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# Deep-Sea Mining in Areas Under National Jurisdiction:

# Mapping the International Legal Framework Preventing Potential Harm to Coastal Communities

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The contents of this memorandum are solely the views of the authors. It was prepared without the active involvement of the beneficiary and does not necessarily reflect its views or positions.

# Contents

# List of abbreviations

CBD -Convention on Biological Diversity

DSM - Deep Sea Mining

EEZ – Exclusive Economic Zone

EIA – Environmental Impact Assessment

FPIC – Free Prior Informed Consent

GC – General Comment

HRC -Human Rights Committee

IATHR - Inter American Court of Human Rights

ICCPR - International Covenant on Civil and Political Rights

ICESCR - International Covenant on Economic, Social and Cultural Rights

ICJ – International Court of Justice

ICSID - International Centre for Settlement of Investment Disputes

ILAs - International Investment Agreements

ILO - International Labor Organization

IMO -International Maritime Organization

ISA -International Seabed Authority

ISDS - Investor-state dispute settlement

ITLOS – International Tribunal for the Law of the Sea

LOS – Law of the Sea

MARPOL - International Convention for the Prevention of Pollution from Ships

PP – Precautionary Principle

RLRF - Pacific-ACP States Regional Legislative and Regulatory Framework for Deep Sea Minerals Exploration and Exploitation

SPS - Agreement on the Application of Sanitary and Phytosanitary Measures

TBT - Agreement on Technical Barriers to Trade

UNCLOS- United Nations Convention on the Law of the Sea

UNDRIP - United Nations Declaration on the Rights of Indigenous Peoples

UNCITRAL - United Nations Commission on International Trade Law

WTO – World Trade Organization

# Executive Summary

Exploration and understanding of the deep seabed have grown significantly in recent decades, and with them the potential for extraction of valuable minerals through technologies of Deep Sea Mining (DSM). Growing DSM capacities raise concerns regarding the environmental and social impacts of such operations, especially harm to marine ecosystems and the effects on coastal communities, including Indigenous Peoples. This memorandum maps the main instruments and sources of international law relevant to DSM, focusing on affected states, citizens, coastal communities and/or Indigenous Peoples that may wish to limit DSM operations and mitigate its negative impacts. We identify relevant disciplines of international law, among which there are gaps, but also overlaps and synergies – the Law of the Sea (LOS), environmental law, international human rights law, indigenous peoples law, and international investment law. We provide a general characterization of these legal areas as applicable to DSM within national jurisdiction, identify legal obligations of DSM State sponsors and private operators, and examines legal tools which are available to affected groups.

Under LOS and especially the United Nations Convention on the Law of the Sea (UNCLOS), States have the right to exploit natural resources in marine areas under their national jurisdiction, subject to certain limitations. UNCLOS imposes general obligations on States to protect the marine environment from pollution, including specific protections against pollutive activities on the seabed. Under Article 208 UNCLOS, States must adopt laws and regulations to prevent, reduce and control pollution of the marine environment arising from or in connection with seabed activities subject to their jurisdiction, no less effective than international standards. States wishing to carry out DSM under national jurisdiction should incorporate into domestic legislation the precautionary principle (PP), environmental impact assessments (EIAs), biodiversity protection, prevention of transboundary harm, prevention of vessel-source pollution, and community partnership, granting significant protections to the environment and communities, especially if domestically incorporated.

International human rights law applies to DSM in areas such as the right to a healthy environment. The recognition of human rights relating to the environment and expansion of the scope of their protection has increased.

Indigenous peoples' rights relate to the impact DSM may have on the livelihood and culture of Indigenous Peoples. Indigenous communities must be involved in the approval processes of such projects, enabling them to effectively voice concerns and objections. Most significant is the principle of Free, Prior and Informed Consent (FPIC). FPIC dictates that before a State carries out any project that may infringe upon the rights of Indigenous Peoples, it must first obtain their approval through consultation.

