

TERMS OF REFERENCE

Hiring Individual Consultant (International) for Preparation of Dam Inspection and Monitoring Guidelines and Assets Management in Sri Lanka

Contract No.: LK-MOMDE-455790-CS-INDV

1.0 Introduction

The Government of Sri Lanka (GoSL), with financing from the World Bank (WB), has proposed the Integrated Watershed & Water Resources Management Project (IWWRMP). The Project Development Objective is to improve watershed and water resources planning, enhance dam safety, and expand irrigation water distribution networks by rehabilitating water resources infrastructure. The project comprises four components, namely, Watershed and Water resources Planning (Component 1), Infrastructure Improvement (Component 2), Contingent Emergency Response (Component 3) and Project Management (Component 4). Among them, Component 2 is dedicated to infrastructure improvements. This component will finance the rehabilitation of headworks and downstream water resources infrastructure to enhance safety and related irrigation canal systems, improving their operational efficiency and durability. These dams and canal systems are overseen, operated, and maintained by Implementing Agencies (IAs), including the Irrigation Department (ID), Mahaweli Authority of Sri Lanka (MASL), and Provincial Irrigation Departments (PIDs).

2.0 Background

Sri Lanka has numerous dams and reservoirs critical for irrigation, water supply, hydro-power, and an additional benefit of flood control. Proper inspection, monitoring, and management of these assets are essential to ensure their safety, functionality, and longevity. The IWWRMP project under the Ministry of Agriculture, Livestock, Lands and Irrigation seeks International & National (Local) consultant to develop comprehensive guidelines for dam inspection and monitoring and provide expertise in assets management.

In Sri Lanka, the operation and management of dams involve several institutional arrangements and entities responsible for various aspects of dam operation, maintenance, and safety. The following agencies play a significant role in water resource management for agriculture, drinking water, hydropower generation, inland fisheries, environmental needs, and water resources development:

- **Irrigation Department (ID):** The Irrigation Department is a key government agency responsible for the planning, construction, operation, and maintenance of irrigation infrastructure, including major and medium dams and reservoirs throughout the country.

- **Mahaweli Authority of Sri Lanka (MASL):** The Mahaweli Authority is responsible for the planning, implementation, and management of the Mahaweli Development Program, which includes several major and medium dams and multipurpose reservoirs.

- **Provincial Irrigation Department (PID):** The Provincial Irrigation Department is a provincial agency responsible for the planning, construction, operation, and maintenance of irrigation infrastructure, including major, medium, and minor dams and reservoirs across provincial rivers.

- **Department of Agrarian Development (DAD):** The Department of Agrarian Development is responsible for cascade management, including the planning, construction, operation, and maintenance of minor dams and reservoirs, and irrigation infrastructure throughout the country.

- **Ceylon Electricity Board (CEB):** The Ceylon Electricity Board is a government agency responsible for the planning, construction, operation, and maintenance of infrastructure, including major, medium, and minor dams and reservoirs for hydropower generation.

- **National Water Supply and Drainage Board (NWSDB):** The National Water Supply and Drainage Board is a government agency responsible for water supplying for domestic and industrial use, as well as the operation and maintenance of dams and related infrastructures for their own reservoirs.

3.0 Objectives

The main objectives of this consultancy are to:

1. Develop comprehensive, practical guidelines for the inspection and monitoring of dams in Sri Lanka.
2. Create a robust framework for the management of assets associated with dams and reservoirs.
3. Enhance the technical capacity of local staff in dam safety, inspection, monitoring, and assets management practices.

4.0 Scope of Work

The International consultant will undertake the following tasks with the support of a National (Local) consultant:

Task 1: Review and Assessment

- Conduct a comprehensive review of existing guidelines, standards, and practices related to dam inspection and monitoring in Sri Lanka.
- Review good international guidelines and asset management framework and summarize key factors and lessons to be reflected.
- Identify gaps and areas for improvement in the existing system.

- Review / Document lessons learned and remedial measures taken.
- Overview of Sri Lankan legislation applicable to dams, legal background.
- Identify issues of coordination among dam owners in the country.

Task 2: Development of Guidelines

- Overarching guidelines in a comprehensive and complementary manner to existing agency guidelines for dam safety, inspection, operation & maintenance and instrumentation monitoring.
- Ensure that the guidelines align with international best practices and standards.
- Include the types of monitoring instruments, reading frequency, analytical/reporting procedures.
- Recommend the level of requirements considering the potential risk of dams.
- Reflect relevant legislation, legal requirements, and inter agency coordination

Task 3: Assets Management Framework

- Develop a comprehensive assets management framework tailored to the needs of Sri Lanka's dam infrastructure including appurtenant structures and reservoirs.
- Include guidelines for inventory management, condition & performance assessment, operation & maintenance procedure, risk management approach and lifecycle management.
- Provide recommendations for the design & implementation of a digital assets management system with GIS linked assets database.

