
Terms of Reference:
Cumulative Impact Assessment and
Management of Renewable Energy
Development in the Sekong River Basin,
Lao PDR

Glossary and Acronyms

| | |
|-------------|---|
| ADB | Asian Development Bank |
| AFD | Agence Française de Développement |
| CI | Cumulative Impact |
| CIA | Cumulative Impact Assessment |
| CMC | Coordination and Monitoring Center |
| CNR | Compagnie Nationale du Rhône |
| DFAT | Australian Department of Foreign Affairs and Trade |
| EIB | European Investment Bank |
| ESIA | Environmental and Social Impact Assessment |
| EWN Project | World Bank-funded project 'Energy-Water Nexus in Lao PDR - Demonstrating IWRM in the Hydropower Sector' |
| GIS | Geographic Information System |
| GIZ | German Corporation for International Cooperation |
| HDWG | Hydropower Developers' Working Group |
| HPP | Hydropower Project |
| ICT | Information and Communications Technology |
| IFC | International Finance Corporation |
| IWRM | Integrated Water Resources Management |
| Lao PDR | Lao People's Democratic Republic |
| MEM | Ministry of Energy and Mines |
| MoNRE | Ministry of Natural Resources and Environment |
| MW | Megawatts |
| NGO | Non-government Organization |
| PDA | Project development agreement |
| PDR | Peoples' Democratic Republic |
| SEP | Stakeholder Engagement Plan |
| ToR | Terms of Reference |
| VECs | Valued Ecosystem Components |

Table of Contents

| | |
|--|----|
| Glossary and Acronyms..... | i |
| Table of Contents..... | ii |
| 1. Background | 3 |
| 2. Vision and Objectives of the Project..... | 5 |
| Vision..... | 5 |
| Objectives of the Assignment | 5 |
| 3. Project Scope | 5 |
| 1: Integrated Cumulative Impact and Power Optimization Assessment..... | 5 |
| 2: Sekong Basin Cumulative Impact Co-Management Platform..... | 10 |
| 3: Capacity Building..... | 11 |
| 4. Stakeholder Identification and Consultations | 12 |
| 5. Project Management | 14 |
| Institutional Arrangements..... | 14 |
| Work Plan and Schedule | 15 |
| Deliverables | 15 |
| 6. Consultant Qualifications..... | 16 |
| Appendix A: Hydropower Projects in the Sekong Basin | 19 |

1. Background

The People's Democratic Republic of Lao (Lao PDR) is pursuing a strategy of renewable energy sector expansion for domestic consumption and export to support socio-economic development targets. The power sector has grown rapidly over the past 20 years, with installed generating capacity rising from 700 megawatts (MW) in 2006 to 6,264 MW in 2016. Hydropower is the dominant energy source in the country and the Government of Lao PDR has ambitious plans to further expand power generating capacity over the coming years. Several feasibility studies for wind and solar power are underway, but these sectors are currently still in their infancy in Lao PDR.

While renewable energy has the potential to help Lao PDR meet its development targets, the pace of change carries risks of significant environmental and social impacts. Individually, hydropower projects can lead to impacts on the aquatic and terrestrial environment, ecosystem services, communities and peoples' livelihoods. Cumulatively, multiple projects within the same watershed can magnify these adverse impacts by altering water quality, sediment transport and biodiversity flows with effects on native biota, agriculture, navigation and other river uses.

In recognition of these challenges, the Government of Lao PDR has in recent years introduced and strengthened the policy and regulatory framework governing the renewable energy sector. Key developments include the *Law on Environmental Protection (2012)*, *Ministerial Instruction on Environmental and Social Impact Assessment (2013)*, the *Policy on Sustainable Hydropower Development in Lao PDR (2015)*, a revised *Water Law (2017)* and recent revisions to the *Law on Electricity (Box 1)*.¹

Under these laws and regulations, all developments larger than 15 MW must conduct a comprehensive Environmental and Social Impact Assessment (ESIA), while smaller developments must complete a less rigorous Initial Environmental Examination (IEE).

The 2013 *Ministerial Instruction on Environmental and Social Impact Assessment* provides certain conditions in which a cumulative impact assessment (CIA) of interactions with other existing and planned developments in the area should be conducted by project proponents, in addition to the standard ESIA. However, in practice CIA implementation in Lao PDR has been weak. A key challenge is that to conduct a CIA, project developers require sufficient information about other existing or planned developments in the same or adjacent watersheds, which is usually not easily available from government agencies, private sector proponents or publicly-available records.

Accordingly, the IFC has worked with the Government to develop draft *CIA Guidelines for Hydropower Projects in Lao PDR* in 2017²

Box 1: Electricity Law Amendments: Article 10 (New). Integrated Power Sector Plan

1. An Integrated Power Sector Plan shall be developed at least once every five years by MEM in consultation with other sectors such as Planning and Investment, Finance, Natural Resources and Environment, Agriculture and Forestry and others. The Integrated Power Sector Plan shall, among other things, identify and prioritize projects based on criteria, which would include, but not be limited to, the following (...):

(i) Adherence to the principles of IWRM consistent with the laws and regulations governing water resources management in the country; (...)

