

AN ENVIRONMENTAL MANAGEMENT PLAN FOR THE CLARION – CLIPPERTON ZONE



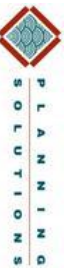
WORKSHOP FOR THE ESTABLISHMENT OF A
REGIONAL ENVIRONMENTAL MANAGEMENT PLAN FOR THE
CLARION-CLIPPERTON ZONE



MAJOR TOPICS

- ❖ **ISA ASSIGNMENT & ADOPTED METHODOLOGY**
- ❖ **LEGAL & POLICY CONSIDERATIONS**
- ❖ **INTEGRATION WITH OTHER REGIMES**
- ❖ **REVIEW OF ENVIRONMENTAL RISKS**
- ❖ **ELEMENTS OF AN EMS**
- ❖ **IMPLICATIONS FOR MONITORING & MPAs**

ISA ASSIGNMENT & ADOPTED METHODOLOGY



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ISA ASSIGNMENT

- ❖ **EXAMINE RELEVANT LEGAL & TECHNICAL ISSUES**
- ❖ **SUGGEST BASIC ELEMENTS OF AN ENVIRONMENTAL MANAGEMENT PLAN FOR THE CCZ**

ADOPTED METHODOLOGY

- 1. SUMMARIZE LEGAL & POLICY CONSIDERATIONS**
- 2. DISCUSS INTEGRATION WITH OTHER REGIMES**
- 3. REVIEW KNOWN ENVIRONMENTAL RISKS**
- 4. USE ISO 14001 AS TEMPLATE FOR SUGGESTED ISA ENVIRONMENTAL MANAGEMENT SYSTEM**
- 5. SUGGEST SPECIFIC APPROACH RELATED TO MONITORING & MARINE PROTECTED AREAS**

LEGAL & POLICY CONSIDERATIONS



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INTERNATIONAL LAW AND POLICY FRAMEWORK

- 1982 UN Convention on the Law of the Sea (LOSC)
- International Environmental Law Instruments and Policy Documents
- International Seabed Authority (ISA) Instruments and Policy Documents
- Self Regulation by the Deep Seabed Mining Sector – IMMS Code

1982 UN Convention on the Law of the Sea (LOSC)

- States Parties have a general obligation to protect and preserve the marine environment (Art 192)
- This general obligation encompasses responsibilities to :
 - Prevent reduce and control pollution of the marine environment from any source including the use of technologies under their jurisdiction or control (Arts. 194 and 196);
 - Assess the potential effects of activities under States Parties jurisdiction or control which may cause substantial pollution of or significant and harmful changes to the marine environment (Art 206);
 - Monitor the risks or effects of pollution on the marine environment (Art 204);
 - Protect and preserve rare and fragile ecosystems as well as the habitat of rare and endangered species and other forms of marine life (Art. 194(5))

1982 UN Convention on the Law of the Sea (LOSC)

- ISA is responsible for administering the mineral resources of the Area including prospecting, exploration and exploitation activities for these resources (Art 157(1))
- ISA charged with taking the necessary measures to ensure effective protection for the marine environment from the harmful effects which may arise from such activities (Art 145)

1982 UN Convention on the Law of the Sea (LOSC)

The ISA must adopt appropriate rules, regulations and procedures to:

- Prevent reduce and control pollution and other hazards to the marine environment that have the potential to interfere with the ecological balance of the marine environment; and
- Protect and conserve the natural resources of the Area, preventing damage to the flora and fauna of the marine environment (Art 145, Annex III Art 17)

Legal and Technical Commission (LTC)

Responsibilities

LTC must:

- Formulate and submit to the ISA Council rules regulations and procedures on prospecting exploration and exploitation in the Area including assessments of the environmental implications of these activities
- Make recommendations to the Council on a monitoring programme to observe measure evaluate and analyse the risks or effects of pollution of the marine environment resulting from these activities
- Ensure that existing regulations are adequate and complied with
- Coordinate the implementation of the monitoring programme (Arts 165(e-h) and 215)

Adequacy and Content of ISA Regulations

ISA regulations must:

- Be drawn up to secure effective protection of the marine environment both from harmful effects directly resulting from activities in the Area or from shipboard processing immediately above a mine site of minerals derived from that mine site; and
- Take into account the extent to which such harmful effects may directly result from drilling, dredging, coring and excavation as well as from disposal, dumping and discharge into the marine environment of sediment, wastes or other effluents (Annex II, Art 17(2)(f)).

