

Terms of Reference for Pourashava Sanitation Support Consultancy (S-12)

1. Introduction

The GOB is committed to achieving the Sustainable Development Goal 6 (2016-30) target of "safe and sustainable sanitation, hygiene and drinking water used by all". However, achieving the SDG 6 will pose a number of challenges - 20 percent of the urban population experiences arsenic contamination and 55 percent E. Coli contamination in their water supply. Piped water supply is limited to large cities and to 10% of the households. These systems suffer from maintenance and quality problems, small number of connections, high operational costs, poor service levels and low tariff recovery. Sanitation in municipalities mainly comprises household on-site pits and tanks that are cleaned infrequently and when cleaned, the fecal matter is dumped in drains and open lands posing a public health hazard. Solid waste, drainage and flooding are other common problems.

The Bangladeshi economy and its recent growth have been dominated by one megacity – Dhaka. International experiences, however, suggest that the economic growth will and have to spread to other areas. Development of key secondary cities would therefore be necessary and inevitable for the sustained economic growth of Bangladesh as well as enhanced equity.

Currently, the main challenges for small towns and secondary cities in Bangladesh are (i) the inadequate urban infrastructure services, fueled by rapid urban growth; (ii) weak management and financial capacity of municipalities; (iii) fragmentation of urban sector responsibilities among numerous central government agencies; and (iv) increasing environmental degradation. Govt. of Bangladesh (GoB) interventions to date have sought to prevent the deterioration of service delivery in the fast growing and emerging urban areas, through a combination of infrastructure investments through central agencies or municipalities, and municipal capacity building. However, management of such support has been difficult mainly due to the weak local fiscal and technical capacity and the resulting high dependence on the central agencies and grants, and the lack of clear and consistent framework to allocate and manage the central support.

Water supply and sanitation (WSS) services delivery is identified as one of the critical sectors requiring urgent attention. It is estimated that only about 56% of the urban population has access to safe water supply. Though all urban households have toilets, the quality of toilet is a cause of concern. As per WHO/UNICEF JMP, 2015 only 58% of the households have hygienic toilets, 30% are dependent on shared toilets and 12% have insanitary toilets. Moreover, a recent study found that over 5 families are dependant on a shared facility (WASH Poverty Diagnostic, 2017) and a large number of household toilets do not have a water-seal. With sewerage limited to Dhaka all other cities and towns are dependant on-site sanitation, namely, pits and septic tanks. The number of households on pits and septic tank differ significantly between cities, secondary towns and pourashavas, with large number of households relying on pits in pourashavas and septic tanks in cities and secondary towns. Moreover, there are issues with pits and septic tanks, with pits constructed beneath the toilet or a septic tank functioning as a holding tank or poorly constructed septic tank discharging through the sides / bottom or septic tank connected to drain / open. Although informal service providers are available and provide pit / septic tank emptying services these are predominantly manual with little attention to health and safety of the emptiers. Further, as there are limited number of treatment facilities, the sludge emptied from pits / septic tanks is discharged in the open resulting in environmental degradation. In addition, only about 20% of solid waste generated in urban areas is collected. The lack of these services has led to serious

environmental degradation in urban areas which disproportionately affects the poor. As the future economic growth of the country depends on the competitiveness of urban areas, enhancing the efficiency and coverage of urban WSS services is a high government priority. The Department of Public Health Engineering (DPHE) has prepared a Water Supply, Sanitation and Drainage Master Plan for 148 Upzilas (Sub-Districts) and Growth Centre level Pourashavas (Municipalities). The Master Plan has laid out the investment requirements in these towns. However, the institutional arrangements for service delivery are far from clear.

Bangladesh has devolved responsibility for urban WSS service delivery to local governments. These comprise a mix of different bodies of differing size including a small number of City Corporations and hundreds of municipalities of sizes from 10,000s (i.e. large villages) – Class C municipalities - to major population centers of 100,000s – Class A municipalities. However, unlike larger cities and rural areas, the model for WSS services delivery in small towns is not well established, and given the range of town sizes, relative geographical locations and political economy, the optimal service delivery model is far from clear.

