

**NORI**  
NAURU OCEAN RESOURCES INC.



**ANNEX 1:  
TERMS OF REFERENCE FOR A SOCIAL  
IMPACT ASSESSMENT FOR THE  
NORI-D POLYMETALLIC NODULE  
COLLECTION PROJECT, 23 MARCH  
2023**

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## I. Background

This Terms of Reference (TOR) was developed by Prizma LLC (Prizma), an independent advisory practice appointed by the Nauru Ocean Resources Inc (NORI), following a Prizma-led scoping exercise detailed in Prizma’s report entitled [Scoping Report and Engagement Record \(Scoping Report<sup>1</sup>\) for the Social Impact Assessment \(SIA\) of the NORI-D Polymetallic Nodule \(nodules\) Collection Project \(the Project\)](https://metals.co/wp-content/uploads/2023/03/NORI-D-SIA-Scoping-Report-and-Engagement-Record-Combined-Final.pdf).

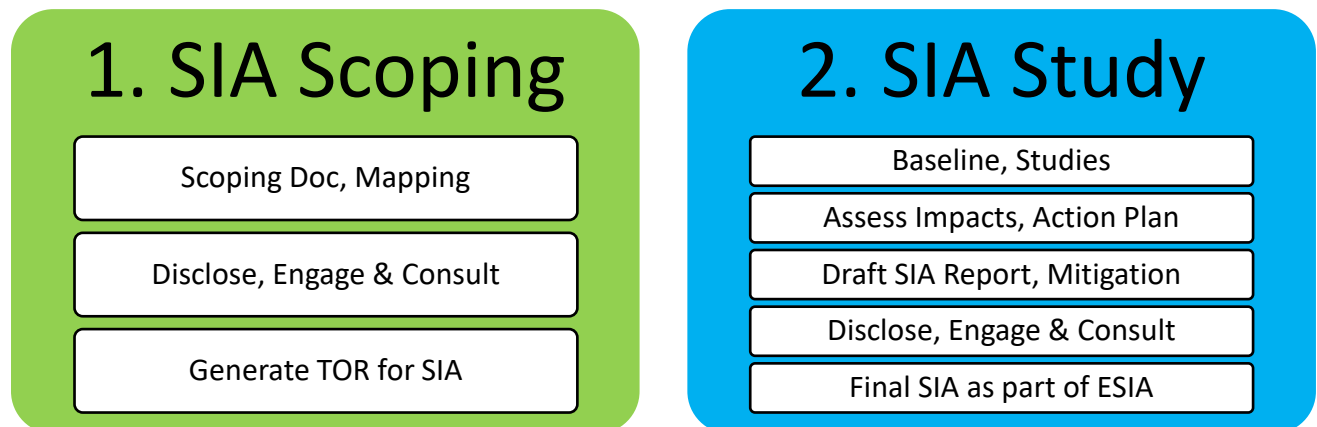
The NORI-D SIA will be the first such study for a deep-sea mining (DSM) project in international waters. The ISA’s exploitation regulatory regime is not finalized. Prizma reviewed ISA’s draft exploitation regulatory regime, utilized published guidance available from organizations such as the International Association for Impact Assessment (IAIA), applied the IFC Performance Standards Performance Standards on Environmental and Social Sustainability (IFC PS), and considered Good International Industry Practice (GIIP). These sources identified the need to conduct an initial screening of the Project, scope the SIA process, and enable early stakeholder engagement.

Applying these findings, Prizma segmented NORI-D’s SIA process into the following two parts or phases:

1. The SIA Scoping phase, and
2. The SIA studies.

The key phases and key components of each phase are illustrated in Figure 1.

**Figure 1: Prizma adopted a two-phased approach to NORI-D’s SIA process**



Source Prizma. Note: Doc -Document, ESIA – Environmental and Social Impact Assessment, SIA – Social Impact Assessment, TOR – Terms of Reference

<sup>1</sup> <https://metals.co/wp-content/uploads/2023/03/NORI-D-SIA-Scoping-Report-and-Engagement-Record-Combined-Final.pdf>

Following an informal presentation entitled “What does an SIA for a Deep-Sea Mining project look like?” and discussions with interested ESIA practitioners on 5 May 2022, on the sidelines of IAIA’s annual conference held in Vancouver, and consulting selected scoping studies from land-based mining, off-shore oil and gas, and offshore wind power projects, Prizma drafted the Project’s SIA Scoping Document.

