

# Terms of Reference (ToR)

## Assessing and Piloting Innovative Integrated Waste Management System (fecal sludge and solid waste) for Rural Areas

### 1. Introduction and Background

Bangladesh is one of the world's most populous countries with an estimated 165 million people in a geographical area of about 144,415 sq.km and per capita income of US\$1,670 (WB Atlas method) in 2018, well above the lower middle-income country category threshold which it crossed in FY14. During recent years, economic condition was improved much in the country with a higher GDP growth rate. Bangladesh's performance against the Millennium Development Goals (MDG) goals was also impressive relative to the South Asia Region average for most of the indicators. Now, Bangladesh is committed to achieve SDG goal 6.1 and 6.2.

The rural areas of Bangladesh are served by onsite sanitation facilities mainly pits (direct or off-set pour flush latrine) and septic tanks. These pits and septic tanks are emptied manually by traditional sweepers and the huge quantity of emptied faecal sludge generated in pits and septic tanks is often disposed of in nearby water bodies and low-lying areas, which pollutes the surrounding environment. Sometimes, the faecal sludge is buried by digging a hole nearby on the ground, which also pollutes the shallow water table, if the protective sand envelope is not constructed around the dumping hole. The Rural FSM Framework expressed concern about unhygienic manual emptying of pits, causing health hazards to the manual emptiers and unhygienic dumping/disposal of faecal sludge causing environmental degradation and emphasized on (a) promoting safe emptying practices (e.g., use of safety gear by emptiers and use of mechanical means, such as pumps); (b) promoting safe disposal (e.g., burying) of emptied faecal sludge; and (c) promoting technologies (e.g., twin pit toilets and other emerging/ potential options) that could eliminate/reduce the need of unsafe pit emptying.

The Rural WASH for HCD Project is a first step in the World Bank's supported designed to help the government achieve better human development outcomes through WASH interventions and uses a convergence approach. The proposed project will invest in WASH infrastructures that meet the 'safely-managed' service standard and in WASH sector development that will ensure the engagement of LGIs and participation of the private sector to provide sustainable and improved WASH services. The project will be supported through Investment Project Financing (IPF) on International Development Association (IDA) terms. The government has committed to investing in 'safely-managed' WASH facilities, which are in line with the service standards needed for meeting SDG 6 and maximizing human capital development.

Under the sanitation component of the project, DPHE will construct public toilet facilities in high pedestrian traffic locations, such as markets and bus stations, construct and renovate WASH facilities in community clinics. It will also provide fully subsidized toilets to the poorest households (around 10 percent of the total households in the project locations). On the other hand, PKSf will provide loan to households to install twin-offset pit latrines to ensure environment-friendly on-site faecal sludge management.

The project will support a sub-component to develop innovative and sustainable safely managed sanitation<sup>1</sup> services including integrated faecal sludge management (FSM) and solid waste management under the Institutional and Regulatory Framework for FSM in Rural areas of the government and implement it on pilot basis in selected 2 union parishads of a selected 2 upazilla under the project with the active involvement of LGIs and private sector. DPHE, the lead agency of the project would like to hire a consultancy and invite

<sup>1</sup> JMP ladder for sanitation defines safely managed sanitation as use of improved latrine facilities that are not shared with other households and where excreta are safely disposed of in situ or removed and treated offsite,

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"Expression of Interest (EoI)" from the professional research institution/organization, I/NGOs, social business enterprises and Engineering Firm to undertake the above assignment.

## 2. Objective of the Pilot program

The general objective is to pilot an integrated waste management (Faecal Sludge Management-FSM and Solid Waste Management-SWM) service (Design, Built and Operate) in rural areas in Bangladesh. The specific objectives are as follows:

- To assess and pilot innovative sustainable safely managed sanitation services (integrated fecal sludge management and solid waste management) under the Institutional and Regulatory Framework for FSM in selected Rural areas of Bangladesh.
- To demonstrate fecal sludge management of the feces of households and toilets of public places along with solid waste management (SWM) through the pilot aiming at scaling fully/partly across the rural area of the country by engaging local stakeholders.
- To improve the capacity of local stakeholders for Faecal Sludge Management (FSM) integrated with solid waste management (SWM) service and to provide Operation & Maintenance support & business model for the system.

## 3. Area for Piloting

The pilot program will be implemented in selected 2 unions of a selected 2 project Upazillas having different geographic and geophysical context. The Consultant is required to propose the pilot unions from any 2 Upzillas from 2 project districts (**Annex-1**) in consideration of population density, availability of growth center (hat and bazar) and good road communication.

