TERMS OF REFERENCE
Individual Contractor

1. Project Information

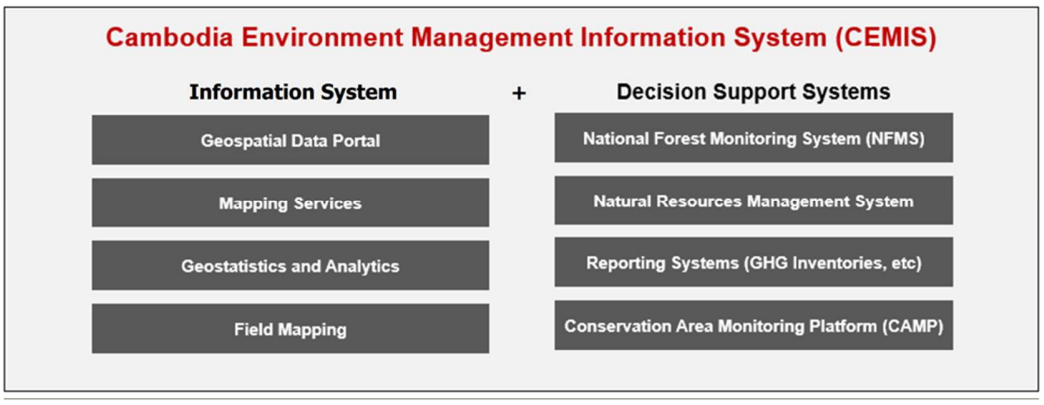
Assignment Title:	National Consultant for Set of Server and Complete Data Network set up for DGIS
Cluster/Project:	CSLEP Project
Post Level:	Specialist
Contract Type	Individual Contractor (IC)
Assignment Location:	Phnom Penh, Cambodia
Expected Place of Travel:	N/A
Assignment Duration:	30 days from 20 July to 19 November 2021

2. Background and Project Description

The Department of Geospatial Information Service (DGIS) of the Ministry of Environment plays an important role in the management and operation of reliable and high-quality environmental geospatial data. These data provide information which assist practitioners and decision-makers in Cambodia, in making decisions in a manner that promotes environmental protection, natural resources management, biodiversity conservation and sustainable development. The DGIS has the goal to establish a well-functioning and sustainable Central Data Portal (CDP) through building the internal and external human capacity, in-house technology, standards, and procedures.

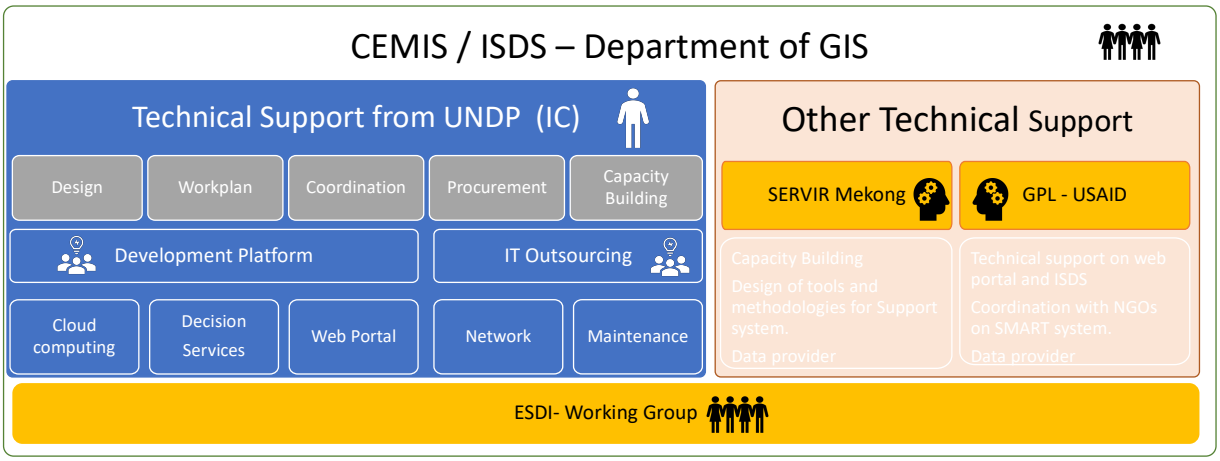
In 2019, the World Bank 's **Cambodia Sustainable Landscape and Ecotourism Project (CSLEP)** was officially launched. The project's main objectives are to improve protected areas management and to promote ecotourism opportunities. As part of the project activities, UNDP will provide technical support DGIS/MOE to develop the Cambodia Environment Information System (CEMIS)/Information Spatial Decision Support System (ISDS) to strengthen the capacity for Protected Area (PA) planning and management and law enforcement. UNDP will provide technical support the DGIS to develop the CEMIS, which is composed of "Information System" and "Decision Support System". The information system hosts a geospatial data portal..