¹ Law on Electricity (1994, amended 2008, 2011, 2017)

² https://www.ifc.org/wps/wcm/connect/fbd4691c-2905-4bdd-bc01-cb8c17ec2de5/Lao+PDR+HPP+CIA+Guidelines_English+version.pdf?MOD=AJPERES

aligned with the *IFC CIA Good Practice Handbook*.³ The *CIA Guidelines* were developed in consultation with the Ministry of Natural Resources and Environment (MoNRE), international development partners, hydropower project proponents and relevant stakeholders including regional and non-government organizations. **To pilot the new *CIA Guidelines*, IFC has agreed with the government of Lao PDR to conduct a basin-wide CIA for the Sekong River Basin.**

The Sekong River Basin (*Figure 1*) is considered particularly important as one of the few remaining major Mekong tributaries with high biodiversity value and few hydropower projects in operation. Development of additional hydro, wind and solar power resources (

Figure 1: Context of the Sekong River Basin (boundary in dark red)



³http://www.ifc.org/wps/wcm/connect/topics_ext_content/ifc_external_corporate_site/ifc+sustainability/learning+and+adapting/knowledge+products/publications/publications_handbook_cumulativeimpactassessment

Appendix A: Hydropower Projects in the Sekong Basin), together with expanded industrial operations such as mining, logging and plantation forestry, indicate a significant risk of cumulative, including transboundary, impacts.

In November 2017, the IFC hosted a preliminary stakeholder engagement meeting with MEM, MoNRE, DFAT and representatives from over a dozen operational or planned hydropower projects in the Sekong River Basin. The meeting discussed potential approaches for conducting a CIA in the Sekong River Basin, advancing collaboration, and developing a coherent, multi-stakeholder CIA and co-management platform. The meeting identified the need to expedite the CIA to facilitate timely Government review of proposed renewable energy projects in the basin.

2. Vision and Objectives of the Project

Vision

Sustainable planning for renewable energy⁴ development in the Sekong River Basin is founded on clear, multi-stakeholder commitment to assessing and managing cumulative impacts, collaborative monitoring and co-management.

Objectives of the Assignment

1. Plan and execute an integrated assessment of the cumulative impacts of renewable energy development in the Sekong River Basin, including power optimization and development scenarios.
2. Lead the participatory design of a framework for ongoing river basin co-management in the Sekong, including collaborative environmental and social impact monitoring and management.
3. Strengthen the capacity of Sekong River Basin stakeholders in CIA and co-management.

3. Project Scope

The Consultant team is expected to deliver the following Project scope of work, organized according to each of the three key objectives above.

1: Integrated Cumulative Impact and Power Optimization Assessment

The integrated cumulative impact and power optimization assessment (*'integrated CIA'*) should be conducted according to the *Draft CIA Guidelines for Hydropower Projects in Lao PDR (IFC/MoNRE)*⁵ – with the intention of piloting their implementation. The Consultant should refer to the CIA Guidelines for information on the expected scope, approach and standard methodology for the CIA portions of the Project.

However, this Project includes complementary, additional tasks to the standard CIA process by integrating elements of collaborative river basin power optimization assessment (see Objective 1; Task F). The Integrated Cumulative Impact and Power Optimization Assessment Process to be followed is illustrated by *Figure 2*.

Task A) Review the regulatory framework

Review the existing legal, institutional and governance framework for renewable energy and natural resource development in the Sekong River Basin to gain a complete understanding of the regulatory context, considering:

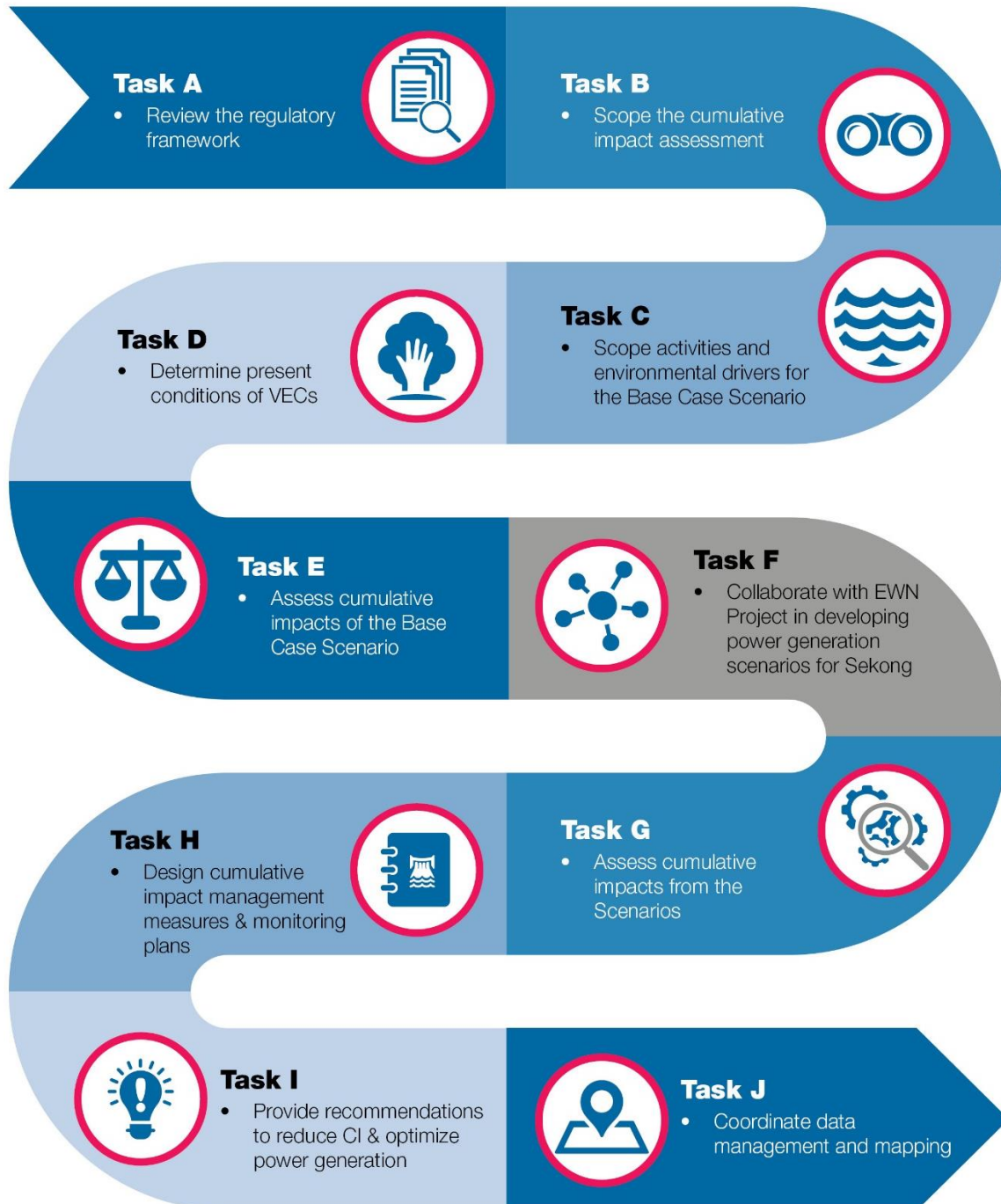
- The principles of sustainable development as set out in the *Law on Environmental Protection (2012)*, *Policy on Sustainable Hydropower Development (2015)*, *Lao PDR Water and Water Resources Law (2017)*, *Electricity Law (2017)*, *Ministerial Instruction on ESIA Process of the Investment Projects and Activities (2013)* and other relevant governance/regulations.