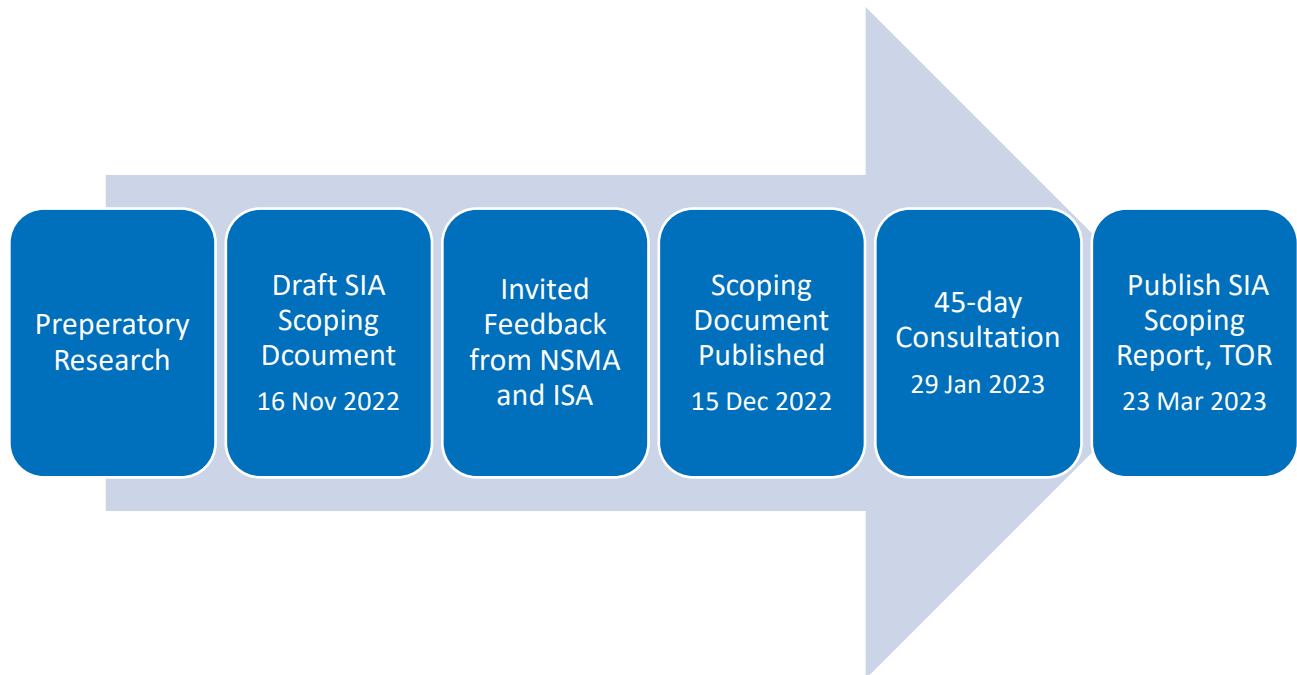
On 16 November 2022, the Nauru Ocean Resources Inc. (NORI) shared the draft SIA Scoping Document with the ISA Secretary General, requesting for the document to be further shared with ISA’s Legal and Technical Commission, for feedback. The draft SIA Scoping Document was also shared with the Nauru Seabed Minerals Authority (NSMA) for information and feedback.

The SIA Scoping Document was web-published for public comments on 15 December 2022. The 45-day long consultation period following the publication of the SIA Scoping Document on 29 January 2023. NORI and Prizma also hosted two seminars to provide engagement opportunities on the sidelines of the Mining Indaba Cape Town on February 7, 2023.

No formal feedback or guidance has been provided by the ISA Secretariat or Legal and Technical Commission on NORI-D’s SIA Scoping Document and/or topics or approaches to be included in the TOR.