Responsibilities of States Parties

- States Parties must adopt complementary laws and regulations to prevent reduce and control pollution of the marine environment from activities in the Area undertaken by vessels, installations, structures and other devices flying their flag, under their registry or operating under their authority
- These laws and regulations must be no less effective than the ISA rules, regulations and procedures

International Environmental Law Instruments and Policy Documents

- **Precautionary approach** – where there are threats of serious or irreversible damage to the environment, lack of full scientific certainty shall not be used as a means for postponing cost effective measures to prevent environmental degradation (Rio Declaration Principle 15)
- **Duty to prevent harm to areas beyond national jurisdiction** (Rio Declaration Principle 2)

International Environmental Law Instruments and Policy Documents

Agenda 21 Oceans Chapter

- Application of preventive precautionary and anticipatory approaches to reduce risk of harm to marine environment
- Prior assessment of activities that may have significant adverse impacts on the marine environment
- The integration of marine environmental protection considerations into economic and social development policies
- Development of economic incentives to encourage the use of clean technologies such as the polluter pays principle

International Environmental Law Instruments and Policy Documents

1992 Convention on Biological Diversity (CBD)

- Duty to conserve marine biodiversity entails protection of a range of components including species habitats ecosystems and genetic material
- COP CBD has urged States Parties and relevant organizations to further develop scientific and technical guidance for the implementation of EIAs and strategic environmental assessments (SEA) in areas beyond national jurisdiction (ABNJ)
- COP CBD have also developed criteria for ecologically and biologically significant areas (EBSAs) and encouraged their application to ABNJ

ISA Instruments and Policy Documents

- ISA Regulations on Prospecting and Exploration for Polymetallic Nodules in the Area (2000) impose comprehensive environmental responsibilities on the States and State sponsored entities involved in prospecting and exploring for polymetallic nodules
- States and State sponsored entities submitting plans of work for exploration in the Area must submit a description of their proposed programmes for oceanographic and environmental baseline studies that would enable an assessment of the potential environmental impact of the activities on the marine environment and description for proposed measures for the prevention reduction and control of pollution and impacts on the marine environment
- Monitoring programmes and annual reports also required
- ISA may also take emergency environmental protection measures where exploration activities cause significant adverse changes in the marine environment

ISA Instruments and Policy Documents

- Polymetallic Nodules Environmental Guidelines (2001)
specify in extensive detail the data to be collected by the contractor in order to establish an environmental baseline for a particular exploration area
- The Guidelines also expand on the types of exploration activities which require an EIA and the observations and measurements to be made
- Guidelines currently under review and subject to ISA approval will provide further guidance to contractors on the key parameters for the oceanographic and biological data to be submitted

ISA Instruments and Policy Documents

Further amendments to both the Polymetallic Nodules Regulations and Guidelines will be needed as contractors move to the exploitation phase including:

- Criteria for identification of impact reference zones
- Criteria for identification of areas which the Council disapproves for exploitation because of risk of serious harm to the marine environment
- Guidelines on the application of the precautionary approach
- Criteria for determining whether an effect from an activity in the Area represents a significant adverse change in the marine environment
- Guidelines for exploration contractors on the description of technical and financial capability to respond to any incident or activity which causes serious harm to the marine environment
- Guidelines on acceptable heads of claim regarding damage to the marine environment for which liability may potentially arise and levels of penalties that may be imposed by the ISA Council on contractors for damage to the marine environment

Self Regulation by Deep Seabed Mining Sector

- International Maritime Minerals Society (IMMS) adopted a Code for Environmental Management of Marine Mining in 2001
- IMMS Code comprises a Statement of Environmental Principles and a set of Operating Guidelines for application at specific mining sites
- Code is a voluntary instrument which provides a framework and benchmarks for marine mining companies in their operations and for local communities, other stakeholders, governments, IGOs and NGOs involved in prescribing and assessing best environmental practices at marine mining sites
- Code is currently under review.