⁴ Primary focus on large-scale hydropower, with consideration of small hydro, wind and solar power projects.

⁵ https://www.ifc.org/wps/wcm/connect/fbd4691c-2905-4bdd-bc01-cb8c17ec2de5/Lao+PDR+HPP+CIA+Guidelines_English+version.pdf?MOD=AJPERES

- Guiding governance frameworks such as the Mekong River Commission’s (MRC) *Integrated Basin Development Strategy for the Lower Mekong Basin (2016-2020)* and *Framework for Transboundary Environmental Impact Assessment (2018)*.⁶

Figure 2: Integrated Cumulative Impact and Power Optimization Assessment Process



⁶ <http://www.mrcmekong.org/about-mrc/completion-of-strategic-cycle-2011-2015/environment-programme/transboundary-eia/>

Task B) Scope the cumulative impact assessment

Determine spatial boundaries for the assessment with consideration of both relative significance and practical issues of time/resources required for effective inclusion in the assessment:

- The entire mainstem of the Sekong River and its key tributaries, as well as the concession areas for wind and solar power generation in the basin.
- Associated infrastructure (e.g. transmission lines, roads) and ancillary activities (e.g. transport of construction materials to the project site).
- Transboundary (i.e. cross-border) issues.

Determine temporal boundaries for the assessment by considering:

- Appropriate temporal boundaries (e.g. a 10 or 20-year period) for the current and foreseeable basin development scenarios.
- 100-150 years for the anticipated temporal extent of impacts.
- The length of long-term climate cycles that may impact on hydrological factors.

Collate completed plans, programs and studies of potential relevance to the CIA.

Identify and verify previously identified Valued Ecosystem Components (VECs) in the Sekong River Basin in consultation with stakeholders. The CIA Guidelines provides a selection of possible VECs for consideration.

Engage stakeholders in at least one 2-day workshop to explore and determine the final spatial and temporal boundaries and VECs based on the different developments and stressors considered over time (refer to *Section 4 'Stakeholder Identification and Consultations'*). Ultimately, professional judgment is required to estimate the appropriate scope and to justify the reasoning behind the boundaries/VECs used.

Task C) Scope activities and environmental drivers for the Base Case Scenario

In collaboration with MEM, agree upon existing, proposed and likely future developments and other natural / social stressors within the boundaries established in Task A (the '**Base Case Scenario**') that may affect the VECs in the Sekong River Basin. These could include:

- Medium- and large-scale hydropower projects
- Small hydro, wind, solar and hybrid power projects
- Large-scale mining, forestry and agriculture
- Other natural / social stressors in the Sekong River Basin
- Known or likely transboundary issues from the Sekong River or adjacent river basins in Lao PDR, Cambodia and Vietnam.

Task D) Determine present conditions of VECs

Determine present conditions of VECs.

- Consolidate applicable data and information on VECs.
 - o Review ESIA and CIAs (if any) conducted previously across the Sekong River Basin in Lao PDR.

- Consolidate existing data and information from reports, studies and surveys.
- Conduct a gap analysis and generate informed estimates to address critical data deficiencies.
- Define the existing condition of VECs and provide an understanding of their potential reaction to stress, resilience and recovery times.

Task E) Assess cumulative impacts of the Base Case Scenario

Assess cumulative impacts from the Base Case Scenario and evaluate their significance over VEC's future conditions.

- Consider past, present and future environmental and social impacts and the potential range of environmental variation that may influence VECs' conditions - not solely on expected average conditions (e.g. change in climate patterns and/or predictability).
- Identify and describe potential transboundary impacts.
- Assess significance of known and anticipated cumulative impacts, including the efficacy of existing mitigation, monitoring and management efforts.
- Determine anticipated residual cumulative impacts for the Base Case Scenario.

