

ENVIRONMENTAL MANAGEMENT PLANS

Introduction

An important objective of environmental assessment is to develop procedures and plans to ensure that the mitigation measures and monitoring requirements approved during the environmental compliance review will actually be carried out in subsequent stages of the project. As a result, ADB places strong emphasis on the preparation of EMPs during project processing and on setting out conditions and targets to be met during project implementation. The terms of reference for an EIA thus require the Borrower or their consultants to prepare an EMP as a major output of the environmental assessment. Where appropriate, the key contents of EMPs are incorporated into the loan agreement, for implementation and monitoring by the Borrower.

ADB requires that an EMP be included as part of the EIAs and IEEs (for Category B projects deemed environmentally sensitive). The EMP is carefully reviewed to ensure environmental safeguard compliance prior to the first MRM. However, at this stage in the project cycle, the specific construction and operational activities may not be well defined. And often it is not possible or practical to provide the details required for an effective EMP. Thus the ADB requires that the Borrower ensure that a revised EMP be prepared at the beginning of the implementation stage

Institutional Arrangements

Environmental Management Office

Where relevant, a project environmental management office (EMO), or its equivalent within the Project Management Office/Unit at the executing agency, should be established. To ensure long-term institutional capacity building, it is recommended that the staff of the EMO be drawn from the permanent full-time staff of the executing agency. Major responsibilities of the EMO are to ensure the mitigation measure and monitoring programs are carried out as agreed, and reporting is completed in compliance with the ADB requirements.

Successful environmental supervision requires a mechanism to (i) determine whether the executing agency is carrying out the project in conformity with the EMP, (ii) identify problems, and (iii) to develop plans for corrective action.

In some cases, technical assistance may be required to build capacity, including technical support, equipment and financial resources, for strengthening of the EMO. In general, institutional strengthening should

- help the EMO to supervise the implementation of the EMP including supervision and evaluation of the work to be undertaken by or on behalf of the Borrower with respect to the mitigation measures and monitoring requirements;
- provide on-the-job training to officials of the EMO in order to build technical expertise in the environmental and social aspects of environmental management;
- instruct EMO personnel in the proper techniques of project inspection, monitoring, use of field monitoring equipment, and data collection; and

- assist the EMO to coordinate and consult with other government agencies, local communities, NGOs, and other stakeholders concerned with the environmental aspects of the project.

Contents of the EMP Prior to the MRM

The minimum contents of an EMP that should be included with EIAs or IEEs (for Category B Projects deemed environmentally sensitive), are described below:

1. Summary of Impacts

This section should summarize the predicted adverse environmental and social impacts that must be mitigated.

2. Description of Proposed Mitigation Measures

This section should set out clear and achievable targets, and quantitative indicators of the level of mitigation required. Each measure should be briefly described in relation to the impact and conditions under which it is required. These should be referred to designs, development activities, equipment descriptions, and operating procedures and implementation responsibilities.

3. Description of Monitoring Programs and Parameters

This section should outline the specific monitoring protocols, parameters, and expected frequencies. It should identify objectives and specify the type of monitoring required; it also describes environmental performance indicators which provide linkages between impacts and mitigation measures identified in the EIA/IEE report – parameters to be measured, methods to be used, sampling location and frequency of measurements detection limits and definition of thresholds to signal the need for corrective actions. Monitoring and supervision arrangements should be agreed by the ADB and the executing agencies to ensure timely detection of conditions requiring remedial measures; furnish information and the progress and results of mitigation and institutional strengthening measures; and assess compliance with national and ADB environmental safeguard policies.

4. Public Consultation Activities

The EMP should include a plan for public consultation activities during the finalization and implementation of the EMP. The degree of consultation will depend on the project and local situation, but will normally include (i) notification of local communities when project activities are going to take place; (ii) disclosure of the results of monitoring programs to local communities and other stakeholders; and (iii) provision for independent third party monitoring, where necessary (see Chapter X). Projects with potential for significant adverse impacts may require public consultation on the design of mitigation measures and provide for public participation in environmental monitoring. Stakeholder consultation is also recommended during the preparation of final monitoring reports.

5. Description of the Responsibilities for Mitigation and Monitoring Requirements

This section should specify the institutional arrangements for implementation - taking account of the local conditions. Responsibilities for mitigation and monitoring shall be defined along with arrangements for information flow, and for coordination between agencies responsible for mitigation. EMP specifies the organizations and individuals that will be responsible for undertaking the mitigating and monitoring measures, e.g., for enforcement of remedial actions, monitoring, training, and financing. A third party may be contracted in case the local authorities' capacity is limited. The EMP may propose institutional strengthening activities including establishment of appropriate organization arrangements, appointment of key staff and consultants; and arrangements for counterpart funding and onlending when necessary.

