



Mekong River Commission Secretariat

**REQUEST FOR PROPOSAL
No. RFP19-033**

**Enhancing MRC's Land Use/Land Cover Monitoring System and Capacity to Provide
Satellite Service for the LMB-Phase 1**

Vientiane, Lao PDR, March 2019

SECTION I

INVITATION FOR PROPOSALS

Enhancing MRC's Land Use/Land Cover Monitoring System and Capacity to Provide Satellite Service for the LMB-Phase 1

The Mekong River Commission Secretariat (hereinafter “the Employer”) hereby invites sealed Proposals from eligible Consultants for the consultancy services called “[Enhancing MRC's Land Use/Land Cover Monitoring System and Capacity to Provide Satellite Service for the LMB-Phase 1](#)” in accordance with the terms and conditions mentioned in the Request for Proposal.

A firm will be selected under the Quality and Costs Based Selection (QCBS) and procedures described in this RFP, following the Mekong River Commission (MRC) regulations, detailed in the MRC's Procurement Manual which can be found at: <http://www.mrcmekong.org/working-with-mrc/tenders/>.

This Request for Proposal (RFP) includes the following documents:

Section I	Invitation for Proposals
Section II	Instructions to Bidders
Section III	Terms of Reference
Section IV	Evaluation Criteria
Section V	Technical Proposal Forms
Section VI	Financial Proposal Forms
Section VII	Draft Contract

The tender (1 original and 5 copies in case of submission in sealed envelopes) shall be submitted to MRC Procurement Unit not later than **26 April 2019, 3:00 PM** local time by courier or e-mail to:

Mekong River Commission Secretariat
Administration Division
Procurement Unit
P.O. Box 6101, Unit 18 Ban Sithane Neua,
Sikhottabong District, Vientiane 01000, Lao PDR.
Tel: (856) 21 263 263; Fax: (856) 21 263 264
Email: procurement@mrcmekong.org

And, please inform us by writing at the address stated above, upon receipt:
That you received the Letter of Invitation, and
Whether you will submit a proposal alone or in association.

Yours Faithfully,

Suchart Sirijungsakul
Director
Administration Division
Mekong River Commission Secretariat
Vientiane, Lao PDR

SECTION II

INSTRUCTION TO BIDDERS

1. Proposal to be considered

- a. **Eligibility:** Proposals which comply with the conditions and terms as stipulated in the Request for Proposal documents will be considered.
- b. **Conflict of Interest:** MRC considers a conflict of interest to be a situation in which a party has interests that could improperly influence that party's performance of official duties or responsibilities, contractual obligations, or compliance with applicable laws and regulations.
- c. **Amendment of RFP:** At any time before the submission of Proposals, MRC may amend the RFP by issuing an addendum in writing or by standard electronic means. Consultants having informed MRC about their intention to submit a proposal will be informed directly. Any changes will be posted on MRC's website. MRC reserves the right to extend the submission deadline if the amendment is substantial.
- d. **Cancellation:** The MRCS reserves the right to cancel this Request for Proposal at any time

2. Procurement package

The RFP consists of a single package.

3. Clarification

Request for clarifications should be made in writing and sent to the Procurement Unit at procurement@mrcmekong.org.

Deadline for requests for clarifications is 14 days before the deadline for submission of the tender bids.

All MRCS replies will be in writing and posted on the MRC's website: www.mrcmekong.org under the section "Tenders".

4. Language of the Proposal

The Proposals prepared by the bidders and all correspondence and documents relating to the Proposal exchanged by the bidders and the MRCS shall be written in the English language. Any printed literature furnished by the bidders may be written in another language so long as accompanied by an English translation of its pertinent passages in which case, for purposes of interpretation of the Proposal, the English translation shall govern.

5. Proposal Currencies.

All prices shall be quoted in US dollars.

6. Period of Validity of Proposals

Proposals shall remain valid for 120 days after the date of Proposal submission prescribed by the MRC.

7. Submission of Proposals

7.1 Sealing and Marking of Proposals

The proposals shall be submitted in one outer sealed envelope containing two separate sealed envelopes, one envelope containing the Technical Proposal(s) and one envelope containing the Financial Proposal(s). The outer envelope shall be clearly marked “**Proposal: RFP No. 19-033 Enhancing MRC’s Land Use/Land Cover Monitoring System and Capacity to Provide Satellite Service for the LMB-Phase 1; - DO NOT OPEN BEFORE SUBMISSION DEADLINE**”. The two sealed inner envelopes shall be marked “Technical Proposal(s)” and “Financial Proposal(s)” respectively. The sealed envelope shall be addressed to the Mekong River Commission Secretariat at the following address:

Mekong River Commission Secretariat
Administration Division
Procurement Unit
P.O. Box 6101, Unit 18 Ban Sithane Neua,
Sikhottabong District, Vientiane 01000, Lao PDR.
Tel: (856) 21 263 263; Fax: (856) 21 263 264
Email: procurement@mrcmekong.org

Alternatively, bidders are allowed to submit their proposal by email. Bidders who intend to submit electronic proposals must follow the following submission instructions:

- Bidders can submit a proposal by email. The proposal shall be separated in two files: one for technical proposal and one for financial proposal.
- The file for the financial proposal shall be protected by a password which shall be kept with the bidders. If the company passed the technical requirement threshold MRC would then request the password to open the financial proposal file. However, if the company loses the password or in case the file could not be opened the MRC would not assume responsibility.
- The file shall be in the form of MS word or MS excel (MS Office 2007 at least) or PDF version 7.
- Please send the electronic proposal to procurement@mrcmekong.org
- Please be aware that bids or proposals emailed to the MRCS will be rejected if they are received after the deadline for bid submission. As an email may take some time to arrive after it is sent, especially if it contains a lot of information, we advise all bidders to send email submissions well before the deadline.
- Maximum size for electronic submission: The maximum size per email that MRC can receive is 10MB. Bidders may need to split proposals into parts to fit this limit.

Please note that the proposal must be arrive in the aforementioned mail box before the submission deadline

7.2 Deadline for Submission of Proposals

The deadline for submission of the bids is **26 April 2019 3:00 PM** local time.

Proposals should contain details of the criteria for the selection mentioned below. The bid shall be prepared in English and one (1) original and five (5) copies must be submitted. The sealed bid envelope must be received by the Mekong River Commission Secretariat on or before the hour and date fixed for receipt of bids, in accordance with the invitation for bids.

7.3 Confirmation of participation

The company who is willing to submit their proposal should confirm by fax/email to MRCS procurement unit at least 14 days before the deadline for submission of proposals.

8. Late Proposals

Any proposal received by MRCS's procurement unit after the deadline for submission of Proposals will be rejected.

9. Criteria for Selection.

The Method of Selection is QCBS (Quality and Costs Based Selection).

- Evaluation of Technical Proposal:

The evaluation panel will fully evaluate the Technical Proposals. The panel will determine which of the Technical Proposals pass the minimum agreed technical score specified in the Section IV.

After the evaluation of Technical Proposals has been completed, the MRCS will notify those Consultants whose proposals did not pass the minimum technical score or were considered to be non-responsive to the TOR.

- Evaluation of Financial Proposal:

Proposals that exceed the indicated budget shall be rejected before any further evaluation.

The financial evaluation shall be based on the lowest price of those bidding firms which submitted responsive Technical Proposals. The formula for determining the financial scores is the following:

$S_f = 100 \times F_m / F$, in which S_f is the financial score, F_m is the lowest price and F the price of the proposal under consideration.

▪ Final evaluation and negotiations:

The final ranking of the proposals will be based on the quality of technical proposals and lowest cost.

The total score will be calculated as the weighted sum of the technical and financial scores, with the weights given to the technical and financial scores being:

80/20 where the technical proposal = 80 and the financial proposal = 20.
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With regard to contract negotiations the MRCS reserves the right to invite the next-ranked firm to negotiate, if negotiations with the first-ranked firm do not result in a contract.

Bidders who pass the minimum score but are unsuccessful based on the calculation of the technical and financial scores, will be notified after the contract with the winner has become effective.

10. Association

Proposals submitted by an association of two or more firms as partners shall comply with the stipulations:

- (i) The Proposal shall be signed so as to be legally binding on all partners.
- (ii) One firm shall be nominated as the lead firm of the association.
- (iii) The lead firm shall be liable for the execution of the Contract in accordance with the Contract terms.
- (iv) The lead firm shall receive instructions for and on behalf of any and all partners.

11. Rejection of proposals

Should any Proposal fail to comply with the terms and conditions stipulated in this Request for Proposals, or be incomplete, conditional or obscure, or contain additions not called for or irregularities of any kind, or does not respond to important aspects of the RFP, and particularly the Terms of Reference or if it fails to achieve the minimum technical score indicated in Section II-9 (a) above, it may be rejected as non-responsive.

MRCS reserves the right to accept or reject any proposal, and to annul the bidding process and reject all proposals at any time prior to contract award, without thereby incurring any liability to the bidders.

