Terms of Reference

Updating and validation of GIS data for developing Ward Sanitation Action Plan in one ward of Jashore Paurashava

1. Introduction and Background

SNV Netherlands Development Organisation is a not-for-profit development organisation working in the sectors of WASH, Agriculture and Energy through providing advisory services, facilitating knowledge development, networking, strengthening local capacity builders, and carrying out advocacy at national and international levels. Founded in 1965, SNV has built a long term local presence in countries of Africa, Asia, and Latin America. For more information, please refer to our website: www.snv.org.

The WASH SDG programme, funded by the Netherlands Ministry of Foreign Affairs and Trade, is being implemented by SNV in partnership with the WASH Alliance International and Plan Nederland. This Programme is implemented in seven countries: Bangladesh, Ethiopia, Indonesia, Nepal, Tanzania, Uganda and Zambia. These countries all have significant numbers of people with poor access to and use of WASH services, either in rural areas or in densely populated areas with uncontrolled urbanisation and deteriorating water security. The WASH SDG programme aims to sustainably improve access to, and use of, safe drinking water for at least 450,000 people, sanitation for at least 2 million people and improve the hygiene behaviours of 1.6 million people before the end of 2022. In Bangladesh SNV is implementing Urban Sanitation Programme in three cities: Jashore, Benapole and Gazipur.

Jashore is one of the oldest Municipality in the then Bengal Province which was established in 1864. Jashore Paurashava is responsible for the development of the city and ensuring better municipal services and living standards for city dwellers. It covers an area of 14.71 square kilometers. The total population according to the population census 2011 is 201,796 of which 104,753 are males and 97,043 are females. Jashore municipality consists of 9 Wards and 73 mahallas (BBS, 2015).

The Local Government (Paurashava) Act 2019 gives Paurashavas the responsibility of urban sanitation and Faecal Sludge Management (FSM). It assigns responsibility to households for construction and maintenance of latrines and garbage disposal (including faecal sludge)[1]. Improper disposal of faecal sludge is treated as an offence under the Act. In Paurashavas, septic tank system and different form of pit latrines are predominant sanitation systems. However, in the absence of effective Sanitation/ FSM services and lack of monitoring, direct discharge of toilet wastewater into storms drains/ sewers/ open areas is common in most Paurashavas.[2].

As per the baseline survey of WASH-SDG project (2018), around 30% of the households have environmentally safe sanitation facilities in Jashore Paurashava. More than one quarter of the HHs from poorest wealth either use unimproved toilet or share toilets with neighbours. Wealthier groups enjoy more improved toilet facilities than the poor. Around 88% has functional toilets without any blockages in the water seal but there is no water available within the toilet cubicles. Around 77% of the households have containment but these are not emptied routinely.

The Atlas of Poor Settlement in Jashore Paurashava 2011, identified 28,232 households as poor in 908 poor settlements. Ward wise distribution of poor settlements varies between 6.6% in ward 6 and 15.31% in ward 4. In some wards like 1, 5, 8 and 9 concentration of extremely poor settlements are quite high. Most of the poor settlements are old, although the average age is about 41 years. Density of settlements is not so high in Jessore. About half of the settlements as well as households were found in vulnerable situation both environmentally as well as economically. The poor settlements are scattered all over the city with more concentration in central part; settlements are by and large smaller in size and the larger ones are worst off; and most of the poor settlements in Jessore are comparatively new. Poor settlements are growing at an accelerated rate in Jessore.[3]

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[1] Review of Legal and Other Governing Factors Related to FSM in Bangladesh 2014 (SNV in Bangladesh)
[2] Institutional and Regulatory Framework for FSM 2017 (Local Government Division, MoLGED&C)
[3] Atlas of the Poor Settlement in Jashore Paurashava 2011 (Urban Partnership for Poverty Reduction, UNDP and Jashore Paurashava)

Several projects and organisations are supporting Jashore Paurashava to improve the sanitation conditions in the city, but the main challenge is how to adequately address and ensure access and safely managed sanitation for Low Income Communities (LIC) and slums. City Region Development Project (CRDP) of Local Government Engineering Department has been supporting Jashore Paurashava in infrastructure development that includes construction of an Integrated Waste Management Plant. This plant includes provisions for treatment of both Municipal Waste and Faecal Sludge. Urban Governance Infrastructure Improvement Project (UGIIP-III) is support the Paurashava for sustainable human development, economic growth and poverty reduction by enhancing municipal management and strengthening capacity to deliver municipal services and improve physical infrastructure and urban services including sanitation services.