We also briefly address international investment law, recommending further research regarding scenarios in which a government grants DSM licenses to foreign investors, possibly exposing it to investment claims.

A recurring concern is the need for preventive measures. Many of the relevant legal and policy mechanisms are most effective if deployed as preventive rather than reactive measures. Standards such as FPIC, PP and biodiversity protection law should be utilized in order to limit or sustainably manage natural resource exploitation before negative impacts of DSM occur.

# Introduction

Deep-sea mining (DSM) is a potentially significant economic sector that has been envisioned for decades but only recently became technologically possible. The prospect of DSM exploration and extraction in areas under national jurisdiction has raised significant environmental and social concerns.

DSM is the process of retrieving mineral deposits from the deep seabed – the area of the ocean below 200 meters depth, which covers about 65% of the Earth's surface. It is estimated that 46% of the world's oceans are under national jurisdiction.[1] There is growing interest in the mineral deposits of the deep sea, largely due to depleting terrestrial deposits for metals and minerals, coupled with rising demand for these minerals to produce high-tech applications such as smartphones, green technologies such as wind turbines, solar panels and electric storage batteries.[2]

There are two predominant forms of deep-sea mineral extraction: the continuous-line bucket system (CLB) and the hydraulic suction system. The CLB operates much like a conveyor-belt, running from the sea floor to the surface of the ocean where a ship or mining platform extracts the desired minerals, and returns excess materials to the seafloor. Hydraulic suction mining lowers a pipe to the seafloor, which transfers nodules up to the mining ship. Another pipe from the ship to the seafloor returns the tailings to the area of the mining site.[3]

The effects of the extraction process on the seabed and marine eco-system are not yet fully understood. However, based on similar activities done on land and the results of these operations, it is plausible that DSM could cause serious environmental damage. The environmental impacts of DSM are expected to be diverse. Among other effects, scientists anticipate that machines cutting and collecting minerals on the seafloor will create sediment plumes, potentially smothering seafloor habitats for kilometers around the mining site. Depending on where plumes are released, this pollution could also travel hundreds or even thousands of kilometers. Discharges and toxic plumes may cause turbidity in the water column that will decrease the available sunlight for photosynthesis and slow down biological regeneration.[4] Moreover, seafloor extraction tools, the riser pipe and the ship are expected to generate noise and vibrations that can affect the auditory senses and systems of some animals. Background noise can also interfere with communication between animals or limit their ability to detect prey.[5]

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[1] According to the International Seabed Authority (ISA) website, 54% of the world's ocean seabed lies in areas beyond national jurisdiction; INTERNATIONAL SEABED AUTHORITY- ABOUT ISA, https://www.isa.org.jm/about-isa (last visited Oct. 18, 2020).

[2] IUCN- DEEP-SEA MINING, https://www.iucn.org/resources/issues-briefs/deep-sea-mining (last visited oct. 18, 2020).

[3] Rahul Sharma, *Deep-Sea Impact Experiments and their Future Requirements*, 23 MARINE GEORESOURCES & GEOTECHNOLOGY, 331 (2005).

[4] Rahul Sharma, *Environmental Issues of Deep-Sea Mining,* 11 PROCEDIA EARTH AND PLANETARY SCIENCE, 204 (2015).

[5] PHILLIP WEAVER AND DAVID BILLIET, ENVIRONMENTAL IMPACTS OF NODULE, CRUST AND SULPHIDE MINING: AN OVERVIEW, IN ENVIRONMENTAL ISSUES OF DEEP-SEA MINING IMPACTS, CONSEQUENCES AND POLICY PERSPECTIVES 5 (Rahul Sharma eds. 2019).