Figure 1. Cambodia Environment Management Information System (CEMIS)



In coordination with other technical support provided by SERVIR Mekong and Greening Prey Lang/USAID, UNDP will provide technical support for works related to 1. Design, 2. Work plan, 3. Coordination, and 4. Capacity building for the development of platform and IT outsourcing related to CEMIS/ISDS. UNDP will provide additional technical assistance to operationalize cloud computing, decision services, web portal, IT network and maintenance (See Figure 2).

Figure 2: UNDP and other technical support for CEMIS/ISDS



SERVIR Mekong and GPL will provide complementary support to the MoE for the CEMIS work. Their support includes capacity building for web portal, ISDS, design of tools and methodologies for support system, data provision and coordination with NGOs on SMART system. Of particular relevance for the project is the SMART (the spatial monitoring and reporting tool), which is a suite of software tools to monitor, report, measure, and evaluate site-based conservation and wildlife law enforcement activities.

3. Objective of the Assignment

The DGIS of the Ministry of Environment is in charge of collection, process, analysis from and stock of heterogeneous data sources including documents in general (.doc, .xls, .pdf, .ppt, .pdf, etc.) and **geo-information** like satellite images, drone photos, GPS and GIS files (.tiff, .shp, .r, .py, etc), using GIS and Remote Sensing software packages offline and online. The user will be able to perform computation locally on desktop clients, and also consume dedicated geoprocessing service provided by a master node running in the infrastructure.

The required services are to assess the hardware and software to setup or improve the equipment capacities of the laboratory of the DGIS of the Ministry of Environment. It includes the assistance to the Department of HIS to optimize a central system to manage GIS information, laptops or workstations needed, a LAN and WIFI network to ensure the connectivity of a Data Network Connection to Server is up and running completely as below:

- Client workstation access to computers, server, photocopiers and other peripheric with the roles/permission setup to the Database Server.
- Ensure the correct operation of the server, computers (laptops and desktops) and peripherals (printers, scanners and others) with scalability when the data is scaling up and with the minimal down time.

- Securing the computer network (servers and workstations) by deploying the necessary technologies to make safe a local LAN network, including a Backup system.

4. Scope of Work

Under the leadership and guidance of the MRV specialist of UNDP and the director of the Department of GIS of the MOE, the consultant will provide technical support for the following specific activities:

a) Assessment of the DGIS Laboratory (UNDP).

Assess the existing structure and expansion plan of the DGIS, analysing the type of data, equipment and software used (including peripherals), the network and servers, the common work done (day-to-day) in the laboratory, the role of internal and external users and the expected work once CEMIS is fully operational.

The consultant must undertake the assessment in coordination with the head of the department of GIS. It is expected to have a gap assessment report with the technical recommendations/ specifications of hardware and software needed to rationalize the data production, analysis, storage and sharing inside and outside the department. This report will be the technical specifications for the procurement plan and must contain:

- A table with the number of items (software, hardware or related service), description, unit and quantity.
- Specifications for the Software: Essential functionalities with a description
- Specification for hardware: Technical specifications and recommended brands
- Specification for network: Detail specifications on the wire and wireless network, include a description of number of estimated peripheral elements (printers, scanners, etc), role of users, setup and backup systems.

Once the consultant has completed and submitted list of materials and equipment with the detail technical specifications and service requirement, the CSLEP procurement unit will start the procurement process (expected three months for the procurement process). During this process, the service provider is expected to support the DGIS and the CSLEP in the following activities:

b) Overseen the installation, configuration, commissioning, and functional test of the entire data network solution for the DGIS laboratory in the MOE for all users connected by wire.

