

Sustainable Tourism Training - Samoa

Role of the Environmental Management Plan (EMP)

2-4 March, 2022







Key Outline:

1. Environmental Management Plan.
2. Planning, Monitoring, Reporting.
3. joped@sprep.org/7253782.

Sustainable Tourism

- Sustainable tourism is a concept that covers the complete tourism experience, including concern for economic, social and environmental issues as well as attention to improving tourists' experiences and addressing the needs of host communities





What is an Environmental Management Plan?

- The Environmental Management Plan (EMMP) represents **the key mitigation and enhancement measures for impacts**, which are translated into concrete action programs/projects and defines the institutional framework and mechanisms for ensuring their appropriate implementation
- A plan that translates proposed mitigation measures into practice.
- Typically developed as part of environmental assessment

Example: Environmental Management Plan

For a Power Plant Construction Project in X-land

B. Monitoring: Operation Phase

Potential Environmental Impacts	What <i>parameter is to be monitored?</i>	Where <i>is the parameter to be monitored?</i>	How <i>is the parameter to be monitored?</i>	When <i>is the parameter to be monitored?</i>
Air emissions of NO _x , SO ₂ , CO, and particulate matter (PM)	Emissions of air pollutants: (1) NO _x calculated as NO ₂ ; (2) SO ₂ ; (3) CO; (4) PM. The applicable standards are: (1) NO ₂ ≤ 400 mg/m ³ ; (2) SO ₂ ≤ 850 mg/m ³ ; (3) CO ≤ 150 mg/m ³ ; (4) PM ≤ 100 mg/m ³	At the stack of the power plant	By continuous monitoring equipment supplied with the power plant	Initial test at commissioning and annual subsequently. Continuous for NO _x and CO.
Air emissions of NO _x , SO ₂ , CO, and particulate matter (PM)	Ground level concentrations: (1) NO _x ; (2) SO ₂ ; (3) PM. The applicable environmental standards are: (1) NO _x : Annual average ≤ 40 µg/m ³ ; Max 24-hour average ≤ 150 µg/m ³ ; Max 30-min average ≤ 500 µg/m ³ (2) SO ₂ Annual average ≤ 40 µg/m ³ ; Max 24-hour average ≤ 150 µg/m ³ ; Max 30-min average ≤ 500 µg/m ³ (3) PM Annual average ≤ 50 µg/m ³ ; Max 24-hour average ≤ 125 µg/m ³ ; Max 30-min average ≤ 280 µg/m ³	In adjacent residential areas and/or nearest air quality monitoring stations	By buying data from the local air quality monitoring station	Once before commissioning of the plant and annually when the plant is in operation
Noise from construction works	Noise level, dB[A]. Applicable limits are 80 dB[A] on-site and 65 dB[A] off-site.	At 1 meter from operating turbines and in nearest residential areas	Measurements by a licensed organization using certified measurement devices	Once before commissioning of the plant and annually when the plant is in operation

Example: Environmental Management Plan

For a Road Safety Improvement Project

A. Mitigation: Construction Phase

Project Activity	Potential Environmental Impacts	Proposed Mitigation Measures	Institutional Responsibility	Costs
Construction: Material supply	<i>Asphalt plant</i> dust, fumes, workers health and safety, ecosystem disturbance	Use existing asphalt plants; requirement for official approval or valid operating license	Contractor/Plant Operating Company (Ensuring that materials only come from licensed sources would be included in the contract terms, and it would be the contractor's responsibility to comply with his contract)	US\$ 5000
Construction: Construction site	<i>Destruction of crops, trees, meadows, etc.</i>	Ensure control of working zone and land acquisition; compensate damage	Construction Contractor; Road Administration	Depends on scale of damage

What is a OEMP and CEMP?

- Operational Environmental Management Plan (OEMP) provides a framework for project specific environmental management.
- A CEMP describes how activities undertaken during the construction phase of development will be managed to avoid or mitigate environmental or nuisance impacts, and how those environmental management requirements will be implemented.