The destruction of ocean floor habitats at the mining site, spreading of sediment, discharge of water plumes and general marine pollution could decimate fish stocks, and therefore affect coastal community's food security.[6] In fact, Scientists have warned that, "Communities that rely on fish stocks for subsistence could be particularly vulnerable to the impacts of seabed mining."[7] DSM is expected to cause additional social and economic impacts, especially to coastal communities and Indigenous Peoples among them. DSM can have a particularly strong impact on fishing. According to a report by Blue Ocean Law,[8] DSM exploration activities have reportedly already hurt the fishing sector in Tonga, a State of Polynesia, in which fishing contributes greatly to the country's economy. According to some scholars, DSM is expected, *inter alia*, to impair the economy and community health, raise socio-environmental challenges issues related to ocean-use and ownership over its resources, and cause food shortages.[9] Moreover, pollution caused by DSM could disrupt local ecosystems, chasing away animals like dolphins, sharks or whales, some of which are endangered, with negative impacts on sustainable economic practices such as ecotourism.[10]

With respect to Indigenous Peoples, there is a fear of eliminating traditional practices and religious customs. For example, the inhabitants of Lavongai (New Hanover) Island in Papua New Guinea are concerned they will not be able to join their ancestors after death, as the place where spirits are supposed to pass over is located in an area for which the Government of Papua New Guinea have granted exploration licenses. Deep-sea mining could also alter the development of shark populations and thereby affect a traditional fishing practice, known as "shark calling" - a practice performed in the Bismarck Archipelago of Papua New Guinea. It involves luring a shark to one's canoe in the open sea and catching it with the help of a noose.[11] According to Indigenous tribes in the Pacific, the noise produced by DSM explorations in Papua New Guinea Causes sharks not to hear them, and therefore not attracted to shore.

On this basis, the following memorandum sets out, as a mapping project, the main instruments and sources of international law which may be relevant to affected states, citizens, coastal communities and/or Indigenous Peoples in the effort to restrain DSM and mitigate its negative impacts. Our focus is on maritime areas under national jurisdiction, in contrast to areas under international regulation.

The legal regime for DSM in areas under national jurisdiction is generally distinct from the regime applicable to DSM in areas beyond national jurisdiction, is not fully clear and in any event is currently untested. As will be

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[6] THE WORLD BANK, PRECAUTIONARY MANAGEMENT OF DEEP-SEA MINING POTENTIAL IN PACIFIC ISLAND COUNTRIES 29 (last visited Oct. 18, 2020).

[7] Kirsten F. Thompson, Kathryn A. Miller, Duncan Currie, Paul Johnston and David Santillo, *Seabed Mining and Approaches to Governance of the Deep Seabed,* 5 FRONT. MAR. SCI. 1 (2018).

[8] Deepsea Conservation Coalition, RESOURCE ROULETTE - HOW DEEP-SEA MINING AND INADEQUATE REGULATORY FRAMEWORKS IMPERIL THE PACIFIC AND ITS PEOPLES, p. 33 (May.9, 2018) http://www.savethehighseas.org/resources/publications/resource-roulette-how-deep-sea-mining-and-inadequate-regulatory-frameworks-imperil-the-pacific-and-its-peoples/.

[9] ELAINE BAKER AND YANNICK BEAUDOIN, DEEP SEA MINERALS: DEEP SEA MINERALS AND THE GREEN ECONOMY (Elaine Baker and Yannick Beaudoin eds. 2013).

[10] Marie Navarre and Héloise Lammens, *Opportunities of Deep-Sea Mining and ESG Risks*, p. 37 (Aug. 2, 2017) https://research-center.amundi.com/page/Publications/Discussion-Paper/2017/Opportunities-of-deep-sea-mining-and-ESG-risks .

[11] IAIN OVERTON, CHARMING SHARKS (Oct. 14, 2000), The Guardian https://www.theguardian.com/travel/2000/oct/14/watersportsholidays1.

explained in the first section of the memorandum, this legal regime is highly affected by the sovereign rights of states to exploit the natural resources in these areas, and unlike legal regimes dealing with areas beyond national jurisdiction, it is subject to international law to a lesser degree, though still significant.