Task F) Collaborate in developing power generation scenarios for the Sekong River Basin

The Consultant will not be directly responsible for identifying and assessing power generation scenarios, but will work in close collaboration with MEM and the consulting team leading the World Bank-funded 'Energy-Water Nexus (EWN) Project' (Box 2). The elements of the EWN project will cover the following:

- Understand the Government's overall vision, power planning and sustainable development objectives for the Sekong River Basin.
- Identify key criteria and parameters for identifying and analyzing power generation scenarios which minimize cumulative impacts whilst still meeting the vision/goals, e.g.:
 - Number, size and locations of hydropower projects (HPPs), differentiated by status of design / development; area of study; hydrologic profile and water balance; water users; operational regime (run-of river vs. storage); head utilization mode (diversion vs. powerhouse at the toe of the dam) etc.
 - Technical, financial and economic criteria / metrics and resource options.
 - Renewable energy generation and transmission / interconnection infrastructure configurations, considering: Interconnectors – i.e. the World Bank is considering support for an interconnection between Lao PDR and Vietnam to evacuate excess power and there is a similar project proposed from southern China to Vietnam, via Lao PDR; internal transmission lines; associated infrastructure and ancillary elements.

Box 2: The World Bank-funded project 'Energy-Water Nexus in Lao PDR - Demonstrating IWRM in the Hydropower Sector' (Appendix C) includes a highly complementary scope of work, including a feasibility study / pilot project in the Sekong River Basin scheduled between January and December 2018: "Task C will demonstrate processes to assist in prioritizing hydropower development from a list of possible projects, taking into account cascade factors and non-power

- This process should incorporate the Integrated Power System Plan regulation currently under development, including market and demand assessments, system-wide planning objectives, and uncertainty analysis.
- Characterize non-power interests in the Sekong River Basin: Identify non-power interests; specify planning objectives with respect to (cumulative) environmental, social and economic interests.
- Identify integrated river basin development options using scenario analysis, with the focus on renewable energy.
- Conduct trade-off analysis among the possible scenarios, across technical, financial, economic, social and environmental objectives using multi-criteria decision tools. Consider the impact of uncertainty and irreversibility on trade-offs and project sequencing.
- Identify a shortlist of two or three *Scenarios*, covering a range of options / combinations for development of the Sekong River Basin, including hydropower on the mainstem and/or tributaries of the Sekong River.

Task G) Assess cumulative impacts from the Scenarios

Assess cumulative impacts from the shortlisted Scenarios and evaluate their significance over VEC's future conditions.

Task H) Design cumulative impact management measures and monitoring plans

Design adequate strategies, plans and measures to manage (avoid, minimize, compensate, etc.) cumulative impacts for the Scenarios.

Task I) Provide recommendations to reduce cumulative impacts and optimize power generation

Conduct multi-criteria comparative analysis on the short listed Scenarios based on pre-defined criteria and the outcome from the integrated CIA.

Provide recommendations to optimize power generation and reduce cumulative impacts.

Host a multi-stakeholder workshop to report back on the integrated assessment process and verify / seek buy-in on the integrated CIA recommendations and proposed update to the draft CIA Guidelines.

Complete draft and final Integrated Cumulative Impact and Power Optimization Assessment report, detailing the entire process, findings and outcome.

Task J) Coordinate data management and mapping

Utilize Geographic Information System (GIS) software and any associated database applications to develop maps which illustrate key features as part of the CIA.

Capture data in a spatially-linked database platform and use appropriate GIS mapping tools recognized in Lao PDR.

Consider whether the database platform is to be purpose built or leverage an existing platform (e.g. Coordination and Monitoring Center Project (CMC) – see *Box 3*).

Take into account the scope of work under Objective 2, Task B) '*Facilitate harmonization of data management, mapping and reporting protocols*'.

2: Sekong Basin Cumulative Impact Co-Management Platform

The Consultant is required to design a framework for involving the public and private sector in addressing identified cumulative impacts in the Sekong River Basin, including collaborative environmental and social impact monitoring and management.

The Platform would ultimately aim to enhance collaboration and governance in the Sekong River Basin by:

- (i) Supporting the co-management (avoidance, minimization, compensation, etc.) of environmental and social impacts resulting from multiple or successive developments in the Sekong River Basin.
- (ii) Exploring pro-active and retroactive design modifications to hydropower and other Sekong River Basin projects (location, timing, technology, etc.) to better coordinate operations and manage cumulative impacts (e.g. through watershed protection / reforestation, water quality monitoring, erosion and sediment control, fish hatcheries, environmental flows (eflows) management, cascading operations and maintenance, etc.).
- (iii) Coordinating, to the extent possible, basin-wide approaches and methodologies for environmental and social impacts assessment, monitoring, data analysis, reporting and management.
- (iv) Maintaining open communication and engagement with relevant stakeholders.

N.B. The Consultant is not responsible for fully operationalizing the Platform; only for developing its framework and providing foundational capacity building, as described below.

Task A) Design the framework for a Sekong River Basin Cumulative Impact Co-Management Platform

Building on lessons learned from related initiatives, the Consultant will lead in the participatory design of a framework for a Sekong River Basin Cumulative Impact Co-Management Platform.