SECTION III

TERMS OF REFERENCE

1. CONSULTANCY SUMMARY

Project Title:	Enhancing MRC's Land Use/Land Cover Mapping and Monitoring System and Capacity to Provide Satellite Service for the LMB – Phase 1
Title of Consultancy:	Consultant for a preparation of Updating LULC Mapping 2019/2020 Project – Phase 1
Type of Consultancy:	Medium term consultancy
Division:	Technical Support Division
Duration:	35 working days (15 May – 15 November 2019)
Duty Station:	Home base, with travelling to MRC Secretariat and regional events in the MRC's member countries
Reporting to:	Director of Technical Support Division through Remote Sensing and GIS Specialist
Required deliverables for this consultancy:	Review and prepare technical guideline for a preparation of Updating LULC Mapping 2019/2020 Project Phase-I by enhancing MRC's LULC monitoring system and capacity to provide satellite service for the LMB

2. BACKGROUND

The Mekong River Commission (MRC) was established by the 1995 Agreement on Co-operation for the Sustainable Development of the Mekong River Basin, between the governments of Cambodia, Laos, Thailand, and Viet Nam. In accordance with this Agreement, the Mission of MRC is: *“To promote and coordinate sustainable management and development of water and related resources for the countries’ mutual benefit and the people’s well-being by implementing strategic programmes and activities and providing scientific information and policy advice”*. MRC’s role has been to support the collection and analysis of critical data and communicate the results effectively to inform timely decision-making in Member Countries.

The MRC’s Remote Sensing and GIS activity has been formulated to address the new data generation by updating and maintaining the geospatial data such the water extent, flood map, rainfall, soil moisture and other indices for the Geographic Information Systems (GIS) database. This activity comprises the surface water detection, wetland, irrigation, LULC database by applying the Earth Observation (EO) technology and GIS technique to promote Integrated Water Resources Management: IWRM-based basin development in line with Basin Development Strategy (2016-2020), this basin development is to follow IWRM principles.

The BDS identifies Basin Needs for MRC’s indicator frameworks in term of the updating data for exchange and sharing among Member Countries, which MRC’s Remote Sensing and GIS activity has an advantage for rapidly updating data that safe time and cost for regional planning and transboundary water resource management. The remote sensing technology does not only allow coverage of very large areas which enables regional surveys on a variety of themes, but it also contributes an identification of

extremely large features monitoring issues through the EO technology such the satellite imagery both real-time and near real-time issues, especially by applying IWRM approaches paying special attention to disaster risk management either flood or drought issues.

2.1 Status of Land Cover Map products in the LMB

In 1997, the Mekong River Commission completed a project to produce forest cover map in the Lower Mekong Basin (LMB). The project, launched by the Interim Mekong Committee in 1992, was followed to update maps of land cover and wetlands across the basin. This second project was completed in cooperation with the Food and Agriculture Organization of the United Nations (FAO) in 2003. This new dataset was aligned to the FAO's Land Cover Classification System (LCCS). The information on wetlands, however, was out of date, being based on aggregated data from Member Countries between 1993 and 1997.

All Member Countries and MRC programmes required updates to these data sets, which are essential for sustainable resource management as well as being core data for environmental monitoring and modelling. Potential applications include fish production models, development planning, wetlands monitoring, and climate change scenarios, flood and land management require an updated data on land cover.

In 2010, MRC Secretariat had implemented the updated land cover map 2009/2010 products, covering the LMB. The project aimed to generate new datasets of land cover map 2009/2010 products both dry and wet season including annual dataset. The project was implemented as a core activity of the former Information and Knowledge Management Programme (IKMP) during MRC Strategic Plan 2011-2015. Such updates could provide a significant amount of core geospatial data and information to support MRC Secretariat as well as National Mekong Committees (NMCs) and Line Agencies (LAs) in terms of GIS analysis, mapping, modelling, visualizing and decision-making in national and regional planning.

However, the recently updated land cover map 2009/2010 products both dry and wet season datasets are less details of significant **land use** types for The MRC's Council Study that finalized by the end of year 2017. The Council Study was studied for assessing the impact of these developments on environment, peoples' wellbeing and economy. The study analysis of development in the Mekong Basins includes hydropower, irrigation, agriculture and land use, transportation, domestic and industrial water use, flood protection and includes climate change. It was thus an integrated, cross-sectoral, comprehensive and state-of-the-art study supporting sustainable development in the Mekong Basin focusing on the MRC Member Countries – Thailand, Lao PDR, Cambodia and Viet Nam.

Consequently, MRC Secretariat has planned to continually enhance and maintain a common GIS-based information from satellite-based approach for knowledge management and dissemination system as it is significant dataset on MRC-Information System (MRC-IS) and its tools including functionalities to support all MRC activities.

2.2 The Needs of updating LULC Mapping products in the LMB

Under MRC Strategic Plan (SP) 2016-2020 contains the plan to implement a set of activities to identify practical knowledge on monitoring responsibilities provides an opportunity to build ownership and capacity among the relevant Member Countries' agencies. One targeted outcome over the course of this SP, to maintain its current suite of monitoring and forecasting systems as well as its modelling tools and

capability, which is the Activity 6.2.6 “Regularly update and maintain the MRC-IS and its tools and Functionalities”.

To support the SP 2016-2020 by providing more informative services among member countries regarding the Decision Support Framework (DSF) of the MRC, agriculture monitoring land use, environmental monitoring for the State of Basin including MRC’s indicator framework and other integrated cross-sectoral issues for IWRM-based Basin Development Strategy (BDS). Technical Support Division (TD) has proposed the Annual Work Plan (AWP) 2019 by focusing on the Preparation of Updating LULC Mapping 2019/2020 Project by applying the EO technology via a machine learning from the Google Earth Engine (GEE) platform including the Collect Earth Online (CEO) by satellite-based LULC Mapping and Monitoring in the LMB, which was approved by the MRC Joint Committee Members.

The project will generate important baseline data of LULC in LMB for water resource planning, floodplain management and other activities such as hydrological and climate change studies together with environmental modelling for the GIS database. Understanding the status of the up-to-date LULC dataset is very significant to support decision making and BDS. The data, information and image interpretation are also useful for those engaged in studies and research in the LMB.

A wide range of stakeholders recognises the importance of LULC for sustaining human-dependent livelihoods and maintaining the ecological integrity of the basin, as reflected in the widespread use of LULC types as the basis for agro-ecological zones. At the same time, this implementation plan must be an indispensable part of the knowledge base on the EO technology through the satellite data in the LMB, both should be regularly monitored for sustainable uses.

In this context, the Technical Support Division of MRC Secretariat is recruiting the international firm/consortium to assist with the implementation of the “Enhancing MRC’s Land Use/Land Cover Monitoring System and capacity to provide satellite service for the LMB – Phase 1” for preparation of Updating LULC Mapping 2019/2020 product of MRC Secretariat.

2.3 Overall purpose of the implementation

The purpose of the updating LULC map 2019/2020 for the LMB by satellite -based approach is under the Activity 6.2.6, which mainly aims to implement and generate new datasets of LULC map including their information catalogue either dry or wet season including annual dataset for disseminating through MRC-IS. To share reliable data for sustainable development goals, as well as necessary capacity building for Member Countries. Meanwhile, the EO technology and the remote sensing approach efficiently contributed the overall figures and they were the key information as the decision support system for all governmental and intergovernmental organizations for dimensions of IWRM, which will be considered a key achievement of MRCS under SP 2016-2020.

The up-to-date LULC map 2019/2020 products in the LMB will facilitate better informed the dynamic state of basin in term of agricultural, socio-economic, and climate adaptation sectors by building a tangible capacity in relevant national institutes by making a LULC map 2019/2020 product and evaluating the sustainability of water use in for all sectors as well as IWRM-based Basin Development Strategy. The updating LULC dataset is very important to support decision making. The data, information and image interpretation are also useful for those engaged in studies and research in the LMB. At the same time, this report seeks to raise awareness among stakeholders of the significance and ecological functions of LULC in the LMB.

In addition, the project aims to update and improve MRC-IS through integrated the updated remote sensing and GIS tools into MRC-IS. It will also establish a baseline for producing an updated and qualified LULC datasets with land use information catalogue for the basin-wide management. The main objectives are to collect, compile and provide accurate and reliable information to help interpret satellite imagery by applying the EO technology via a machine learning from the GEE platform, conduct achievable accuracy assessments and establish a land use information catalogue for the LMB and disseminate via MRC-IS.

3. OBJECTIVE AND APPROACH

3.1 Objective of the Consultancy

The consultant or consortium will work to prepare an inception and summary report of Enhancing MRC's LULC Monitoring System and capacity to provide satellite service for the LMB, as well as the regional and global trends of the study. They will also prepare and develop methodologies, tools, and action plans for the case studies on the LULC change by satellite-based monitoring system, primary and secondary data collection, and road map for basin management.

The preparation and delivery a necessary training package and manuals related to the remotely sensed data acquisition and collection and its algorithm on the implementation of LULC map products from satellite -based approach, especially for SWAT modelling and other relevant models, will be required as well.

They will be responsible for providing technical supports/advices on remotely sensed data acquisition and collection on LULC, change detection analysis, sustainable land use, remote sensing, GIS, hydrology, and water resource management to quantify and visualize water supply and demand in a basin across multiple sectors, and potential of new developments to Remote Sensing and GIS Team under the TD.

Given the MRC Strategic Plan 2016-2020 and the above context for Enhancing MRC's Land Use/Land Cover Monitoring System and capacity to provide satellite service for the LMB.

3.1.1 Project outputs

The consultant or consortium will work to prepare a summary report (a technical report) on the preparation of Enhancing MRC's Land Use/Land Cover Mapping and Monitoring System and Capacity to Provide Satellite Service for the LMB – Phase 1, as well as the regional and global trends of the study. They will prepare and develop methodologies, tools, and action plans by satellite-based Mapping and Monitoring, primary and secondary data collection, and road map for basin management.

The implementation of the preparation for LULC Mapping 2019/2020 products, will be undertaken as a 'proof-of concept' or feasibility study. The aims are to achieve;

Output 1: LULC classification system in 2019/2020 is developed and updated.

