

Terms of Reference (TOR) for the Consulting Services of
GIS Mapping Expert (NGE)
Technical Assistance and Support to DFRM for Implementation of LENS2 Subproject
15 months contract

A. INTRODUCTION

1. GOL has accessed \$6.83 million of GEF funding (from Biodiversity, Land Degradation, and Sustainable Forest Management focal areas) and \$32 million IDA funds (national and regional funding) to implement the Second Laos Environment and Social (LENS2) project. The project development objective (PDO) of PAW is: *to help strengthen selected environmental protection management systems, specifically for protected areas conservation, enforcement of wildlife laws, and environmental assessment management.* . The LENS2 Project aims to create wildlife and PAs enforcement standards, develop good practice applications for PA management and reduction of illegal wildlife trade at the central level and at key A sites as well as improve the implementation of environment and social impact assessments. It builds on bilateral initiatives between Lao PDR, Thailand and Vietnam to control illegal wildlife trade, as well as strengthens Lao PDR's capacity to collaborate with regional centers of knowledge and with international organizations addressing wildlife trafficking.

2. The LENS2 executing agency is the Environment Protection Fund Office (EPFO). The project will function as a financing mechanism for a suite of sub-projects implemented by various sub-project delivery agencies (SDAs), within the framework of three project components: Component 1: Institution development and capacity building; Component 2: Protected area management; and Component 3: Project administration and EPF capacity building.

3. As part of the LENS2 implementation a number of national, regional, and/or international consultants will be mobilized to assist the various SDAs to implement the sub-projects. One priority SDA is the **Department of Forest Resource Management (DFRM)**. Previously under the Ministry of Agriculture and Forestry (MAF), DFRM was formed under the Ministry of Natural Resources and Environment (MONRE) in 2012. DFRM is the national focal agency for the coordination of PA management. PAs are managed by Provincial and District lines under the DFRM. The current institutional set up for PA management in Laos is complex, especially so for the management of the National Protected Areas (the nationally designated Conservation Forests). Each national-level PA is managed by a small number of officers from the provinces and districts in which the PA is located, with a Management Unit headed by an officer from the Provincial Office of Natural Resources and Environment (PONRE). Planning and management for nationally designated Conservation Forest and Protection Forest is entrusted to the provinces and districts. With this diffuse accountability, as well as insufficient staff, equipment and training, PAs that do not receive external assistance are not actively managed. DFRM is understaffed and underequipped, and its role of coordinating and its authority in demanding results are both unclear. Further challenges to management of the PA system include a perception across Laos that environmental considerations are a hindrance to fulfilling the country's economic aspirations, a lack of capacity within DFRM and management units to track and monitor investment plans that affect the PAs, and ineffective collaboration between conservation agencies from Lao PDR and neighboring countries to enact trans-boundary management.

4. DFRM has received a \$3,397,439 million, 2,5 million for sub-grant to implement a subproject entitled **Institutional capacity building for protected area management and wildlife conservation and 900,000 Hundred thousand dollar to Review, mapping and data collection on land use and forests in and outside the 3 forest categories to inform re-delineation of the 3 FC**

and enhanced forest management. The sub-project objective is: *to strengthen the policy and institutional framework and DFRM's capacity to protect and manage the National Protected Areas and the National Protection Forest (NPF) systems and 3 forest categories to inform re-delineation of the 3 FC and enhanced forest management.* The activities will be implemented through the following 4 components:

