introduced the Chair and the speakers.
Sakshi Gudwani, Specialist - WASH, Bill & Melinda Gates Foundation, chaired the inaugural session. Briefly touching upon the background of NFSSM, she shared that the Alliance was convened in January 2016 with a mandate to build consensus around faecal sludge and septage management. With an emphasis on working across all aspects of city sanitation plans and institutional networks, the Alliance seeks to identify innovative solutions that can be scaled up to solve the considerable sanitation problems facing us.

Speaking on ‘Faecal Sludge Management in Bangladesh’, Dr Md Mujibur Rahman, Professor of Civil Engineering at the Bangladesh University of Engineering and Technology (BUET), stated that Bangladesh had almost achieved open defecation-free (ODF) status in the year 2015. The improvement in sanitation coverage in Bangladesh over the past decade has been a remarkable 61 per cent (JMP 2015, WHO & UNICEF) and Dr Rahman attributed this progress to the introduction of on-site sanitation facilities like pour flush latrines and the septic tank system. He explained that the conventional sewerage system is virtually absent in Bangladesh as out of 160 million people, only four million are connected to sewerage, while the rest of the population is served by on-site sanitation systems. Dr Rahman suitably set the background for the day’s discussions, laying out the challenges of FSM in the absence of proper emptying and disposal systems of faecal sludge. He drew attention to the role and importance of FSM in attaining the Sustainable Development Goals (SDG), particularly indicators 6.2 (safely managed sanitation services) and 6.3 (improvement of water quality). Highlighting the fact that Bangladesh is witnessing encouraging initiatives for FSM with support from the Government of Bangladesh, non-governmental organisations (NGOs) and developmental partners, he explained that one of the key initiatives for FSM in Bangladesh is the development of an Institutional and Regulatory Framework (IRF). The Framework aims to assign responsibility of FSM to specific institutions based on existing laws, policies and strategies; ensure coordination among stakeholders; and facilitate environmental, financial and social sustainability. The Ministry of Local Government, Rural Development and Cooperatives is the lead agency for the IRF in coordination with other relevant ministries. Dr Rahman concluded by saying that the local government, which includes city corporations, municipalities, and union parishads will play a major role in its implementation.
The next session was led by Arumugam Kalimuthu, Programme Director, Swachh Bharat Mission (Urban), Technical Assistance Programme, WASH Institute and Convener, NFSSM Alliance, India. Kalimuthu began with highlighting the fact that in India, about 60 per cent of households are beyond the coverage of a sewerage network and nearly 7,000 small towns do not have a centralised sewerage system. He pointed out that the Census 2011 clearly indicates that as the city size decreases, its dependence on on-site sanitation facilities increases. Kalimuthu also emphasised the need for advocacy of manual scavenging laws and guidelines on septic tank constructions for improving FSM status in India. Making a case for strong FSM, he pointed out that poor FSM leads to high health and environmental costs and increased capital and operational expenditure for the centralised system. Despite these concerns, he was happy to share some of the achievements of the NFSSM Alliance. Key among them were:

- Facilitation of regional workshops on FSM in various states
- Assistance in formulating FSM policy for states
- Development of Rapid Assessment Tools for urban local bodies (ULBs) to facilitate formulation of budgets

Finally, Depinder Kapur, of Sanitation Capacity Building Platform (SCBP), Programme Lead for the National Institute of Urban Affairs (NIUA) outlined the challenges and lessons of SCBP. He explained the context and background of SCBP as a collaborative effort by NIUA for mainstreaming faecal sludge management at the state and national levels.

Sharing NIUA’s experiences in developing capacity building programmes, he stressed that the programmes were tailor-made to fit the capacity of the stakeholders. He also drew attention to some of the challenges and lessons in undertaking these needs, such as central and state dynamics, capacity building in small towns and the limitations of the current Orientation Training Modules.

The participants then engaged in an open discussion with the presenters on various aspects of FSM, including issues of containment, land availability, appropriate technology and practice, community engagement, roles and responsibilities of different stakeholders, monitoring, partnership and coordination, and funding and cost-effectiveness.