INTEGRATION OF PLAN WITH OTHER REGIMES



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Cross Sectoral Regimes and Processes

- LOSC Part VII – High Seas
- LOSC Part XIII – Marine Scientific Research
- Fisheries Sector Instruments – LOSC Part VII/UN Fish Stocks Agreement/ RFMOs
- Shipping Sector Instruments – MARPOL 73/78 and London Convention and Protocol
- Regional Seas Organizations
- UN Working Group on ABNJ

LOSC Part VII - High Seas

- The water column above the Clarion Clipperton Zone is high seas and subject to Part VII of the LOSC
- Activities in the Area must co-exist with States and their flag vessels and nationals exercising high seas freedoms which may also involve interaction with the seabed
- Adverse environmental impacts from other human uses of the high seas are only remotely regulated through mechanisms such as flag state and port state control with their inherent limitations
- There is some potential for undermining of CCZ environmental management plan unless cross sectoral information exchange and coordination occurs with other sectors conducting activities on or above the CCZ

LOSC Part XIII – Marine Scientific Research

- Marine scientific research is already well integrated into the Part XI regime
- Both States Parties and the Authority may carry out marine scientific research in the Area for peaceful purposes and for the benefit of mankind as a whole (Art 143)
- They effectively work in partnership to coordinate and disseminate the results of research and analysis through the ISA and other international channels
- The general principles applicable to marine scientific research under Part XII of the LOSC are also applicable to marine scientific research in the Area

Fisheries Sector Instruments

- Freedom of fishing applies in water column above CCZ subject to conditions set out in Part VII Section 2 LOSC, UN Fish Stocks Agreement and relevant UNGA Resolutions and regional fisheries management agreements
- Of most relevance to environmental protection in the Area are the adverse impacts of unregulated high seas bottom trawling
- UNGA Res 61/105 of 2006 called on flag States and RFMOs to conduct environmental assessments prior to authorizing bottom contact fishing activities including the identification of vulnerable marine ecosystems (VMEs) and to manage such activities so as to prevent significant adverse impacts to VMEs

Fisheries Sector Instruments

- VMEs were defined in International Guidelines for the Management of Deep Sea Fishing in the High Seas adopted by FAO in 2008
- If an area meets the VME criteria the flag State of a fishing vessel or relevant RFMO must manage deep sea fishing activities to prevent significant adverse impacts or not authorize them to proceed
- Consultation with relevant RFMOs (WCPFC) in developing CCZ environmental management plan will be important in identifying VMEs and any measures need to protect them

Shipping Sector Instruments

- The major threat to the CCZ marine environment from shipping activities is the intentional and accidental discharge of pollutants into the high seas water column above the CCZ
- Through the mechanism of flag State jurisdiction and IMO regulatory instruments there is regulation of shipping activities in high seas areas
- Most relevant instruments are MARPOL 73/78 and London Convention and Protocol

Shipping Sector Instruments

- Designation of special areas under MARPOL 73/78 where vessel source discharge restrictions apply and particularly sensitive sea areas (PSSAs) where associated protective measures apply is potentially available in areas beyond national jurisdiction
- None so far declared in ABNJ and would need to be supported by majority of shipping States to be effective

Role of Regional Seas Organizations

- Regional seas organizations (RSOs) are already playing a role in the protection and preservation of the marine environment in ABNJ in regions such as the South West Pacific, NE Atlantic and the Mediterranean.
- Although the three Pacific based RSOs do not have the water column above the CCZ within their areas of responsibility, their member States could form a compact to apply for protective measures such as special areas under MARPOL 73/78, PSSAs under IMO Guidelines and RFMO conservation and management measures related to high seas bottom fishing particularly in the CCZ areas of environmental interest

UN Working Group on ABNJ

- The three meetings of the UN Working Group on conservation of biodiversity in ABNJ have emphasized the importance of:
 - Developing practical measures for the conservation and sustainable use of marine biodiversity in ABNJ
 - Cooperation and coordination among States and competent international organizations such as ISA in applying relevant approaches for the conservation and sustainable use of marine biodiversity in ABNJ
- The Working Group provides a means of disseminating information on the CCZ environmental management and monitoring plan and fostering cooperation in its implementation with States, IGOs, NGOs and other oceans sector representatives

