

# AGENDA

## DAY 1: MONDAY, 20 FEBRUARY 2017

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9:00–10:00 **Opening Remarks** / Rajendra 1–3

- Welcome by Doulaye Kone, Conference Chair
- Phanindra Reddy, Principal Secretary, Municipal Administration & Water Supply Department (MA&WS), Tamil Nadu, India
- Honorable M. Venkaiah Naidu, Minister, Ministry of Urban Development, India
- Nomvula Mokanyane, Minister, Ministry of Water and Sanitation, South Africa
- H.H. Pujya Swami Chidanand Saraswatiji

### Opening Ceremony

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10:00–10:30 **Break** / Rajendra Foyer

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10:30–12:00 **Research 1.1: Integrated Processes – I** / Rajendra 1–3

1. HOFFMANN, Michael et al., “Development of Integrated Reactor Systems for the Combined Biological and Electrochemical Treatment of Faecal-Sludge and Wastewater Without Discharge to the Environment”, USA
  2. JIMENEZ, Irene et al., “Urine-tricity Project”, UK
  3. SALMON, Brandy et al., “Market Insights for The Reinvented Toilet”, India
  4. BAIR, Robert et al., “India Field Testing of an Integrated Sanitation Platform with Electronic Public Toilet (eToilet) and Off-grid Anaerobic Membrane Bioreactor (NEWgenerator™)” USA
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### Research 1.2: Economics & Business – I

 / Rajendra 4

1. MEHTA, Meera et al., “Financing Citywide FSM Services”, India
  2. MILLS, Freya et al., “Increasing Institutional and Regulatory Support for Private Sector”, Australia
  3. BERENDES, David and Nirat Bhatnagar et al., “Sanitation Credits: A New Financing Model to Scale Investment in Fecal Sludge Management”, USA
  4. KOOTTATEP, Thammarat et al., “Financial Feasibility Analysis for FSM business in Thailand”, Thailand
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### Research 1.3: Design & Evaluation

 / Rajendra 5

1. PHILIP, Ligy et al., “Performance Evaluation of DRDO Based Anaerobic Biodigesters for Blackwater Treatment”, India
  2. MCWHIRTER, Michael et al., “Design of Sludge Treatment Facilities in Indonesia: Learning from the Past to Design a Better Future”
  3. NARTYE, Eric et al., “Technological Options For Fecal Sludge Pelletization In Ghana”, Ghana
  4. WOOLLEY Stuart et al., “SASTEP: Lessons Learnt from Phase I of the SASTEP EarthAuger Demonstration in South Africa”, South Africa
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**Case Studies 1.1: Container-Based Sanitation** / Rajendra 6

1. GARDINER, Virginia et al., "Serviced Household Toilets, FSM and ICT in Antananarivo: Lessons Learned", Madagascar
  2. BERNER, Catherine et al., "Waste Transformation, not Waste Treatment: Understanding the Value of Poop in Sanitation's Waste Processing Model for Cities", Kenya
  3. KRAMER, Sasha et al., "Developing a Social Business for the Provision of Household Sanitation in Dense Urban Settings", Haiti
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**Case Studies 1.2: Managing FSM in India** / Rajendra 7

1. SCOTT, Cecilia Lauren, "Community Engagement: An Important Part of Successful FSM"
  2. CHARY, Srinivas et al., "Operationalizing FSM Regulations at City Level: A Case Study of Warangal", India
  3. MANSURI, Aasim et al., "Toilets and Beyond: How to implement ODF in small towns in India", India
  4. REDDY, Phanindra and Prakash Govindswamy, "Operationalising Septage Management Guidelines in Tamil Nadu", India
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**Industry 1.1: City Scale FSM** / Rajendra 8

1. SAHA, Uttam Kumar et al. "City scale sludge treatment plant in Faridpur, Bangladesh: Plan to Action", Bangladesh
  2. BHAVSAR, Dhruv et al., "A systematic Approach Adopted by government of Maharashtra scale up FSM services", India
  3. INMAN, JR, "Operation of FSM utility at scale in the US: the case of FloHawks", USA
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**Industry 1.2: FSM Logistics** / Sembian Annex 2

1. GARDINER, Virginia et al., "Collection Logistics and Waste Pre-processing: Cross learning" UK
  2. VILLARRAGA, Huayna Paola et al., "Logistic Tool to improve FSM business model", Thailand
  3. TA, HUNG ANH et al., "Applicability of Innovative possibilities for FS Collection and Transportation services in perception of service operators and experts", Thailand
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12:00–13:15 **Lunch** / Rajendra Foyer

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13:00–14:15 **Poster Sessions** / Lotus Lounge, Hibiscus Lounge, Sembian Annex 1

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**Interactive Sessions – Professional Skill Competitions** / Sembian Porch