In order to achieve SDG 6.2, the WASH-SDG project developed a strategy to prepare Ward Sanitation Plans with different settings of a Ward. Initially the strategy will be piloted in one ward of Jashore Paurashava for demonstration of coordination of the interventions under different initiatives. After having consensus by all stakeholders this strategy will be replicated in the entire city by Paurashava with support from local and central government agencies, donors and private sector.

GIS-based Sanitation Mapping will be used as a tool to support the planning process by the stakeholders and for establishing effective FSM services in the selected ward.

2. Rationale of the assignment

To develop ward sanitation strategy a comprehensive set of data would be required to do the analysis of the current situation. Spatial data would allow more compressive analysis and helps us build up profile of the sites based on the key issued required for developing sanitation planning. The special data also need to integrate with non-spatial data for better decision making purpose.

With support from different projects, Jashore Paurashava have developed different databases over the period of time which they use for their service delivery purposes and those are mostly non-special data. These databases are holding database, tax database, water supply database, sweepers' database, etc. These databases are not linked to each other, therefore it is a challenge to take decision based on the integrated information. Currently Urban Governance Infrastructure Improvement Project (UGIIP-III) has been supporting Jashore Paurashava developing master plan which also gathering both GIS and non-GIS data. These database do not have all features that is required for developing sanitation plan. Therefore these dataset need to be updated and additional features to be collected. Additionally this spatial data need to be linked with holding database so that through it all other database can be linked. Ultimately to make these useful and integral part of municipal management an Integrated Information Management System (IMIS) will be developed for Jashore Paurashava.

SNV is supporting the process of developing ward sanitation strategy/ plan and developing the IMIS for Jashore Paurashava. To fit the GIS data into IMIS and make it effective, some other data need to acquire and develop along with the updating and validation of previously collected data. Additionally data verification is considered an integral step to check its authenticity, accuracy and consistency. It is important to check the validity and reliability of the data before we implement the IMIS at city scale.

However, at this stage we intend to develop Ward Sanitation Action Plans in one ward as pilot. Jashore Paurashava has selected ward number 5 for piloting which is the largest in terms of area. This ward is concentrated by many non-households premises (offices, educational institutes) as well there is a significant number of slums/ LICs. There are around 3,000 poor households living in 114 Low Income Settlements in this ward and about 40% of the settlements are located on government land.[4]

Therefore, the WASH-SDG project is seeking appropriate consultant for updating and validation of GIS-based data and develop additional datasets and analytical maps in ward number 5 of Jashore Paurashava.

[4] Atlas of the Poor Settlement in Jashore Paurashava 2011 (Urban Partnership for Poverty Reduction, UNDP and Jashore Paurashava)

3. Objective of this assignment

The objectives of this updating & validation exercise of GIS data in ward 5 of Jashore Paurashava are:

a. Update existing GIS Database of Ward 5 of Jashore Paurashava with new building structures, containments (toilet pits/ septic tanks), road networks and drain networks on the basis of field verification/ observation of the new features.

b. Prepare Ward Sanitation Profile Document and supporting maps of the specific ward, to understand current sanitation situation and most critical areas.

c. Create new GIS database and new attributes for the ward of Jashore Paurashava, for deeper understanding of sanitation needs. Link the GIS based building database of the specific ward with holding number of Jashore Paurashava.

d. Develop analytical maps on-demand of the selected ward, as supporting tool for Ward Sanitation Action Plans.

4. Scope of work:

The Service Provider must have necessary experiences of creating GIS-based digital base maps using high resolution satellite image, field survey and map updating, socio-economic survey, familiar with urban elements for urban management. The Jahore Paurashava and SNV team will provide regular quality control support to the service provider team to ensure the integrity and reliability of data.

5.1 Updating existing GIS Database of ward 5 of Jashore Paurashava

- Revise existing GIS Data of ward 5 of Jashore Paurashava, review data set, documents regarding the GIS data and maps. This includes Jashore Paurashava's databases, NUPRP Ward Sanitation Atlas 2011 and other available sources. These will be provided by Paurashava and SNV.
- Acquire latest high resolution satellite image available in archive and identify new missing features and features do not exist in the GIS Database but exist in the image, or vice versa.
- Verify these features in the field and also collect basic information that exist in the GIS data and update existing database accordingly. The features include holding number, confirm containment type and location, link to building and access road, road type and width, drainage type and width, confirm main building and it subsidiary building.
- Update land use database of Jashore Paurashava based on the land use changes identified in the Satellite image with field verification. Information and metadata of new features added and removed from existing GIS database has to be documented.