The general timeline of NORI-D’s SIA scoping process is illustrated in Figure 2

**Figure 2: General timeline of NORI-D’s SIA scoping process**

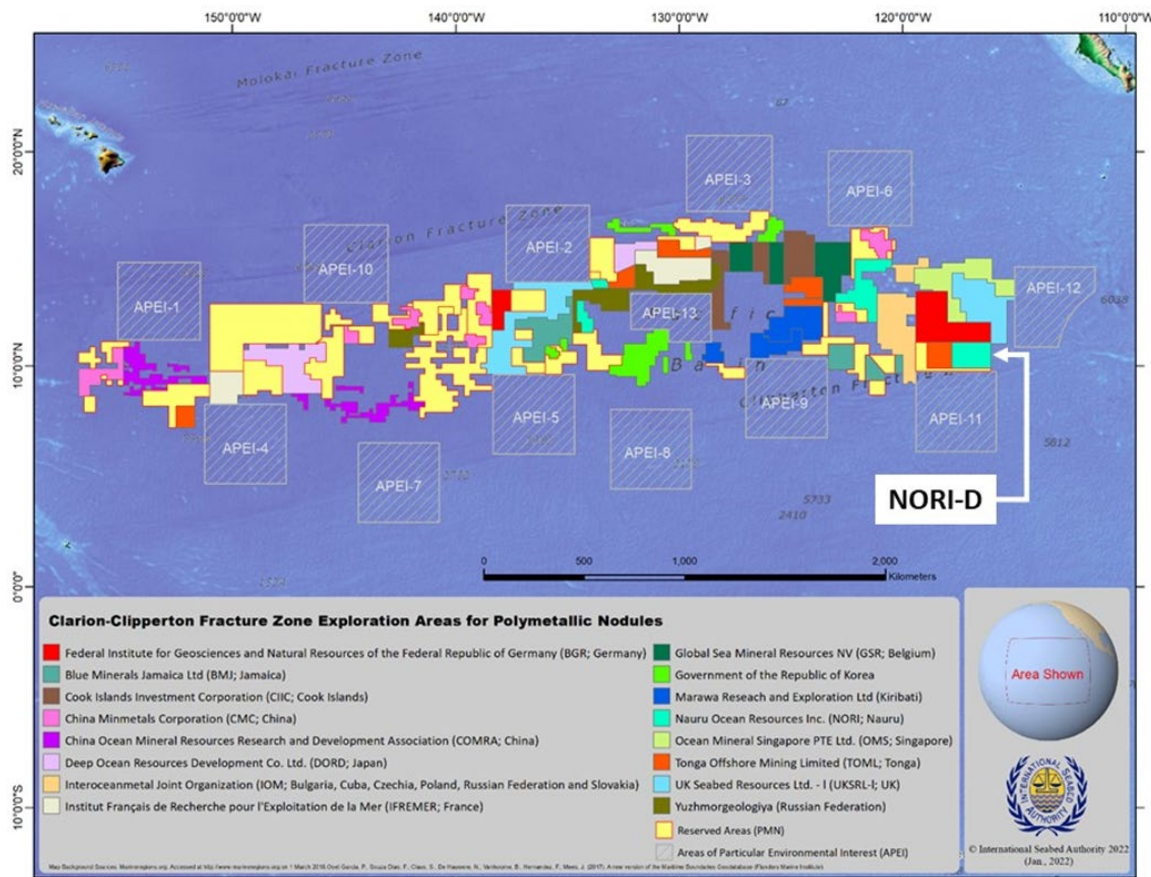


Source: Prizma. Note: SIA – Social Impact Assessment, ISA – International Seabed Authority, NSMA - Nauru Seabed Minerals Authority

## II. The NORI-D Project

The Project is located within the Clarion Clipperton Zone (CCZ, see Figure 3) and would be the first deep-sea mining project in international waters in the Area Beyond National Jurisdiction. The Project involves three inter-related phases of developments designed to collect nodules containing the “battery metals” nickel, copper, cobalt, and manganese from the abyssal plains (ocean floor at over 4,000 meters depth) of the CCZ: (a) Collector Test (sea trials completed in 2022); (b) Project Zero; and (c) Project One. The nodules are expected to be toll-treated by a land-based, third-party facility<sup>2</sup>, and/or at bespoke and newly built land-based processing facilities and are expected to be subject of future due diligence and/or assessments. The Project is described in further detail in the SIA Scoping Document, Section III, Project Description.

**Figure 3: Location of NORI-D, exploration blocks, and APEI in the CCZ**



Source: ISA (accessed 26/3/2022). APEI - Areas of Particular Environmental Interest represent 1.97 million km<sup>2</sup> of protected seafloor set aside by the ISA pursuant to regional environmental management plans.