The Government of Bangladesh has proposed a Bangladesh Municipal Water Supply and Sanitation Project (BMWSSP) with financial assistance from World Bank (WB) and the Asian Infrastructure Investment Bank (AIIB). The objective of the project is to increase access to improved water supply and sanitation services in selected municipalities and strengthen the municipalities' institutional capacities for delivering water and sanitation services. The size of the municipalities (pourashavas) in the proposed project range between 15,000 to 162,000 with an average size of 34,000. The list of pourashavas is detailed in Annex 1.

While the proposed project supports water and sanitation, detailed below are sections relevant to sanitation:

- Identify, support poor households and motivate other households to improve insanitary toilets (Component 3.1 (i))
- Promoting public toilets for floating populations with appropriate management arrangements (Component – 3.1 (ii))
- Improving the management of existing sanitation facilities particularly focusing on sanitation service chain i.e. containment improvement, collection, transport, treatment and disposal of fecal matter through sustainable service delivery model as well as promoting safe sanitary practices in municipalities (Component – 3.1 (iii) & (iv));
- Strengthening the operations and institutional structure of the municipalities, emphasizing on increasing the efficiency and sustainability of operations and maintenance;

2. Objective and Scope of the Assignment

To assist the Project pourashavas in preparing the Pourashava-wide sanitation improvement plan and providing hand-holding support to them for implementation of the plan. This will include collecting data for situation analysis, detailing options for the full sanitation chain, and an informed decision making following a detailed technical and management assessment. This will require:

- Review of available data (with pourashava as well as other sources), identifying key gaps in information, and carrying out supplementary data collection (through rapid field surveys, case studies, consultations, etc.) with the pourashava.
- Work alongside pourashava personnel in conceptualizing and developing a pourashava wide sanitation improvement plan. The plan will be developed in consultation with the stakeholders and communities.

- The scope of activities will include but not be restricted to, the following:
 - i) *Household sanitation improvements*
 - Validate the data on household sanitation collected by pourashava through discussions with pourashava / households and visit to households.
 - Identify number of households dependent on shared and unimproved sanitation in each pourashava.
 - Identify poor households with insanitary toilets / shared toilets and estimate the subsidy that is needed for sanitation improvements.
 - Identify other (non-poor) households and detail regulations / laws that require households to improve toilets
 - Develop technical options for toilet improvements, cost and construction quality checks, considering the best practice options available in Bangladesh and elsewhere
 - Develop training modules on technologies and construction quality monitoring and deliver training to pourashava personnel and entrepreneurs / masons.
 - Develop an information system to track progress including mechanism to check adherence to design and construction quality.
 - ii) *Public toilets*
 - Estimate the floating population and determine the number of toilet seats needed.
 - Review the available type design and make changes as needed to the context. The design needs to consider separate arrangements for men, women and disabled persons.
 - Estimate the land needed for the construction of public toilets, capital and operating costs for the public toilets.
 - Since public toilets are to be maintained through user charges, estimate the charges and discuss the proposed charges with the Pourashava Stakeholders.
 - In discussions with the Pourashava, identify women self-help groups and gauge their interest in maintaining the public toilets, and if interested, provide training and capacity-building to them for management roles.
 - In the absence of women self-help groups, identify other parties to maintain the public toilets. This could include but not limited to youth, informal sweepers, solid waste collection personnel, etc.
 - Develop bidding documents for construction, and operation and maintenance of public toilets.
 - Develop management options for public toilet operations and train groups entrusted with the management of public toilets.
 - iii) *Fecal sludge management*
 - a) *Emptying and transport of fecal sludge and solid waste*
 - In consultation with households and service providers determine the frequency of emptying septic tank / pits.
 - Using the information, estimate the volume of fecal sludge that could be emptied considering existing and those following household sanitation improvements.
 - Estimate number and capacity of trucks to evacuate the fecal sludge considering accessibility to household and containment structures.
 - Review and detail the current emptying practice (frequency of emptying pits and septic tank; who provides service (pourashava or private (formal / informal); charges for services) and disposal practices.
 - Detail options to move households from on demand to regular desludging services.