The Consultant team will develop the Platform framework through consultation with all relevant stakeholders, including:

- Defining the key features of the Platform, including a governance committee, institutional arrangements (see Section 5 of this ToR), data collection/sharing protocols, privacy/confidentiality arrangements, standard operating procedures and plans for implementation.
- Developing institutional and financial mechanisms to support co-management of common environmental and social challenges, impacts and risks.
- Considering how to build an ongoing or periodic process of power optimization and CIA into the Platform's framework, in order to manage participatory planning for future basin development projects.
- Investigating options for linking into past and present cross-border collaboration initiatives

involving the Sekong and adjacent Sesan and Sre Pok River Basins,⁷ building on the governance lessons learned in managing potential transboundary impacts.

- Piloting approaches and learning lessons to inform broader integrated management planning at basin level in Lao PDR and elsewhere (e.g. Mekong Subregion).

Task B) Facilitate harmonization of data management, mapping and reporting protocols

Develop protocols for the long-term collection, storage and analysis of comparable, high quality, primary and secondary data relating to the Sekong Basin, including: Specifications for information

Box 3: The *Coordination and Monitoring Center (CMC)* project (2017-18) managed by MEM aims to assess the feasibility of a hydropower-focused CMC in Lao PDR, beginning with the mainstream Mekong and gradually expanding. The current scope is on coordinating operational aspects of hydropower (navigation, flood management, maintenance activities, etc.). The Sekong River Basin is not included. However, there is potential for collaboration with the Sekong River Basin CIA in identifying appropriate institutional arrangements, data collection/sharing protocols, privacy/confidentiality clauses, operating procedures, etc. See Appendix C.

and communications technology (ICT) such as servers and networking; data collection / sharing protocols; privacy / confidentiality; standardized mapping and reporting protocols / templates; etc. (see Task 1e).

The Consultant Team will be required to have a strong understanding of the complementary AFD-funded project (*Box 3*) to establish a Mekong River Basin ‘*Coordination and Monitoring Centre (CMC)*’ and highlight any opportunities for collaboration. The CMC work should inform the development of the Platform’s data management, mapping and reporting protocols, and vice-versa.

3: Capacity Building

The Consultant is to strengthen the capacity of Sekong River Basin renewable energy stakeholders in cumulative impacts assessment and co-management.

Task A) Build the capacity of Government and private developers in CIA and basin co-management through workshops, seminars and on-the-job training

The Consultant should plan and facilitate a 2-day Project Inception and Training Workshop with key stakeholders. The first day of the workshop will cover: Project vision and objectives; institutional arrangements, roles and responsibilities; workplan and schedule; information requirements; etc. The second day will comprise a capacity building seminar, focused on the business case for CIAs - building on IFC and other resources. Finally, the Consultant will conduct a brief capacity building needs assessment of the key Government departments and project developers to inform planning of subsequent capacity building activities.

The Consultant is to use the outcome from that assessment, supplemented by wider stakeholder engagement activities, to prepare a Capacity Building Plan. This Plan should include provisions for simultaneous interpretation for all capacity building sessions and for all final materials to be provided in both English and Lao.

⁷ e.g. IUCN, BRIDGE project – Building River Dialogue and Governance in the ‘3S’ (Sesan, Sre Pok, and Sekong) river basin MRC, Joint Project on Sustainable Water Resources Development and Management in the 3S basin ADB (2012), Sesan, Sre Pok, and Sekong River Basins Development Study (Project 40082)

After completing the CIA portion of the Project, the Consultant is to develop and deliver a series of three 2-day capacity building sessions with key stakeholders. The sessions should relate directly to the issues identified in the CIA, and create understanding on potential strategies for mitigation and co-management. Recommended sessions are: 1) Key issues emerging from the CIA; 2) Orientation to the Sekong River Basin Cumulative Impacts Co-Management Platform, and; 3) Integration of power optimization into CIA for sustainable hydropower planning.

If counterpart staff of the Government are assigned to the Project, the Consultant is to facilitate knowledge sharing and on-the-job training to these individuals, where possible.

Task B) Make recommendations on improvements to Lao PDR's draft CIA Guidelines based on the experience from the Sekong River Basin

As the Project seeks to pilot the CIA Guidelines, the Consultant is required to make recommendations on possible improvements to the draft CIA Guidelines for stakeholder discussion and verification. The recommendations should be included in the Final Project Summary Report, though updating of the CIA Guidelines document itself is not part of the scope.

4. Stakeholder Identification and Consultations

The assessment and management of cumulative impacts is an iterative process, requiring the engagement of key stakeholders through all phases of the Project. This engagement should build on the existing and substantial knowledge base available and collaboration conducted to date with key stakeholder groups.

The Consultant is required to prepare a Stakeholder Engagement Plan (SEP) to guide the consultations in-line with the work schedule for the Project. The preparation of the SEP should involve the identification and mapping of stakeholders and a detailed plan of consultation and communication activities specific to each group, to be implemented by the Consultant. The consultation activities may range from meetings, workshops, forums, telephone calls, on-site discussions, focus groups discussions and surveys.

The SEP should be developed in the early stages of the Project, and form part of the Inception Report. Besides engagement with stakeholders in Lao PDR, it should outline the manner in which the Consultant will undertake consultations in Vietnam and Cambodia to ensure transboundary impacts have been considered in the CIA. This may include travelling to Vietnam and Cambodia to meet with government and collect information.