<sup>2</sup> Note also TMC [media release](#) about TMC entering into MOU with nickel processor Pacific Metals Co Ltd (PAMCO) of Japan, to evaluate the processing of Polymetallic Nodules into Battery Metal Feedstocks

### III. Scope of the SIA

#### A. Objectives

The overall objective of the SIA is to identify and analyze the potential social impacts and effects of the Project and to recommend initiatives, realize sustainable development opportunities, as well as to mitigate negative impacts. The purpose of the SIA is to:

- Engage relevant stakeholders
- Describe and analysis the social baseline
- Identify both positive and negative social impacts
- Leverage positive social impacts
- Mitigate negative social impacts
- Develop social management and monitoring plans

The SIA will further define assessment boundaries for key aspects and impacts, including spatial, temporal, technical and administrative boundaries, and include closure. This will build on the current available information from the following documents:

- NORI's Project description contained in the Scoping Document
- ISA Draft Regulations on Exploitation of Mineral Resources in the Area, March 2, 2023 and Phase I Standards and Guidelines
- IFC Performance Standards, the Equator Principles, and Good International Industry Practice
- Guidance notes from the IAIA and other relevant sources

The SIA will define the Project's social zone of influence, which will be informed by the environmental zone of influence, thresholds and uncertainties established as part of the EIA studies. The definition of the spatial scope will consider the:

- Analysis and results to be provided by the environmental studies
- Nature of the existing social baseline
- Manner in which social impacts are likely to emerge or be propagated
- Areas affected, both positively and negatively, by impacts
- Geographical and temporal boundaries
- Thresholds and uncertainties related to material social impacts
- Common Heritage of Humankind

The Project development timelines will also be incorporated into the SIA.

## B. Regulatory Framework

The SIA will identify all applicable legal and regulatory standards and guidelines, and significant contextual issues, such as Blue Economy themes<sup>3</sup>. Prizma notes that the ISA is still developing its mining code and related regulatory regime.

The Scoping Document as well as in comments received during the Scoping Document review period, identified key elements of regulatory framework, including the following:

- United Nations Convention on the Law of the Sea on the conservation and sustainable use of marine biological diversity of areas beyond national jurisdiction
- The ISA Regulatory Regime (currently in draft form)
- Nauru International Seabed Minerals Act
- IMO, other relevant International Conventions
- IFC Performance Standards
- Proponents' Corporate Values, Policies and Standards
- Human Rights

The Project development and material permitting timelines will also be identified.

## C. Project Overview

### Project Proponents and Partners

- Republic of Nauru, Sponsoring State
- NORI, Contractor
- The Metals Company (TMC), NORI's parent company
- Allseas, Offshore Partner

### Project Location

NORI plans to collect (also referred to as “mining”, “exploitation” or “harvesting”) polymetallic nodules (PMN) from the abyssal plains of the Clarion Clipperton Zone (CCZ). The CCZ is a designated area, in Areas beyond National Jurisdiction (international waters), located in the Pacific Ocean.

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<sup>3</sup> [Blue Economy: oceans as the next great economic frontier \(unric.org\)](https://www.unric.org/en/blue-economy-oceans-as-the-next-great-economic-frontier)

## Project Components and Activities

NORI proposes to implement the project in phases which allows for the ramp-up of nodule collection capacity as information is collected in the field and confidence in the technical and environmental performance of the system improves over time. A high-level schedule will also be presented.

### Integrated Nodule System Collector Test

A summary of the test will be included as the data collected from this system tests informs the project design, environmental and social impact assessment, and the adaptive management system.

### Project Zero

The integrated nodule system pilot collector system (as described in the [NORI-D EIS \(NORI, 2022\)](#)) will be upgraded into a first commercial production system and commissioned for commercial operation in the NORI-D contract area. This first phase of the NORI-D commercial development is referred to as Project Zero.

Project Zero entails:

- Refurbishment of the production vessel used in the integrated nodule collection test (the Hidden Gem)
- Nodule collection using one collector robot (1.3 million wet tonnes per year)
- Transshipment of the nodules to an existing or “brownfield” port facility (location yet to be finalized)
- Stockpiling and tolling the nodules through existing RKEF processing facilities

### Project One

Subject to achieving the objectives for Project Zero, NORI will propose to ramp-up operations to Project One. Full implementation of Project One as currently planned would involve scaling up collection and processing from 1.3Mtpa to an approximate average of 12.5Mtpa of wet nodules at steady state production (expected 2030-2045).