Puneet Srivastava, Policy Manager at WaterAid India then gave a vote of thanks to the Chair and introduced the Chair for the second session, Dr M Habibur Rahman, inviting him and the speakers to the dais.
Focused on FSM and a City Wide Approach, this hour-long session was chaired and moderated by Dr M Habibur Rahman, Chairman, Dhaka Water Supply and Sewerage Authority (DWASA), Bangladesh. Dr Rahman introduced the three speakers - Dr Abdullah Al-Muyeed, Jutta Camargo and Bhitush Luthra, and briefly shared their associations, experience, expertise and key contributions made in the environmental, academic, WASH and FSM sectors. Setting the context for the session, Dr Rahman highlighted the advantages and disadvantages associated with both centralised and decentralised systems to treat sewage and wastewater. He pointed out that a central sewerage system requires less manpower and covers a large area and population in comparison with a decentralised system. At the same time, there is a dire need for FSM to address sanitation targets as centralised sewerage systems cannot cover all the areas. He pointed out that to achieve the Sustainable Development Goal, we must keep working on a sustainable sanitation framework to avoid human contact and safely dispose the waste.

Dr Abdullah Al-Muyeed from the Programme Support Unit, WaterAid UK, then elaborated on ‘The Chronicle of Faecal Sludge Management’, with a special focus on the history of FSM in Bangladesh. He asserted that the centralised sewer network is now garnering interest from sponsors, while the country also needs FSM to attain safe sanitation. He also underlined the importance of occupational health and safety in sanitation practices.

Further, he highlighted the fact that overall only one per cent faecal sludge is treated and 99 per cent remains untreated and is not disposed safely, causing environmental pollution. Giving details about an FSM project that WaterAid Bangladesh had undertaken in collaboration with the municipality of Tangail district of Bangladesh, he urged that the time had come to practice safe sanitation. He discussed approaches adopted under the project, which included capturing the entire value chain of FSM at the municipality level by establishing a co-composting plant in Sakhipur municipality. Before this project was implemented in 2015, only 21 per cent of the waste was safely managed. Sakhipur municipality took the lead in planning, operations and maintenance of the sanitation service chain. Stressing on the necessity of science and contextual solutions, Dr Muyeed explained how those are embedded in the co-compost plant in Sakhipur in terms of safe desludging, safe conveyance, safe treatment and safe reuse of the end-use product for agriculture. Such a context-specific solution for Sakhipur contributed to 59 per cent of faecal sludge being safely managed by 2017. Therefore, integration of actors from various sectors was vital for the success of FSM.
Giving an insight into ‘FSM in Africa: A Journey’, Jutta Camargo, Regional Coordinator from BORDA, Africa, highlighted interventions implemented in Dar es Salam, Tanzania. She presented FSM approaches adopted by BORDA impacting environmental, social, technological and institutional aspects. Sharing the experience of a faecal sludge management plant in Kigamboni, she highlighted its capacity, coverage and economic impact and the effect of its end-use product in fishpond and agriculture production.

The second part of her presentation included an intervention with Malakuwa River Restoration Project, which was implemented in 2013 by engaging various top-level government institutions and ministries. She touched upon the key components of the project like wastewater management, solid waste management, project coverage and area.

Finally, she focused on the decentralised wastewater treatment systems (DEWATS) used for the DAR Project and highlighted key approaches to the project, including framework like social, legal, economic, and cultural. By presenting different case studies, she underlined the key lessons learned from them and the measures to strengthen FSM approaches and advocacy.

Bhitush Luthra, Deputy Programme Manager, Water Programme at Centre for Science and Environment (CSE), India, presented a ‘Shit Flow Diagram (SFD): An Integral Part of City Wide Sanitation’. He explained the diagram and its relevance in planning and managing city wide FSM. His presentation included processes necessary to plan and prepare the diagram. He described SFD as an important tool in planning city wide sanitation and its methodologies. By way of demonstration, he applied SFD in three different scenarios and presented his analysis for the different cities and the key outcomes of SFD derived by applying the tool to those cities.
Finally, the workshop was thrown open for a panel discussion in which speakers discussed various FSM issues and offered their opinions and insights.

**FSM Network Bangladesh: Nexus efforts paving the roadmap towards achieving SDG**

Hasin Jahan, Country Director, Practical Action, Bangladesh

As Country Director of Practical Action, Bangladesh, Jahan drew attention to a successful alliance that is actively contributing towards combating the challenges of FSM in Bangladesh. He started by lauding the impressive progress Bangladesh had made on toilet construction, but added that it was this progress that had compelled his organisation to start thinking about FSM very early on as they were aware that constructing millions of toilets alone could not be the solution. He pointed out that in the process of making Bangladesh open defecation-free and bringing it below one per cent, the participation and efforts of all governmental and non-governmental agencies, with the exception of the private sector, was recognised.