The most relevant legal frameworks will be presented in relation to possible scenarios and legal questions that may arise from DSM and its potential negative effects. In order to address these scenarios and questions we examine several disciplines of international law, among which there are gaps, but also overlaps and synergies – the Law of the Sea (LOS), environmental law, international human rights, Indigenous Peoples' rights and (to limited extent) investment protection law. This is without prejudice to other areas of international law that may be applicable in particular circumstances, such as international humanitarian law, international trade law or cultural heritage law.

The main scenarios and questions which the memorandum addresses (set out generally in Figure 1 below) include basic issues, such as DSM legality in areas under national jurisdiction, restrictions imposed by the various disciplines of international law, and relevant forums to which various players could turn in case of breach of these obligations.

Each section of the memorandum examines potential hypothetical scenarios that could arise from DSM operations, from the perspective of different areas of law, as set out in Figure 1 below. The first section deals with issues relevant to LOS and environmental law. Here we examine the legality of DSM, the restrictions imposed under international law, and some of the legal tools that may be available to citizens and neighboring (and other) countries to take legal action against the operating state in the case of breach of international law. The second and third sections examine the legality and restrictions imposed on states in the context of DSM impacts on human rights. These sections are linked to each other in that they are both part of the human rights regime, but of a different nature. The second section deals with the status of human rights related to the environment, the scope of these rights and the protection afforded to them by different courts and tribunals. The third section examines the laws specific to Indigenous Peoples, and especially the right to Free, Prior and Informed Consent (FPIC). In the fourth and final section of the memorandum, a more contingent scenario is noted, according to which the coastal state rescinds a DSM contract or license granted previously to a foreign corporation, triggering a claim under international investment protection law, if applicable, raising the question which defenses may be available to the host state.

**Figure 1. - Matrix of Scenarios regarding DSM in Areas under National Jurisdiction**

| Scenario | Main Questions | Inter-/ Intra-State? | Main Actors | Memorandum Section |
|---|---|---|---|---|
| **1. Harm within the coastal host state**<br><br>DSM in areas under national jurisdiction of a coastal state causes harm or creates risk of harm *within* those areas. | What are the obligations of coastal states under **the Law of the Sea and international Environmental Law** regarding DSM? How can these obligations enable action by coastal communities? | Mainly intra-state, employing international law | Coastal states, citizens/coastal communities, private operators, NGOs | Section 1 - Law of the Sea and Environmental Law |
| | What are the obligations of coastal states under **international human rights law** relating to the adverse effects of DSM and how can these obligations enable action by coastal communities? | | | Section 2 - International Human Rights relating to the Environment |
| | What legal tools do coastal **Indigenous Peoples** have vis-à-vis DSM that could impair their rights? | | | Section 3 - Indigenous Peoples rights. |
| **2. Harm outside the coastal host state**<br><br>DSM in areas under national jurisdiction of a coastal state causes harm or risk of harm *outside* those areas. | What rights do neighboring/affected states have under international law when **transboundary harm** occurs? | Mainly inter-state | State permitting DSM and affected states | Section 1 – Law of the Sea and Environmental Law |
| **3. DSM prevented by coastal state**<br><br>Coastal state rescinds DSM contract or license due to concerns regarding harm or risk of harm. | How can a state defend against an **investment protection** claim? | Investor-State | Coastal state (host state); foreign investor (private actor). | Section 4 – International Investment Protection Law |

# 1 The Law of the Sea and Environmental Law

## 1.1 Introduction

In this section we examine the obligations of states wishing to carry out or permit DSM activities in areas under their national jurisdiction, under the Law of the Sea and international environmental law. Although some important components of the Law of the Sea do not pertain to environmental considerations, and some important principles of international environmental law are not exclusive to the marine environment, these fields of international law are dealt in tandem because of their significant overlaps and inter-relationships.

The tools presented in this section may serve coastal communities in general but may also aid Indigenous Peoples of coastal states specifically. Arguments based on the laws, standards of practice and obligations of States discussed in this section could be utilized in claims of Indigenous communities against violations of their rights made by the State. This is because of the special connection between the coastal indigenous communities and the land or maritime areas which they inhabit. The relationship of Indigenous Peoples and coastal communities to the environment and the ocean establishes strong claims based on obligations under the Law of the Sea and international environmental law, which can be used to address DSM and its negative impacts.