5.2 Prepare Ward Sanitation Profile Document for the ward.

- Develop a profile of the specific ward in relation to basic and sanitation information at current situation. This profile should be a document of 5 to 10 pages including a narrative summary of 1 or 2 pages, some graphs and indicators and supporting maps.
- The generated maps should include, at least, Base Map, Land Use Map, Containment type, Sanitation facilities (community and public toilets, water points,…), sludge discharging points, water logging areas, etc.
- These maps should follow the standard layout used by Jashore Paurashava with logos of Paurashava, SNV and other partner organizations, the service provider needs to get approval from SNV and Paurashava before finalizing the map.

5.3 Create new GIS database and new attributes for the ward.

- Conduct containment survey to capture existing situation of septic tanks and pit latrines. Current dataset for containments only contains type, but it is required to include size of containment, construction material, soak well and drain discharge. The specific questions

for the survey and required attributes will be provided by SNV. The size of the survey should be recommended by consultant team.

- Update the Building footprint layer linking with Holding Number, for all buildings within the ward.
- In addition, integrate all information generated by the Community Action Plans (CAP) in each of the Communities, as part of UGIIP-III. Other minor datasets can be included if available, like community toilets and others.

5.4 Develop analytical maps on-demand of the specific ward, as supporting tool for Ward Sanitation Action Plan

- Support SNV and Paurashava team on their request to produce analytical maps, field maps, lists of buildings for sample selection, etc. they need in the process of conducting surveys & studies, developing ward sanitation action plan, preparing reports, making presentation, etc.
- This support will be extensive during all consultant assignment, and as per estimation, a total number of 30 maps at ward level can be requested, including profile and analytical maps, and around 15 additional maps at Jashore level.
- Orient Paurashava and SNV team to understand the GIS data and create and maintain data structure in EXCEL, so that data and information gathered about containment is always intact and can be integrated with Paurashava GIS database.

5. Implementation arrangements

a. The consultant will use the GIS and non-GIS data the project developed so far.
b. The consultant will recruit qualified enumerators for data collection/ verification. S/he will be responsible for designing the field survey tools and provide training to the enumerators.
c. The consultant will consult with relevant personnel of Paurashava for tax zone adjustment, as required.
d. The consultant will be responsible for data entry as required.
e. The consult will take necessary measures to ensure quality of data to be collected and entered into the database.
f. A team comprising of Paurashava, SNV, and relevant Project of Paurashava will review the outputs and monitor the progress and provide feedback time-to-time. The consultant will update progress to the team on a weekly basis.

6. Deliverables

The Consultant is expected to deliver the following:

1. Updated GIS database and Ward Sanitation Profiles for the specific ward.
2. Completed GIS Database for the ward, including related Maps and Report.
3. Final Report on the activities and support provided to Paurashava and SNV team.

7. Timeframe

A total of ten weeks is required for this assignment.

Scope of work	Estimated time
5.1 Updating ward's existing GIS Database	Within two weeks after signing the contract.
5.2 Prepare Ward Sanitation Profile Document for the ward.	Within four weeks after signing the contract. This activity is first priority, as it is required for Ward Sanitation Action Plans.
5.3 Create new GIS database and new attributes for the ward.	To be developed after Ward Sanitation Profile document. The estimated duration is of four weeks.

5.4 Develop analytical maps on-demand of the ward, as supporting tool for Ward Sanitation Action Plans	This activity will be continuous during the duration of the agreement, but mainly required during Ward Profile and Ward Sanitation Action Plan development by Paurashava, SNV, and relevant project of Paurashava.

8. Human resource requirement

The Consultant/s must have educational background on GIS application and experience working on GIS-based spatial analysis and WASH, preferably in sanitation mapping in municipalities in Bangladesh. Consultant must have understanding about municipal services and experiences in municipal tax system in Bangladesh.

9. Application

Interested organisations or consulting firms or individuals are requested to submit their technical and financial proposals with the details on organisational overall and similar experience, methodology including activities and milestones, budget details, time frame and CVs of expert(s).

Electronic copy of the proposal duly signed should be submitted to **bangladesh@snv.org** with the subject line: **Updating, Validation and Finalisation of GIS Data for Establishing Ward Sanitation Map in ward 5 of Jashore Paurashava** latest by **10:00am** of **17 September 2019**.

For any query related to the ToR, please contact Shahidul Islam, Governance Advisor, SNV. Email: shahidulislam@snv.org