Jahan disclosed that while working in different dimensions of faecal sludge management, Practical Action tried to mainstream FSM in terms of different technology and processes like composting, co-composting, biogas production and even aqua-culture, but it was the private sector which helped them to integrate FSM by providing innovative and low cost technological solutions to faecal sludge management. This made them realise the contribution of the private sector to innovation in sanitation. Similarly, they observed that due attention was not being given to the fertiliser associations and companies who deal with the sale of compost, which is the end product of FSM. This brought about the very important realisation that for successful FSM, it is necessary to consider the diverse roles of all the different actors involved and orchestrate their actions into a unified, streamlined process. Jahan revealed that this led to the formation of an FSM Network in August 2016 with the aim of providing safe and sustainable FSM in Bangladesh for improved public health and environment by 2030. This network has been formed with the objective of knowledge sharing and acts as an advocacy platform for FSM promotion at the policy level and to ensure the engagement of the private sector. Fifty organisations and individuals representing the government, private organisations, research institutes and NGOs have joined the network so far. Jahan informed the gathering that a flagship event, ‘FSM Convention’, was organised last
month under the banner of the FSM network, and an upcoming important agenda of the network was to get approval for an institutional and regulatory framework for FSM. He concluded by saying that they are in the process of building a platform to understand the bottlenecks and problems the private sector is facing.

Policy-Advocacy Integration: Experiences of the 1st FSM Convention of Bangladesh

Rajeev Munankami, Senior Advisor and Team Leader, FSM Programme, SNV Netherlands Development Organisation, Bangladesh

Agreeing with Jahan, Rajeev Munankami said that one cannot work in isolation. There have been many organisations working piecemeal, but it has been realized that these interventions are more successful when all the players come together to share their knowledge. With this background, Munankami informed the gathering that SNV had organised a two-day convention in Bangladesh on 07-08 December 2016. The overall aim was to find the way forward in terms of policymaking, technology and commercialisation, in order to scale up FSM in municipality and town planning. Munankami disclosed that Day One of the Convention focused on these larger issues of FSM while Day 2 was a Convention of Pit-emptiers who, he acknowledged, are the actual drivers of FSM. Revealing that in Bangladesh, there are more than 80 per cent manual emptiers, Munankami said that it is important to recognise their hard work and contribution towards making the city clean at a very small incentive. Another important consideration was the occupational health and safety of the pit emptier and the entire value chain of faecal sludge management. He also informed the gathering that SNV was now working with the National Skill Development Council to create a Certificate Course for the emptier.

Another important agenda, he said, was to find ways to mainstream FSM within the government policy-implementation regime and to make sure that the government start investing in it. With this in view, he shared that one of their pilot interventions towards making the regulatory framework operational would be to enable the municipal authority to charge 12 per cent of the holding tax as FSM Tax for the services they provided. Under the municipality tax regulation, an urban local body can charge FSM or sanitation tax for the service they provide. He explained that a quick calculation revealed that a city with a population of 13 million could generate eight million taka, which could then be used towards infrastructure investment and operational and maintenance costs of the plants.

Underlining the fact that all these interventions and plans would not succeed without the stakeholders, Munankami concluded by saying that SNV was also focusing on ensuring the participation of all stakeholders.

Tracking FSM experiences of Africa

Jutta Camargo, Regional Coordinator, BORDA, Africa

Camargo took centre stage to briefly touch upon
BORDA’s experiences and challenges with FSM in Africa and Indonesia. She explained that BORDA had entered into sludge management only recently since their main focus had been wastewater. While working in Africa and India, their major concern had been the informal settlements and pit latrines and they were looking for ways to handle faecal sludge and integrate it with their technology. Camargo announced that this was when BORDA started thinking of constructing a treatment plant and thus began their work on sludge management. The first treatment plant was set up in Indonesia where technology was good but unfortunately, the lack of an institutional setup made it difficult to run the plant. This was a lesson learnt for BORDA and then they moved to implement FSM in Tanzania. Here, Camargo shared, they first invested in communication with the municipality. They adopted a competitive approach among the urban local bodies (ULBs), which made them very enthusiastic. Regrettably, however, only two honest applications came up against three planned plants.

She added that in Tanzania, there are five ministries responsible for faecal sludge management and it is very difficult to establish regular communication among them, which results in many complexities. In conclusion, she said that BORDA was now working with a focus on bringing them together on one platform to achieve success.