- Proposal for Enhancing MRC's LULC map 2019/2020 and Monitoring System and capacity to provide satellite service for the LMB is developed;

- Communication and dialogue on Enhancing MRC's LULC map 2019/2020 production is improved;
- Satellite images (Optical/SAR) are available and quality assured;
- Implementation Plan of Updating MRC's LULC map products for dry, wet season and annual dataset including capacity to provide satellite service according to the service and product specifications;
- Develop the multi-sensors approach (Optical/SAR) to improve accuracy of MRC's LULC map products 2019/2020 delivery;
- Evaluate the quality of the Landsat 8 and/or Sentinel-2, and SAR images for operational perspective, including product quality and service reliability to prepare technical guideline for preparation of LULC Mapping 2019/2020 (Project Phase-II in 2020);
- Provide recommendations for service improvement from a technical, operational, and institutional perspective.

Output 2: The LULC information catalogue of LMB is established based on the field data collection, secondary information and relevant reports.

- Review and prepare technical guideline for significant typology of LULC Mapping 2019/2020 product in LMB;
- Demonstrate the information catalogue for Field Data Collection (FDC) and the Collect Earth Online (CEO) platform;
- Demonstrate the guideline for FDC and CEO relates to LULC information catalogue and its typology in LMB.

3.1.2 Project outcomes

Three immediate outcomes are to be expected to achieve during the project– Phase 1.

- The understanding of the significant LULC typology, LULC change and characteristic of LULC types within the LMB are strengthened.
- Tools to support the LULC generation and accuracy as part of QA/QC manual are improved and strengthened.
- The technical capacity building for relevant line agencies in MRC Member Countries with respect for enhancing MRC's LULC monitoring system and capacity to provide satellite service for the LMB – Phase 1 such as the satellite image interpretation and classification with data processing via GEE platform as well as data QA/QC are improved and developed.

The preparation and delivery a necessary training package and manuals related to the remotely sensed data acquisition and collection and its algorithm on the implementation of LULC Mapping 2019/2020 products from remote sensing approach, especially for MRC DSF that simulates basin-wide hydrological, flow and water quality processes as well as human interventions purposes, will be required as well.

The consultant or consortium will be responsible for providing technical supports/advices on remotely sensed data acquisition and collection on LULC Mapping 2019/2020 products, sustainable agricultural and socio-economic use, remote sensing, GIS, hydrological modelling especially Soil & Water Assessment Tool (SWAT), water resource management, and potential of new developments to Remote Sensing and GIS Team under the TD.

3.2 Proposed Approach

The consultant or consortium in their Proposal will detail the approach they recommend taking to achieve the goals of this ToR. The project will be executed in a consultative and participatory manner. For the final outputs to be useful, they must be understood and seen as relevant by the key stakeholders involved in the space and water communities to access data and knowledge in the region, and in particular by the National Mekong Committees and Line Agencies responsible for different aspects of river monitoring, including water resource management, climate modelling, biodiversity conservation, food security, surface modeling, global policies and water-management decision making. and drought aspects, as well as space solutions and technologies for water-related topics.

Objectives of the proposed project are with respect to provide recommendations for service improvement from a technical, operational, and institutional perspective.

The specific objectives were to:

- (i) Prepare a project implementation plan for enhancing MRC's LULC mapping 2019/2020 product and capacity to provide satellite service for the LMB – Phase 1;
- (ii) Identify spatial and temporal changes from former MRC forest cover (1997) land cover dataset (2003 and 2010) that occurred within this time period using image indices;
- (iii) Perform hotspot analysis and change detection analysis for FDC plans from multi-temporal of satellite images.
- (iv) Prepare LULC information catalogue for preparation of image interpretation and classification

3.3 Geographical area of the project

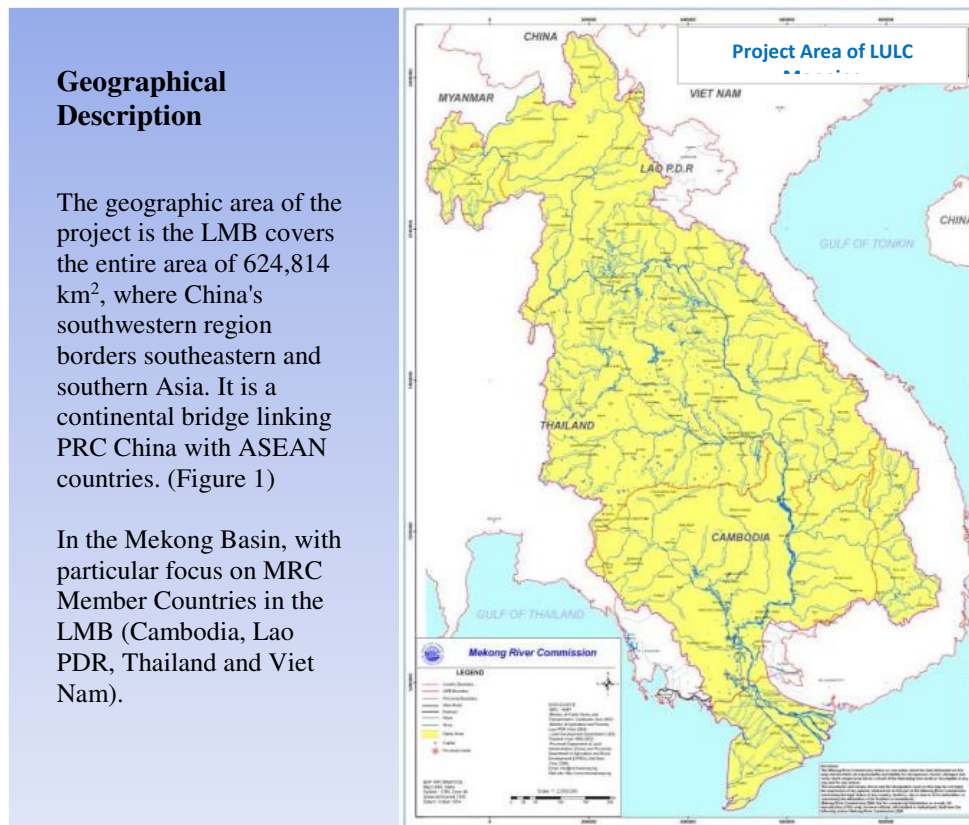


Figure 1. Map of Project area

4. RESPONSIBILITIES AND TASKS:

The consultant or consortium should assemble a team of suitably qualified experts to undertake this work under the direction of the Team Leader. In addition, a vital part of this study will utilise the skills within MRCS and member countries and to build capacity of NMCs and Line agencies where possible.

The duties of consultant or consortium will include to:

- Undertake literature review of forest cover map 1997, land cover map 2003, 2010 product of the MRC as well as regional and global trends and lessons learned for;
 - Gaining knowledge and understanding on a preparation for the preparation of Updating LULC Mapping 2019/2020 product and transboundary LULC sustainable management in the LMB and continue to apply suitable approach to achieve it and;
 - Developing road map and assess necessary capacity for remote sensing application of IWRM;
- Provide technical supports and advices on digital image processing for a preparation of Updating LULC Mapping 2019/2020 project;
- Develop methodology and tools to collect, manipulate, and analyze secondary data, especially optical and Synthetic Aperture Radar (SAR) images, related to LMB;
- Analyze and synthesize the relevant data and information submitted by the member countries and summarize the change detection analysis from forest cover map 1997, land cover map 2003, 2010 (Phase-I), especially in terms of agricultural land use monitoring issue, forest cover monitoring and mapping, disaster risk awareness and management;
- Create a draft road map for necessary capacity for Enhancing MRC's Land Use/Land Cover Mapping and Monitoring System and Capacity to Provide Satellite Service for the LMB – Phase 1;
- Develop an action plan for case study for;
 - Collecting primary (FDC) and secondary (CEO) data, especially optical and SAR images for generating a new product of LULC Mapping 2019/2020, for the next SP 2021-2025;
 - Developing road map and assessing necessary capacity for better implementation LULC Mapping 2019/2020 in LMB, and for the next SP 2021-2025;
- Prepare technical guidelines and instructions, including the source code for data handling and digital image processing by GEE, including input parameters;
- Initiate and propose necessary training courses/workshops for capacity building for primary and secondary data collection, pre-processing, and post-processing of remotely sensed data both Optical and SAR images, GEE and CEO;
- Write the technical report and information catalogue for the LULC mapping 2019/2020 product comprise, GIS database, questionnaire, available satellite images especially multi-sensors approach, and relevant information for disseminating onto the MRC-IS.

4.1 Core Technical Team

Team Leader (5 wd)

The Team Leader will lead the development of the approach and technical methodology for Enhancing MRC's Land Use/Land Cover Monitoring System and capacity to provide satellite service for the LMB – Phase 1. S/he will be primarily responsible for the coordination and final production of related documentation and outputs with associated comments and feedback from the interactive planning. Based on those results, the team leader will come up with the final products and the technical report of the project.

To facilitate for interactive planning/meeting: As set out in the TOR, these interactive planning/meeting are expected to engage the producers and users among the Member Countries of MRC Secretariat. The preparation of Updating LULC Mapping 2019/2020 project by Enhancing MRC’s Land Use/Land Cover Monitoring System and capacity to provide satellite service for the LMB topic is needed to ensure progress of a discussion on meaningful of EO technology applications for the National Mekong Committees (NMCs)and Line agencies (LAs).