- *Component 1: Institutional development for NPA and NPF systems (planning and guidelines)* providing technical assistance for developing the institutional development for adaptive management of PAs and improve the policy framework for NPA, NPF and wildlife management by commissioning some studies, preparing a status report and master plan for NPAs, and developing guidelines for PAs, PFs, as well as manuals for these conservation forest management practices. Key activities include (1.1) a study on optimization for NPA management system through interviews and stakeholder consultation workshops and some field visit where necessary, (1.2) development of DFRM website, (1.3) preparation of NPA Status Report, (1.4) preparation of NPA master plan, (1.5) An economic evaluation of NPAs, (1.6) Payment for Ecosystem Service (PES) and economic evaluation of NPFs and NPAs, (1.7) Suites of guidelines for protected area management (at least 5 guidelines), (1.8) a guidelines for NPF, and (1.9) Suites of Manual for NPA and NPF (at least 5 manuals).
- *Component 2: Operation of NPA and NPF System (supervision and management)* facilitate operation and training of priority activities. Key activities/outputs include (2.1) Matrix for NPA supervision, (2.2) Protected and management wildlife species list of Lao PDR, (2.3) NPA factsheets of Lao PDR, (2.4) Category of land tenure types in NPAs, (2.5) Category of NPAs of Lao PDR, (2.6) Promote NPF management, (2.7) Cooperation with Vietnam on PAs (4 times), (2.8) Annual NPA Meeting (5 times), (2.9) Database for tracking investment in NPAs, and (2.10) Supervision of sub-projects, and (2.11) Tiger surveys and planning.
- *Component 3: Sub-project management and capacity building* aiming to improve its capacity to manage the subproject as well as training and capacity building activities. Key activities/outputs include (3.1) Advisory Technical Working Group, (3.2) Public relations for conservation, (3.3) Staff training needs assessment, (3.4) PA Managers training, (3.5) GIS/mapping training, (3.6) English training, (3.7) In-house training, (3.8) International meetings (incl. twinning visits), (3.9) Sub-project arrangement, (3.10) Sub-project performance, and (3.11) Annual Work plan and Budget (AWPB). Technical advisors (international and national) and a number of consultants including an accountant will be mobilized.
- *Component 4: Review, mapping and data collection on land use and forests in and outside the 3 forest categories to inform re-delineation of the 3 FC and enhanced forest management.* Key activities/outputs include (4.1) Assignment of GoL staff, engagement of TA team, procurement of equipment, and implementation guidelines draft, (4.2) Validation of Implementation Guidelines, Partnership and Road Map, (4.3) Collection and compilation of data and maps already available and socio-economic development plans etc, (4.4) Development of GIS DB and preparation of base maps, (4.5) Desk study assessment on current land use, populations within current 3FC boundaries and priority areas for biodiversity conservation, (4.6) District/Provincial level participatory review of forest and land use, and indicative revision of the 3FC, (4.7: Drafting and compilation of maps and data on forest and land use in and outside 3FC, and indicative revision of 3FCs, per district, comparing pre and post, (4.8) National Consultations/Workshops to review data and maps from 3FC review and any proposed indicative revisions/options, and (4.9) Final Data and maps from review and indicative revision of 3FC presented to NA and GoL, for review and direction.

B. OBJECTIVE OF THE SERVICES

5. The objective of the assignment is to support DFRM staff in delivering the database, maps and associated reports with proposed re-delimitation of the 3 forest categories.

C. TASKS

The National GIS Mapping Expert (NGE) is expected to:

- Assist in finalizing of the GIS manual for the program, and ensures its Lao version is correct.
- Provide training to all central and provincial GIS and mapping staff.
- Provide TA and support to the field teams.
- Ensure all GIS and mapping data generated by the field teams is efficiently sent back to the central team (after providing a reasonable level of quality checking)
- Be responsible for training in the use of, and then ensuring the correct implementation of 'forest zone descriptor' data.
- Be co-responsible (with TPMA) for compiling the District and Provincial Reports, and then the Master Plans.

The NGE will work closely with the sub-project team from DFRM and with other consultants to this sub-project to carry out tasks including, but not limited to, the following:

Task 1: Re-delimitation Guidelines.

- Assist DFRM for the design, consultation and quality control of Guidelines for re-delimitation of the 3 forest categories including necessary and additional materials to guide the mapping part of the re-delimitation process as needed.
- Assist DFRM in consultation and dissemination of the re-delimitation guidelines.