In addition to the inception and draft report workshops, and meetings with government stakeholders, there are three key Project activities requiring stakeholder consultations, including:

- 1. Definition of parameters:** Definition of the VECs, along with the corresponding temporal and spatial boundaries will require the participation of a range of stakeholders and experts. It is not possible to assess impacts on every VEC, therefore, it will be necessary to define those VECs which are most valued by stakeholders or vital to the functioning of the ecosystem.
- 2. Participatory design of the cumulative impacts basin co-management framework:** This will require participation and investments from HPP proponents for data sharing and contributions to on-ground mitigation and management initiatives. It will also require investment from the appropriate Government departments to manage and see through the recommendations of the CIA.
- 3. Collaboration with other initiatives:** The Consultant should be aware that there are other initiatives being undertaken simultaneously for the Sekong River Basin, and river and

watershed management in Lao PDR; most crucially the World Bank-funded ENR project. The Consultant should make every effort to understand these initiatives, identify their relevance to this Project and establish mechanisms to avoid duplicative efforts or stakeholder fatigue (e.g. investigate possibility of a combined SEP for the two projects). There may be instances wherein the Project will be able to incorporate the findings and outcomes of these initiatives within this Project, and/or identify the need to collaborate with other initiatives. As part of a response to the TOR, the Consultant should note their approach to coordinating with relevant initiatives and managing risk of stakeholder fatigue.

In their response to this ToR, the Consultant will need to propose their approach to stakeholder consultations and engagement activities that will inform the development of the SEP and achieve an adequate breadth of engagement across all identified stakeholders. The Consultant can refer to the IFC’s *‘Stakeholder Engagement: Good Practice Handbook for Companies Doing Business in Emerging Markets’*.

Not all interested parties need to be involved in all stakeholder consultations as many stakeholders are often resource constrained. There may be layers of engagement for different stakeholder groups. Some stakeholders may only need to be kept informed or be provided feedback throughout the process. A *Sekong Basin CIA Coordination Committee* should be established under the HDWG and facilitated by IFC and MEM (see *‘Institutional Arrangements’* below). This Committee and other stakeholders may need to be involved in all engagements to support collaborative decision-making and empowerment around the Project outcomes. The method of involvement may vary with the different groups. Participation should occur only if there is an added-value outcome, and in some instances disclosure of the Project and its findings may be all that is required. As part of the project, IFC will set up a page within its website to share approved documents and to inform the public.

Furthermore, the process should not be slanted towards HPP development interests, or any other single interest group. It should seek to include all views of relevance to the conduct of the Project.

Preliminary identification of stakeholders includes:

| Stakeholder Group | Stakeholder |
|--|---|
| Government Ministries/Departments/ Committees in Lao PDR | Ministry of Energy and Mines Ministry of Natural Resources and Environment Ministry of Agriculture and Forestry Ministry of Planning and Investment Ministry of Information, Culture and Tourism Ministry of Labour and Social Welfare Ministry of Public Health Ministry of Industry and Commerce Ministry of Public Works and Transport Attapeu, Champassak, Saravane, Sekong Provincial Governments Sekong Basin CIA Coordination Committee |
| Hydropower and renewable energy developers and representative bodies | Viet Lao Power JSC, Chaleun Sekong Energy Co., RATCH-Lao Services Co., Ltd., Ratchaburi Electricity Generating Holding Public Co. Ltd (Ratch), China International Water and Electric Corp – CWE, Vientiane Automation and Solution Engineering Co. Ltd (VASE Laos), EDL-GEN Public Company, V&H Corporation, Asia Investment and Development, Lao World Engineering and Construction Company, |

| Stakeholder Group | Stakeholder |
|---|---|
| | Duangpasert Construction Company, Inter Rao Engineering LLC, Impact Energy Asia Co Ltd, among others. Members of Hydropower Developers' Working Group, CNR |
| International / multilateral / bilateral development institutions | IFC, World Bank, ADB, European Investment Bank (EIB), and bilateral agencies (DFAT, JICA, GIZ, AFD), Mekong River Commission |
| Other Governments | Vietnam and Cambodia |
| Universities & research organizations | National University of Laos Subject matter experts / academia |
| Local communities | Communities affected by and likely to be affected by existing and planned medium to large-scale hydropower projects and those who directly interact with the ecosystem components that overlap with the proposed developments. |
| Local and international NGOs | National Heritage Institute, International Rivers, Flora and Fauna International, The Nature Conservancy, Wildlife Conservation Society, World Wildlife Fund, International Union for Conservation of Nature (IUCN), Stockholm Environment Institute, Water Land and Ecosystems, International Water Management Institute (IWMI); Oxfam, Lao Biodiversity Association (LBA), Love Natural Resource Association (LNRA), among others |

5. Project Management

Institutional Arrangements

The Consultant will report directly to IFC.

The consultant will be responsible for coordinating and organizing all activities and consultations that fall within the scope of this ToR, including liaising with government and private sector stakeholders in Lao PDR.

IFC will facilitate the creation of a multi-stakeholder *Sekong Basin CIA Coordination Committee* (the Committee) to oversee implementation of the integrated CIA (Objective 1). In the interests of time, the Committee will be convened in parallel with the recruitment and mobilization of the Consultant.

The Committee will include representatives from private sector developers active in the Sekong Basin, relevant Government of Lao PDR agencies (MEM, MoNRE) and IFC. The Committee is likely to be established under the auspices of the Hydropower Developers' Working Group (*see Box 4*).

The Committee will meet periodically during the course of the project to enable key stakeholders to efficiently engage in the CIA process, facilitating the sharing of data, reports, management plans and information related to the environmental and social impacts of respective developers' projects.

Box 4: Hydropower Developers' Working Group

The IFC launched the Lao PDR Hydropower Developers' Working Group (HDWG) in 2013 to improve the overall sustainability of the hydropower sector in the country. The HDWG provides an opportunity for the private sector to build capacity, network, and input into policy change. Several Independent Power Producers (IPPs) active in the Sekong basin are HDWG members.