**Project One entails:**

- The introduction of another refurbished vessel, with a capacity of up to 3.6 Mtpa (wet)
- A further upgrade of the Hidden Gem to up to 3.6 Mtpa (wet)
- Construction of a new purpose-built production support vessel (Collector Ship 1)



## Processing Nodules

Although the on-shore processing is beyond the SIA's regulatory authority, the Project's SIA will speak to and provide context about processing, and identify corporate policies and commitments to meet applicable regulatory requirements and good international practice. Project options, alternatives and partnerships are still being developed, and Project Zero is expected to involve third-party processing (tolling) of nodules<sup>4</sup>. The associated social impacts are expected to be addressed in future social due diligence, studies, or assessments. Considerations will also be given to shipping related aspects, such as security.

## Project Justification

The Scoping Document highlighted and described the following under Section E, Project Justification:

- Economic rationale
- Demand forecast
- Benefit sharing
- Climate change
- Diversification of resources
- Low-carbon/low resource intensity metal production
- No tailings dams
- Social impacts of alternatives
- Biodiversity opportunity costs
- Marine science knowledge and capacity building

These will be further detailed in the SIA study, highlighting also how the Project can provide an alternative source or option to obtain scarce battery metals. Other studies, including those commissioned by the ISA, which review the potential impacts from deep-sea mining on land-based producers, will also be considered.

## Closure

A section describing closure planning for NORI-D Project will also be included.

## D. Feasible Alternatives

When considering potential alternatives to the Project, it is important to include only those options that are technically and economically feasible, including through the use of best available technologies. Alternatives are functionally different ways to meet the need for a project.

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<sup>4</sup> Note also TMC [media release](#) about TMC entering into MOU with nickel processor Pacific Metals Co Ltd (PAMCO) of Japan, to evaluate the processing of Polymetallic Nodules into Battery Metal Feedstocks

In Section V, Feasible Alternatives of the Scoping Document, a number of feasible alternatives were considered. These will be developed further within the SIA, including “no project” as an alternative. This section will also justify why, considering commonly applied E/SIA methodologies, certain alternatives proposed during the consultation phase (such as urban mining or recycling) will not be considered further in the SIA.

## E. SIA Methodology

An SIA is the primary approach to a comprehensive assessment of the social effects of the Project. The SIA is a systematic process of analyzing, monitoring and proposing mitigation measures for social effects, including intended and unintended social changes. The methodology adopted includes engaging with stakeholders. The SIA will characterize both positive and negative effects.

The ISA’s Draft regulations on exploitation of mineral resources in the Area identifies topics which should be covered in the EIS (see also [ISBA/25/C/WP.1](#): Draft regulations on exploitation of mineral resources in the Area, and [ISBA/27/C/5](#): Draft guidelines for the preparation of environmental impact statements). The Scoping Documents include these requirements in greater detail:

- A table of content for an EIS (see Table 13 in the Scoping Document)
- Key ISA terms and expectations relevant to the SIA (see Table 14 in the Scoping Document).

The draft regulatory regime referenced further above also includes references to the IFC Performance Standards and the Equator Principles.

Section X (page 70) of the Scoping Document describes key methodologies to be followed. A selection is also presented below and will be further developed in the SIA.

### Identification of Valued Social Components

Environmental effects can intersect, link to and influence socio-economic and socio-cultural effects. Selecting valued components that can capture this connectivity and reflect the Project context will help in the process of predicting effects. Once valued social components (VSCs) are identified and validated, they become the focus of the social impact assessment, and an analysis of impacts to these components is carried throughout the assessment process. Engaging with a diverse group of stakeholders is important, as different stakeholders attach differing values to various VSCs which may influence their level of support for the Project.

VSC with a socio-economic and socio-cultural dimension are identified further below, along with additional topics emerging from Prizma’s research and comments received during the SIA scoping stage. Additional VSCs may be identified during planned stakeholder engagement activities, and from reviewing the results of environmental studies and identification of zones of influence.