## 4. Scope of works

The scope of consulting services (Design, Built and Operate) will specifically include, but not be limited to the followings:

### Concept development, planning and implementation

- a. Conduct a literature review, analysis and reporting the existing technologies and approaches for fecal sludge management and solid waste management (SWM) in the selected rural areas.
- b. Design and conduct situation analysis by collecting and analyzing data/information related to internal and external environment to understand the strengths, weaknesses, opportunities and threats (SWOT analysis) related to the development of waste management service system. It can also include precise and accurate pictures of current practices/trends of consumers, current conditions, which can be used to guide strategic planning and decision-making as the best way forward on waste management service.
- c. Situation analysis based on findings, design conceptual ideas of innovative solutions to address the problems associated with FSM and SWM including safely managed sanitation services from the Project (both DPHE and PKSf) considering technical and financial feasibility, social acceptability and environmental sustainability using relevant evaluation tools and add on mitigation measures if needed;
- d. Implement the solutions including monitoring as per plan with active involvement of DPHE, LGI, PKSf and their partners, NGOs and private sector and document the results as best practices and lessons learned of the pilot implementation in line with the objectives of the pilot;

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- e. Validate and fine-tuning the conceptual ideas for implementation in the project field through community and stakeholder consultations and their engagement to build support and ownership for the pilot program;
- f. Develop a full implementation plan including proposed model(s) for the solutions including monitoring and evaluation framework for the pilot program and capacity building plan for local stakeholders involved in the sanitation sector including FSM and SWM;
- g. Develop a scaling-up plan for the successful pilot program, including policy and institutional change recommendations.
- h. Develop guidelines for the business based service models to help to facilitate replication in other areas including capacity building, operation model(s) etc. as applicable; and design, conduct and document research initiatives as applicable.
- i. Identify local potential entrepreneurs and traditional emptier group/sanitation workers, and build their capacity to be engaged in the implementation of the proposed model(s) for FSM and SWM in the pilot location; and develop a business model. The firm will operate and maintain the piloted system for 1 year after the completion of the contract.
- j. Provide support to develop/enhance knowledge and skills of personnel of Union Parishad and other stakeholders required to particularly to implement the pilot project;

#### **Stakeholders Engagement and awareness building**

- k. Perform stakeholder analysis to design Stakeholders engagement strategy including gender inclusion and equality issues in rural aspects towards ensuring meaningful participation of relevant stakeholders over the entire sanitation value chain.
- l. Design and conduct awareness building campaign based on stakeholder's engagement strategy to introduce FSM and SWM service model(s) in the pilot area engaging the range of stakeholders in the system.

#### **Monitoring and documentation**

- m. Develop guidelines for the demonstrated service models for FSM and SWM for facilitating scaling up across the country;
- n. Perform process documentation for learning purposes;
- o. Disseminate learning through organizing national-level dissemination workshops. (**Knowledge Sharing and Dissemination Event:** Two events will be conducted at the national level and zonal level with sector experts of the district and national level (Minimum participants number will be 50).

### **5. Methodology**

The detailed methodology of carrying out the above activities and implementation process in selected rural areas will be designed by the Consultant and will be proposed in the technical proposal. However, the consultant is required to follow a participatory and consultative process with all stakeholders (targeting households, local government institutions, and private sector stakeholders) and a demonstrative process as well in carrying out the assignment. The program will focus on testing and scaling up innovative technologies and approaches for safely managed sanitation including FSM & SWM.

### **6. Outputs, Deliverable and payment modality**

The consultant will be responsible for the following deliverables:





- a) **Inception report** literature review findings on existing approaches for FSM & SWM in rural Bangladesh, detailing the conceptual model(s) of the pilot program including selection of target areas, implementation methodology, operational plan and implementation milestones within a month after signing the contract (5% of contract value);
- b) **Situtaion analysis report** highlighting the status of safely managed waste management including problems and challenged faced by the community within 3 months after signing the contract (5% of contract value);
- c) **Stakeholders' consultation and validation report** of the proposed conceptual model validating in terms of their technical and financial feasibility, social acceptability, and environmental sustainability and including feedback and suggestions from national level and community level stakeholders within 6 months after signing the contract. (40% of contract value);
- d) **Quarterly progress reports** clearly indicating milestones achieved in the pilot implementation process (50% of contract value in 6 equal quarters);
- e) **Standard implementation guidelines** with full implementation plan, capacity building module, monitoring framework and BCC materials for the demonstrated service models of FSM and SWM for facilitating scaling up across the country validated by the concerned stakeholders by end of the 21st month; and
- f) **Completion report** on the results of the pilot implementation includes best practices, lessons learned, scaling-up plan for the successful pilot program, recommendations for policy and institutional changes at the end of the pilot program by the end of the 24<sup>th</sup> month.
- g) **O&M** Demonstrate, pilot and commission the innovative options in the selected sites. Provide O &M for 12 months and handover the system to Union parishad. 5% performance security will be released after the completion of 1 year O&M.

## 7. Team Composition

The Consultant will be required to engage professionals having relevant experience and expertise, particularly in waste management, engineering, Gender, action research, private sector management, financial analysis, monitoring and documentation for carrying out the assignment with their clear inputs as required. However, the project will provide support for the following positions. The consultant will be required to mobilize resources internally to provide other expert support to the project team.