Task 4: Capacity Building

- Design and conduct training programs for relevant staff on the new guidelines and assets management framework including three number of National level workshops at selected three regions of Sri Lanka.
- Provide training materials.
- Offer on-site support during the initial implementation phase.

Task 5: Reporting and Documentation

- Prepare detailed reports at each phase of the assignment, including findings, recommendations, and progress updates.
- Submit a final comprehensive report encompassing all aspects of the consultancy.

5.0 Deliverables

The international consultant is expected to deliver the following deliverables in coordination with the Local Consultant:

Deliverable No	Deliverables	Required Tasks to be Covered	Time Frame from commencement of Contract (Months)
1	Inception report with a detailed work plan and timeline.	Detailed work plan and timeline.	0.75
2	Review and assessment report.	Task 1	2.0
3	Draft guidelines for dam inspection and instrumentation monitoring.	Task 2	3.0
4	Draft assets management framework including the guidelines and other required documents.	Task 3	4.0
5	Conduct three number of national-level workshop & feedback session and report.	Task 4	4.75
6	Training program design and materials including training manuals.	Task 4	5.0
7	Final guidelines and assets management framework including all required documents.	Task 5	5.5
8	Final comprehensive report.	Task 5	6.0

The major outputs of the proposed contract as well as all interim submissions (deliverables) will be reviewed by the Technical Review Committee (TRC) appointed by the Project Director, and the acceptance of the deliverables will be made within **two weeks' time period**.

The Client review time period is included in the above time frame.

The international Consultant shall deliver the presentation base on each deliverable to the TRC.

The submission of reports at each deliverable stage should include with 03 nos. of hard copies with a USB drive.

Payments for each deliverable will be made after the acceptance of the TRC.

6.0 Duration

The consultancy is expected to be completed within a period of 6 months from the date of commencement.

Two weeks of field inspection covering major scale, medium scale and small-scale dams in Sri Lanka is expected during the Task 1 implementation (Review & Assessment).

International Consultant shall remain in the Sri Lanka during the three number of national level workshops conducting period, minimum of one week.

7.0 Work Plan

	1 st Month				2 nd Month				3 rd Month				4 th Month				5 th Month				6 th Month			
	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4
Inception Report																								
Client Review 1																								
Assessment Report																								
Client Review 2																								
Draft Guideline																								
Client Review 3																								
Draft Asset Management																								
Client Review 4																								
Workshops																								
Client Review 5																								
Training Manuals																								
Client Review 6																								
Final Guidelines																								
Client Review 7																								
Final Comprehensive Report																								
Client Review 8																								

The client review period for each item will be only up to a maximum of two weeks period after each item submission or completion.

8.0 Selection Procedure

International Consultant will be selected on an open competitive method in accordance with the procedures set out in the World Bank procurement guidelines: “Procurement Regulations for IPF Borrowers (dated July 1, 2016, revised in November 2017 and August 2018).

9.0 Qualifications and Experience

The international Consultant should possess the following qualifications and experience:

- Advanced degree in Civil Engineering, and/or Water Resources Engineering, or a related field.
- At least 20 years of experience in dam safety, inspection, monitoring, and assets management.
- Proven track record of developing guidelines and frameworks in similar nature assignments.
- Familiarity with international best practices and standards in dam safety and assets management.
- Experience in applying standards, guidance given by the International Commission on Large Dams (ICOLD) and guidelines introduced by the World bank for safety of dams and downstream communities and so on
- Experience in conducting training and capacity-building programs.
- Excellent analytical, communication, and report-writing skills.
- Previous experience working in South Asian region or similar contexts will be considered as an advantage.
- Experience in working on similar projects in different countries, with proof of similar type of work completed.
- Knowledge of best practices adopted by other countries related to dam safety and assets management.
- Ability to work collaboratively with local consultants.

10.0 Facilities to be provided by the client

- Authorized letters will be provided for coordinating with other IAs, based on the request from consultant without any additional payments.
- Coordination with other stakeholders for meetings, workshops or any other project related activities.
- Any field visit requirement shall be done at the cost of consultant.

11.0 Payment Schedule

Payments for each deliverable will be made after the acceptance of the Technical Review Committee.

Deliverable No	Deliverables	Percentage of Payment
1	Inception report with a detailed work plan and timeline.	10 %
2	Review and assessment report.	15 %
3	Draft guidelines for dam inspection and instrumentation monitoring.	10 %
4	Draft assets management framework including the guidelines and other required documents.	10 %
5	Conduct three number of national-level workshop & feedback session and report.	10 %
6	Training program design and materials including training manuals.	10 %
7	Final guidelines and assets management framework including all required documents.	10%
8	Final comprehensive report.	25%
	Total	100 %