The main questions addressed are: Do coastal States have the right to carry out DSM in areas under their national jurisdiction? If so, is the right absolute or constrained? is it limited by the United Nations Convention on the Law of the Sea (UNCLOS) or other international instruments? what are the standards of international environmental law that apply to areas under national jurisdiction? And more specifically, what are the obligations of coastal states towards the protection of biodiversity and affected coastal communities? How can states' ability to perform DSM be restricted by environmental principles such as the precautionary principle, Environmental Impact Assessments, and the obligation not to cause transboundary harm?

## 1.2 Maritime Zone Division

This memorandum deals with DSM operations specifically in areas under the national jurisdiction of states, and so it is crucial to first understand the division of marine zones under international law. As explained in this sub-section, the marine zone division has great significance on the State's ability to grant mining licenses and regulate operations. LOS governs human activities in the ocean, and divides the jurisdiction on governance into several different maritime zones. Thus, the spatial distribution of jurisdiction is the foundation of ocean governance. This division can be viewed in Figure 2 below.

The right of coastal States to regulate and exploit areas of the ocean under their jurisdiction is one of the foundations of the UNCLOS,[12] an international multilateral treaty signed in 1982. UNCLOS defines the rights and responsibilities of nations concerning the use of the world's oceans, establishing rules for the management of the ocean and the ocean's natural resources.

168 States have ratified UNCLOS, and it is considered to be a highly accepted legal source. In fact, over the past several decades, a number of international instruments have made a generalized reference to the "customary

[12] Convention on the Law of the Sea, Dec.10, 1982, 1833 U.N.T.S. 397. [ hereinafter: UNCLOS].

Law of the Sea as reflected in UNCLOS".[13] However, some States (including those with significant coastlines) such as the United States, Israel, Kazakhstan, Peru, Syria, Turkey, and Venezuela, have not ratified the treaty.

These zones grant coastal States different levels of jurisdictional rights. In general, a State has stronger rights in zones nearer to its coastline than it does further into the ocean.[14]

### 1.2.1 Maritime Zones Under National Jurisdiction

Maritime zones under national jurisdiction are divided into two major groups: areas that are part of the sovereign territory of the coastal state, and areas in which the coastal state enjoys some sovereign rights, but are not considered part of its sovereign territory. Each group is divided into subgroups, which are governed under different regulations.

### 1.2.2 Maritime Zones Under National Jurisdiction: Territorial Sovereignty

Internal waters, territorial seas and archipelagic waters constitute marine zones under the territorial sovereignty of the coastal state. Consequently, these areas are considered part of the coastal state.[15] For this memorandum there is no need to elaborate on internal waters, meaning lakes and rivers, because they are irrelevant to DSM.

**Territorial Sea:** The territorial sea is the marine zone from the shores or baseline of the coastal State extending 12 nautical miles into the seas. Coastal States have sovereignty and jurisdiction over the territorial sea. These rights extend not only on the surface but also to the seabed and subsoil, as well as vertically to airspace.[16] This means, that DSM in the territorial sea is in principle subject to the coastal State's jurisdiction.

**Archipelagic waters**: a zone relevant only to archipelagic states.[17] Article 47 UNCLOS allows archipelagic states to draw a baseline connecting all the islands of which the country is composed.[18] The area of the seas enclosed between the landward side of the Archipelagic baselines and the seaward side of it is called **Archipelagic Waters.**[19] according to Article 2 UNCLOS, the coastal state has sovereignty over this area.[20] Again, like the territorial sea, DSM in archipelagic waters is subject to the coastal state's jurisdiction.