The suggested nature of the workshops should be described in the Proposal. Depending on the skill and credentials of the Team Leader, this person may design and facilitate the meeting. Alternatively, an additional resource may be included in the team to carry out this work. The time allocation and cost for preparation and facilitation should be detailed in the Proposal. The MRCS may consider alternative resources for this particular role to ensure success of these workshops if deemed necessary.

A tentative meeting schedule is:

	<i>Project Coordination Committee meetings</i>	<i>Tentative schedule</i>
1	Project inception meeting, discussing the implementing on a preparation of Updating LULC Mapping 2019/2020 project by Enhancing MRC’s Land Use/Land Cover monitoring System and capacity to provide satellite service for the LMB.	30 May 2019
2	Regional working session on the progress report of a preparation of Updating LULC Mapping 2019/2020 project – Phase 1	04 Jul 2019
3	Final workshop of the project – Phase 1 by review meeting, discussing implementing contractor’s draft final report.	8-9 Oct 2019

Skills and Experience:

- Qualifications in remote sensing and GIS, engineering, natural science, economics or related field (preferably PhD) and at least 15 years professional experience and in natural disasters, disaster risk awareness, risk assessment planning and policy or related fields.
- Proven capability to facilitate interactive and participatory planning workshops with diverse stakeholders across sectors and across national boundaries;
- Substantial experience in the Mekong Region (or similar) on issues related to the disaster risk awareness, sustainable development, environmental management and infrastructure assessment; and
- Demonstrate strong technical capacity in geospatial information science, ability to lead the team of international experts, commitment, excellent mentoring and communication skills, proficient in English.
- Prior work experience with the international organizations on natural disasters, disaster risk awareness and assessment or related projects will be an advantage.
- Proven experience in the management of multi-disciplinary teams and leading studies of complex technical nature and excellent communication skills.

Technical Advisor/Expert (10 wd)

The Technical Advisor/Expert will synthesis the result from team member and to gain a detailed understanding of the preparation of Updating LULC Mapping 2019/2020 project Phase-I by enhancing MRC’s Land Use/Land Cover monitoring System and capacity to provide satellite service for the LMB, and operational information on the existing proposed LULC map product. A clear understanding of the

status of all projects in the basin should be gathered to understand specifically if they retain any flexibility to alter any of their key setting, and operational characteristics.

He/she will work with team members to propose result for the Enhancing MRC's Land Use/Land Cover monitoring System and capacity to provide an information catalogue of LULC mapping 2019/2020 service in the context of the EO technology. He/she will be present at consultations to explain the practicalities and application on remote sensing approach.

Skills and Experience:

- Qualifications in atmospheric science, remote sensing and GIS, geoinformation science, physical geography, hydrology, water resource management, applied mathematics and theoretical physics, civil engineering or related fields (preferably PhD) and at least 15 years professional experience as developing user or client driven geospatial tools, or applications, including modeling, database management, and quality control as well as in natural disasters, disaster risk awareness, risk assessment planning and policy or related fields.
- Substantial experience in-depth and proven knowledge and skills in hydrological science, hydrological modelling, physical geography especially LULC mapping, Integrated Water Resources Management action plan and road map development, agricultural land use monitoring data management;
- Experience in preparation and organizing of training courses on disaster risk management, remote sensing and GIS for satellite-based LULC Mapping and Monitoring, agricultural modelling, and management;
- Ability to communicate effectively, verbally and in writing with a wide range of people and to work in a multicultural environment;
- Practical experience with good knowledge of the Mekong riparian countries or similar tropical regions is a strong asset;
- Ability to work and cooperate in international working environments is essential;
- Excellent written and oral communication skills in English; working knowledge of riparian languages is an advantage.

Remote Sensing Specialists (20 wd)

The Remote Sensing Specialist will focus on the analysis of multi-temporal satellite datasets with providing the hotspot analysis and change detection analysis from multi-temporal satellite images, identify spatial and temporal changes from former MRC forest cover (1997) land cover dataset (2003 and 2010), provide the statistics on the LULC change in the LMB. They will contribute to the analysis of panchromatic, multi-spectral, hyperspectral, and superspectral imaging systems, including the spectral reflectance signature by enhancing MRC's Land Use/Land Cover monitoring system and capacity to provide an information catalogue of LULC mapping 2019/2020 service according to the service and product specifications and provide an input at the technical workshops.

They will be responsible for editing the production from digital image analysis and synthesis for LULC information catalogue under GIS facility including the Land Cover Classification System (LCCS) databases using remote sensing and GIS software. Supports the Team Leader and Technical Advisor through the maintenance of applications of remote sensing approach and databases used for the basin-wide assessment and regional planning.

Skills and Experience:

- Relevant higher degree qualifications and over 10 years’ experience in remote sensing and GIS, geoinformation science, engineering, physical geography, hydrology, water resource management, environmental science, applied mathematics and theoretical physics, civil engineering or related fields, with a detailed knowledge of digital image processing by applying the EO technology;
- Strong practical and technical experience in competency with image processing and GIS software, such as but not limited to PCI Geomatics, ENVI, ERDAS, and ArcGIS, etc.
- Prior experience in geospatial data analytics and developed geoprocessing tools in the field of water resources, transportation, meteorology, climate, catastrophic flood modeling, satellite imagery, Remote Sensing, LiDAR, Radar, IFSAR, Web Applications, and 3D Simulations.
- Prior experience in problem solve and troubleshoot complex issues associated with remote sensing-based datasets and derivative products
- Experience with a variety of satellite-derived datasets and multi-sensors
- Excellent communication abilities and skills in training and capacity building.

4.2 Summary of Resource Requirements

An initial estimate has been made for planning purposes of the working days required for this assignment. The breakdown per output is in item 5. These estimates will need to be confirmed by the Team in the Inception Phase of the project.

Expert	Allocated Working Days
Team Leader - Facilitator for interactive planning/meeting - Reviewer for technical report before submission	5 WDs
Technical Advisor/Expert - Facilitator for technical workshops - Author for technical report and consolidate the experimental results from team members	10 WDs
Remote Sensing Specialist - Technical operator for digital image processing, including Image Support Data	20 WDs
Total allocated working days	35 WDs

5. TIMEFRAME, MILESTONES AND DELIVERABLES

The project will be conducted over a 35-day period, with the following milestones. The consultant or consortium will produce the following deliverables.

No.	Task	Deliverable	working days (Estimate only)	Delivery date
1	Undertake literature review of existing Forest Cover Map 1997, Land Cover Map 2003, 2010 products of MRC, as well as regional and global trends and lessons learned.	• A draft report on the review of existing Forest Cover Map 1997, Land Cover Map 2003, 2010 products of MRC. The report will provide the change detection analysis of multi-temporal satellite datasets with providing the hotspot analysis and change detection analysis from multi-temporal satellite images, identify spatial and temporal changes from former MRC forest cover (1997) land cover dataset (2003 and 2010), provide the statistics on the LULC	10	30-May-19

		change in the LMB. • A recommendation on LULC information Catalogue for Enhancing MRC's Land Use/Land Cover Monitoring System for the LMB – Phase 1		
2	Provide technical supports and advices on Enhancing MRC's Land Use/Land Cover Monitoring System for the LMB – Phase 1	• Technical note and guidelines for undertake the remotely sensed data collection and its digital image processing on GEE and CEO for a preparation of Updating LULC Mapping 2019/2020 Project – Phase 1	7	30-May-19
3	Develop the methodology and tools to collect, manipulate, and analyze secondary data, especially a preparation of Updating LULC Mapping 2019/2020 project – Phase I	• Presentations of the methodology and requirements for the draft report on the generating new product of LULC Mapping 2019/2020 project.	4	30-Jun-19
4	Propose necessary training courses/workshops for capacity building for primary data collection and case studies implementation	• List of necessary training courses/workshops for capacity building for remotely sensed data collection, with the outline of training package and manual. • Provide a training workshop for MRCS and MCs and participate the meeting by MRC's request.	4	30-Jun-19
5	Write the inception report and land use information catalogue for the LMB	• A regional inception report on Enhancing MRC's Land Use/Land Cover Monitoring System for a preparation of Updating LULC Mapping 2019/2020 Project through the EO technology in the LMB. • LMB's LULC information catalogue • A report on project implementation plan, data review with technical guideline, and road map.	10	30-Nov-19
Total working days			35	

6. WORKING ARRANGEMENT

6.1 Reporting and Communication

Under the overall supervision and guidance of the Director of Technical Support Division with the support from Remote Sensing and GIS Specialist, the consultant or consortium for the Project “Enhancing MRC's Land Use/Land Cover Mapping and Monitoring System and Capacity to Provide Satellite Service for the LMB – Phase 1”. The consultant or consortium will provide technical guidance and support to the MRC Secretariat and Member Countries with Line Agencies. They will work directly with and report through the Remote Sensing and GIS Specialist.

6.2 Work Station

The consultant or consortium will generally be home based, with travel to the MRCS and regional locations the MRC's member countries as required for consultations.

7. CONDITION OF PAYMENT

Payment will be made based on the actual number of working days with the MRC's daily timesheet template provided by the consultant or consortium. Travel and subsistence costs will be included in the

working day rate of the consultant. Tasks will be assessed and technically endorsed and approved by the MRC’s Remote Sensing and GIS Specialist prior to payment.