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14:30–15:15 **Keynote** / Rajendra 1–3  
FSM priorities for Swachh Bharat Mission

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15:15–15:45 **Break** / Rajendra Foyer

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1. HALLOWELL, Benjamin et al., “Carbon Neutral Electrical Generation from Human Solid Waste: Developing the Energy Balance and Identifying Suitable Electrical Generation Solutions Capable of Harnessing Thermal Energy”, USA
2. FOUTCH, Gary et al., “Temperature and Shear Rate Dependent Viscosity Model for Feces Simulant and Computational Fluid Dynamics Analysis of a High-Throughput Viscous Heater to Process Feces”, USA
3. CHENG, Yu-Ling et al., “Smouldering and Catalytic Conversion for Fecal Treatment”, Canada
4. BOHNERT, Kate et al., “Continual Flow Heat Treatment System for Container-based Toilets”, Kenya

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**Research 1.5: Economics & Business – II** / Rajendra 4

1. TSEPHHEL, Stanzin and Isha Dash, “Scalability of underground drainage and faecal sludge management :- a financial perspective from India”, India
2. WATSON, Philip et al., “Determining the Economically Optimal Capacity of a Decentralized Faecal Sludge Treatment Plant”, USA
3. KITA, Akifumi et al., “Sub Saharan Africa Stakeholder Perspectives and Early Thoughts on Macro Business Model Implications”, USA
4. SUGDEN, Stephen, “Strategies and lessons for achieving scale in Sanitation”, USA

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**Research 1.6: Characterisation & Quantification of FS – I** / Rajendra 5

1. MEHTA, Meera et al., “San Benchmarks: Citywide Assessment of Sanitation Service Delivery – Including On-Site Sanitation”, India
2. VELKUSHANOVA, Konstantina et al., “Development and Testing of Faecal Sludge Simulants”, South Africa
3. STRANDE, Linda, “Engineering Design Approach for Selection and Design of Treatment Technologies”, Switzerland
4. DE LOS REYES, Francis et al., “Linking Microbial Communities to Degradation Processes Occurring in a VIP and Pour-Flush Latrines”, USA

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**Case Studies 1.3: Organizing FSM** / Rajendra 6

1. ASRI, Aldy and Mardikanto Indiyani, “Moving Towards Nationwide Roll Out of Fecal Sludge Management”, Indonesia
2. SUMARNI, Sanusu and Reini Siregar, “Improved Septage Management: Introducing Regular and Improving on-demand emptying, lessons and experience from Balikpapan City, East Kalimantan Province, Indonesia”, Indonesia
3. BUSTRAAN, Foort et al., “Introduction of Scheduled Desludging Services in Indonesia”, Indonesia
4. REDDY, Malini et al., “Application of Information Communication Technology (ICT) for effective Planning and Implementation of FSM Programme: A Case study of Warangal City”, India

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**Case Studies 1.4: Bringing FSM Operators into the Sanitation Service Chain** / Rajendra 7

1. SIMWAMBI, Aubrey et al., “Current and optional FSM operation models for over-coming current and future challenges”, Zambia
  2. ROKOB, Janka and Christian Rieck, “FSM means tackling the entire sanitation chain: examples from urban Uganda”, Uganda
  3. NKURUNZIZA, Allan, “The Case for Private Sector Participation in Faecal Sludge Management Service Provision in Kampala”, Uganda
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**Industry 1.3: FSM Education & Building Capacity** / Rajendra 8

1. MANANDHAR SHERPA, Anjali et al., "FSM Human Resource Training through online education"
  2. MILLS, Freya et al., "Equipping local governments with the skills to implement scheduled desludging", Australia
  3. KOHLER, Laura et al., "Assessing city level FSM needs to build capacity", USA
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**Industry 1.4: FSM Knowledge Management** / Sembian Annex 2

1. ROSEMARIN, Arno et al., "Improving SuSanA's KM and collaboration platform to benefit FSM practitioners", Sweden
  2. SINGH, Aprajita et al., "Creating demand for sanitation and FSM through exposure- Evidence from Bihar", India
  3. ROHILLA, Suresh et al., "Institutional Capacity Building of Ganga Basin Cities for their journey beyond ODF", India
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## DAY 2: TUESDAY 21 FEBRUARY 2017

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**9:00–10:00 Keynote** / Rajendra 1–3

- FSM Asia Case Study: Malaysia – Sasidharan Velayutham
  - FSM Africa Case Study: Senegal – Mbaye Mbeguere
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**10:00–10:30 Break** / Rajendra Foyer**10:30–12:00 Research 2.1: Integrated Processes – II** / Rajendra 1–3