### 1.2.3 Maritime Spaces Under National Jurisdiction: Sovereign Rights

**Contiguous Zone:** The contiguous zone is the marine zone contiguous to the territorial sea, in which the coastal state may exercise the control necessary to prevent and punish infringement of its customs, fiscal,

[13] Examples include: Article 16 of the Agreement on Cooperation on Marine Oil Pollution Preparedness and Response in the Arctic, 15 May 2013; Article 16 of the International Convention for the Control and Management of Ships' Ballast Water and Sediments, 2004, 13 February 2004,
available at www.water.epa.gov/type/oceb/habitat/upload/20041029invasivespeciesBWM-Treaty36.pdf.
[14] Eric A. Posner & Alan O. Sykes, *Economic Foundations of the Law of the Sea*, 104 American Journal of International Law 579, 569-596 (2010).
[15] Yoshifumi Tanaka, THE INTERNATIONAL LAW OF THE SEA (2d ed. 2015). [hereinafter Tanaka].
[16] UNCLOS, supra note 12, Art 2.
[17] Archipelagic state means a State constituted wholly by one or more archipelagos and may include other islands; id at 46(a).
[18] *Id*, Art 47.
[19] *Id*. Art 49.
[20] *Id*. Art 2.

immigration or sanitary laws and regulations within its territory or territorial sea.[21] This zone exists to bolster a State's law enforcement capacity and prevent criminals from fleeing the territorial sea.[22] Coastal states may exercise only enforcement, not legislative, jurisdiction within its contiguous zone.[23] This zone is not particularly relevant to DSM, as DSM operations aim to exploit natural resources located in the seabed, an area governed under the continental shelf regime, explained below.

**Exclusive Economic Zone (EEZ):** The EEZ is an area beyond and adjacent to the territorial sea that extends 200 miles from the baseline of territorial sea, and is subject to the specific legal regime established in part 5 of UNCLOS.[24] Thus, it is not part of the territory of the coastal state, and yet according to Article 86 UNCLOS,[25] it is not a part of the high seas either.[26] The EEZ needs to be proclaimed by the State, and upon proclamation, applicable sovereign rights over the EEZ are exclusive to that State. The coastal State has sovereign rights to explore, exploit, conserve and manage natural resources, whether living or non-living, of the water superjacent to the seabed and of the seabed and it subsoil.[27] It is important to note that the sovereign rights of the coastal state over the EEZ are essentially limited to economic exploration and exploitation, and therefore must be distinguished from territorial sovereignty as such, which is more comprehensive.[28] Those sovereign rights mentioned above are exclusive in the sense that no one may undertake these activities or make claims to the EEZ besides the coastal state who claimed it,[29] although competing claims may of course occur. The coastal state may also exercise both legislative and enforcement jurisdiction in the EEZ.[30].

**Continental Shelf**: the continental shelf of a coastal state comprises the seabed and subsoil of the submarine areas that extend beyond its territorial sea up to 200 nautical miles.[31] Where the outer edge of the continental margin extends beyond 200 nautical miles, the limit of the continental shelf is to be determined on the basis of geological criteria, and can be extended up to 350 nautical miles beyond its coast, as can be seen in Figure 2 below.[32]

The sovereign rights of the coastal state over the continental shelf are inherent,[33] and it exercises sovereign rights over the continental shelf for the purpose of exploring and exploiting its natural non-living resources.[34] Where the coastal state has established an EEZ, that state has the sovereign right to explore and exploit marine

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[21] *Id*. Art 33.

[22] Hugo Caminos, Contiguous Zone, Oxford Public International Law (March 13, 2020), https://opil.ouplaw.com/view/10.1093/law:epil/9780199231690/law-9780199231690-e1151#law-9780199231690-e1151-div1-1..

[23] Tanaka, supra note 15, at 125.

[24] UNCLOS, supra note 12, Arts 55-57.

[25] Article 86 UNCLOS provides that that the provisions of Chapter 7 of the Convention governing the high seas apply to all parts of the sea that are not included in the EEZ, territorial sea or internal waters ; id, at 86.

[26] Tanaka, supra note 15, at 130.

[27] UNCLOS, supra note 12, Art 56.

[28] Supra note 26.

[29] *Id*. at 131.