Main Tasks and Required Deliverables	Percent of payment
After signing of the contract and upon submitted of original invoice.	20%
Upon the completion and submission of related deliverables of task from 1 and TD/MRCS reviewed and approved.	30%
Upon the completion and submission of related deliverables of task from 2 to 3 and TD/MRCS reviewed and approved.	30%
Upon the completion and submission of related deliverables of task from 4 to 5 and TD/MRCS reviewed and approved.	20%

Remark: In addition to the major required deliverables, the consultant or consortium has to submit Daily Timesheet, Work Plan, and Progress Reporting.

8. INTELLECTUAL PROPERTY RIGHTS

Intellectual property rights - IPR: Information, data, database, knowledge resources in the forms of briefings, reports, proceedings, articles, essays, etc. issued by and for the MRCS will be the MRCS property. Any utility, announcement and disclosure that are without MRCS highest levels of authority permission is considered illegal and will be charged by relevant local and international legal procedures.

9. ENGLISH COMPETENCY:

All team members will require excellent English skills are required for the work with a TOEIC score > 600 required except for those who have PhD from English Native Speaking countries.

10. OTHER REQUIREMENT

A work plan setting out monthly activities will be submitted with the inception report.

11. SIGNATURE BLOCK

Consultant: _____

Date: _____

Division Director: _____

Date: _____

SECTION IV

TECHNICAL EVALUATION CRITERIA

No	Criteria	Max. Score	Company			
			A	B	C	D
1	Organisation and methodology	30				
	<i>Proposed methodology and approach based on the analysis of the TOR</i>	25				
	<i>Workplan (timetable of outputs, activities & inputs by team members)</i>	5				
2	Quality of key personnel					
	a) Team Leader	20				
	Doctoral degree in remote sensing and GIS, civil engineering, natural science, economics or related field with at least 15 years professional experience as developing user or client driven geospatial tools, or applications, including modeling, database management, and quality control, natural disasters, disaster risk awareness, risk assessment planning and policy or related fields	3				
	Demonstrate strong technical capacity in geospatial information science, ability to lead the team of international experts, commitment, excellent mentoring and communication skills, proficient in English	2				
	Experience in organizing the international conference or workshop and to lead the team on the implementation of remotely sensed data via Google Earth Engine, Collect Earth Online and derivative products	10				
	Proven capability to facilitate interactive and participatory planning workshops with diverse stakeholders across sectors and across national boundaries with substantial experience in the Mekong Region (or similar)	5				
	b) Technical Advisor	20				
	Doctoral degree in scientific fields such as atmospheric science, remote sensing and GIS, geoinformation science, physical geography, hydrology, water resource management, applied mathematics and theoretical physics, civil engineering or related fields with at least 15 years professional experience as developing user or client driven geospatial tools, or applications, including modeling, database management, and quality control	2				
	Substantial experience in-depth and proven knowledge and skills in remote sensing and GIS, atmospheric science, geoinformation science, physical geography especially LULC mapping, Integrated Water Resources Management action plan and road map development, agricultural land use monitoring data management	3				
	Experience in preparation and organizing of training courses on remote sensing and GIS for satellite-based LULC Mapping and Monitoring, agricultural modelling, and management	10				
	Proven experience to facilitate the regional workshop in term of land use/land cover monitoring system and the machine learning such the Google Earth Engine and Collect Earth Online the Google Earth Engine with remote sensing-based datasets and derivative products	5				

No	Criteria	Max.	Company			
	<i>c) Remote Sensing Specialist</i>	30				
	Relevant higher degree qualifications and over 10 years' experience in remote sensing and GIS, geoinformation science, engineering, physical geography, hydrology, water resource management, environmental science, applied mathematics and theoretical physics, civil engineering or related fields, with a detailed knowledge of digital image processing and remotely sensed data handling by applying the EO technology;	5				
	Strong practical and technical experience in competency with image processing and GIS software, such as but not limited to PCI Geomatics, ENVI, ERDAS, and ArcGIS, etc.	5				
	Prior experience in geospatial data analytics and developed geoprocessing tools in the field of water resources, transportation, meteorology, climate, catastrophic flood modeling, satellite imagery, Remote Sensing, LiDAR, Radar, IFSAR, Web Applications, and 3D Simulations.	5				
	Experience in implementation of remotely sensed data via Google Earth Engine, Collect Earth Online and derivative products.	15				
	TOTAL TECHNICAL SCORE(*)	100				

Note:

(*) The acceptable threshold for technical proposals is set at **a minimum score of 80 points out of 100 points**. Technical proposals which do not reach this minimum score will not be considered for financial evaluation.

SECTION V

TECHNICAL PROPOSAL FORMS

FORM TECH-1 TECHNICAL PROPOSAL SUBMISSION FORM

[Location, Date]

To: Mekong River Commission Secretariat P.O. Box 6101, 184 Fa Ngoum Road, Unit 18,
Ban Sithane Neua, Sikhottabong District, Vientiane 010000, Lao PDR.

Ladies and gentlemen,

We, the undersigned, offer to provide the consulting services for [Insert title of assignment] in accordance with your Request for Proposal dated [Insert Date] and our Technical Proposal. We are hereby submitting our Proposal, which includes this Technical Proposal, and a Financial Proposal sealed under a separate envelope.

If negotiations are held during the period of validity of the Proposal, i.e., before [Insert Date], we undertake to negotiate on the basis of the proposed staff. Our Proposal is binding upon us and subject to the modifications resulting from contract negotiations.

We understand you are not bound to accept any Proposal you receive.

We remain,

Yours sincerely,

Authorized Signature [In full and initials]: _____

Name and Title of Signatory: _____

Name of Firm: _____

Address: _____

FORM TECH-2 STATEMENT OF AVAILABILITY

[Insert Consultant logo and paper heading]

STATEMENT OF AVAILABILITY

To: Mekong River Commission Secretariat
Procurement Office

Date: _____
Ref. No.: _____

Dear Mr Suchart Sirijungsakul, Administration Division Director

Subject: *[Insert title of assignment]* _____

I (We), the undersigned

State that the proposed named expert(s) listed below is/are available to carry out the services relating to the Request for Proposal mentioned above as from, for the period initially envisaged in the proposal submitted.

No	Expert's Name	Title/Position	Duration
1			
2			
3			
4			
5			
...			

I (We) understand that failure to make the named expert(s) listed above available for the performance of the services may lead to the cancellation of the Contract if the justification provided for the personnel change is not accepted by the Mekong River Commission Secretariat in advance

Signature and stamp: _____

Name on behalf of the Bidder: _____

Title: _____

Date: _____

SECTION VI

FINANCIAL PROPOSAL FORMS

FORM FIN-1 FINANCIAL PROPOSAL SUBMISSION FORM

[Location, Date]

To: Mekong River Commission Secretariat P.O. Box 6101, 184 Fa Ngoum Road, Unit 18,
Ban Sithane Neua, Sikhottabong District, Vientiane 010000, Lao PDR

Ladies and gentlemen,

We, the undersigned, offer to provide the consulting services for [Insert title of assignment] in accordance with your Request for Proposal dated [Insert Date] and our Technical Proposal. Our attached Financial Proposal is for the sum of [Insert amount(s) in words and figures¹].

Our Financial Proposal shall be binding upon us subject to the modifications resulting from Contract negotiations, up to expiration of the validity period of the Proposal.

No commissions or gratuities have been or are to be paid by us to agents relating to this Proposal and Contract execution.

We understand you are not bound to accept any Proposal you receive.
We remain,

Yours sincerely,

Authorized Signature [In full and initials]:

Name and Title of Signatory:

Name of Firm:

Address:

¹ Amounts must coincide with the ones indicated under Total Cost of Financial Proposal in Form FIN-2.

FORM FIN-2 BREAKDOWN OF COSTS

No.	MRC BL	Description	Unit Price	Quantity	Total in USD
I	Remuneration (*)				
		Consultant			
Sub-Total (I)					
II	Other costs (if any)				
		Regional/International Airfares (Economy class)			
		DSA			
		Other expenses, including visa and land transportation			
Sub-Total (II)					
Grand Total (I+II)					

- (*) Fees must cover:

- (v) The remuneration actually paid to the concerned expert(s) per working day;
- (vi) Administrative costs of employing the expert(s);
- (vii) Service provider's overheads, profit and backstopping facilities.

SECTION VII

DRAFT CONTRACT

MEKONG RIVER COMMISSION CONTRACT

[Insert Contract Number/Current Year]

[Insert title of assignment]

The Mekong River Commission Secretariat (hereinafter referred to as “the Employer”), wishes to engage *[Insert company/organization/institution]*, duly incorporated under the Laws of ***[Insert the name of the country]*** (hereinafter referred to as the "Contractor") in order to perform services in respect of the *[Insert title of assignment]* (hereinafter referred to as the “Services”), in accordance with the following Contract:

a. Contract Documents

12. This Contract is subject to General Conditions of contract for Professional Services attached hereto as Annex I. The provisions of such Annex shall control the interpretation of this Contract and in no way shall be deemed to have been derogated by the contents of this letter and any other Annexes, unless otherwise expressly stated under section 4 of this letter, entitled “Special Conditions”.
13. The Consultant and the Employer also agree to be bound by the provisions contained in the following documents, which shall take precedence over one another in case of conflict in the following order:
 - a) this letter including Annex I;
 - b) the Terms of Reference for the Service, attached hereto as Annex II.
 - c) the breakdown of costs as Annex III.
 - d) the proposal from the Consultant, attached hereto as Annex IV.
14. All the above shall form the Contract between the Consultant and the Employer, superseding the contents of any other negotiations and/or agreements, whether oral or in writing, pertaining to the subject of this Contract.

b. Obligations of the Consultant

- i. The Consultant shall perform and complete the Services described in Annex II with due diligence and efficiency and in accordance with the Contract.
- ii. The Consultant shall provide the services of the following key personnel:

