TERMS OF REFERENCE

Title: Procurement and Implementation of GIS platform for Thimphu Thromde

Duration and Timing: February to July, 2020 (6 Months)

Reporting: Thimphu Thromde

Background

The population of Bhutan is around 735,000 in 2017, its urban population growth rate (2.5 percent annually) is among the highest in South Asia. According to the most recent census data, 37.8 percent of the total population is estimated to be urban[1]. The capital city, Thimphu, is the largest urban agglomeration followed by Phuentsholing, Gelephu and Samdrup Jongkhar. Thimphu became a town in 1961 and grew as the capital of Bhutan. The central government administration as well as a number of corporate bodies are headquartered here, and it is the largest urban center in the country.

Bhutan's rapid economic growth and expansion of urban population have highlighted the need for improved urban governance and management and the demand for higher order urban services. The Royal Government of Bhutan (RGoB) has taken important steps, over the years, to strengthen the role and capacities of Thromdes, Dzongkhags and Gewogs in service delivery and citizen engagement. Nevertheless, municipal governments in Bhutan, especially the four Class A Thromdes, continue to face policy and institutional barriers that limit their ability to become effective, responsive and accountable in urban planning and management, service delivery, and local economic development.[2]

Today, local governments – particularly Thromdes, which are urban local governments – face many constraints limiting potential. As Bhutan urbanizes, Thromdes will play a more prominent role in governance, service delivery and local economic development. To empower them, it is important to continue the current trajectory of deepening decentralization and strengthening local governments.

Substantial number of private properties (land and buildings) are to be serviced by the Thromde. Thromde provides numerous services like water supply services, street lighting, sewerage services, solid waste collection services, and many more. Properties are also source of revenue for Thromde as property owners are required to pay annual property tax. Thromde is responsible for development, and operation and maintenance of infrastructure and other assets required for service delivery.

With advancement of technology, especially GIS technology, it becomes easy to manage and track assets and properties. GIS combined with web-based technology provides strong

[1] PHCB, 2017
[2] Bhutan Urban Policy Notes- Regional Development and Economic Transformation

platform that can be used for management of asset information and service delivery through citizen engagement.

Currently, Thimphu Thromde MIS system is capable of storing property data, assessment of taxes and collection of taxes. Similarly, a simple Digitized Asset Register is implemented that stores data on asset owned by Thimphu Thromde. However, both the systems do not contain spatial data on properties and Thromde Assets. While the existing systems are able to generate MIS related to revenue collection, service delivery, property information updates, asset details, asset maintenance records, asset inspection and asset disposal information, the systems do not provide interactive GIS and mapping based information access to Thromde administration and citizens.

In view of above, Thimphu Thromde intends to establish GIS based platform that can be easily integrated with existing Revenue Management System (for properties database) (RMS) and Digitized Asset Register (for Thromde Assets) (DAR). The platform should be able to fetch data from RMS and DAR and also establish linkage between the mapping infrastructure and RMS & DAR for details on asset and properties.

Objective of the Assignment

The objective of this project is to strengthen the Revenue Management System and Asset Register through integration of GIS based platform and transformation of Thimphu Thromde to a smart city.

The expected outcomes of the assignment are:

1. A GIS based mapping system that captures all essential features of the properties necessary for Building Occupancy and Property Tax Assessment through integration with Revenue Management System.
2. A GIS based mapping system that enables visualization of real time data regarding building occupancy and property tax assessment which can be sorted by local area plan, Thimphu Structural Plan, constituent units, date and time range and KPI (key performance indicator).
3. A GIS based Asset mapping system that captures all the infrastructure assets through integration with Digitized Asset Register.
4. Dashboard designed to provide real time data regarding property tax status and building occupancy. Along with assessed properties, this should also help identify all un-assessed and under assessed properties in the city. The dashboard should provide interactive map as well as statistical MIS comprising of multiple performance indicators that provide real time view of Thromde's performance.
5. Provide capacity building and handholding to local authorities for the use of this system.

6. Provide GIS based interactive platform for citizen engagement providing features to track properties, service requests and service access. The interactive citizen engagement platform is expected to have a mobile app as well.

Scope of work

1. Study the current state of MIS and GIS platform implemented in Thimphu Thromde.
2. Supply, customize and implement the GIS platform that has the capability to realize the expected outcomes stated above.
3. Determine the integration requirement between the GIS platform and existing MIS systems and develop the integration.
4. Identify necessary Key Performance Indicators of properties for Property Tax Collection and Building Occupancy.
5. Study and analyze the existing data and update the platform with at least 1000 structures (assets and properties). The updated data should be mapped in all systems so that MIS generated is consistent.

