

Good Practice in Environmental Impact Assessment for Coastal Engineering in the Pacific

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Summary

Environmental impact assessment (EIA) is used to manage development projects. It aims to maximise benefits and minimise negative impacts on communities and their environment. When implemented well, EIA can support the achievement of green growth targets, climate change resilience, and UN Sustainable Development Goals. Across the Pacific, SPREP has been promoting the use of EIA for more than 25-years. While the SPREP 2016 and 2018 guidelines provide a detailed overview of EIA, they do not provide practical details on how to assess and mitigate impacts from coastal development projects. Consequently, a new guide has been produced by RHDHV for SPREP to do just this.

Keywords: coastal development, environmental impact assessment, good practice, Pacific.

Introduction

The Secretariat of the Pacific Regional Environment Programme (SPREP) has been promoting the use of EIA, delivering EIA capacity-building and building on advances in global practice relating to EIA for more than 25-years. While the SPREP 2016^[1], 2018^[2] and 2020^[3] *Environmental Assessment Guidelines* provide a detailed overview of EIA and offer practical tips and tools to support Pacific Island communities and territories (PICT) government officers managing the EIA process, they do not provide practical details on how to assess and mitigate impacts from specific developments, including the many projects in the Pacific that entail coastal engineering.

Coastal environments in the Pacific are ecologically diverse and, in many instances, cover entire islands from reef to ridgetop. They supply valuable resources that support PICT lifestyles, livelihoods and cultural practices; and they provide critical defences against storms, cyclones and tsunamis causing flooding and erosion, the frequency of which is expected to increase with climate change. Coastal engineering projects can make a positive contribution to PICTs if they are designed to ensure that important coastal areas are not degraded, and the EIA process is an important tool for achieving this by identifying likely impacts, alternatives and mitigation measures.

Guidance

Given this context, SPREP determined that guidance on good practice in EIA for coastal management and development projects would be valuable and the *Good Practice in EIA Guide for Coastal Engineering in the Pacific* was born. The guide is not intended to alter the established EIA process, but to build upon it, with a specific coastal engineering, adaptation, and management focus. It provides specific examples, approaches and mitigation measures relevant to the coastal

environment; and is designed to support PICT governments in meeting their obligations to undertake, require and review EIAs for coastal development, in line with relevant multilateral environmental agreements, including the Noumea Convention and Convention on Biological Diversity.

Content

The Guide is provided in two parts: (a) a guidance note and (b) an environmental monitoring and management plan (EMMP) 'toolkit'. The note introduces coastal systems in the Pacific and typical engineering projects; from dredging, reclamation, maritime facilities, breakwaters, seawalls, outfalls and moored structures, through to beach nourishment and other nature-based solutions (see Figure 1).



Figure 1 Te buibui structure in Abaiang, Kiribati (Source: SPREP, 2015^[4])

It provides information on the supporting studies typically required for EIA and approaches suited to the Pacific (but is not a survey or site investigation guide) and covers in detail typical impacts and mitigation strategies (see Figure 2) relating to:

- changes in coastal processes;
- changes marine water and sediment quality;

- direct and indirect implications for benthic communities and habitats;
- direct and indirect implications marine fauna and avifauna;
- potential effects on terrestrial habitats; and,
- potential effects on communities (air quality, noise and societal implications).

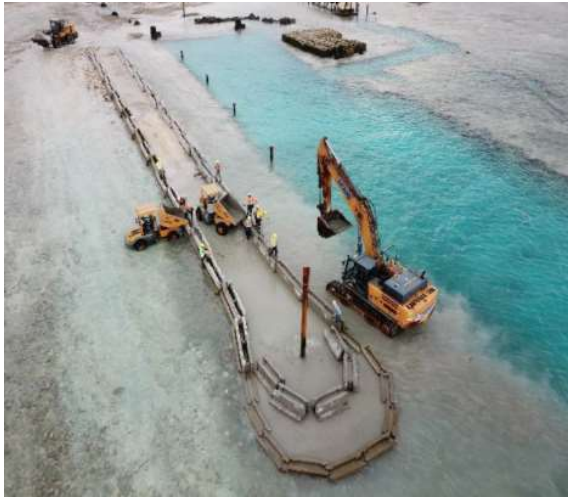


Figure 2 Examples of working in low tide conditions and bunding in Nukulaelae, Tuvalu (Source: in house)

This includes good practice examples, points to note and tips (e.g., on the use of portable monitoring devices in remote locations and defining modelling requirements based on working methods).

EMMP

Project specific EMMPs are generally required as a step to attaining approval to start work and form part of the approval conditions and environmental licences or permits for project operations. EMMPs typically follow from EIA, with the objective of implementing and ensuring mitigation, monitoring and management actions.

The EMMP toolkit sets out the core requirements of and for environmental monitoring and management (see Figure 3), and plan scope and structure. Of potentially more value, however, it provides an EMMP template and a review checklist, as well as example EMMP measures.

Effective EIA

Scoping is the process of identifying the issues to be addressed in EIA and the level of detail to which an issue is to be examined. Scoping is a fundamental early stage of the EIA process that enables the resources available to be focussed on the key issues, saving time and money.

Good consultation is crucial to a successful EIA process and requires a considered and continuous approach. It should identify sites of importance, risks and hazards, and support the design of appropriate solutions. In the Pacific, the approach taken to stakeholder engagement must also account for the cultural norms and hierarchy of the location where the project is taking place.

The EIA process does not end once consent is issued; as development approvals are typically contingent on conditions set by the regulator, which often refer directly to the mitigation measures identified in the EIA and/or specific conditions to be implemented through an EMMP. Therefore, the need for environmental monitoring & management (in line with the EIA) continues for the life of the project. To this end an EMMP should be a living document that is periodically reviewed and amended to reflect changing environmental conditions, project details and developments in good environmental management.

This paper will introduce the good practice EIA guide produced by RHDHV for and with SPREP.

References

[1] SPREP (2016). Strengthening environmental impact assessment: guidelines for Pacific island countries and territories. Apia, Samoa: SPREP.
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 [3] SPREP (2020). Strategic environmental assessment: guidelines for Pacific island countries and territories. Apia, Samoa: SPREP.
 [4] SPREP (2015). The Village That Banned Seawalls. <https://www.sprep.org/news/village-banned-seawalls>.
 [5] SPREP (*in press*). Good Practice in environmental impact assessment guide for coastal engineering in the Pacific. Apia, Samoa: SPREP.

| Project activity | Predicted impact | Management / Mitigation measure | | Monitoring | |
|------------------|------------------------------------|---------------------------------|----------------|---|----------------|
| | | Action | Responsibility | Approach & Timing | Responsibility |
| Excavation | Sediment laden runoff leaving site | Install sediment fences | Site Manager | <ul style="list-style-type: none"> • Daily visual inspection of sediment fences to ensure they are installed correctly and capable of retaining sediment on site. • Visual inspection of sediment fences during rain events to ensure no sediment is washed from site | Site Manager |

Figure 3 EMMP Toolkit example responsibility matrix (SPREP, in press^[5])