Name	Area of Expertise	Position Assigned

- iii. Any changes in the above key personnel shall require prior written approval of the Chief Executive Officer of the MRCS, and the Employer.
- iv. The Consultant shall also provide all technical and administrative support needed in order to ensure the timely and satisfactory performance of the Services.
- v. The Consultant has to submit to the Employer the deliverables specified hereunder according to the following schedule:

List of Deliverables	Delivery Dates
[Insert e.g. Progress Report]	[Insert Date]
[Insert e.g. Final Report]	[Insert Date]

- vi. All reports shall be written in the English language, and shall follow the technical specifications provided in the Guideline for the preparation of Sub-area Profiles. All reports shall be transmitted by the Consultant by courier to the address of the Employer specified in 9.1 below.
- vii. The Consultant represents and warrants the accuracy of any information or data provided to the Employer for the purpose of entering into this Contract, as well as the quality of the deliverables and reports foreseen under this Contract in accordance with the highest industry and professional standards.

c. Price and Payment

- 3.1 In full consideration for the complete and satisfactory performance of the Services under this Contract, the Employer shall pay the Consultant a fixed contract price of **[INSERT CURRENCY & AMOUNT IN FIGURES AND WORDS]**.
- 3.2 The price of this Contract is not subject to any adjustment or revision because of price or currency fluctuations or the actual costs incurred by the Consultant in the performance of the Contract.
- 3.3 Payments effected by the Employer to the Consultant shall be deemed neither to relieve the Consultant of its obligations under this Contract nor as acceptance by the Employer of the Consultant's performance of the Services.

3.4 The Employer shall effect payments to the Consultant after acceptance by the Employer of the original invoices and receipt submitted by the Consultant to the address specified in 9.1 below, upon achievement of the corresponding milestones and for the following amounts:

MILESTONE ¹	AMOUNT	TARGET DATE
[Insert milestone]	[Insert amount]	[Insert date]

d. Special Conditions

- No special conditions shall apply.

e. Submission of Invoices

- All original and signed invoices shall be submitted by the Consultant for the payment under the contract to MRC’s Procurement Unit, address as mentioned in clause 9.
- Invoices submitted by fax or copies of invoice shall not be accepted by the Employer.

f. Time and Manner of Payment

- Invoices shall be paid within thirty (30) days of the date of their acceptance by the Employer. The Employer shall make every effort to accept an invoice or so advise the Consultant of its non-acceptance within a reasonable time from receipt.
- All payments shall be made by the Employer to the following bank account of the Consultant:

Bank name:
 Bank address:
 Account name:
 Account number:
 Swift code:

g. Entry into Force, Time Limits

- The Contract shall enter into force upon its signature by both parties.
- The Contractor shall commence the performance of the Services not later than **[INSERT DATE]** and shall complete the Services by **[INSERT DATE]**.

¹ If an advance payment is granted, define the first milestone as "upon signature of the contract by both parties". Please note that advance payments should be granted only in exceptional cases, and that they must comply with the Employer policies and procedures.

- All time limits contained in this Contract shall be deemed to be of the essence in respect of the performance of the Services.

h. Modifications

- Any modification to this Contract shall require an amendment in writing between both parties duly signed by the authorized representative of the Consultant and Chief Executive Officer, the Employer.

i. Notifications

- 9.1 For the purpose of notifications under the Contract, the addresses of the Employer and the Consultant are as follows:

For the Employer:

Mekong River Commission Secretariat

Finance and Administration Unit

Procurement Unit

P.O. Box 6101, 184 Fa Ngoum Road, Unit 18,

Ban Sithane Neua, Sikhottabong District, Vientiane 01000, Lao PDR

Telephone: +856 21 263 263, Facsimile: +856 21 263 264

Email: procurement@mrcmekong.org

For the Consultant:

[INSERT COMPANY NAME, ADDRESS AND TELEX, FAX AND CABLE NUMBERS]

If the above terms and conditions meet with your agreement as they are typed in this Contract Documents, please initial every page of this contract and its attachments and return to this office one original of this Contract, duly signed and dated.

Mekong River Commission Secretariat

Consultant

Chief Executive Officer

Date:

Date:

Clearance by:

Chief, Financial Officer

Director, Administration Division

Chief, Hydrologist

Funds are available and obligated:

Director, Technical Division
Project Code:

ANNEX I
GENERAL CONDITIONS OF CONTRACT
FOR PROFESSIONAL SERVICES

Article 1 - Independent Contractor

Nothing contained in this Contract shall be construed as establishing or creating between the Employer and the Contractor the relationship of master and servant, principal and agent or employer and employee; it being understood that the Contractor is an independent Contractor in relation to the Employer. No person engaged by the Contractor in connection with the performance of any obligation under this Contract shall be regarded as an agent, servant, employee of the Employer, and the Contractor shall be solely responsible for all claims by such persons arising out of or in connection with their engagement by the Contractor. The Contractor shall inform such persons of the foregoing.

Article 2 - Contractor's General Responsibilities

1. The Contractor shall perform its obligations under this Contract with due diligence and efficiency and in conformity with sound professional, administrative and financial practices.
2. The Contractor shall act at all times so as to protect, and not be in conflict with, the interests of the Employer, and shall take all reasonable steps to keep all costs and expenses at a reasonable level.
3. The Contractor shall be responsible for work or services performed by its agents, servants, employees, subcontractors and independent contractors in connection with this Contract. To this end, and without limiting the generality of the foregoing, the Contractor shall select reliable persons who will perform effectively, respect local customs and conform to the highest standards of professional, moral and ethical conduct.
4. The Contractor shall respect and abide by all applicable laws, regulations and ordinances of Cambodia and shall take all reasonable measures to ensure that its agents, servants, employees, subcontractors and independent contractors do.

Article 3 - Assignment of Personnel

Other than persons specifically named in this Contract, no person shall be assigned by the Contractor to work or perform services in connection with this Contract until after the Contractor has notified the Employer of the identity of such proposed persons and has provided the Employer with their curricula vitae, and the Employer has notified the Contractor that the Employer approves of such assignments.

Article 4 - Removal of Personnel

1. Upon notice by the Employer, the Contractor shall forthwith withdraw any person assigned to work or perform services in connection with this Contract and shall assign new persons in accordance with the provisions of Article 3. Such withdrawal or replacement shall not be a cause for suspension of the contract.
2. Any costs or expenses resulting from any withdrawal or replacement of persons pursuant to paragraph 1 of this Article 4 shall be borne by the Contractor.

Article 5 - Employee's Compensation and other Insurance

1. The Contractor shall take out and maintain:
 - (a) all applicable employee's compensation and liability insurance with respect to its agents, servants and employees performing work or services in connection with this Contract;
 - (b) liability insurance in an appropriate amount for death, bodily injury or damage to property arising from the operation of any vehicles, boats or airplanes or other equipment owned or leased by the Contractor or its agents, servants, employees, subcontractors and independent contractors performing work or services in connection with this Contract;
 - (c) comprehensive general liability insurance in an appropriate amount for all claims for death, bodily injury or damage to property, including, but not limited to, products liability, arising from acts performed or omissions committed by the Contractor, its agents, servants, employees, subcontractors and independent contractors in connection with this Contract; and
 - (d) such other insurance as may be agreed upon between the Employer and the Contractor.
2. Upon request by the Employer, the Contractor shall provide evidence, to the reasonable satisfaction of the Employer, of the insurance referred to above and shall give the Employer reasonable advance notice of any proposed changes related to such insurance.
3. The Employer undertakes no responsibility to provide life, health, accident, travel or any other insurance coverage, which may be necessary or desirable in respect of any persons performing services in connection with this Contract.

Article 6 - Encumbrances

The Contractor shall not cause or permit any lien, attachment or other encumbrance by any third party to be placed on file or to remain on file in any public office or on file with the Employer against any money due or to become due for any work done or services rendered in connection with this Contract, or by reason of any claim or demand against the Contractor.

Article 7 - Source of Instructions

The Contractor, its agents, servants, employees, subcontractors and independent contractors, shall neither seek nor accept instructions from any authority external to the Employer in connection with the performance of their obligations under this Contract, and shall refrain from any action which may adversely affect the Employer. The Contractor shall take all reasonable measures to ensure that its agents, servants, employees, subcontractors and independent contractors comply with the Provisions of this Article.

Article 8 - Prohibition of Conflicting Activities

The Contractor and its personnel shall not engage in any business or other activity that conflicts with performance of duties under this Contract.

Article 9 - Officials not to Benefit

The Contractor warrants that no Employer official has been or will be, directly or indirectly, offered or given any inducement or benefit in connection with this Contract or the award thereof.

Article 10 - Subcontracting

The Contractor shall engage no subcontractor to perform any work or services in connection with this Contract unless the Contractor shall have notified the Employer of the identity of the proposed subcontractor and the Employer shall have notified the Contractor of its approval of the engagement of the subcontractor. The approval by the Employer of the engagement of a subcontractor shall not relieve the Contractor of any of its obligations under this Contract or from its responsibility for the work or services performed by the subcontractor.

The terms of any subcontract shall be subject to and in conformity with the provisions of this Contract. The term “subcontractor” includes any independent contractor or other person or entity with which the Contractor enters into an association, affiliation or relationship of any form for the purposes of performing work or services in connection with this Contract, other than an agent, servant or employee of the Contractor.

Article 11 - Assignment

The Contractor shall not assign, transfer, pledge or make other disposition of this Contract or any part thereof or of any of the Contractor’s rights, claims or obligations under this Contract except after obtaining the prior written approval of the Employer.