1. ELLEDGE, Myles et al., "Continued Development and Field Testing of a Decentralized, Self-contained Toilet that Converts Human Waste into Burnable Fuel and Disinfected Liquid", USA
  2. GREGO, Sonia et al., "Field Testing Of Onsite Wastewater Treatment Technologies With 100% Pathogen Removal", USA
  3. PIASCIK, Jeffrey et al., "Catalytic Pyrolysis of Human Feces for Biofuel Production", USA
  4. KULAK, Michal et al., "A Life Cycle Perspective on Scaling Up Sanitation in India", UK
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**Research 2.2: Pathogen & Parasites Inactivation** / Rajendra 4

1. FOUTCH, Gary et al., "The Inactivation of Ascaris suum Eggs by Short Exposure to High Temperatures for the Purpose of Sanitizing VIP Latrine Sludge by Viscous Heating", USA
  2. AMOAH, Isaac Dennis et al., "Method for the Detection and Quantification of Soil Transmitted Helminth Eggs in Faecal Sludge", South Africa
  3. CHAPGAIN, Saroj Kumar et al., "Disinfection from Freshly Separated Fecal Matters by Applying Heat and Chemicals", Thailand
  4. HARROFF, Lauren et al., "Fermentation of Human Faecal Waste to Produce Carboxylic Acids and Inactivate Ascaris Eggs", USA
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**Research 2.3: Biotreatment – I / Rajendra 5**

1. LARAMEE, Jeannette et al., “Integrating Lifecycle Carbon, Energy and Water Impacts into Decentralized Sanitation Infrastructure Planning”, USA
2. GUEYE, Amadou et al., “Is it Possible to Continually Produce Fodder on Planted Drying Beds Treating Faecal Sludge?”, Senegal
3. LALANDER, Cecilia et al., “Treatment of Faecal Matter – A product value comparison of four treatment options”, Sweden
4. PURKAYASHTA, Debasree et al., “Effect of Environmental Parameters on the Treatment of Human Fecal Waste by Black Soldier Fly Larvae”, India

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**Case Studies 2.1: FSM & Urban Management / Rajendra 6**

1. SINGH, Shirish and Dev Bhatta, “An Arduous Journey of FSM in a Small Municipality of Gulariya, Nepal”, Nepal
2. OKOTH, Simon Onyango et al., “Scaling up Faecal Sludge Management in Kenya’s Urban Areas”, Kenya
3. SAKAI, Akira, “FSM Cooperated with Sewerage in Japan”, Japan

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**Case Studies 2.2: Public-Private Partnerships for FSM / Rajendra 7**

1. DE LA BROSSE, Noemie et al., “Tackling the post-ODF challenge in Bangladesh through public-private partnerships: Preliminary results of Faridpur FSM business model”, UK
2. MENZIES, Iain et al., “Hybrid PPP for Non-network Sanitation Improvements in Greater Colombo”, Sri Lanka
3. CHARY, Srinivas et al., “Improving Sanitation Services through Service Level Agreements and Public Private Partnerships: A Case study of Warangal City”, India

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**Industry 2.1: Tools & Planning / Rajendra 8**

1. SONKO, Elhadji Mamadou and Linda Strande, “Tools for FSM planning in small towns: case study of Bignona, Senegal”, Senegal
2. BLACKETT, Isabel et al., “Tools for the assessment and development of sustainable city-wide FSM services”, UK
3. BRUECKNER-SUPRIYONO, Marina et al., “Cooperation AIT and BORDA – on the application of FSM Toolbox in project cities”, Indonesia

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**Industry 2.2: Technology Innovations – From the Field Session 1 / Sembian Annex 2**

1. SOLANKI, Ravi et al., “SimpliSafi: an off-site sanitation system that vertically integrates waste collection and sludge processing for informal settlements”, UK
2. SOHIER, Laurent, “Bio-solar purification – a new process to treat domestic wastewater and to turn water and wastes in a safe reusable form”, France
3. FRANCIS, George et al., “Biomass Steam Processing (BSP) – Conversion of Biomass to Coal by Steam Conditioning”, Germany

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12:00–13:15 **Lunch** / Rajendra Foyer

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13:00–14:15 **Poster Sessions** / Lotus Lounge, Hibiscus Lounge, Sembian Annex 1

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**Interactive Sessions – University Challenge** / Sembian Porch

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14:30–15:15 **Keynote** / Rajendra 1–3

- Peter Janicki, Transformative Technology and Sanitation Innovation: Janicki Omni-Processor, Janicki BioEnergy
- Cheryl Hicks, Toilet Board Coalition; Nimish Shah, Unilever; and Tomita Kensuke, Lixil

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15:15–15:45 **Break** / Rajendra Foyer

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16:00–17:30 **Research 2.4: Integrated Processes – III** / Rajendra 1–3