- Collect information on service providers (formal / informal) engaged in emptying, and discuss their interest and assistance needed to move from manual to mechanical or for their participation in mechanical emptying.
- Estimate the cost to empty and transport the sludge from household to disposal facilities and cross-check with charges currently paid by household.
- Evaluate different management models for emptying and develop an option to lease / manage fecal sludge emptying that is relevant for the pourashavas.
- Review the available data and solid waste (collection, transportation and disposal including treatment of waste; who provides service; available equipment and personnel, household payment for service) and detail existing options and determine options for improvement

b) Fecal sludge treatment

1. Trenching

- Assist pourashava in identifying land for trenching facility considering relevant hydrogeology characteristics (soil permeability, water table, distance from settlements)
- Estimate land requirement for trenching (27 pourashavas).
- Detail technical option, costing (capital and operation and maintenance cost).
- Develop bidding documents for construction of trenching facilities and their operation and maintenance.

2. Pilot fecal sludge treatment (3 pourashavas)

- Evaluate different options for fecal sludge treatment and develop detailed technical plans for economically viable option.
- Estimate land requirement, capital and operating costs.
- Explore feasibility, demand for reuse of fertilizer.
- Explore options to meet the operation and maintenance cost of the treatment facility in keeping with the recently approved Institution and Regulatory Framework for FSM.
- Develop models for collection, treatment and disposal of septage
- Develop bidding documents for construction of fecal sludge treatment plants and operation and maintenance
- Train DPHE, pourashava and service provider (to be selected) in regulations, technology, operation and maintenance of fecal sludge treatment plants.

iv) Others

- List out wastewater (grey) treatment options for greywater management/treatment, and cost estimates for municipality to decide on locally appropriate solution
- Develop an analysis report, which details the existing household sanitation arrangements, public / community sanitary conveniences, septage, greywater and solid waste management. Use the analysis to detail options for sanitation improvement beginning with household / public and community toilets, emptying, treatment and disposal.
- Share the findings with all stakeholders to elicit comments and in consultations with stakeholders finalize options for collection, treatment and disposal and solicit suggestions for improvements in sanitation.
- Prepare, in consultation with citizens and key decision makers, the pourashava sanitation plan that is comprehensive, citywide and meets the objectives of safe collection, transportation, treatment and disposal of human excreta, solid and liquid wastes.

- Hand hold and help the pourashavas in the implementation of the sanitation plan.

3. Client Input

DPHE shall provide office space (bare space without furniture and equipment) for the consultancy services at Dhaka. DPHE shall also provide all available information and project related documents to the consultants

4. Duration of the Consultancy

The duration of the consultancy services shall be 30 months.

5. Institutional Arrangement of the Consultancy

The Project director (PMU) from DPHE for the Project will coordinate the overall implementation of the Consultancy activities. The Consultancy firm will coordinate with the Project's Technical Support Units at the national and regional levels, as well as with the relevant DPHE Executive Engineers' offices.

6. Suggested Team of Consultants

The team of consultants will provide the following expertise:

- A Team Leader, with demonstrated experience in sanitation. Experience in urban environmental services will be preferred. The Team Leader will lead the pourashava sanitation planning and implementation support process and will be responsible for all deliverables.
- Environment/Sanitary Engineer with experience in planning and design of household, as well as public/community sanitation facilities and conveyance, treatment/re-use and disposal of human excreta, household liquid and solid waste.
- Business Development Specialist: specialist in business management and private sector participation particularly related to urban water supply and sanitation services.
- Field Researchers to assist in data collection and analysis, consultations and field studies.