Together with the head of DGIS, revise the installation, setup and configuration of the equipment, material, software and peripherals acquired for the development of CEMIS, including:

- The physical and topologic network schema.
- A complete wire computer network, adapting/modifying the existing Server,
- A correct configuration of the internet connection via LAN and WLAN, router, computers and peripheric devices.
- The set up the TCP/IP, domain, roles and users verification system.
- Review the Logical Network Diagram and the IP address information.
- Revise the selection of compatible server, and server configuration as Database server for Spatial Data access, control, and collection and retrieval.

- Update and/or upgrade the Server, including the windows license, RAM, HDD and creating a useful backup system.

- Revise the administrative permission of user access and control to data and folders.
  - The server, firewall and the security system
  - Permissions and groups using Windows Server as domain controller.
  - The protocol of folders service by user and role.
  - Check the backup system.

c) Provide a technical training to the IT unit.

- Training in the basic principles of operation, maintenance and update/upgrade the network, including the creation and update of roles in the network.

5. Geographical area to be covered:

- The DGIS office is located in the MOE building third floor, Phnom Penh, Cambodia.
- The tenderer must indicate the methodology of the project management of the entire solution of these TOR, specifying in detail the phases of the project and the duration of each phase

6. Expected Outputs and Deliverables

N	Deliverables/Outputs	Target Due Dates	Number of days	Review and Approvals Required
1	A full technical specifications and procurement plan for the Procurement unit of the CSLEP project.	July 15, 2021	10	MRV specialist
2	A report of the installation of the equipment and material, with recommendations for the DGIS	15 days after the procurement and installation is completed by CSLEP	15	
3	A manual of the training A training report	5 days after the training.	5	

7. Institutional Arrangement

Roles of consultant

- The consultant shall work with DGIS leader of the MOE and the MRV specialist of UNDP, throughout the assignments.
- The consultant needs to maintain regular communication with UNDP Country Office as and when problems emerge during the period, especially if they affect the scope of the job.

Roles of the UNDP Country Office

- The County Offices will review the deliverables for payment release

8. Duration of the Work

- Expected duration of work: 30 days from 20 July to 19 November 2021

9. Location of work

- The duty stations for this assignment are home country and Phnom Penh.

In case selected individual contract(s) who is expected to travel to the Country Office (CO) to undertake the assignment in the country (Cambodia) is required to undertake the BSAFE training. https://training.dss.un.org/course/category/6 prior to travelling.

10. Minimum Qualifications of the Individual Contractor

Education:	At least Bachelor's degree in the Computer Science or related field.
Experience:	• At least 8 years of working experiences in providing services in the field of providing IT Solution, including at least 3 projects on GIS/mapping solutions. • Demonstrated experience in Training groups • Proven experiences in Working with GIS Database server, and Network troubleshooting.
Competencies:	• Demonstrates integrity by modeling the UN's values and ethical standards • Displays cultural, gender, religion, race, nationality and age sensitivity and adaptability • Treats all people fairly without favoritism • Fulfils all obligations to gender sensitivity and zero tolerance for sexual harassment.
Language	English and Khmer

11. Criteria for Evaluation of Level of Technical Compliance of Individual Contractor

Technical Evaluation Criteria	**Obtainable Score**
At least Master degree in the Computer Science or related field.	20
At least 8 years of working experiences in providing services in the field of providing IT Solution, including at least 3 projects on GIS/mapping solutions.	40
Demonstrated experience in training groups.	10
Proven experiences in Working with GIS Database server, and Network troubleshooting.	30

Total Obtainable Score:	**100**

12. Scope of Bid Price and Schedule of Payments

- A service provide should prepare the technical and financial proposals that cover the whole assignment and the evaluation will be done as a lump sum.

Payment schedules

N	Outputs/Deliveries	Payment Schedule	Payment Amount
1	Upon satisfactory completion of deliverable #1	July 30, 2021	20%
2	Upon satisfactory completion of deliverable #2,	September 30, 2021	50%
3	Upon satisfactory completion of deliverable #3	November 10, 2021	30%