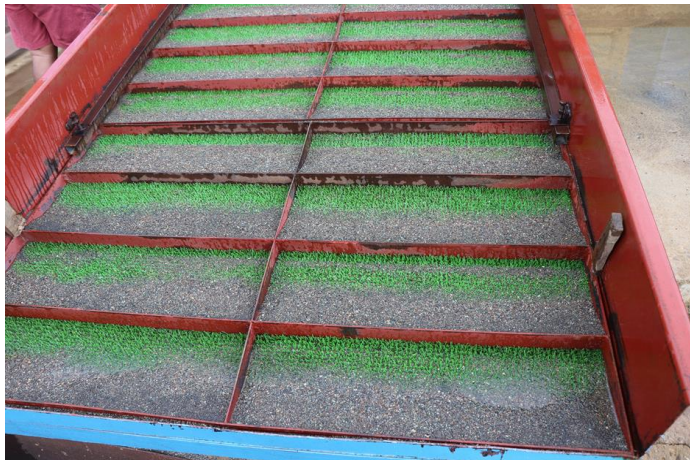
Mining Case Study



Extraction



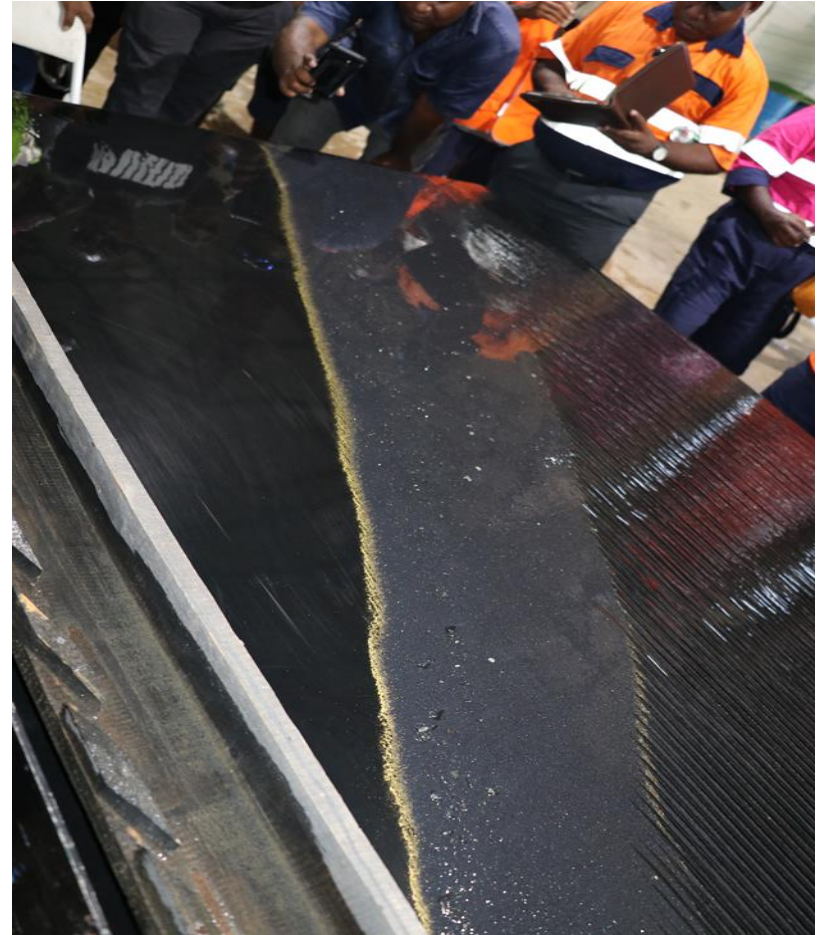
Separation



Sand Collection



Silt Collection



Country Case Study – Port Development



The EIA Report:

- 1. EIA Report submitted with the EMP by the Ports Authority**
- 2. The EIA Report was Approved by the regulator**
- 3. The EMMP was sighted but not approved by the regulatory agency**
- 4. There was lack of monitoring carried out by the agency – not understanding what is the EMP and the purpose of the EMP.**

What is the main aim of the EMP?