- Employment, Labour, and Gender (incl. safety, health and security)
- Economy – Impacts on Nauru and ISA (including benefit sharing and taxation)
- Workforce, Safety and Security

- Emergency Response Planning
- Fishing
- Tourism
- Scientific Research and Capacity Building
- Marine genetic resources
- Product Stewardship
- Traditional Knowledge, including emotional aspects
- Culture, including Underwater Cultural Heritage (UNESCO)
- Developing Land-based Producer States (use existing Lapteva study)
- Common Heritage of Humankind (CHH)

## Uncertainty

There may be many types of uncertainties that are relevant to assessing whether an effect will occur, and the implications of the effect. Uncertainty in SIA is to be expected, particularly when predicting outcomes in complex systems. The sources of uncertainty need to be reduced where possible through additional study or mitigation measures, but when uncertainty cannot be reduced it needs to be described such that it can be considered in decision making. Throughout the SIA, effort to address uncertainties will be focused on those uncertainties that are most meaningful to the most material social risks identified during the SIA.

Impact predictions will be made using available data and information, but where significant uncertainty remains, it will be acknowledged in the SIA. A conservative approach will be used by the SIA Team and where applicable, the SIA will make recommendations concerning measures that should be in place within a Social Management Plan to further reduce or address uncertainties.

## F. Baseline Studies

A desktop review of available information will be undertaken to further develop the socio-cultural and socio-economic baseline. This will include a high-level review and presentation of data and analysis from the Integrated Nodule Collector System Test, and will also take into account relevant topics related to potential social impacts related to Areas of Particular Environmental Interest (APEI), Preservation Reference Zones (PRZ) and Impact Reference Zone (IRZ).

Subject to the analysis of environmental studies and determination of zones of influence, the concept of “Affected Communities” (as defined in the IFC PS), may not be relevant given the remote and offshore location of NORI-D’s DSM activities, while land-based facilities, for which such a concept may be more relevant, have yet to be identified.

Further engagement with stakeholders and relevant organizations will be undertaken to obtain additional data. These stakeholders and organizations will be mapped, also considering emerging results from the EIA

studies, will be considered, and direct stakeholder meetings will be undertaken. Potential stakeholders called out during the scoping consultation include the following:

- Fishermen/women and fishing associations
- Women's groups and/or representatives
- Youth groups and/or representatives

A description of available traditional knowledge and cultural use will be included.

Some additional studies may be identified based on evolving Project designs and other developments related to, for example, the processing of nodules, and/or the findings of the environmental and ecological studies currently underway. At the time of drafting the TOR, no fieldwork, such as new census, household livelihood assessments, or similar other studies, are expected to be required for NORI-D's DSM activities, which are located many hundreds to thousands of kilometers away from the nearest communities. However, once future, land-based facilities have been identified, or if significant social impacts are predicted from environmental effects from NORI-D's DSM activities, social due diligence and/or a variety of assessments may be required, such as assessing economic displacement or physical resettlement. This is expected to be conducted in accordance with the relevant legislation of the host country where the processing facilities are located, as well as applying Good International Industry Practice (GIIP).

## G. Potential Aspects and Impacts

The SIA will define potential aspects and impacts and identify interactions between the Project and these aspects and impacts, and outline indicators that will be used to measure them.

Based on the draft regulatory framework described further above, which are still being developed and negotiated, this section will describe the socioeconomic and sociocultural environment aspects and impacts based on the following human activities and uses:

- Fisheries
- Cultural heritage
- Marine traffic
- Submarine cables
- Tourism
- Marine scientific research
- Sociocultural uses
- GHG emissions (natural resource intensities)
- Other uses of the general NORI-D area

## H. Cumulative Impacts

The assessment of cumulative impacts considers the combination of multiple impacts that may result when the Project is considered alongside other existing or proposed projects and activities in the same geographic area or affecting the same valued components. Given the Project's location and context, it is assumed that the relevant VSCs to be considered for a cumulative impact assessment are:

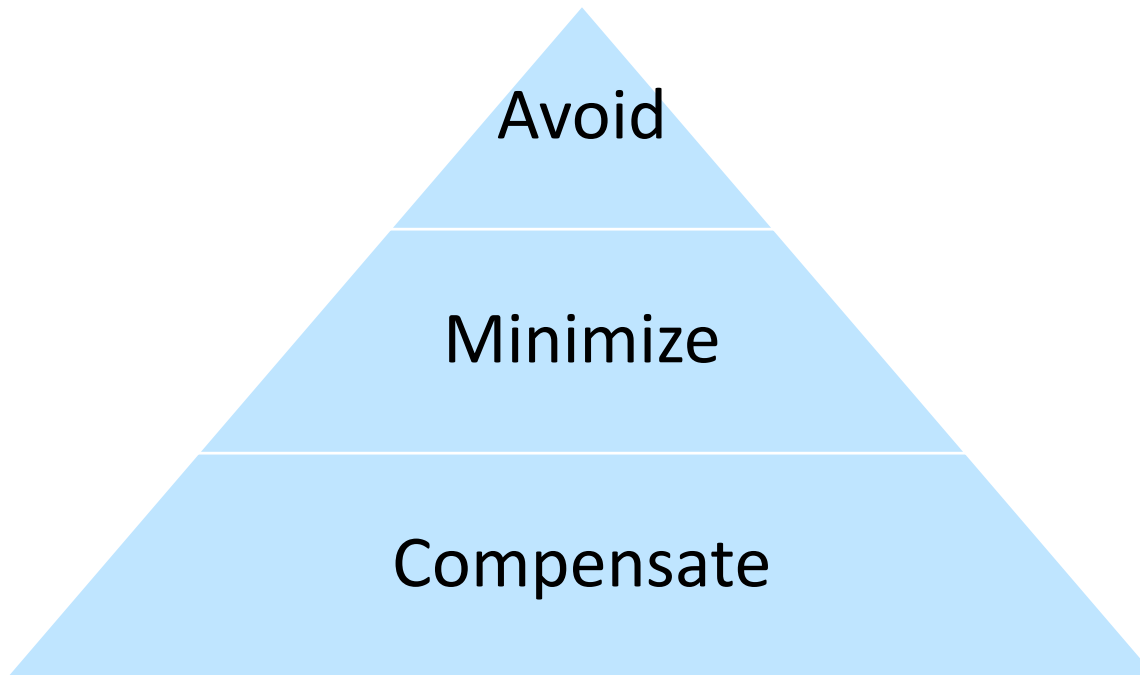
- Migratory marine species, such as whales or turtles
- Fisheries
- Climate Change (carbon sequestration, sea level rise, climatic events)
- Climate Change impact of Project (emissions, avoidance)
- Volume and price of battery metals contained in nodules
- Benefits for humankind (revenues, knowledge, education, training, pharmaceutical, biomaterials)
- Land-based facilities
- Benefit sharing
- Biodiversity and ecosystem services
- Marine genetic resources

There may be several VSCs within an effect pathway. Prioritization of VSCs that are most important to assess will be informed through stakeholder engagement and consider also traditional knowledge. The temporal boundaries, including extending it to millennia, was also proposed and will be considered during the SIA.

## I. Mitigation Measures

Defining appropriate mitigation measures is a central part of the SIA process. The SIA will identify opportunities to enhance positive effects through net gain and benefits initiatives. Some examples of enhancement measures for positive effects include financial benefits, employment, skills training, investment in community projects, and scholarships. Enhancement measures should create new positive impacts or benefits. The mitigation hierarchy concept, illustrated in below, will be applied to address significant negative impacts and effects, where feasible.

**Figure 4: Simplified mitigation hierarchy concept to be used in the SIA**



Source: After IFC Performance Standards (PS1)

## J. Residual Effects

Residual effects are those significant effects remaining after the implementation of all mitigation measures. The residual effects analysis will be clearly documented in the SIA along with supporting rationale for the evaluation. Residual impacts will be identified through a risk assessment process that will be conducted in accordance with an international standard (for example, ISO9001) to allow also a standardized risk assessment process throughout the ESIA study.

## K. Consultation and Engagement

Summarize results of stakeholder mapping, engagement and outreach, and outcome of consultation activities. Records of such activities, such as minutes of meetings, will be provided in appendices. These will also identify commitments made by the Project proponents.

## L. SIA Study Team

Provide a list of key contributors and authors of the SIA.

## M. Conclusions and Recommendations

Provide recommendations based on the outcome of the SIA, taking also into consideration outcome of stakeholder engagement efforts.

## N. References

Provide a listing of key references used.

## O. Annexes

The annexes that will be included in the SIA include, but are not limited to:

- Glossary
- Public Consultation and Disclosure Plan
- Social Management Plan
- Health, Safety, Emergency Response, and Security
- Consultation and Engagement Records (subject to permission)