Article 12 - Records, Accounts, Information and Audit

1. The Contractor shall maintain accurate and systematic records and accounts in respect of the performance of its obligations under this Contract.
2. The Contractor shall furnish, compile and make available at all reasonable times to the Employer any records, accounts or other information, oral or written, which the Employer may reasonably request in respect of the performance by the Contractor of its obligations under this Contract.
3. The Contractor shall allow the Employer or its authorized agents to inspect and audit such records, accounts or other information upon reasonable notice.

Article 13 - Language, Weights and Measurers

Except as may otherwise be specified in this Contract, the English (UK) language shall be used by the Contractor in all written communications to the Employer with respect to the performance of the obligations under this Contract and with respect to all documents procured or prepared by the Contractor pertaining to such obligations. The metric system of weights and measures shall be used in respect of all work and services performed in connection with this Contract.

Article 14 - Title to Equipment or Property

1. Title to all equipment and property furnished by the Employer for the purpose of this Contract shall rest with the Employer. The Contractor shall be responsible and accountable to Employer for all equipment or property purchased with funds provided or to be reimbursed by the Employer. The Contractor shall take all reasonable measures, including maintaining appropriate insurance, necessary to preserve such equipment or property from loss or damage until returned to the duly authorized office of the Employer upon completion of the work or services or termination of this Contract, or when no longer needed by the Contractor for the purposes of this Contract. Such equipment or property

shall be returned to the Employer in the same condition as when made available to the Contractor, subject to normal wear and tear. The Contractor shall be liable to the Employer for the loss of or damage to such equipment or property, except to the extent that the Contractor proves that it took all reasonable measures to avoid the loss or damage.

2. The Contractor shall maintain an up-to-date and complete list of all equipment and property purchased by the Contractor in connection with this Contract.

Article 15 - Confidential Nature of Documents

1. All maps, drawings, photographs, plans, manuscripts, records, reports, recommendations estimates, documents and all other data (referred to hereinafter in this Article as “documents” compiled by or received by the Contractor or its agents, servants, employees, subcontractors or independent contractors in connection with this Contract shall be the property of the Employer shall be treated as confidential and shall be delivered only to duly authorized Employer officials on completion of work or services under this Contract or termination of the Contract, or as may otherwise be required by the Employer.
2. In no event shall the contents of such documents or any information known or made known to the Contractor by reason of its association with the Employer be made known by the Contractor or its agents, servants, employees, subcontractors or independent contractors to any unauthorized person without written approval of the Employer.
3. Subject to the provisions of this Article, the Contractor may retain a copy of documents produced by the Contractor.
4. The Contractor shall take all reasonable measures to ensure that its agents, servants, employees, subcontractors and independent contractors comply with the provisions of this Article.
5. The obligations in this Article do not lapse upon termination of this Contract.

Article 16 - Use of Name, Emblem or Official Seal of the Employer

The Contractor, its agents, servants, employees, subcontractors and independent contractors shall not advertise the fact that it is performing, or has performed, work or services for the Employer or, or use the name, emblem or official seal of the Employer or any abbreviation of the name of the Employer in connection with its business for advertising purposes or for any other purposes. The Contractor shall take all reasonable measures to ensure compliance with this provision by its agents, servants, employees, subcontractors, and independent contractors. This obligation does not lapse upon termination of the Contract.

Article 17 - Copyright, Patents and Other Proprietary Rights

1. All intellectual property and other proprietary rights, including but not limited to patents, copyrights and trademarks, in all countries, with regard to maps, drawings, photographs, plans, manuscripts, records, reports, recommendations, estimates, documents and other materials, (referred to hereinafter in this Article as “materials”) except pre-existing materials, publicly or privately owned, collected or prepared in consequence of or in the

course of the performance of this Contract, shall become the sole property of the Employer, which shall have the sole right to publish the same in whole or in part and to adapt and use them as may seem desirable, and to authorize all translations and extensive quotations there from. If the Contractor incorporates in its materials any previously published or unpublished materials, it shall obtain permission for the publication, use and adaptation in any language free of cost to the Employer from the persons in whom any existing copyrights therein may be vested and produce evidence to the Employer of such permission.

2. The Contractor agrees that it will forthwith disclose and assign to the Employer all discoveries, processes, or inventions, made or conceived in whole or in part by it alone or in conjunction with others relating to or arising out of this Contract, and the said discoveries, processes, or inventions, shall become and remain the property of the Employer, whether or not patent applications are filed thereon
3. Upon request of the Employer and at its expense, the Contractor shall take all necessary steps, execute all necessary documents and generally assist the Employer in securing such proprietary rights and transferring them to the Employer in compliance with the requirements of the applicable law.
4. The obligations in this Article do not lapse upon termination of the Contract.

Article 18 - Amendments

No modification of or change in this Contract, waiver of any of its provisions or additional contractual provisions shall be valid or enforceable unless previously approved in writing by the parties to this Contract or their duly authorized representatives in the form of an amendment to this Contract duly signed by the parties hereto.

Article 19 - Force Majeure

1. “Force majeure” as used herein means acts of God, natural disasters, invasion or war (whether declared or not) and other hostilities, revolution, rebellion, industrial disturbance, except where solely restricted to employees of the Contractor, insurrection or riot, commotion or other disorder, ionising radiation or contamination by regular activity from any nuclear fuel or waste, radio-active toxic explosives or other hazardous properties of any explosives, nuclear assembly or nuclear components thereof, or other act, event or circumstance of a similar nature or force arising from circumstances beyond the control of the parties or which the parties could not reasonably be expected to have taken into account at the time of the conclusion of this Contract and which or the consequences of which the parties could not reasonably be expected to have avoided or overcome.
2. In the event of and as soon as possible after the occurrence of any cause constituting force majeure, which renders the Contractor unable, wholly or in part, to perform his obligations and meet his responsibilities under this Contract, the Contractor shall give notice and full particulars of such force majeure to the Employer. The notice shall include steps proposed by the Contractor to be taken, subject to the written approval of the Employer, including any reasonable alternative means for performance that is not prevented by force majeure.

Subject to acceptance by the Employer of the existence of such force majeure, which acceptance shall not be unreasonably withheld, the following provisions shall apply:

- (a) The obligations and responsibilities of the Contractor under this Contract shall be suspended to the extent of its inability to perform them and, subject to the provisions of Para. (e) hereof, for as long as such inability continues. During such suspension and in respect of work suspended, the Contractor shall be reimbursed by the Employer for the Contractor's substantiated reasonable costs of maintenance of any of the Contractor's equipment and for reasonable per diem for the Contractor's permanent personnel rendered idle by such suspension, subject to Para. (d) hereof;
- (b) The Contractor shall within fifteen (15) days after the notice to the Employer the occurrence of the force majeure submit to the Employer a statement of estimated costs referred to under sub-paragraph (a) above during the period of suspension. Within thirty (30) days after the end of the suspension, the Contractor shall submit to the Employer a complete statement of the Contractor's actual costs;
- (c) The term of this Contract shall be extended for a period equal to the period of suspension taking, however, into account any special condition, which may reasonably justify the period of extension to be different from the period of suspension;
- (d) Where the Contractor's equipment or permanent personnel referred to in sub-paragraph (a) are idle on site as a result of the suspension for a period exceeding thirty (30) days, the Contractor shall confer with the Employer in good faith with a view towards agreeing upon a reasonable reduction of the costs incurred with respect to such equipment and personnel and a reasonable apportionment between the parties of such costs. If the parties fail to agree upon such reduction or apportionment within seven (7) days after the initial thirty (30) days of suspension, the matter will be resolved in accordance with Article 29 hereof;
- (e) If the Contractor is rendered permanently unable, wholly or in part, by reason of force majeure, to perform its obligations and meet its responsibilities under this Contract, the Employer shall have the right to terminate this Contract on the same terms and conditions as are provided for in Article 22, Termination by the Employer, except that the period of notice shall be seven (7) instead of fourteen (14) days; and
- (f) The Employer may consider the Contractor permanently unable to perform in case of any suspension period of more than ninety (90) days.