The objective of Environmental Management Plan (EMP) is to formulate measures which will:

1. **Mitigate adverse impacts on various environmental components, which have been identified during the environmental impact assessment study.**
2. **Protect environmental resources where possible**



Regulatory Requirements of EMP in some laws in the Pacific

Country A – Environment Management Act

EM 32 Environmental Management and monitoring

(1) A proponent must prepare and implement any environmental or resources management plan. Monitoring programme, protection plan or mitigation measures that is required as a condition of any approved EIA.

(2) The EIA Administrator or an approving authority, may conduct an inspection to determine compliance with subsequent (1)

Environmental management plan (EIA Regulation)

26. (1) If an environmental management plan for a proposal is required as part of an EIA report by the TOR, it must –

- (a) describe in respect of the proposal the environmental protection measures that will be put in place by the proponent if approval is given for the proposal;**
- (b) include an environmental monitoring and surveillance program of action;**
- (c) provide for an environmental monitoring committee to be appointed by the proponent to verify that the environmental protection plan is being fulfilled and adverse impacts of the proposal documented.**

Country B - Environment (Permits and Consents) Regulations 2018

Definition: environmental management plan means, in relation to a project permit or a consent, the plan required under regulation 20

Regulation 20: Where management plan imposed as condition If, in accordance with section 36(7)(a), 50(2)(a)(ii), 51(2)(a)(ii), 57(2)(a)(ii), or 58(2)(a)(ii) of the Act, the permitting authority requires a management plan to be prepared as a condition of a project permit or consent, the permitting authority must specify the particular requirements of the management plan.

Country C:- ENVIRONMENTAL PROTECTION AND CONSERVATION ACT [CAP 283]

1 After sub-clause 3(2)

Insert "(3) In addition to sub-clause (1), the Director may, if he or she considers necessary, require a project proponent to submit an Environmental Monitoring and Management Plan."



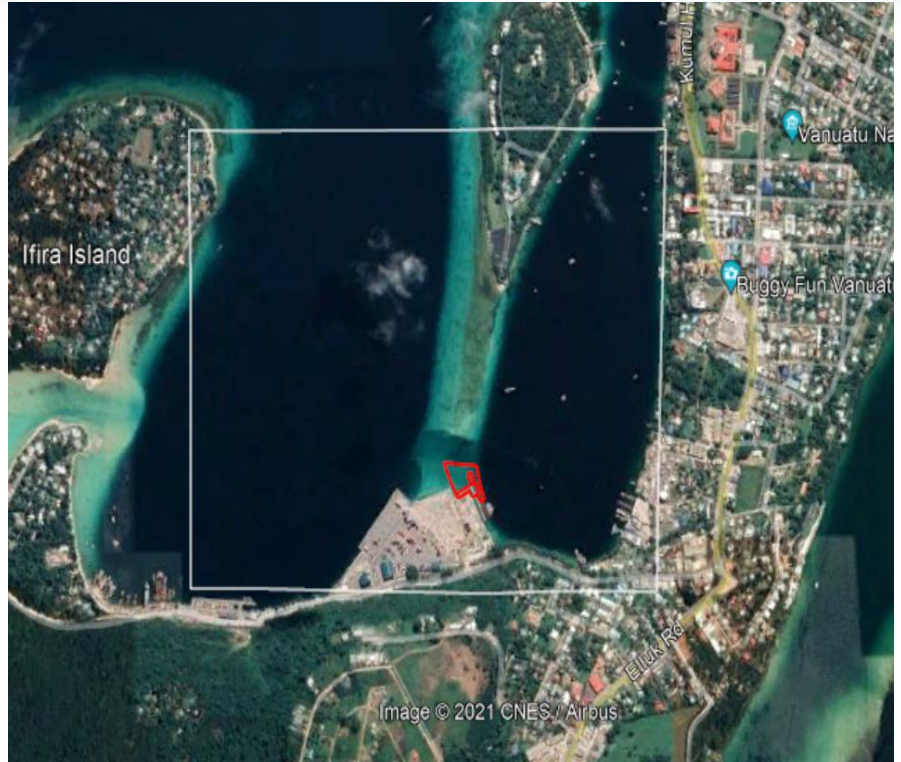
Questions:

1. Who approves the EMP?
2. Does it need to be reviewed by other sectors?
3. Who prepares an EMP?
4. What are some of the things you should prepare yourself with before you review an EIA or EMP?



1. Define Project Influence area (s)

- Project site
- Immediately adjoining area
- Broader affected areas
- Areas subject to induced/indirect impacts
- Areas subject to cumulative impacts



2. Identify Environmental or Sensitive Receptors

- Communities or objects at risk from project impacts
- Communities – social, cultural environmental
- Objects – buildings or artifacts affected by vibration, erosion, worksite itself



3. Identify Project Components & Construction Activities

- Project components
- Construction Activities
- Schedule of works



Construction Activities and Schedule

- Site Clearance
- Demolition and removal of structures
- Dredging
- Piling
- Rock armouring for revetment
- Deck & ramp construction
- Site pavement, drainage, water supply, lighting, access gate



Step 4. Conduct Risk Assessment

Risk = likelihood × consequence

Likelihood – certain (5); likely (3); unlikely (2); rare (1)

Consequence – catastrophic (5); major (3); moderate (2); minor (1)

Risk assessment matrix



Risk assessment matrix

Environmental Management Measures

Construction/op eration/activity	Risks	Likelihood that site or sensitive receptors will be Affected (score)	Consequence if site or sensitive receptors Affected (score)	Risk Score (consequence x likelihood)
Site Clearance	Dust	1 rare	2 moderate	2
	Noise	1 rare	2 moderate	2
	Traffic safety on road	2 unlikely	3 major	6

***The risk scores determines the need for environmental management measures
(>6 requires action)***

Step 5. Assign Environmental Management Measures

Construction /operation/activity	Risks	Likelihood that site or sensitive receptors will be Affected (score)	Consequence if site or sensitive receptors Affected (score)	Risk Score (consequence x likelihood)
Site Clearance	Dust	1 rare	2 moderate	2
	Noise	1 rare	2 moderate	2
	Traffic safety on road	2 unlikely	3 major	6

What will be the Environmental Management Measures?

Planning, Monitoring and Reporting EMP – The Responsible Parties

1. Environmental Authority and Monitoring & enforcement officer(s)
2. Developer
3. Environmental Specialist and consultants
4. Site supervisors and contractors
5. Management and workers



Planning, Monitoring and Reporting EMP – The Responsible Parties

Planning – Ensuring that everything is in place before construction starts

Monitoring – Checking if the project is proceeding as planned, also recording and correcting problems.

Reporting - Letting all stakeholders know how the project is progressing.



Planning

- Ensuring that everything is in place before construction starts
- Communication with all stakeholders
- Conditions of development
- Time of monitoring
- Resources
- Committees



Monitoring – Checking if the project is proceeding as planned, also recording and correcting problems. Why monitor?

- To verify the effectiveness of environmental management measures.
- To comply with statutory requirements (permit conditions, applicable standards)
- For continuous improvement:
- environmental awareness,
- deterrents.
- To collect evidence.



Reporting - Letting all stakeholders know how the project is progressing

Focus on	Focus on monitoring and inspection and results (no pasting loads of text from other reports)
Use	Use tables and photos – can be updated each report
Include	Include completed checklists