1. CID, Clement and Michael Hoffmann, “Design and implementation of integrated electrochemical wastewater treatment and recycling systems for onsite sanitation in the developing world”, USA
2. DESHUSSES, Marc et al., “A Neighbourhood Faecal Sludge Treatment System Using Supercritical Water Oxidation”, USA
3. PARKER, Alison et al., “The Nano Membrane Toilet”, UK
4. YEH, Daniel et al., “From TRL5 to TRL7: Development of the NEWgenerator™”, USA

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**Research 2.5: Social Aspects** / Rajendra 4

1. REDDY, Malini et al., “Why do Women in India not Use Public Toilets? Patterns and Determinants of Public Toilet Usage by Women in Warangal City”, India
2. WILLETTS, Juliet et al., “Smart Compliance in Faecal Sludge Management: Strategies to Achieve Health and Environmental Outcomes”, Australia
3. MILLS, Freya Et al., “FSM is Not Just an Urban Issue: Findings from a Rapid Assessment in Rural Vietnam”, Australia
4. CHILKUNDA, C.A. Srinivasamurthy et al., “Studies on the impact of anthropogenic wastes on growth and yield of maize and cowpea, major nutrients and pathogen load in soil” India

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**Research 2.6: Characterisation & Quantification of FS – II** / Rajendra 5

1. PRADEEP, Rohini et al., “Characteristics of Faecal Sludge generated from onsite systems located in Devanahalli”, India
2. KUMAR, Sampath et al., “Septage Characterization in Indian Urban Centres and Standalone Treatment Options for Septage Handling & Disposal”, India
3. DIAZ-AGUADO, Berta Moya et al., “Maximising the Value of Fertilisers Derived from Source-Separated Human Waste in Antananarivo, Madagascar”, UK
4. SEPTIEN, Santiago et al., “Rheology of faecal sludge from VIP latrines”, South Africa

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**Case Studies 2.3: Resource Recovery with FSM** / Rajendra 6

1. MUSPRATT, Ashley et al., “Leveraging resource recovery to pay for sanitation: Pivot Works demonstration in Kigali, Rwanda”, Rwanda
  2. BINALE, Aidah Nelima, “Turning Human Faeces in Resource in Kenya Informal Settlements”, Kenya
  3. ROY, D. Chandra and P. Kumar Saha, “Learning from Demonstration of FSM Value Chain in Satkhira, Bangladesh”, Bangladesh
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**Case Studies 2.4: Developing Small FSM Businesses / Rajendra 7**

1. DRABBLE, Sam et al., "From pilot project to emerging FSM service: scaling up innovation PPP model for citywide FSM services in Dhaka"
  2. SKLAR, Rachel et al., "Designing Pit Emptying Business Models to Facilitate City Scale Faecal Sludge Management Services in Kigali, Rwanda", Rwanda
  3. GREENE, Nicola et al., "Practical Advances in Pit Latrine Emptying Technology", Rwanda
  4. FAWZI, Ammar et al., "Support of Manual Pit Emptiers in Freetown, Sierra Leone"
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**Industry 2.3: FSM as Business / Rajendra 8**

1. SINGH, SANJAY and Aprajita Singh, "Business Model development for FSM insights from Bihar, India", India
  2. SAUER, John, "Improving Practitioners Knowledge of Market Development Approaches for Use in FSM Programmes"
  3. RATH, Manas and Tchelet Segev, "The Blue Water Company: Operating and Maintaining City-scale FSM systems", India
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**Industry 2.4: Technology Innovations – From the Field Session 2 / Sembian Annex 2**

1. RAMAMOORTHY, Rajesh, "Onsite Domestic Wastewater Treatment using a modified septic tank-effect of hydraulic mixing on pollutant removal", India
  2. PRITT, Salian, "Low-cost pre-cast toilet designs", Uganda
  3. FORBIS-STOKES, Aaron et al., "Three years of field experience piloting the anerobic digestion pasteurization latrine", USA
  4. OSBERT, Atwijukye et al., "DEFAST: From research to market", Uganda
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17:30–18:30 **Networking & Cocktail Hour** / Hibiscus Lounge

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18:30–20:30 **Dinner** / Rajendra Level

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## DAY 3: WEDNESDAY, 22 FEBRUARY 2017

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9:00–10:00 **Keynote** / Rajendra 1–3

- Vijay Padmanabhan, Asian Development Bank
  - Dhesigen Nadoo, CEO, Water Research Commission
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10:00–10:30 **Break** / Rajendra Foyer

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10:30–12:00 **Research 3.1: Drying & Dewatering** / Rajendra 1–3