Work Plan and Schedule

- The anticipated period of project implementation is **10 months**.
- Mobilization and the integrated CIA portion of the Project (Objective 1) is anticipated to last approximately 6 months of intensive inputs.
- Remaining tasks under Objective 2 and 3 will require intermittent inputs over the remaining 4 months, but may be phased to overlap with the final few weeks of CIA work.
- Consultant teams should be appropriately staffed to ensure sufficient resources to support rapid mobilization and implementation.
- The consultant teams will work from home, Vientiane (IFC office) and in the field. Person days should show how many days will be at home and in the field.

Deliverables

The schedule for key deliverable submission is presented in the table below:

| Deliverable | Description | Due by* |
|---|--|---|
| Inception Workshop (2 days) and Reporting | <p>Day 1: Presentation of proposed Project vision and objectives; institutional arrangements, roles and responsibilities; workplan and schedule of tasks under Objective 1 (Integrated CIA) and Objective 2 (Platform); information/data requirements; etc.</p> <p>Day 2: Seminar focusing on the business case for CIAs; Rapid Capacity Building Needs Assessment.</p> <p>Inception Report including: Project Implementation Plan; Risk/issues Log and Management Plan; Standalone Integrated Cumulative Impacts and Power Optimization Assessment Plan; Summary of Inception Workshop; Stakeholder Engagement Plan; Rapid Capacity Building Needs Assessment Report.</p> | <p>Draft Report: 3 weeks</p> <p>Workshop: 5 weeks</p> <p>Final Report: 6 weeks</p> |
| Interim Workshop (1 day) and Reporting | <p>Workshop to provide an update on project progress; present findings from Tasks A - D) under Objective 1; update project workplan; update plan for remainder of Integrated CIA; discuss risk/issues log; conduct a planning session for tasks under Objective 2.</p> <p>Interim Report on items above; Summary of Interim Workshop; Capacity Building Plan.</p> | <p>Draft Report: 12 weeks</p> <p>Workshop: 15 weeks</p> <p>Final Report: 16 weeks</p> |
| Integrated Cumulative Impacts and Power Optimization Assessment Workshop (1 day) and Report | <p>Workshop to present / verify findings from Tasks A-J under Objective 1 and seek buy-in on the outcomes and recommendations.</p> <p>Integrated Cumulative Impacts and Power Optimization Assessment Report on items above, plus a summary of the workshop proceedings.</p> | <p>Draft Report: 22 weeks</p> <p>Workshop: 25 weeks</p> <p>Final Report: 28 weeks</p> |
| Framework for Sekong Basin Cumulative Impact Co-Management Platform | Report on outcome of Tasks under Objective 2 | Draft Framework: 30 weeks |

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|--|--|--|
| Capacity strengthening workshops | 3 x 2 day workshops on: 1) Key issues emerging from the CIA 2) Orientation: The proposed Sekong Basin Platform 3) Power optimization assessment for sustainable hydropower planning 4) And/or other topics with prior approval from IFC. | 30 weeks 34 weeks 35 weeks |
| Final Project Workshop (1 day) and Reporting | Workshop to provide a Project implementation summary; present summary of final findings and recommendations from Objective 1 and Objective 2; discuss risks/issues/lessons learned for post-Project phase. Final Project Report on items above and annexes: Summary of Capacity Building Workshops; Recommendations to improve CIA Guidelines (<i>updating the Guidelines is not part of the scope</i>). Final Framework for Sekong Basin Cumulative Impact Co-Management Platform; Summary of Capacity Building Activities and Future Recommendations. | Draft Report: 35 weeks Workshop: 38 weeks Final Report: 42 weeks |
| Final stakeholder meetings and dissemination | Series of activities to disseminate Project outcomes to stakeholders and ensure awareness of ongoing processes – e.g. Platform; HDWG. | 40-42 weeks |

**in weeks after contract signing*

All draft deliverables should be presented in English, with final deliverables also translated into Lao at the Consultant's expense.

All workshop materials should be provided to IFC for approval at least 2 weeks in advance.

Meetings of the Sekong Basin CIA Coordination Committee will be held immediately before each workshop listed in the table of deliverables above. The consulting firm will be required to give an oral presentation and respond to any questions arising.

Final deliverables will be subject to the acceptance of IFC and MEM.

All maps generated must be approved by IFC and based on World Bank Group policy.

6. Consultant Qualifications

The Consultant team should be appropriately structured with sufficient resources of qualified international and national consultants to ensure timely mobilization and high quality implementation.

The Consultant team should include an appropriate gender balance.

The Consultant should nominate all specialists required to complete the Project, present the rationale for each position proposed and the envisaged level of (home/field) inputs in person days.

Curriculum Vitae (2 pages maximum) should present tailored information for each key expert and a statement confirming their availability.

Required non-key experts may include translators, interpreters, research assistants and support staff (CVs not required).

Consultants' technical proposals should provide an explanation of how any consortiums or sub-consultants would work together in this Project, outlining who will do what, clarifying lead and supporting roles, and indicating level of input of specialists - full time, part time, short term, etc.

The key expertise required in the Consultant team comprises:

International Team Leader / Cumulative Impact Assessment Specialist (Hydropower)

- Master's Degree or higher in Environmental Science, Environmental Engineering or a related field
- At least 10 years of relevant experience in undertaking CIA and/or ESIA for renewable energy projects in multiple countries, particularly cascading hydropower projects
- Understanding of the IFC CIA Good Practice Handbook and IFC Sustainability Performance Standards
- Substantial international experience, in addition to an excellent understanding of hydropower development and river basin co-management in the Greater Mekong Subregion
- Excellent verbal and written communications skills in English.

