

Minimum requirements for an Environmental Management Plan for River Sand Mining (Category B Only)

The EMP is an essential tool for ensuring that mitigation of the negative impacts and enhancement of the positive impacts is carried out effectively throughout the life of the project. An EMP should be systematically improved on a regular basis to ensure that best available technologies (BATs) and best environmental management practices are implemented in a manner that is pragmatic, efficient and cost-effective.

The Environmental Licensing Law requires that the EMP is a document for Category B Project. The EMP must be prepared as a stand-alone document: This means that there may be some baseline information as parts of the environmental assessment process.

It should be noted that the any resettlement or compensation matters are not part of the EMP but should be presented separately.

The EMP shall include, as relevant, the following elements:

1. Executive Summary
Provide a summary of the key impacts identified for the different phases of the proposed project, and the measures that will be put in place to manage and monitor such impacts.
2. Details of the project proponent
3. Details of the consultants or persons who prepared the EMP
4. Description of the project
This section should include details of project activities.
5. Description of the environment
The description of the baseline conditions of the existing environment should provide information on the physical, ecological, economic, social, and cultural components. This description should also include details of the interactions between these different components and the importance of such relationships.

This section should also include details of the methodologies used for data collection and analysis.

This section should provide sufficient information to give a brief but clear picture of the existing environmental conditions.

The information should include, as relevant:

- a. Physical components
 - i. Climate, including any implications of climate change
 - ii. Geology
 - iii. Air
 - iv. Surface waters
- b. Ecological components
 - i. Wetlands
 - ii. Mangroves
 - iii. Protected areas and national parks

- iv. Flora and fauna, especially any rare, endangered, vulnerable, threatened or previously un-catalogued species or habitats. Including, in particular, reference to the IUCN, and any regional or national listing of rare, endangered, vulnerable or threatened species or habitats
 - c. Economic components, including
 - i. Employment sectors
 - ii. Infrastructure facilities
 - iii. Land use
 - iv. Tourism
 - d. Social components
 - i. Population and communities (including numbers, locations, composition, employment, unemployment)
 - ii. Health profiles of communities
 - iii. Institutions, schools and health facilities
 - iv. Land ownership, including informal or customary land ownership, and any other rights over the land
 - e. Cultural components, including non-physical resources and elements, including
 - i. Cultural heritage
 - ii. Archeological sites
 - iii. Historic sites
 - iv. Sacred sites
 - v. Unique landscape
6. Legal requirements
- This section should present the legislation, standards, guidelines etc related to environmental and social aspects of the project.
- Typical obligations may consist of World Bank/IFC/ADB performance standards, IFC environmental, health and safety standards or guidelines, ADB environmental and social safeguards, Equator principles, ISO standards, EITI principles, and sustainability reporting guidelines under the Global Reporting Initiative.
7. Institutional roles and responsibilities
- This section should identify the different roles and responsibilities of the developer and institutions at the different stages of the prescribed development. In particular it should identify who should update the EMP based on detailed designs, who incorporates that into the bid and contract documents, civil works contractor to prepare construction or site-specific EMP based on proponents EMP.
- This section should also identify who monitors compliance with the EMP.
8. Summary of impacts
- This section should summarize the anticipated negative environmental and social impacts identified from the Project.
9. 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 impacts and conditions under which it is required.

It may be necessary to sub-divide this section between the different phases of the proposed project: construction, operation and decommissioning.

10. Governing parameters

This section should set out the specific emission limit values and environmental quality standards which are relevant to the proposed project.

The proponent must indicate how he intends to comply with international best practice and Best Available Technologies.

Any use of modeling or engineering calculations should be clearly explained and referenced.

The proponent must provide details of all relevant parameters – and for emissions/discharges to air, water, soil, and waste management. Discharges to sewers should be included, if relevant. This section should also address any occupational health and safety standards.

The information may be provided in table format. For example:

Discharges to water			
Parameter	International best practice standard	Proposed discharge limit value	Comments
pH			
BOD			
COD			
Suspended solids			
Bacteria			
Heavy metals			
Pesticides			
Eutrophication			
etc			

It may be necessary to sub-divide this section between the different phases of the proposed project: construction, operation and decommissioning.

11. Monitoring program

This section should detail the specific parameters, monitoring protocols, sampling locations and frequencies of monitoring, and how compliance with implementation of the EMP and sub-EMPs will be checked and reported.

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The above information may be presented in table format.

It may be necessary to sub-divide this section between the different phases of the proposed project, such as: construction, operation and decommissioning.