1. STRINGEL, Santiago Septien et al., "LaDePa Process for the Drying and Pasteurisation of Faecal Sludge from VIP Latrines by the Means of IR Radiation, and Reuse of the Product", South Africa
  2. TREGO, Anna et al., "Integrated Digestion and Nutrient Recovery to Enhance Value Extraction from Faecal Sludge Treatment", UK
  3. SEMIYAGA, Swaib et al., "Dewatering Pre-Treatment of Faecal Sludge in Urban Slums", Uganda
  4. STRANDE, Linda et al., "Faecal Sludge Dewatering: Two New Research Facilities for a Multi-Directional Approach", Switzerland
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**Research 3.2: Health, Safety, & Hygiene / Rajendra 4**

1. BERENDES, David et al., "Urban Risk Factors Associated with Enteric Infection in Children: The Role Of Toilets, FSM, and Flooding in a Low-Income Neighborhood of Vellore, India", India
2. ROMA, Elisa et al., "Faecal Sludge Management in Urban and Peri-urban Areas of LMICs: Challenges and Sustainable Solutions", UK
3. YAKUBU, Habib, "Assessment of Public Health Risks from Unsafe Faecal Sludge Management in Accra", Ghana
4. SURAJA, Raj et al., "Exposure to Faecal Contamination in 3 Low-income Urban Settings: Results from the SaniPath Tool", India

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**Research 3.3: Biotreatment – II / Rajendra 5**

1. THOMAS, Anu Rachel et al., "Decentralized Treatment Strategies For Septage Management", India
2. ARUMGAM, Kalimuthu et al., "Development of On-site Faecal Sludge and Septage Treatment Techniques", India
3. DEY, Digbijoy et al., "From Research to Implementation: BRAC WASH Initiative for FSM in Urban Areas", Bangladesh
4. CHANDRAN, Kartik et al., "Faecal Sludge Biorefineries based on a Volatile Fatty Acid Platform", USA

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**Case Studies 3.1: Faecal Sludge Treatment / Rajendra 6**

1. MUNANKAMI, Rajeev et al., "Lesson Learned on Faecal Sludge Treatment Plant over Passive Landfill Site", Bangladesh
2. RAJBHANDARI, Reetu et al., "Faecal Sludge Treatment and Reuse in Emergencies: A Case Study from Mahalaxmi Municipality, Nepal", Nepal
3. ROBBINS, David et al., "Co-treatment of Septage with Municipal Wastewater in Medium Sized Cities in Vietnam", Vietnam

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**Case Studies 3.2: Small FSM Businesses in the Market / Rajendra 7**

1. BERNADO, Deogratus and Mathias Milinga, "Management of Faecal Sludge (FS) by Private Entrepreneurs for a Sustainable Business Model", Tanzania and USA
2. MUXIMPUA, Odete et al., "Emerging Lessons on FSM from Maputo, Mozambique", Mozambique
3. BUSINGYE, John, "It's not only the technology: Running a successful pit emptying business in Kampala, Uganda", Uganda

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**Industry 3.1: Learning from Research / Rajendra 8**

1. SINDALL, Rebecca, "Findings of the shit flow diagram developed for the city of Durban, South Africa", South Africa
2. FURLONG, Claire, et al., "Lessons learnt from developing SFDs at scale", UK
3. SPIT, Jan et al., "What is the future of pit emptying and faecal sludge treatment in emergencies", Netherlands

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**Industry 3.2: Addressing the Human Resource Gap in FSM / Sembian Annex 2**

Workshop

Moderator: Maren Huevels

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12:00–13:15 **Lunch** / Rajendra Foyer

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13:00–14:15 **Poster Sessions** / Lotus Lounge, Hibiscus Lounge, Sembian Annex 1

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**Interactive Sessions – Talk by Dr. Lucas Dengel on Ecological Hygiene vs. Surgical Hygiene** / Sembian Annex 2

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14:30–16:00 **Research 3.4: Pit Emptying & Sludge Accumulation Rates** / Rajendra 1–2

1. DE LOS REYES, Francis et al., “The Flexcrevator: An Improved Pit Emptying Technology with Trash Exclusion”, USA
  2. RADFORD, James et al., “Physical and Financial Performance of Pit Emptying Technologies”, UK
  3. DE LOS REYES, Francis et al., “Designing the Next Generation of Pit Emptying Technologies Using a Workshop Approach”, USA
  4. RAMAN, Rajiv et al., “Promoting safe on-site sanitation in urban Tamil Nadu: Case Study of Tiruchirapalli and Periyanaickenpalayam”, India
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**Research 3.5: Broad FSM** / Rajendra 4

1. JOSEPH, Ravikumar et al., “Financing Non-network Systems for Small Towns: An exploratory analysis”, India
  2. DESHUSSES, Marc et al., “Odors and FSM: Impacts and How to Deal with the Stench”, USA
  3. PILLAY, Sudhir et al., “From Research to Commercialisation and Uptake of Sanitation Technology Innovations: The WRC Pour and Low Flush Experience”, South Africa
  4. TILLEY, Elizabeth et al., “The Informal Economy of Pit Emptying in Blantyre, Malawi”, Malawi
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**Research 3.6: Anaerobic & Chemical Treatment** / Rajendra 5