National Team Leader (Renewable Energy)

- Degree (preferably a Master's Degree) in
- Environmental Science, Environmental Engineering or a related field
- At least 8 years of relevant experience in undertaking CIA and/or ESIA for renewable energy projects
- Experience and an excellent understanding of river basin co-management in Lao PDR and/or the Greater Mekong Subregion
- Good verbal and written communications skills in English.
- Local understanding and experience of working with the Sekong River Basin will be an advantage.

A suitable combination of international and national specialists covering the following areas of expertise:

Water Resources Engineering / Hydrology

- Degree (preferably a Master's Degree) in Water Resources Engineering or Hydrological Engineering
- At least 15 years of relevant experience in water resource management, hydrological and hydraulic modelling for basin management
- Excellent understanding of and/or expertise in issues related to hydropower projects, basin wide hydropower optimization, dam flow releases and impacts associated with developing and operating cascading hydropower projects.
- Experience in Lao PDR and/or the Greater Mekong Subregion

Civil Engineering (Hydropower)

- Degree (preferably a Master's Degree) in Hydropower Engineering or Civil Engineering
- At least 15 years of relevant experience in hydropower engineering and civil works associated with hydropower development including dam siting, powerhouse site selection, optimization of HPP parameters, cost estimates, dam construction, tunnel construction, and workplace health and safety, etc.
- Excellent understanding of identifying impacts associated with optimal dam/powerhouse configuration to minimize cumulative impacts of cascading hydropower projects.
- Experience in Lao PDR and/or the Greater Mekong Subregion.

Biodiversity / Ecology

- Degree (preferably a Master's Degree) in Ecology or a related field
- At least 8 years of experience with aquatic and terrestrial biodiversity of relevance to hydropower
- Experience in Lao PDR and/or the Greater Mekong Subregion

Social Development

- Degree (preferably a Master's Degree) in Sociology or Anthropology or a related field
- At least 8 years of experience in conducting CIA and/or social impact assessments
- Strong experience in socio-economic analysis of project impacts in Southeast Asia, preferably with experience specific to the Mekong River Basin and with indigenous communities in Lao PDR or the Sekong River Basin.

Stakeholder Engagement

- Degree in Communications, sociology, governance or a related field
- At least 8 years of experience in stakeholder consultation/dialogue across Lao PDR or the Mekong region.
- Direct experience in the Sekong River Basin and the hydropower sector is desirable.

GIS specialist

- Relevant Information Technology qualifications
- At least 5 years of experience managing GIS spatial data and mapping

Appendix A: Hydropower Projects in the Sekong Basin

| Company Name | Hydropower Project | Installed capacity | Current Status | COD Date |
|--|--|--------------------|-----------------|-----------------|
| Viet Lao Power JSC | Xekaman 3 | 250 | Operating | 2014 |
| | Xekaman 1 | 290 | Operating | 2016 |
| | Xekaman - Sanxai | 32 | Construction | 2017 |
| | Xekaman 4 | 70 | FS/PDA | Est <2025 |
| Chaleun Sekong Energy Co | Nam Kong 2 | 66 | Construction | 2017 |
| | Nam Kong 3 | 45 | Construction | 2018 |
| RATCH-Lao Services Co., Ltd. Ratchaburi Electricity Generating Holding Public Co. Ltd (Ratch) | Xepien - Xenamnoy | 410 | Construction | 2019 |
| | Xekong 4A | 175 | FS Approved | Est. <2025 |
| | Xekong 4B | 165 | FS Approved | Est. <2025 |
| China International Water and Electric Corp - CWE | Nam Kong 1 | 75 | MOU | <i>No known</i> |
| | Xekaman 2B | 100 | FS ongoing | Est. <2030 |
| Vientiane Automation and Solution Engineering Co. Ltd (VASE Laos) | Dakchaliou 1 | 11 | <i>No known</i> | <i>No known</i> |
| | Dakchaliou 2 | 13 | <i>No known</i> | <i>No known</i> |
| Construction and Investment International Co Ltd | Houay La Ngea | <i>No known</i> | <i>No known</i> | <i>No known</i> |
| EDL-GEN Public Company | Nam Bi 1 | 50 | PDA | <i>No known</i> |
| | Nam Bi 2 | 68 | PDA | <i>No known</i> |
| | Nam Bi 3 | 12 | PDA | <i>No known</i> |
| V & H Corporation | Xekong - downstream A | 76 | PDA | 2020 |
| Asia Investment and Development (Lao Company) | Xekong 3A | 140 | FS complete | 2020 |
| | Xekong 3B | 146 | FS complete | 2021 |
| | Wind Farm, Xekong Province (Kalarm District) | 600 | MoU | <i>No known</i> |
| Xe-Pian Xe-NamNoy Power Co., Ltd. (PNPC) | Xepien - Xenamnoy | 410 | Cons | 2019 |
| Lao World Engineering & Construction Company | Xekong 4a | 175 | FS Approved | Est. <2025 |
| | Xekong 4b | 165 | FS Approved | Est. <2025 |
| Inter Rao Engineering LLC | Xekong 5 | 330 | FS complete | <i>No known</i> |
| Impact Energy Asia Co Ltd | Monsoon wind farm | 600 | MoU | <i>No known</i> |