7. Qualification, Experience and Responsibility of Key Staff

Qualification, Experience and Responsibility of proposed Key Staff are shown below:

Sl. No.	Consultant	Educational Qualification & Experience	Responsibilities
1	Team Leader	<ul style="list-style-type: none"> ▪ Post graduate degree in engineering, management or social sciences ▪ 10 years of relevant experience in citywide planning and working specially in the field of urban sanitation, urban environmental services. ▪ Experience of working with urban local bodies. ▪ Age limit is max 60 	<ul style="list-style-type: none"> ▪ TL will be responsible for all deliverables under the contract in a timely manner with acceptable standard. ▪ Prepare and implement achievable annual work plan; ▪ Develop training modules on technologies and construction quality monitoring and deliver training to pourashava personnel and entrepreneurs / masons ▪ Train DPHE, poursahava and service provider (to be selected) in regulations, technology, operation and maintenance of fecal sludge treatment plants. ▪ Provide training and other support to municipalities for the latter to implement the project successfully ▪ Ensure close cooperation with and assistance to the PD for effective and efficient implementation of the project; ▪ Liaise with DPHE at national and regional levels, and with other government and non-governmental

Sl. No.	Consultant	Educational Qualification & Experience	Responsibilities
		years.	<p>stakeholders as required for the successful delivery of the project</p> <ul style="list-style-type: none"> ▪ Ensure adherence to the Environmental and Social framework; ▪ Prepare and transmit monthly, quarterly, and annual reports, periodic financial management reports ▪ Ensure the transfer of technology in a systematic way; and ▪ Carry out all other tasks and activities needed for successful project implementation in municipalities.
2	Environment/Sanitary Engineer	<ul style="list-style-type: none"> ▪ Postgraduate degree in Environmental/Sanitary Engineering having at least 8 years experience in the planning and design of sanitation systems. ▪ Experience in city-level planning and working with urban community groups will be an advantage. ▪ Age limit is max 55 years. 	<ul style="list-style-type: none"> ▪ Set out guidelines for review and design of city wide planning in the urban sanitation ▪ Validate the data on household sanitation ▪ Review the available type design and make changes as needed to the context. ▪ Develop technical options for toilet improvements, cost and construction quality checks ▪ Develop bidding documents for construction and operation and maintenance of public toilets. ▪ Develop cost estimate to empty and transport the sludge from household to disposal facilities and cross-check with charges currently paid by household. ▪ Develop bidding documents for construction of trenching facilities and their operation and maintenance. ▪ Develop models for collection, treatment and disposal of septage ▪ Develop bidding documents for construction of fecal sludge treatment plants and operation and maintenance ▪ Carry out all other tasks and activities as needed.
3	Business Development Specialized	<ul style="list-style-type: none"> ▪ Graduate degree in management, social sciences or engineering, with demonstrated 3-years experience in business innovations in or allied services sectors. ▪ Age limit is max 55 years. 	<ul style="list-style-type: none"> ▪ Ensure that a proper management system is in place in sanitation sector of each municipality ▪ Develop options to manage the public toilets and train groups entrusted with the management of public toilets. ▪ Evaluate different management models for emptying and develop an option to lease / manage fecal sludge emptying that is relevant for the particular municipality.; ▪ Develop business models for collection, treatment and disposal of septage ▪ Carry out all other tasks and activities needed for successful project implementation in municipalities.
4	Field Researchers	<ul style="list-style-type: none"> ▪ Graduate Degree in Social Science/economics/management/ engineering /equivalents. ▪ Minimum 2 years relevant experience of working with urban infrastructure project. ▪ Age limit is max 55 years. 	<ul style="list-style-type: none"> ▪ Identify number of households dependent on shared and unimproved sanitation in each pourashava. ▪ Identify poor households with insanitary toilets / shared toilets and estimate the subsidy that is needed for sanitation improvements. ▪ Identify other households and detail regulations / laws that require households to improve toilets ▪ Determine the number of toilet seats needed as per users pattern. ▪ Identify women self-help group and gauge their interest to maintain the public toilet. ▪ Identify others to maintain public toilets ▪ Conduct detail survey to estimate the number and

Sl. No.	Consultant	Educational Qualification & Experience	Responsibilities
			<ul style="list-style-type: none"> capacity of trucks to evacuate the fecal sludge ▪ Collect information on service providers (formal / informal) engaged in emptying and discuss their interest and assistance needed to move from manual to mechanical emptying ▪ Identifying land for trenching facility considering relevant hydrogeological characteristics ▪ Carry out all other tasks and activities as needed.