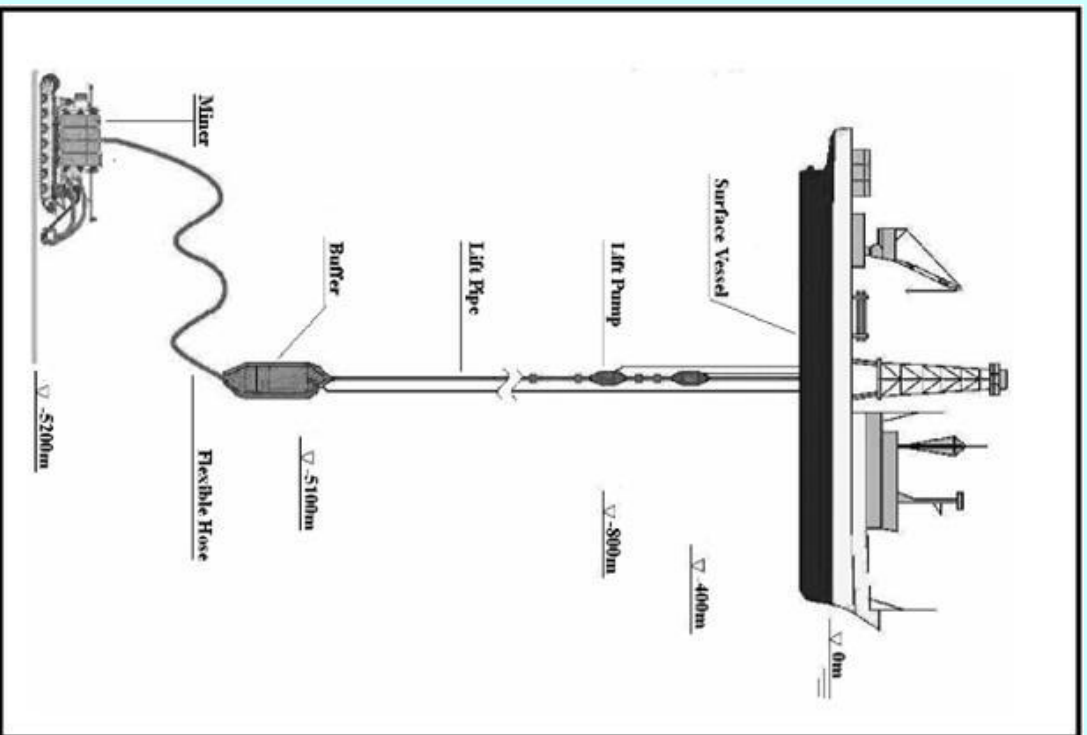
ENVIRONMENTAL RISKS FROM MINING



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BASIC COMPONENTS & FIRST-ORDER RISKS IN CCZ



- ❖ Surface Vessel
 - Mining discharge plume
 - Oil, process water discharges
 - Lights & noise
- ❖ Lift System
 - Suspended sediments
 - Impediments to swimming organisms
- ❖ Seabed Pick-up System
 - Direct disruption of habitat
 - Indirect disruption from sedimentation

CONSENSUS TO DATE

1. Most impacts are specific to the site and mining system,

However:

2. Direct and indirect impacts on benthic life are likely to be significant and are very poorly understood.

ELEMENTS OF AN ENVIRONMENTAL MANAGEMENT SYSTEM (EMS)