The Monitoring program should be such that the following objectives are met:

- to measure the impacts that occur during the different phases of the project, as relevant, construction, operation, and decommissioning, closure and post-closure;
- to ensure compliance with legal requirements and corporate commitments;
- to determine the effectiveness of mitigation measures and other environmental or social protection measures, such as enhancement measures;

- to determine the accuracy of impact predictions;
- to facilitate impact management by warning of unanticipated impacts.

The monitoring programs (e.g., air quality or groundwater monitoring) should be designed to allow for appropriate management actions to be taken as soon as possible in the event of any accident or incident, or any non-compliance with any emission limit value or environmental quality standard.

12. Reporting requirements

This section should set out the reporting frequencies and types of reports to be prepared. This should include:

- a. internal monitoring and inspection
- b. incident, accident and emergency reporting
- c. Measuring performance indicators and interpreting and acting on the indicators
- d. Training programs.

The types of reports, and reporting frequencies for reporting to the environmental authorities, and other authorities should also be specified.

It shall be a condition of any environmental license that the license holder informs the appropriate authorities as soon as practicably in the event of any accident or incident.

13. Responsibilities for mitigation and monitoring

The responsibilities for the various parties involved in implementing the management actions, mitigation measures and monitoring activities must be clearly defined.

This section should include the arrangements for information flows and for co-ordination between the various parties.

14. Emergency plan

The EMP should include an emergency plan to address risks associated with accidents and emergencies during construction, operation and decommissioning.

The emergency plan should be linked to any other local emergency plans.

The emergency plan should address the specific risks associated with any dangerous chemicals or hazardous wastes (if any).

15. Decommissioning plan

A brief summary from Mine Closure Plan.

16. Capacity development and training

Training is essential for ensuring that the provisions of the EMP are implemented efficiently and effectively. Training needs should be identified based on the existing and available capacity of the site and project personnel (including the proponent, contractors and subcontractors) to undertake the required management actions and monitoring activities.

A training program should be presented in this section of the EMP. The training program should be developed and delivered by suitably qualified personnel, in a language and medium understood by workers or employees.

17. Public consultation and information disclosure

Involving the public in preparation of the EMP is fundamental to increasing the public's understanding and acceptance of the project (e.g., how the project may affect or

improve their living conditions). Public involvement also enables members of the public to identify and bring forward impacts and issues that are not immediately obvious to those preparing the EMP. The earlier in the project preparation process the public can be involved, the more likely that a trusting relationship can be built and useful recommendations made.

The project proponent must undertake a process of consultation with people who may be affected by the project and the project stakeholders. The project proponent must ensure that the public, including affected people and women have the opportunity to participate fully in the consultation process. Consultations should take place on a continuous basis starting as early as possible in the EIA process.

This section should include:

- a. Purpose of the consultation during the preparation of the EMP
- b. methodology and approach
- c. summary of consultation activities carried out
- d. summary of main comments received from the public, community leaders, NGOs, local officials, other stakeholders
- e. identify how those comments were taken into account
- f. details of public participation activities (dates, venues, attendance, topics discussed, minutes of meetings etc)
- g. Summarize the public acceptance or opinions on the proposed project
- h. describe other related materials or activities (such as press releases, notifications)
- i. recommendations for future consultations.

This section should also include the measures to ensure the continued participation of the public throughout the life-cycle of the project.

18. Complaints and grievances mechanisms

The proponent shall establish a complaints and grievances mechanism (CGM) related to environmental and social issues arising during the construction, operation and decommissioning, closure and post-closure phases.

This CGM may be managed by the proponent/license holder with involvement of local authorities and community leaders. This may be accomplished by setting up a project mediation committee that will meet on a regular basis, or in response to a particular incident.

The proponent should indicate how it will manage complaints and grievances in the EMP.

Any complaints and grievance mechanism is without prejudice of the rights of any complainant to make a complaint to the environmental or other authorities or to commence proceedings through the courts.

19. Work plan and implementation schedule

This section should include a work plan and implementation schedule indicating the timing of activities and operations, together with the related environmental engineering works and inspection and monitoring schedule.

The work plan and implementation schedule is particularly important during the construction phase of the project.

20. Cost estimates

To ensure that the mitigation measures and monitoring requirements are correctly implemented and funded, this section should contain the cost estimates.

This section should include both the initial costs and recurring expenses for implementing all the measures defined in the EMP.

21. Review of the EMP

This section should outline the procedures and mechanisms that will be used to revise the project in the light of monitoring results or changes to the project.

22. Non-technical summary

A non-technical summary of all the above information should be provided. It should be written in plain and simple so as to be understood by the average person.

Annexes

It may be necessary to include thematic environmental management and monitoring plans. These may be better presented as annexes to the main EMP.