1. BOURGAULT, Catherine et al., “The Suitability of Specific Methanogenic Activity Test For Modelling the Ammonia Inhibition of Anaerobic Digestion of Faecal Sludge Samples”, Canada
  2. NORDIN, Annika, “Ammonia Sanitisation for a Safe Use of Sewage Fractions – From Theory to Practice”, Sweden
  3. REDDY, Varshini and Clifford Godwin, “Stabilization of Faecal Sludge through Anaerobic digester at Devanahalli”, India
  4. SENEAL, Jenna et al., “Inactivation Of Ascaris In Urine By Drying In Calcium Hydroxide For Application In The Autarky Toilet”, Sweden
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**Case Studies 3.3: Coordinating FSM Service Providers** / Rajendra 6

1. POTTER, Alana et al., “Successful Sludge Enterprises in Small Urban Centres in Zimbabwe”
  2. DRABBLE, Sam et al., “Citywide coordination of the septage management market in Vizag, India”
  3. SHARMA, Debisha, “Desludging-Operators’ Association – Cesspool operator as key stakeholder in FSM policy”, India
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**Industry 3.3: FSM Measurement & Evaluation** / Rajendra 8

1. KOWSHIK, Ganesh et al., “Management Information System (MIS) for Integrated FSM services in Tamil Nadu”, India
  2. SUGDEN, Steven, “The pit falls and problems of monitoring a growing pit emptying process”, USA
  3. SCHOEBITZ, Lars et al., “Monitoring Safely Managed Sanitation in the 2030 Agenda for Sustainable Development – Experience from Uganda”, Switzerland
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**Industry 3.4: FSM Finance & Marketing** / Sembian Annex 2

1. AUERBACH, David, "Encouraging Participatory financing for scaling urban sanitation solutions in growing cities", Kenya
2. SPIT, Jan et al., "VIA Water Innovations: marketing of faecal sludge valorization end-products and how these products contribute to a successful sanitation chain", Netherlands
3. SHAH, Gopi et al., "Development Impact bonds for faecal sludge treatment", USA
4. FELGENHAUER, Katharina et al., "Enabling Viable Public-Private Partnerships in Resource Recovery and Reuse for Improved Faecal Sludge Management", Ghana

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16:15–16:45 **Break** / Rajendra Foyer

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16:45–17:30 **Award Ceremony** / Rajendra 1–3

**Closing Remarks**

**Reflections on FSM4 and Key Take-Away Messages**

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# POSTERS

## RESEARCH POSTERS

Lotus Lounge

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R1 **Asian Institute of Technology**  
Finding Appropriate Location and Service Area for Fecal Sludge Treatment Plant using GIS and Network Analysis

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R2 **Asian Institute of Technology**  
Optimization of Electrochemical Disinfection for Treatment of Effluent from On-site Sanitation System

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R3 **Atl-Hydro (UbuntuSAN)**  
Thermal Profiling and Mass Transfer Considerations for Sludge Beneficiation – Biochar Production Using Concentrated Solar Power

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R4 **Ben-Gurion University**  
Potential Utilization of Hydrothermally Treated Fecal Sludge

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R5 **BORDA**  
Women as Agents of Change in Faecal Sludge Management

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R6 **Central Agricultural University (CAU), Imphal**  
Characterization of Faecal Sludge and Sewage Sludge, their Effect on Growth and Yield of Brinjal, Bendi and Field Bean

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R7 **Duke University**  
Bioaerosol Generation During Pit Emptying in Malawi, Africa

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R8 **Eawag/Sandec**  
Market-Driven Approach for Selection of Faecal Sludge Treatment Products

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R9 **EAWAG: Swiss Federal Institute of Aquatic Science and Technology**  
Business Model Innovation In Cartridge Based Sanitation Service Providers

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R10 **EGERTON UNIVERSITY**  
User Practices And Fill Up Rates Of Pit Latrines Serving Low Income Urban Settlements in Nakuru County, Kenya

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R11 **Georgia Institute of Technology**  
The Burden Of Fecal Sludge Management On The Poorest: Evidence From Demographic And Health Survey Data

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R12 **IFAN Ch. A. Diop, University Cheikh Anta Diop**  
Testing The EarthAuger Toilet In Washer Communities Installed in Flooded Areas In Pikine, Dakar, Senegal

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R13 **Institute for Sustainable Futures, University of Technology Sydney**  
Achieving safe management: A case for strengthening the attention to liquid streams in on-site and local sanitation

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R14 **International Water Management Institute**  
Fortifer: Introducing Fecal Sludge-Based Soil Ameliorant For Improved Agricultural Production In Tropical Regions