**Why Indian cities cannot be ODF without sustainable FSM services: Role of the NFSSM Alliance**

Dr Suresh Kumar Rohilla, Programme Director, Centre for Science and Environment, India

Dr Suresh Kumar Rohilla, Programme Director, Centre for Science and Environment said that they have long been advocating that Indian cities cannot be open defecation-free without sustainable FSM services. CSE is an active member of the Alliance to mainstream FSM in India. He said that CSE has been working independently for the last 35 years in the area of water management and has also tracked the entire economics of water and sanitation. Dr Rohilla said that CSE has been advocating a decentralised approach as the answer to issues like pollution. He revealed that in India, there is a problem of policy implementation despite having good written policies. The National Urban Sanitation Policy 2008, talked about preparing a city sanitation plan, which included a sub-component for preparing a faecal sludge management plant. Everything was written but not understood by the people who were to deliver. There were no consultants and no university that would produce the practitioners with the required skill for sanitation issues. Dr Rohilla pointed out that today, after eight years of the policy; it was evident that nothing had moved at the ground level. He added that one of the important studies that CSE was involved in was the mapping of 72 cities to see how their excreta flows. They also published a book called ‘Excreta Matters’, which raised the issue to the next level of advocacy. Dr Rohilla pointed out that earlier, sanitation
solutions were understood to be the domain of civil engineers who never thought beyond sewers and it was assumed that water was the business of institutions and water utilities. CSE realised that the political economy of water and wastewater requires dialogue with varied people; that it was important to connect with the society, technology and economy. In addition, when we talk about the decentralised solution, the user interface becomes very important. There were talks of constructing toilets but faecal sludge management was never part of those dialogues.

Acknowledging the work of organisations like BORDA, who have been working on decentralised wastewater treatment plants, Dr Rohilla regretted the fact that these plants are never owned by the governments. He said that he only knew of one project - Delhi Water Utility – which was owned and funded by the government. All the others had donor-led models and were not replicated to scale. Therefore, he believes that there is a strong need to build leadership among the supply side to enable them to have adequate participation.

Speaking about the Alliance that was formed about a year ago, Dr Rohilla said that they were aware that none of the members could replace the government. So it was imperative to put collective pressure on the government and take advocacy to the next level. He pointed out that the government has earmarked 500 cities that would undergo rejuvenation and selected another 100 cities to be converted into Smart Cities. But cities cannot became smart until they are clean and healthy, so collectively the Alliance was able to convince the government that the talk needs to go beyond toilet construction. They suggested that some ‘torch’ cities be built among these 600 cities, which would have faecal sludge management implemented at the ground level and could guide other cities to take sanitation beyond merely constructing toilets.

Happy that the dialogue had begun, Dr Rohilla asserted that still a lot of work needs to be done, as after the enabling framework, it was important to develop a system for intervention and proper monitoring. In conclusion, he hoped that through the Alliance, they will succeed in influencing the government and will have more to report in FSM5.

**How FSM is critical for everyone everywhere:**

**Reaching the poor first**

Avinash Kumar, Director, Programmes and Policy, WaterAid India

Avinash Kumar began by stating that since much had already been said about India, he would just shed light on a few lessons learned while implementing a decentralised solution in a resettlement colony in Delhi. For the past year, WaterAid India had been in dialogue with various units of the Delhi government responsible for different aspects, and it made them realise the complexity of the decision-making process within the government, particularly in the urban context. Kumar revealed that after much dialogue at the initial level, the government agreed to take up a decentralised model but wanted to keep it separate from the sewer-driven centralised solution. They wanted it to be placed elsewhere.
as a demonstration of a decentralised solution. After a series of subsequent conversations, they agreed but wanted it to link to WaterAid’s 2030 plan. He said that this was when they realised that a critical component of successful FSM is changing the mindset of the people concerned. He further revealed that at their inception workshop, the CEO of Delhi Jal Board agreed that sewage connection is limited to 45 per cent of the population and that to reach up to other 55 per cent, there was a need for decentralised solutions. Kumar’s understanding is that despite this recognition in the upper echelons, it would be a long while before it percolated down to the executive arm — which mostly comprises people who have a mindset affixed to a centralised solution. He therefore stressed that it was of utmost importance to first change the behaviour and mindset of the executive wing of the supply side, but he cautioned that since this mindset has been prevalent for the last 150 years, it will take time and effort to change it.

The second point that Kumar made is that our choice of technology is our choice of politics. He elaborated by pointing out that when we talk about decentralised solutions, we also mean decentralised politics, decentralisation of participation, community participation, and ownership by people. Kumar observed that while the 74th amendment, which came 20 years ago, gave immense power to the local government, the irony was that planning rights were given without financial rights. But he also noted that the 14th Finance Commission has, for the first time, allocated funds directly to the local government. While hailing this as a good opportunity for decentralised solutions, Kumar also foresaw that capacity development and gap identifications will be required.