Sl	Position	Number	Duty station
1	Team Leader (Intermittent)	1	Dhaka
2	Field Support Coordinator	1	Dhaka
3	Union Facilitator	2	Pilot unions

The qualification, experience and major tasks of the above team members are given in **annex-2**.

## 8. DPHE Input

DPHE will provide all available information and project related documents to the Consultant. The head office-based Project Management Unit (PMU) and District based Office of the Executive Engineers will provide all necessary TA and supervisory support to the Consultant.

## 9. Duration of the Consultancy

The duration of the consultancy services shall be 24 months after signing the contract. These 24 months, include 6 months for situation analysis, program designing, capacity building and 18 months for full-scale pilot implementation, reporting and learning dissemination.

## 10. Institutional Arrangement of the Services and reporting

The Project Director (PMU) from DPHE for the Project will coordinate the overall implementation of the DBO services. The DBO Firm/ Consultant will coordinate with the PMU of the project, Union Parishad, national expert team at central level and at relevant DPHE Executive Engineers at the district level. The consultant will report to the Project Director (PMU) of the Department of Public Health Engineering (DPHE).

## 11. Evaluation process

- The proposal will be evaluated in accordance with the procedure set out in World Bank's procurement guideline using quality and cost-based selection (QCBS) method;

## 12. Qualifications:

The consulting firm/NGO/Social Enterprises should have the following qualifications:

- At least 7 years of experience in implementing sanitation programs focusing fecal sludge management and solid waste management infrastructure related projects in Bangladesh or other developing countries. Organizations must have demonstrated experience in designing and implementing innovative approaches and technologies for sanitation services with special emphasis on FSM/SWM in rural and urban areas of Bangladesh.

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## List of the project areas (Upazilla)

District	Upazila
Kurigram	Kurigram Sadar
	Chilmari
	Roumari
	Char Rajibpur
	Fulbari
	Ulipur
	Bhurangamari
	Nageswari
	Rajarhat
Chandpur	Chandpur Sadar
	Haimchar
	Matlab Dakshin
	Matlab Uttar
	Faridgonj
	Kachua
	Hajigonj
	Shahrasti
	Dharmapasha
	Tahirpur
	Jagannathpur



## Recommended Team Composition

Key Expert	Person	Person - month	Qualification	Experience	Task
Team Leader (Intermittent)	1	6+3+3 +2=14	Minimum Master's degree in environmental/sanitation Engineering. S/He must have a bachelor degree in civil Engineering from a recognized University.	S/he should have 10 years' working experience in WASH with 7 years' experience in FSM and SWM focusing on both urban and rural context. S/he must be knowledgeable about waste management, i.e. collection, recycling and reuse in rural context. S/he also must be knowledgeable about national policy framework about FSM. S/he must have experience of working as Team Leader/ Project Manager of at least one such type of donor-supported project. S/he must have experience of working with LGIs, government officials at district and upazilla-level, private sector and rural communities.	S/he will lead design and implementation of the pilot innovative FSM program in the rural areas and will be responsible for overall management of the pilot implementation.  S/he will supervise the team members for their specific roles in the implementation process.  S/he will keep contact with PMU and work under their guidance.
Field Support Coordinator	1	18	Bachelor Degree in environmental science/environmental engineering or any other equivalent related field for the assignment.	5 years' total work experience with at least 3 years' experience in WASH focusing on FSM and SWM in both urban and rural context. S/He must have technical knowledge and skill about rural sanitation, FSM and SWM, construction operation and maintenance about of FSM/ SWM infrastructure. S/He should have fair knowledge about designing and developing IEC/BCC materials for awareness raising & campaign for safely managed sanitation and demonstration model of FSM and SWM. S/He should have experience in training and capacity building of LGIs, private sector entrepreneurs and relevant stakeholders involved with sanitation i.e. FSM and SWM.	S/he will mainly be responsible to provide all technical and capacity building support to the field team to effectively implement the pilot program. S/he will build technical and management capacity of LGIs, private sector entrepreneurs for sustainable operation and maintenance of FSM and SWM infrastructures to be built under the pilot program. Further. S/He will be responsible for the design and development of IEC/BCC materials with regard to the demonstrated model of FSM and SWM in the pilot area. S/He will assist the team leader in program designing, implementation, monitoring, reporting and sharing lessons learned.
Union Facilitator	2	18*2=36	Graduate in social science or any other	Minimum 3 years' experience in community mobilization in rural WASH program.	S/he will be UP based and fully responsible for mobilizing the community and LGIs and

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Key Expert	Person	Person month	Qualification	Experience	Task
			equivalent related field for the assignment.	S/he must be able to mobilize UP and other relevant stakeholders/ parties involved with FSM/ waste management in rural areas.	facilitate implementation of the pilot FSM program as per pilot implementation guideline at union level. S/he will help organize all events related to pilot implementation including meeting, orientation and training. S/he will collect progress data and keep documentation of implementation process and lessons learned.

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