Article 20 - Suspension by the Employer

1. The Employer may suspend, for a specified period of time not exceeding thirty (30) days, in whole or in part, payments to the Contractor and/or any of the Contractor's obligations under this Contract, if, in the Employer's sole determination:
 - (a) any condition arises which interferes, or threatens to interfere, with the successful carrying out of the work or services under this Contract, the Employer Project or the

accomplishment of the purpose thereof, or with the performance by either party of its obligations under this Contract: or

- (b) the Contractor shall have failed, in whole or in part, to perform any of its obligations under this Contract.
2. Notice of such suspension shall be given by the Employer to the Contractor, specifying the duration of the suspension. The suspension shall take effect seven (7) days after such notice.
3. If, by the expiry of the period of suspension, the Employer has not notified the Contractor to resume the performance of a suspended obligation, the Contractor may request permission of the Employer to resume such performance. If the Employer does not within 7 days after its receipt of the request, notify the Contractor to resume the performance, either party may terminate the portions of this Contract relating to the suspended obligation by giving the other party seven (7) days prior notice of such termination. If it is not possible or reasonably practicable for only those portions of the Contract to be terminated, the entire Contract may be terminated upon seven (7) days prior notice. The provisions of paragraph 2 of Article 22 shall apply in the event of any such termination.
4. (a) The Contractor shall be reimbursed by the Employer for the Contractor's substantiated reasonable extra costs, occasioned by the suspension, of necessary measures to maintain any of the Contractor's equipment and personnel assigned to the performance of this Contract, while such equipment and personnel are idle as a result of the suspension. However, such reimbursement shall not be paid if the Contractor could reasonably re-assign such equipment or personnel to other tasks or to other contracts of the Contractor;
- (b) As a condition for reimbursement under this paragraph 4, the Contractor shall:
- (i) within fifteen (15) days after a suspension takes effect, notify the Employer of the Contractor's good faith estimate of the anticipated extra costs; and
 - (ii) within thirty (30) days after the end of the suspension, notify the Employer of the Contractor's actual extra costs.
- (c) The Contractor shall not be entitled to the reimbursement provided for in this paragraph 4 where the Employer has suspended an obligation of the Contractor for reasons attributable to the fault or neglect of the Contractor, its agents, servants, employees, subcontractors or independent contractors, or to a failure by the Contractor to perform an obligation under this contract

Article 21 - Additional Rules relating to Suspension

- 1. Except as otherwise provided in this Contract, the rules set forth in this Article apply in the event of any suspension under Article 19 or Article 20.
- 2. During the period of suspension, the Contractor shall provide such information as may reasonably be requested by the Employer concerning the preservation and protection of the work and services performed by the Contractor and the results thereof, and of all property of the Employer, and shall take all reasonable measures to provide for such preservation and protection. Except as provided in paragraph 4 of this Article, the Contractor shall be

reimbursed by the Employer for substantiated reasonable costs incurred by the Contractor in providing such information and taking such measures, provided that an estimate of such costs shall have previously been notified to and approved by the Employer.

3. The Contractor shall produce such reports as may reasonably be requested by the Employer covering the work executed or services performed up to the time of suspension. The reports shall conform to any reasonable requirements by the Employer as to nature, structure and content. Except as provided in paragraph 4 of this Article, the Contractor shall be reimbursed for its reasonable and substantiated costs in preparing the reports, provided that an estimate of such costs shall have been previously notified to and a approved by the Employer.
4. The Contractor shall not be entitled to the reimbursement provided for in paragraphs 2 and 3 of this Article where the Employer has suspended an obligation of the Contractor pursuant to Article 20 for reasons attributable to the fault or neglect of the Contractor, its agents, servants, employees, subcontractors or independent contractors, or to a failure by the Contractor to perform an obligation under this Contract.

Article 22 - Termination by the Employer

1. Notwithstanding the provisions of Articles 19 and 20, the Employer may terminate this Contract for any reason upon not less than fourteen (14) days (in the case of Contracts initially for a period of sixty (60) days or more) or seven (7) days (in the case of Contracts initially for a period of less than sixty (60) days) notice to the Contractor.
2. Upon termination of this Contract:
 - (a) the Contractor shall take immediate steps to terminate the work and services in a prompt and orderly manner and, to that end, shall provide such information as may reasonably be requested by the Employer concerning the preservation and protection of the work or services performed by the Contractor and the results thereof and all property of the Employer, and to minimize losses and further expenditures; the Contractor shall also take all reasonable measures to provide for such prevention and protection and for minimization of losses and expenditures;
 - (b) the Contractor shall be entitled, against appropriate vouchers, to be compensated in accordance with this Contract for work or services performed satisfactorily and in accordance with this Contract prior to its receipt of the notice of termination;
 - (c) unless the termination has been occasioned by any fault or neglect on the part of the Contractor, its agents, servants, employees, subcontractors or independent contractors, or by any failure of the Contractor to perform an obligation under this Contract, the Contractor shall also be entitled, against appropriate vouchers, to be reimbursed for such reasonable costs and expenses as shall have been duly and properly incurred in accordance with this Contract prior to the date of such notice of termination, including such forward commitments as could not with diligent effort be cancelled or reduced, and for reasonable costs incident to the orderly termination of the services, the return travel of Contractor's personnel and the return shipment of their personal effects and of the equipment of the Contractor, to the extent that the same are not otherwise covered by any fees, reimbursements or other compensation paid or payable to the Contractor;

(d) the Contractor shall produce such reports as may reasonably be requested by the Employer covering the work and services performed up to the time of termination. The reports shall conform to any reasonable requirements by the Employer as to nature, structure and contents. The Contractor shall be reimbursed for its reasonable and substantiated costs in preparing the reports, provided that an estimate of such costs shall have previously been notified to and approved by the Employer; and

(e) the Contractor shall not be entitled to receive any payments other than those provided for in this paragraph 2.

Article 23 - Termination by the Contractor

The Contractor may terminate this Contract in accordance with Articles 19.2(e) and 20.3 above.

Article 24 - Other Rights and Remedies of the Employer

1. Nothing in or relating to this Contract shall be deemed to prejudice or constitute other rights or remedies of the Employer.
2. The Employer shall not be liable for any consequence of, or claim based upon, any act or omission the part of the Employer.

Article 25 - Bankruptcy

Should the Contractor be adjudged bankrupt, or become insolvent or should control of the Contractor change by virtue of insolvency, the Employer may, without prejudice to any other right or remedy, terminate this Contract immediately by giving the Contractor notice of such termination.

Article 26 - Facilities, Exemptions, Privileges and Immunities of Contractor and Contractor's Personnel

1. The compensation, reimbursement, remuneration and payment provided for in this Contract do not include any taxes, duties, fees or levies which may be imposed in the recipient country on salaries or wages earned by the Contractor's personnel (except the Employer nationals employed locally) in the performance of the Contract or on any equipment, materials or supplies which the Contractor may bring into that country in connection with the contract or which after having been brought into that country may be subsequently withdrawn there from. If any authority of the Employer refuses to recognize exemption from or reimbursement for such taxes duties, fees or levies, the Employer shall in no event be liable beyond the amount of said taxes, duties, fees and levies or for any failure or delay in obtaining such exemption or reimbursement.
2. The Employer will use its best efforts to obtain for the Contractor and its personnel (except the Employer nationals employed locally) such additional facilities, exemptions, privileges and immunities as the Employer has generally agreed to grant to the Contractors performing services for the Employer within the country and to their personnel. An information copy of the provisions relating to such facilities, exemptions, privileges and immunities that are contained in the Operational Agreement, may be obtained from the Employer. However, the Employer shall in no event be liable for any consequences of, or

any claim based upon, any failure on the part of the Employer to carry out such undertakings.

3. Any Provisions whether in an Agreement, Project Document, or any other instrument to which the recipient Employer is a party, by which the recipient Employer confers benefits upon the Contractor and its personnel in the form of facilities, exemptions, privileges and immunities by reason of the performance of services for the Employer on this Project, may be waived by the Employer where, in its opinion, such immunity would impede the course of justice and can be waived without prejudice to the successful completion of the project or to the interests of the Employer.

Article 27 - Indemnification

The Contractor shall indemnify, hold and save harmless and defend at its own expense the Employer and its officials, agents, servants and employees from and against all suits, claims, demands and liability of any nature or kind, including costs and expenses associated therewith, arising out of acts or omissions of the Contractor or its officers, agents, servants, employees subcontractors or independent contractors in the performance of any work or services in connection with this Contract. Without limiting the generality of the foregoing, this Article shall extend to suits, claims, demands and liability in the nature of workmen's compensation, products liability, and liability arising out of the use of patented inventions or devices, copyrighted material or other intellectual property by the Contractor, its officers, agents, servants, employees, subcontractors or independent contractors and or others responsible to the Contractor, as well as by the Employer. The obligations in this Article do not lapse upon termination of the Contract.

Article 28 - Good Faith

The Parties undertake to act in good faith with respect to each other's rights under this Contract and to adopt all reasonable measures to ensure the realization of the objectives of this Contract.

Article 29 - Arbitration

Any dispute, controversy or claim arising out of or relating to this Contract, or the breach, termination or invalidity thereof, shall, unless it is settled amicably by direct negotiation, be settled by arbitration in Vientiane accordance with the arbitration rules of the United Nations Commission on International Trade Law (UNCITRAL) as at present in force. The appointing authority shall be the Chairman or Deputy Chairman of the Singapore International arbitration Centre ("SIAC"). The number of arbitrators shall be one. The language to be used in the arbitral proceedings shall be English. The Parties agree to be bound by the arbitration award rendered in accordance with such arbitration, as the final adjudication of any such disputes controversy or claim.

Article 30 - Privileges and Immunities

Nothing in or relating to this Contract shall be deemed a waiver of any of the privileges and immunities of the Employer.

Article 31 - Tax Exemption

The Operational Agreement provides, inter alia, that the Employer including its subsidiary organs, is exempt from all direct taxes and from customs duties in respect of articles imported or exported

for its official use. Accordingly, the Contractor authorizes the Employer to deduct from the Contractor's invoice any amount representing such taxes or duties. Payment of such corrected invoiced amount shall constitute full payment by the Employer. In the event any taxing authority refuses to recognize the Employer exemption from such taxes, the Contractor shall immediately consult with the Employer to determine a mutually acceptable procedure.

Article 32 - Form of Notice, Request, Statement or Approval

Any notice request, statement or approval provided for in these General Conditions shall be effective if it is given in writing either by letter, facsimile or email.

Article 33 – Observance of the Law

The Consultant shall comply with all laws, ordinances, rules, and regulations bearing upon the performance of its obligations under the terms of this Contract. The Governing Law of this contract is the law of Lao PDR.

ANNEX II

TERMS OF REFERENCE (TOR)
[Insert TOR texts]

ANNEX *[INSERT ANNEX NUMBER]*

CONSULTANT PROPOSAL