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R15 **International Water Management Institute**  
Exploring Alternative Methods for the Assessment of Nutrients Content of Human Excreta for Global Assessments

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R16 **iWc(innovative water center)**  
Performance Characteristics of a DEFAST system in Uganda under field conditions

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R17 **IWMI International Water Management Institute**  
Evaluation of Co-Composted Fecal Sludge As Agricultural Resource in Sri Lanka

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R18 **Mahidol University**  
Production and Resource Potential of (Bio)char from Faecal Sludge Carbonization

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- R19 **Mahidol University**  
Microbial profile in onsite sanitation system in Thailand
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- R20 **Makerere University**  
Faecal Sludge Characterisation in the City of Kampala, Uganda: Understanding the health-implications and physico-chemical faecal sludge properties for better management strategies
- 
- R21 **Makerere University**  
Pelletizing To Increase Faecal Sludge Treatment Plant Capacities And Resource Recovery
- 
- R22 **Mott MacDonald Ltd**  
Strength testing of 70 Pits in West Bengal and Bihar, India
- 
- R23 **North Carolina State University**  
Simulating an Ultra-Low Flush Toilet Using Computational Fluid Dynamics to Decrease Water Use
- 
- R24 **Partners in Development**  
Protecting the Health and Safety of Workers, the Public and the Environment While Handling Sludge in On-Site Sanitation Systems
- 
- R25 **Pollution Research Group, University of KwaZulu-Natal**  
Research in use: Improving the quality of sanitation data from informal pit emptying in Mzuzu, Malawi
- 
- R26 **Pollution Research Group, University of KwaZulu-Natal**  
Using Black Soldier Fly Larvae to Treat Faecal Sludge from Urine Diversion Dehydrating Toilets
- 
- R27 **r.i.c.e.**  
Understanding open defecation in rural India: Untouchability, pollution, and latrine pits
- 
- R28 **RTI International**  
Designing gender-responsive sanitation systems to address menstrual hygiene management demands
- 
- R29 **Sandec Eawag**  
Understanding Faecal Sludge Dewatering: Research From Uganda, Vietnam, Japan and Switzerland
- 
- R30 **Sustainable Organic Integrated Livelihoods**  
Developing Process Cost Analysis Methodology for Faecal Sludge Management (FSM)
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- R31 **Sustainable Organic Integrated Livelihoods (SOIL)**  
Thermophilic composting as an effective waste treatment option in low-resource settings
- 
- R32 **UNESCO-IHE**  
Sustainable Productive Sanitation Systems (PSS) for South Darfur emergency settlements
- 
- R33 **UNESCO-IHE**  
Evaluating E. coli removal in anaerobic digestion and co-digestion of UDD-F; Single Vs Two stage systems
- 
- R34 **University College London**  
Characterising The Key Exposure Risks In Container Based Toilets And Developing An Effective Risk Management Tool
- 
- R35 **University of KwaZulu-Natal**  
Evaluation of a Prototype De-Trashing Machine for VIP Sludge
- 
- R36 **University of KwaZulu-Natal**  
Drying Kinetics of VIP Faecal Sludge + Design of an Experimental Rig for the Study of Faecal Sludge Solar Drying Kinetics
- 
- R37 **University of Malawi, The Polytechnic**  
Comparison of Characteristics of Pit Latrine Sludge from Informal Settlements in Cities of Malawi
- 
- R38 **University of Malawi, The Polytechnic**  
Comparison of Characteristics of Pit Latrine Sludge from Informal Settlements in Cities of Malawi
- 
- R39 **WASTE**  
Sanitation, pits and climate change
- 
- R40 **WASTE Advisers on Urban Environment and Development**  
Do bio-additives work in Emergencies?
-

## CASE STUDIES POSTERS

Hibiscus Lounge

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- CS1 **BORDA**  
FEACAL SLUDGE TREATMENT PLANT [FSTP]  
DESIGN POSSIBILITIES
- 
- CS2 **Consortium For DEWATS Dissemination (CDD) Society**  
Pilot Faecal Sludge Treatment Plant (FSTP) for Devanahalli Town Municipal Council-Lesson learnt from one year operations
- 
- CS3 **FINISH Society**  
Decentralized Approaches For FSM  
Solves Local Problems
- 
- CS4 **GIZ**  
Proposed Non-conventional Wastewater Management: Case Study of Kochi City, Kerala, India
- 
- CS5 **GIZ**  
Professionalising FSM Services in Peri Urban Areas in Lusaka
- 
- CS6 **HafenCity University, Hamburg and Eawag**  
Faecal Sludge Management in Kabul's informal settlements
- 
- CS7 **Indian Institute for Human Settlements**  
Behaviour Change Communication for Full Chain of Urban Sanitation – An Approach Paper
- 
- CS8 **Sanitation First**  
A Sustainable Sanitation System with Resource Recovery
- 
- CS9 **SNV**  
Community Development Committees as Mechanisms for FSM Service Delivery in Bangladesh
- 
- CS10 **The World Bank – WSP**  
Promotion Strategy for Regular Desludging: Lesson Learned from Balikpapan and Tabanan, Indonesia
- 
- CS11 **WaterAid Bangladesh**  
Co-composting of Faecal Sludge and Municipal Organic Waste in Shakhipur Municipality, Bangladesh
- 
- CS12 **WaterAid Bangladesh**  
Environmental Benefits of Faecal Sludge Co-Composting through Life Cycle Assessment
- 