Task 2: Capacity Building of DFRM and PFRMs.

- Brainstorm on training needs for the purpose of the forest re-delimitation.
- Establish and managed GIS manual monitoring database;
- Conduct training on navigation (GPS, map and compass use) and database management for project staff at different project sites
- Facilitate in meetings/trainings/workshops in Vientiane and the Provinces;
- Train DFRM and PFRM staff in the use of, and then ensuring the correct implementation of, 'forest zone descriptor' data;

Task 3: Technical mapping support

- Assist with DFRM and facilitation of mapping-related workshops;
- Provide GIS and remote sensing support to the team, including land cover and land cover change assessments, analysis of land-use trends and production of maps
- Ensure all GIS and mapping data generated by the field teams is efficiently sent back to the central team (after providing a reasonable level of quality checking);
- Provide Technical support on GIS and remote sensing to 3 forest protection projects;
- With TPMA, compile the District and Provincial Reports, and then the national Master Plans with all 3-forest categories redelimited;
- Keep the database updated (once developed), PFRMs including communications with PA sites.

D. EXPECTED INPUTS

7. The NGE will be based at DFRM Office in Vientiane. It is anticipated that the NGA will allocate more time during the first one year. The need for adjustment and/or extension will be discussed in year 3. Travel to provinces and sub-project sites should be expected. DFRM will provide information and data, office space and facilities.

E. EXPECTED OUTPUTS

8. The NGE will prepare and submit the following reports per the schedule as agreed with DFRM:

- An inception report describing own work plan to implement the Tasks listed above (submitted to DFRM within a month of contract signing or as agreed with DFRM.)
- Brief back to office/trip reports after missions outside Vientiane.
- Contribution to the Semester reports of the subprojects.
- District and Provincial Reports.
- National Master Plans with all 3-forest categories redelineated.
- A succinct final report describing the activities carried out during the period of service including achievement, issues, lesson learnt with a strong focus on advising DFRM on the way forward (draft submitted to DFRM at least 10 days before the contract completion date or as agreed with DFRM.)

F. QUALIFICATION AND EXPERIENCES

9. DFRM seeks a highly experienced GIS and mapping expert as advisor to support DFRM and PFRMs to implement the mapping part of component 4 of the DFRM subproject.

The following lists the **key qualifications and experience**:

- Bachelor or higher degree in either GIS or mapping or in other relevant fields associated with GIS or mapping;
- Minimum of 7 years working experience related to GIS and mapping;
- Minimum of 3 years' experience in mapping in the forest or protected area sector;
- Successfully completed at least one similar assignment (with reference provided).

The candidate must:

- Master at least one of the following GIS Software: ArcGIS, ERDAS, eCognition, QGIS or ENVI;
- Be able to analyse Remote Sensing Data like Landsat, RapidEye, MODIS, ALOS, SPOT as well as Aerial Photographs to create series of visual maps;
- Be able to use Multi Criteria Analysis in GIS.

There would be preference for candidates who are familiar with:

- The existing GIS database of 3 Forest Categories and land uses of Laos (FIPD database, SUFORD, TABI or DALAM);
- land use classes and land use planning tools of Laos;
- Criteria and delineation of 3 Forest Categories of Laos;
- Computer skills, including Word, Excel, PowerPoint and email;
- Conservation criteria from ASEAN countries.
- Forest, protected areas and natural resources management sector in Lao PDR;
- Developing and/or reviewing environmental law, policy, guidelines, and strategies;
- Community based conservation and multiple-use protected areas;

The candidate is expected to demonstrate the following dimensions during the interviews.

- High motivation and spirit in conservation;
- Reasonable communication skills both in Lao and English language;
- Demonstrated skills in teamwork
- Positive and constructive approach with working with Lao Government staff.