The institution shall define which data regarding properties needs to be collected other than building occupancy and property tax assessment already selected by Thimphu Thromde.

6. Develop and standardize a data management protocol

The institution should assess the gap between current and ideal state of data for the project. The institution should define a protocol for assessing the current data ecosystem and create and institutionalize a new data collection, management and analysis protocol. The protocol should address all identified gaps in the data and work on bridging them. The institution should create and implement standard operating procedures for key processes (E.g. data validation, evaluation, access control, API approval etc.)

7. Develop a dashboard and data collection application

- The institution should create an input interface (application) for the data at respective data owner levels.
- The input interfaces need to be aligned to the current reporting practices to make the reporting as effortless as possible.
- Dashboard and application should be easy to navigate. The platform architecture should emphasize open data principles, and should have metadata definitions, data standards, and a data catalogue (title, description, keywords, grouping, sector, jurisdiction etc.) for each section/ collection/ theme. It should also have mechanisms to trigger alerts for regular updates of data.
- The institution should help Thimphu Thromde define which parts of the platform will be internal (in-house) and which will be global, along with access and security protocols to implement the same. This should be in cognizance of data privacy and

protection norms and laws. Such architecture shall be consistent with global practices and regulations on data sharing and use.

- The institution should help Thimphu Thromde define standards for third party use of data, contribution of applications and analytics layers and mechanisms to support the same.

8. Capacity building of different Roles/ Stakeholders

- Institution should conduct capacity building programmes for Local Government Officials working with Property Tax , Building Occupancy and Asset Managers.
- Institution should create a training plan across levels in both technical aspects relevant for the government officials.
- Provide training to identified staff at the relevant divisions.

Deliverables

The deliverables expected from the institution shall include,

	Deliverables	Timeline from start of the assignment
1.	An inception report	Two weeks
2.	Initial identified features and data management protocol	One months
3.	Final identified features and data management protocol	1.5 months
4.	Functional requirement of Dashboard and data collection application	2 months
5.	Dashboard, data collection application and software prototype	3 months
6.	Pilot testing	3.5 months
7.	Final dashboard, data collection application and software revised after pilot	4 months
8.	Training of staff and roll out	Six months
9.	Handholding for relevant government departments	Throughout the project duration

Key Experts

The professional requirements of personnel to be provided by institution for the task are given in the following table detailing type of expertise, required skills and experience. The institution needs to provide CVs of its proposed team for the Key Positions listed in the Table, in the prescribed format. CVs of Key Positions will be evaluated with reference to the specified experience and qualifications. The team of key professionals shall be adequately supported by junior non-key support functionaries in requisite disciplines.

Sr. No.	Key Expert	Qualifications	Experience
1	Team Leader	Master's in Development Planning and Administration with a minimum of 10 years of experience	• Atleast 10 years of experience in the development planning sector • Good knowledge of Property Tax Administration and urban economics as well as town and regional planning.
2	IT Expert	IT professional with sound knowledge	• Atleast 10 years professional experience • Knowledge of working in a city • Has developed softwares and dashboards
3	GIS Expert	Master's in Geoinformatics with at least 5 years of professional experience	• Understands datasets available in cities • Knowledge of working in a city
4	Cartographer	Master's Geoinformation Technology and Cartography	• Knowledge of mapping sciences. • Atleast 2 years of experience
5	Field staff	As required	

Administrative support

The Thromde shall:

- Appoint a Nodal Officer responsible for coordinating the implementation of the project.
- Provide the Institution with necessary information and provide access to existing property tax records, GIS layers for administrative boundaries, building footprints, contour maps, physical geography map, cadastral maps and any other relevant information as and when required.
- Arrange for Hardware and Software, Connectivity and Institutional set up required for property tax administration; access rights to institution to use the hardware and software.
- Arrange necessary workplace and travel for field visits as and when required.

Minimum Required Qualifications for Institution

Sr. No.	Category	Specific Requirements	Supporting Documents Required
1.	Entity	Must be a legally constituted institution	Required constitutional documents, Certified copy of the audited financial statements of last 3 years
2.	Overall experience	Should have at least 30 years' experience in urban and regional planning. Should have at least 30 years' experience in teaching and conducting trainings related to urban and regional planning. Should have atleast 5 years' experience of working within Bhutan	Self-certification of details of the experience
3.	Technical capability	Organization should have developed their own platform for urban asset inventorying and monitoring.	Provide a presentation and showcase functioning platform.