## INDUSTRY POSTERS

Sembian Annex 1

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- I1 **African Water Association**  
Reinforcing Capacity of African Sanitation Operators on non-sewer and FSM systems through peer-to-peer learning partnerships (RASOP-Africa): lessons learnt after a year of implementation
- 
- I2 **Asian Institute of Technology**  
Regulatory Factors Influencing the Effective Faecal Sludge Management in Developing Countries
- 
- I3 **Athena Infonomics India Private Limited**  
Decision Framework for Faecal Sludge Treatment Operative Model and demonstration of the framework in Erumaipatti Town Panchayat, Tamil Nadu
- 
- I4 **Biomass Controls**  
Developing a Transportable Community Processor to Pyrolyze Human Solid Waste in Arctic Environments
- 
- I5 **Biomass Controls**  
Introducing Kelvin: Mobile Software for the Remote Monitoring and Management of Faecal Sludge Collection and Treatment
- 
- I6 **CAWST**  
Design of a Capacity Building Platform for Decentralized Sanitation
- 
- I7 **Center for Study of Science, Technology and Policy**  
Sustainable City Sanitation Planning Process: An FSM + Perspective
-

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I18 **Centre for Science and Environment**  
Using Excreta Flow Diagrams (SFDs)  
As An Integral Part Of City Wide Sanitation  
Planning For Indian Cities

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I19 **Consortium For DEWATS Dissemination  
(CDD) Society**  
Need for Capacity Building of the Stakeholders

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I10 **IPE Global**  
Developing a GIS-based Spatial Model for  
determining Suitability of Sewerage System  
and Non-Sewer based Sanitation solutions  
at various scales in Urban Areas in India,  
Case Study of Tonk, Rajasthan

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I11 **Kampala Capital City Authority**  
Using Geographical Information System (GIS)  
Platform to Support Decision Making in  
FSM in Kampala City

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I12 **Khanyisa Projects**  
Assessment of Business Model for  
Black Soldier Fly Larvae Processing of  
Faecal Sludge on a Municipal Scale:  
A Pilot Case Study in EThekweni, South Africa

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I13 **Netherlands Red Cross and WASTE COOP**  
Lessons learned around pit emptying  
and way forwards for emergencies and  
development context

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I14 **PAS Project, CEPT University, Ahmedabad**  
SaniPlan: IFSM Tools for  
Citywide Assessment and Planning

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I15 **Pollution Research Group,  
University of KwaZulu-Natal**  
Beyond SFDs: Using an Asset Management-  
based Approach to Operationalize Sanitation  
Improvements in Uganda's Towns

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I16 **Practical Action Bangladesh**  
The Treasure Hunt: An Organised Movement  
With Society To Turn Faecal Sludge Into Wealth

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I17 **Practical Action, Bangladesh**  
ICT based Demand Management System  
for Transparent and Responsive FSM Service  
in Faridpur, Bangladesh

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I18 **RTI International**  
A New Model Of Collaborative Innovation:  
The Sanitation Technology Platform

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I19 **SNV Netherland Development Organisation**  
Establishing Performance Standard for  
Public Toilets for City-wide FSM Services  
in Khulna City

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I20 **SNV Netherland Development Organisation**  
Performance Monitoring and Evaluation  
Framework For Demonstration of  
Pro-poor Market-based Solutions For  
Fecal Sludge Management (FSM) in  
Urban Centers of Southern Bangladesh

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I21 **Tide Technocrats**  
Developing a Transportable Community  
Processor to Pyrolyze Human Solid Waste  
in an Urban India Environment

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I22 **Waste Enterprisers Holding**  
Showcasing the Pivot Works FS-to-fuel  
sanitation solution

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I23 **Water Research Commission**  
Developing Technical Competency for  
Faecal Sludge Management in Sub-Saharan  
Africa: The SRFA (Sanitation Research Fund  
for Africa) Programme

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I24 **Water, Engineering and Development Centre  
(WEDC), Loughborough University, UK.**  
Predicting the impact of sanitation investment  
projects on the Sanitation Service Chain (SSC),  
using excreta flow diagrams (SFDs)

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