8. Indicative Timelines and Level of Effort

An indicative estimate of personnel time required to develop and provide implementation support to project pourashavas, is detailed as below:

Personnel	Number	Person Man month	Total Man Month	Type of Position
Team Leader	1	30	30	Full time
Environment/Sanitary Engineer	3	18	54	Intermittent
Business development specialist	3	18	54	Intermittent
Field Researchers	3	18	54	Intermittent

It is presumed that the sanitation consultancy services will be in three batches (say 9-10 pourashava for each batch) considering the reality of the field condition. So, while the Team Leader will be deployed from the commencement of the consultancy, the rest of the positions shall need to be deployed in a staggered manner, so as to match three proposed batches of pourashavas in which planning, and implementation activities are carried out. The bidders may propose "for example, one Environmental / Sanitary Engineer to be deployed from 13 months whereas the other two may be put in place earlier. Similarly, the bidders will propose the deployment schedule of the three Business Development Specialist and Field Researchers.

9. Suggested Timeline, Deliverables and Payment Schedule

The following time lines and deliverables will govern the contract agreement.

Time starts 7 days after signing of contract	Deliverables	Requirement for Submission	Suggested payment
0 – 2 months	Inception Report comprising details of team composition; Gantt chart showing detail activity plan on each scope of work; over view of the current sanitation situation	Soft copy and 10 hard copies	10%

Time starts 7 days after signing of contract	Deliverables	Requirement for Submission	Suggested payment
2 – 08 months	Pourashava Sanitation Improvement Plans completed and approved (Jointly by Pourashava and DPHE) for 9 Pourashavas	Soft copy and 10 hard copies	10%
09 – 15 months	Pourashava Sanitation Improvement Plans completed and approved (Jointly by Pourashava and DPHE) for 18 Pourashavas	Soft copy and 20 hard copies	10%
16 – 18 months	Pourashava Sanitation Improvement Plans completed and approved (Jointly by Pourashava and DPHE) for 27 Pourashavas	Soft copy and 30 hard copies	10%
18 – 28 months	Detailed Report on Pourashava Sanitation Improvement Plans implemented in 27 Pourashavas: (based on number / proportion completed) Bidding document for construction of trenching facilities and their O&M (27 municipalities)	Soft copy and 30 hard copies	20%
18 – 28 months	Detailed Report on Pilot fecal sludge treatment plant implemented and operational (3 municipalities) Bidding document for construction of fecal sludge TP and O&M	Soft copy and 35 hard copies	10%
18 – 28 months	Plan for development of standard public toilets including detail design with bidding document for construction, O & M; development of mechanism for O & M by locally available interested group	Soft copy and 35 hard copies	10%
At the end of 29th months	Draft Consultancy Completion Report (documenting all plans and implementation activities, infrastructure and O&M arrangements, etc.)	Soft copy and 3 hard copies	10%
At the end of 29.5th months	Consultancy Completion Report (documenting all plans and implementation activities, infrastructure and O&M arrangements, etc.)	Soft copy and 35 hard copies	10%

Note: All deliverables must be complied with the relevant scope of work strictly

Different trainings and workshops will be conducted as required by PMU. Training and Workshop Proceedings (Soft copy and 5 hard copies) will be prepared and submitted within 1 week after completion of any training / workshop.

Annex – 1 List of participating pourashavas

Sl. No.	Pourashava	Population
1	Akhaura	39,007
2	Banshkhali	31,938
3	Chandanaish	37,916
4	Homna	31,381
5	Parshuram	31,938
6	Senbagh	20,508
7	Tarabo	162,117
8	Goalando	20,076
9	Chawgacha	23,043
10	Gangni	27,430
11	Bhuapur	30,881
12	Dhanbari	39,008
13	Islampur	41,077
14	Madhupur	60,607
15	Ramgati	38,500
16	Debidwar	63,320
17	Akkelpur	26,061
18	Bagha	29,232
19	Baraigram	23,931
20	Bonpara	18,584
21	Kahalu	14,938
22	Katakhali	30,779
23	Nachole	18,678
24	Panchbibi	24,176
25	Royganj	18,629
26	Shibganj	23,281
27	Taherpur	19,302
28	Ullapara	51,303
29	Baralekha	23,931
30	Kamalganj	18,156