His third point brought up the issue of manual scavenging. He remarked that despite being officially abolished, manual scavenging continues and has now become alarming. Last year, a network organisation working on the issue, documented 800 deaths of people while working in the sewer. Kumar observed that after abolishing manual scavenging in 2013, the government had allocated funds for their rehabilitation. However, only 50 per cent of that budget was used. Rueing the shortsightedness of the government, Kumar said that noticing this trend of unutilised money, the government had this year decreased the budget from INR 470 crore to INR 80 crore instead of planning better utilisation. He ended by stressing that these three issues too should come into the ambit of the agencies working towards FSM.

FSM - Business or Subsidy!

Aftab Opel, Head of Programmes, WaterAid Bangladesh

Unpacking the various processes of FSM, Opel said that it mainly comprised emptying, transportation, treatment and reuse. Emptying for long has been profitable, he said, but when it has to be transported to a particular place far away, it becomes unprofitable. The treatment, too, is very expensive and reuse, to extract some
value, is not feasible as the investment cannot be
recovered from reuse. He, however, pointed out
that when you factor in the long-term health and
environmental benefits, FSM becomes extremely
profitable. Emphasising that FSM is imperative
from the national point of view, he made a case
for the operational components of FSM to be
subsidised in order to make it sustainable.

**Exploring FSM commercialisation: The
Cambodia experience**

*Alicia May, Innovation Advisor, iDE
(International Development Enterprises)*

May introduced iDE as an international NGO
working mainly in Africa and Asia on exploring a
business model for FSM. Talking about Cambodia
specifically, she declared that even two years back
there was no problem of FSM in Cambodia but
now due to the increasing garbage rate, it had
become a problem that needs to be addressed.
She explained that iDE understands the need
for FSM and they are now exploring a low cost,
commercially viable technological solution for
FSM in Cambodia from the rural point of view as
80 per cent of the population lives in rural areas.
iDE uses a human-centric design approach, she
said, which takes into account desirability – what
different actors actually want; viability – whether
it will be commercially and financially viable
and sustainable; and feasibility – i.e. deciding
which technology is feasible. Realising that they
did not know much about desirability from the
household and emptier point of view, May said
that they started undertaking value chain analysis
to understand knowledge behaviour and link
it with the business model. The next step was
entrepreneurship development. She revealed that
they found around 200 sweepers in the city who
wanted to do FSM but did not know how. This was
iDE’s cue to build their capacity so that they could
take all safety measures and get involved in FSM
with a business model. Finally, it was important
to choose a feasible technology, which would help
in combating local challenges. Giving an example,
May said that in the rainy season, it becomes
difficult in Cambodia to take the emptier vehicle
inside the lanes of rural areas. She concluded by
saying that developing technology that is context-
specific could address the challenges and lead to
success.

**FSM: Consequences for public health**

*Dr Christine Moe, Professor, Emory University*

Dr Moe drew attention to the hidden cost of
FSM. She warned that it is critical and mainly
occurs due to poor management of faecal sludge.
Referring to the ‘shit flow’ diagram that was
shared earlier, she reminded everyone that the
generated faecal sludge mostly stays in the
neighbourhood.

Dr Moe enumerated the different ways that we
get exposed to shit, like water, soil, physical
contact, open drains, surface water, birds, flies,
solid waste, flood water, and shared latrines
and cautioned that these are the pathways of
contamination through which public health
gets a negative impact. This negative impact can
become severe when we have poor faecal sludge
management. In conclusion, Dr Moe warned that
it is important to realise that we cannot protect ourselves if there is poor FSM in our surrounding areas.

**Concluding Remarks**

*Dr Suresh Kumar Rohilla*

Concluding the session, Dr Rohilla said that there were important discussions on the political economy of sanitation, and how decentralised solutions need decentralised politics. Experiences at the grassroot level were also shared and important scientific observations were made about the contamination caused due to poor FSM. However, he lamented that despite all this awareness, it is still difficult to solve the problem because the accountable people are usually non-responsive. He stated that though we all know the impact of FSM on public health, we need science to make us aware of the economical benefits of FSM. He regretted that we still do not have laboratories in our districts to test faecal sludge and tell us how the faecal sludge of Asia is different from Africa and how different faecal sludge carry different nutrient values. He pointed out that appropriate knowledge would enable us to reuse faecal sludge more efficiently. Emphasising that the answers to these questions need to be explored and discussed further through alliances, he concluded the session by expressing satisfaction on the day’s proceedings and ended on a note of hope that such discussions and sharing would eventually lead to feasible actions and solutions.
FOR ANY QUERIES, PLEASE WRITE TO:

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