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# Addressing environmental impact assessment challenges in Pacific island countries for effective management of deep sea minerals activities<sup>☆</sup>

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## ABSTRACT

Environmental impact assessment (EIA) is an important instrument for management of deep sea minerals (DSM) activities in the Pacific islands region. However, effective EIA application is likely to be impeded by four challenges common among Pacific island countries: (1) human resource shortfalls; (2) insufficient quality control exercised over EIA reports; (3) weak compliance monitoring and enforcement; and (4) low levels of public engagement and participation in EIA. This paper identifies options for addressing the challenges, to improve EIA implementation and to ensure DSM activities are subject to appropriate regulation and oversight. Risks may be faced if the challenges are not addressed, including, failure to meet environmental management and governance obligations; loss of confidence in the regulatory system; environmental harm; and discouragement of sustainable development and investment. Pacific island countries that choose to engage with the DSM sector must apply EIA rigorously and continually work at improving their EIA systems, if they seek to maximise positive development outcomes and to minimise adverse effects on other marine users and values.

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## 1. Introduction

In the Pacific islands region it is well-recognised that deep sea minerals (DSM) activities (prospecting, exploration and mining) must be subject to rigorous environmental regulation and management, to maximise positive development outcomes and to minimise adverse effects on ecological systems, marine species of local and global significance, ocean processes, ocean-based ecosystem services, and other marine users and industries [1–3]. Sound regulation and management of DSM activities will be critical for ensuring Pacific island countries (PICs) can continue to derive multiple commercial, cultural, recreational, economic, scientific and conservation benefits from their surrounding ocean-scapes [1,3,4].

Environmental impact assessment (EIA) is a universally recognised environmental management instrument [5], applicable to DSM development [6]. The International Association for Impact Assessment has defined EIA as: “The process of identifying,

predicting, evaluating and mitigating the biophysical, social, and other relevant effects of development proposals prior to major decisions being taken and commitments made” [7].

EIA was introduced into the Pacific region in association with Asian Development Bank and World Bank projects, and started to be incorporated into national environmental policies and legislation in the 1990s and 2000s, supported by EIA awareness-raising and training programmes led by organisations such as the Secretariat of the Pacific Regional Environment Programme (SPREP) [8–10].<sup>1</sup> All PICs, with the exception of Nauru, now have provisions for EIA within their national environment laws [11]. Specific requirements for EIA are also included under national seabed minerals/mining laws in the Cook Islands, Fiji, Papua New Guinea, Tonga and Tuvalu,<sup>2</sup> and under regional and international multilateral environmental agreements to which many PICs are party, e.g. Convention for the Protection of the Natural Resources and the Environment of the South Pacific Region (Noumea Convention) [12]; Convention on Biological Diversity (CBD) [13]; United Nations Convention on the Law of the Sea (UNCLOS) [14]. A number of PICs also support the Rio Declaration on Environment and

<sup>☆</sup>The opinions contained in this article are expressed by the authors in their personal capacity and do not reflect the views of the Pacific Community (SPC) or the Secretariat of the Pacific Regional Environment Programme (SPREP).

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<sup>1</sup> SPREP has an ongoing EIA capacity-building programme for PICs, see [11].

<sup>2</sup> For an overview of environmental protection and preservation requirements set by national DSM regulatory frameworks in the Pacific see [43].



Fig. 1. The regulatory steps of the EIA process, including input and direction from legal and policy instruments and the public.

Development (Rio Declaration), which promotes the use of EIA for proposed activities that are likely to have a significant adverse impact on the environment [15].

Despite legislative frameworks, awareness-raising and training programmes, and widespread use of EIA across the Pacific region, challenges have been acknowledged within many PICs, which limit effective EIA application. Four key challenges, linked to lack of institutional capacity and administrative and procedural shortcomings, are: (1) human resource shortfalls; (2) insufficient quality control exercised over EIA reports; (3) weak compliance monitoring and enforcement; and (4) low levels of public engagement and participation in EIA [10,16–18]. These challenges have primarily become evident through the conduct of EIA for land-based developments. The challenges are likely, however, to apply similarly to DSM developments and may be heightened in some cases given the highly technical and relatively novel nature of DSM activities, and the practical difficulties associated with, and resources required for, accessing and directly monitoring DSM sites.

This paper firstly provides a brief overview of the EIA process from a regulatory and DSM perspective. On the basis of this overview, EIA challenges are discussed, including identification of options for addressing the challenges in PICs to support more effective EIA application, and in turn, to support effective management of the emergent DSM sector. The paper concludes by highlighting some of the risks PICs will face if identified challenges are inadequately addressed.

## 2. Regulatory steps in the EIA process, from a DSM perspective

The EIA process, as established internationally, has been described in detail elsewhere [7,19]. PICs generally follow the internationally-defined process, however, some administrative and practical aspects of EIA vary across the region due to countries having different United Kingdom, French and North American legislative foundations [17].

Fig. 1 depicts six EIA regulatory steps that are the primary duty of EIA administrators, government regulators and/or development approval authorities who hold legal responsibility for EIA management and decision-making: (1) screening proposed activities, (2) scoping EIA requirements, (3) reviewing EIA reports, (4) making decisions to approve or reject proposed activities, (5) compliance monitoring for approved activities, and (6) enforcement of approval conditions. Fig. 1 also shows that national legislation, regulations, policies and guidelines, and input from the public, can influence or give direction to each EIA regulatory step. Public engagement and participation in the EIA process is discussed further

in Section 3.4.

In the case of DSM activities, step 1 (screening) will involve the review of a prospecting, exploration or mining licence application to determine whether or not the proposed activity should be subject to comprehensive EIA, and if so, to what level of detail. If the EIA administrator determines that a DSM activity should be subject to comprehensive EIA, step 2 (scoping) will identify the issues and impacts that are likely to be important and result in the development of terms of reference (ToR) to guide the DSM proponent with impact assessment and EIA report<sup>3</sup> preparation. EIA reports completed by the proponent will then be submitted to the EIA administrator for review (step 3). Reviewers will need to determine if an EIA report addresses the ToR, if it adequately assesses the proposed activity and its likely impacts, and if it satisfactorily details an environmental management plan (EMP)<sup>4</sup> that outlines impact mitigation measures and the proponent's intended schedule for environmental monitoring and reporting to government.<sup>5</sup>

Upon conclusion of step 3 the EIA administrator will provide a recommendation to the development approval authority as to whether the DSM activity should be approved (usually with conditions) or rejected. On the basis of this recommendation plus its own deliberations, the approval authority will decide to approve the DSM activity (usually with conditions), to recommend additional studies be performed, or to not approve the activity (step 4). If the DSM activity is approved, the approval authority will also need to approve the EMP.

In addition to environmental monitoring and reporting by the proponent, it will be important that compliance monitoring is undertaken by government, such as DSM site or activity inspections and independent audits (step 5). Enforcement action (step 6), as specified under legislation, is likely to be required where monitoring and reporting by the proponent or compliance monitoring by government indicates non-conformity with development approval conditions or where it provides evidence of mitigation measures failing to work as planned.

## 3. Identifying and addressing EIA challenges in Pacific island countries

The six regulatory steps of the EIA process (Fig. 1) are not always implemented effectively in PICs due to four key challenges:

<sup>3</sup> Also referred to as an environmental impact statement (EIS).

<sup>4</sup> Also referred to as an environmental management and monitoring plan (EMMP).

<sup>5</sup> If an EIA report does not supply all required information, in line with the ToR, the proponent of the DSM activity may be required to submit further information.

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