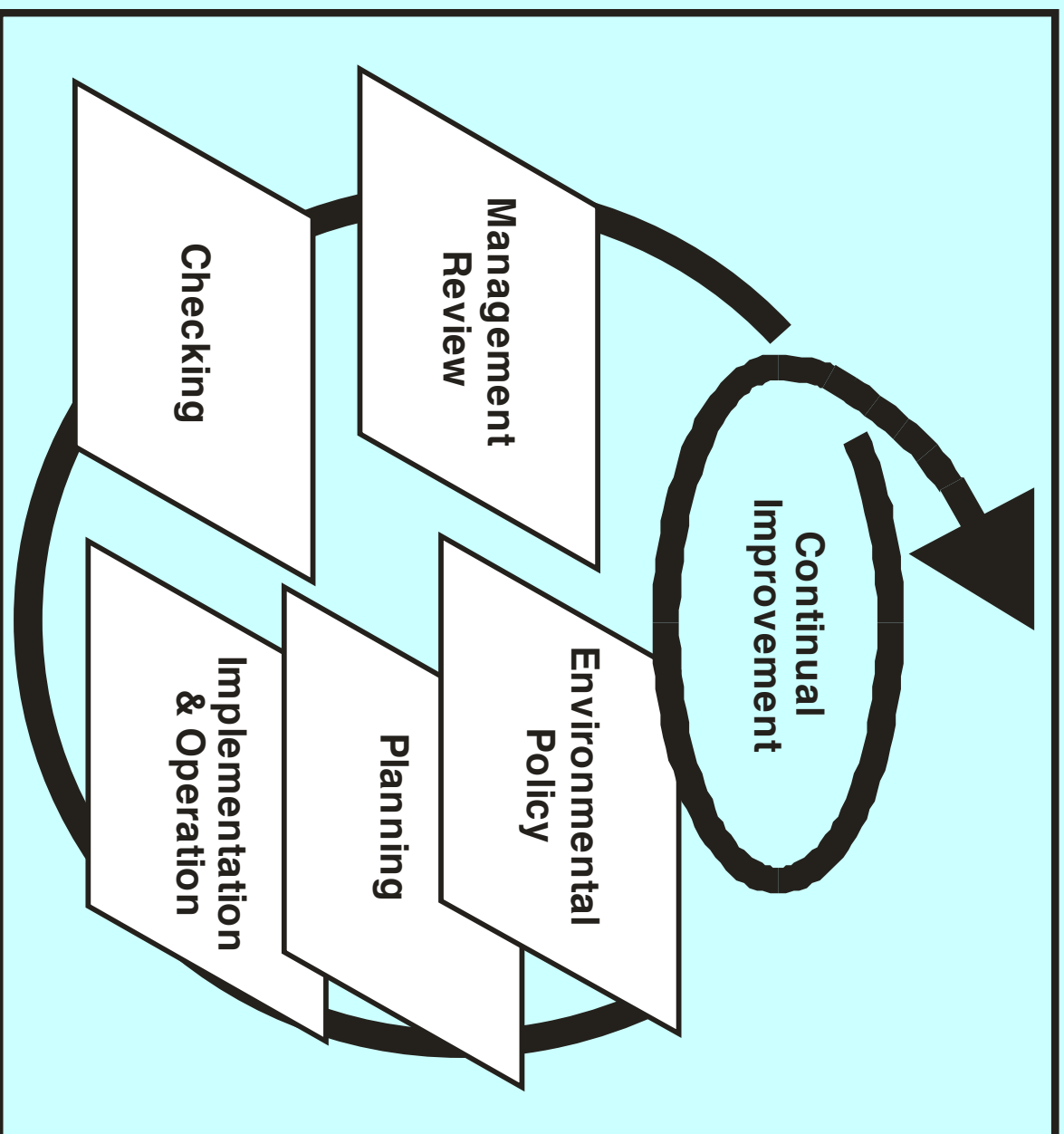
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KEY ELEMENTS OF AN ISO 14001 ENVIRONMENTAL MANAGEMENT SYSTEM

- 1. Is scaled to the organization**
- 2. Includes commitment to continual improvement**
- 3. Complies with legal & policy requirements**
- 4. Provides framework for setting & reviewing environmental objectives**
- 5. Is documented, implemented, & maintained**
- 6. Is transparent internally & externally**

COMMITMENT TO CONTINUAL IMPROVEMENT: PLAN-DO-CHECK-ACT



PLANNING CONSIDERATIONS

- 1. Identify “Environmental Aspects”**
- 2. Maintain links to legal & policy basis for action**
- 3. Keep policies and actions current and relevant**

IMPLEMENTATION & OPERATION

- 1. Commit the necessary resources**
- 2. Define specific schedules for reporting and review**
- 3. Develop emergency response procedures when appropriate**

CHECKING FOR COMPLIANCE

- 1. EMS team reports formally to OREM Director semi-annually**
- 2. Director reports to LTC annually**

CORRECTIVE ACTION, CONTROL OF RECORDS & MANAGEMENT REVIEW

- 1. Annual LTC review of reports**
- 2. Reports made public, with redaction of proprietary data when necessary**
- 3. Periodic (bi-annual?) review by Secretary General's office**
- 4. Occasional workshops with outside experts**

ENVIRONMENTAL MONITORING & MPAS



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MONITORING SUGGESTIONS

- 1. Organize Contractor environmental data into uniform formats & make them available in the Central Data Repository (CDR)**
- 2. Assemble selected public data from CCZ into CDR**
- 3. Strongly support data collection & research related to benthic habitats**

SUGGESTIONS FOR MPAs

- 1. Disseminate current proposal widely & seek reviews**
- 2. Support research on benthic habitats in CCZ**
- 3. Evaluate status of review regularly in EMS reports**
- 4. Sponsor occasional workshops to review status of proposal**
- 5. Establish MPAs at least two years prior to prototype mining in CCZ**