6. Preliminary Cost Estimates

To ensure that mitigation measures and monitoring are adequately funded, the EMP should contain preliminary cost estimates.

Additional Contents of the EMP to include in Revised EMP during Implementation

During implementation, the EMP should be revised once construction and operational activities are well defined. Additional information should be provided on (i) the responsibilities for reporting, (ii) the work plan, (iii) the procurement plan, (iv) detailed cost estimates, and (v) mechanisms for taking corrective action.

7. Description of the Responsibilities for Reporting and Review

This section should specify institutional responsibilities for contractors, Borrower (DMC government), local authorities, and ADB, with the roles that prepare, submit, receive, review, and approve the reports. An implementation schedule detailing the timing, frequency and duration of mitigation measures, monitoring, and reporting of the progress should be prepared, showing phasing and coordination with procedures in the project operations manual and loan agreement. Recipients of such reports should include those with responsibility for ensuring timely implementation of mitigation measures and for undertaking remedial actions. In addition, the structure, content and timing of reporting should be specified to facilitate supervision, review and approval (if necessary) by ADB.

8. Work Plan

This section should specify staffing chart for the EMO, where necessary, and other related work, proposed schedules of participation by the project team members, and activities and inputs of related government agencies. The responsibilities and requirements of contractors should be clearly addressed to ensure integration into legal requirements and bidding/contract documents—EMP requirements should be integrated into such documents to ensure that contractors are clear with their obligations—where supervision identifies inadequacies in their implementation such documents provide a basis for enforcement and reporting. Implementation of major environmental covenants should be linked to disbursement conditions.

9. Procurement Plan

This section should include 2 sections: (i) the plan for procurement of the specific items and equipment required to implement of the mitigation and monitoring programs in the EMP, and (ii) a description of procedures to ensure consistency of all project procurement with the principles and practices of environmentally responsible procurement of goods and services (see Chapter XIII).

10. Cost Estimates

This should section provide the detailed costs of implementation. These should be specified for both the initial and recurring expenses for implementing all measures defined in the EMP, integrated into the total project costs and factored into loan negotiations. All costs—including administrative design and consultancy, and operational and maintenance costs—resulting from meeting required standards or modifying project design should be captured. A budgeting plan should be attached to resolve the issues of how those costs are to be met.

11. Project Feedback and Adjustment

The section should outline the procedures and mechanisms that will be used to modify and reshape the project in the light of monitoring results. A feedback mechanism, with proposed timing and procedures, should be included in the EMP to provide for modifications to the Project, and the executing agencies, the EMO, and the ADB.

Contents of a Complete EMP

1. Summary of Potential Impacts
2. Description of Planned Mitigation Measures
3. Description of Planned Environmental Monitoring
4. Description of Planned Public Consultation Process
5. Description of the Responsibilities and Authorities for Implementation of Mitigation Measures and Monitoring Requirements
6. Description of Responsibilities for Reporting and Review
7. Work Plan including staffing chart, proposed schedules of participation by various members of the project team, and activities and inputs of various government agencies
8. Environmental Responsible Procurement Plan
9. Detailed Cost Estimates
10. Mechanisms for feedback and adjustment

Sample Forms

The development of mitigation measures, the monitoring program, institutional arrangements and scheduling can be aided by the use of the matrices presented in Tables 1 – 14 attached. These matrices should be included in the EMP document.

Table 1: Template for summarizing Mitigation Measures

Project Stage	Project Activity	Potential Environmental Impacts	Proposed Mitigation Measures	Institutional Responsibilities	Cost Estimates
Pre-Construction Phase					
Construction Phase					
Operation and Maintenance Phase					

Table 2: Template for summarizing Monitoring Requirements

	Mitigation Measure	Parameters To be Monitored	Location	Measurements	Frequency	Responsibilities	Cost
Pre-Construction Phase							
Construction Phase							
Operation and Maintenance Phase							

Table 3: Template for summarizing Institutional Strengthening and Training

I. Strengthening Activity	Position (Responsibilities)	Strengthening Program		Schedule	Cost Estimate
Mitigation					
Monitoring					
II. Training Activity	Participants	Course	Content	Schedule	Cost Estimate
1. EMP Implementation Re-design Conflict Resolution					
2. Environmental Processes, Methods and Equipment					
3. Environmental Policies and Programs					

Table 4: Template for Scheduling and Reporting

Activity	Year 1				Year 2				Year 3				...			
	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4				
Mitigation Measures _____ _____																
Monitoring _____ _____																
Institutional Strengthening _____ _____																
Training _____ _____																