[30] UNCLOS, supra note 12, Art 73(1).

[31] *Id*. Art 76(1).

[32] *Id*. Art 76(4).

[33] North Sea Continental Shelf Cases (Federal Republic of Germany v. Denmark), Judgement,1969 I.C.J. Rep.9 ¶ 22 (Feb.20).

[34] UNCLOS, supra note 12. Art 77(1).

living sources on the seabed as well.[35] The coastal state's rights are exclusive in the sense that if the coastal state does not explore or exploit the resources, no one may undertake these activities without the express consent of the coastal state.[36] Coastal sovereign rights include legislative and enforcement jurisdiction with a view to exploring and exploiting natural resources on the continental shelf. However, these rights are restricted in certain matters by international law.[37]

### 1.2.4 Maritime Zones Beyond National Jurisdiction

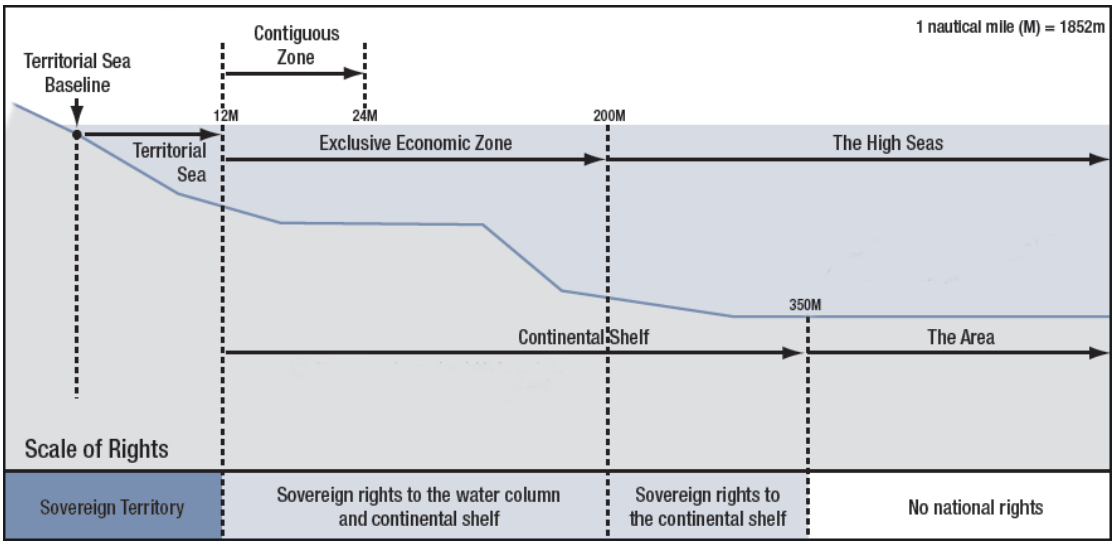
Here we review the law relevant to territories *beyond* the national jurisdiction of states, namely the high seas and the Area, even though it is beyond the scope of this memorandum, in order to more fully understand the laws applicable to DSM.

**High Seas and Deep Ocean Floor:** The ocean surface beyond the EEZ is the high seas. Under UNCLOS, the seabed beyond a coastal State's EEZ and Continental Shelf claims is the international seabed or "The Area".[38] the Area is considered "the common heritage of all mankind",[39] and is beyond any national jurisdiction. The principle of "common heritage of mankind" is composed of three elements. First, non-appropriation of the area as well as its natural resources; second, activities in the area shall be carried out for the benefit of mankind as a whole; and third, the area shall be open to use exclusively for peaceful purposes.[40]

The "International Seabed Authority" (**ISA or the Authority**) is an international body established under UNCLOS, responsible for administering mineral extraction projects and all other activities in the Area. The ISA has the authority to grant mining, exploration, and exploitation licenses to State-sponsored contractors to carry out DSM in the Area. The element of state sponsorship is fundamental to the international regime, as it is designed to ensure that, ultimately, a State Party to UNCLOS is held responsible for the activities of contractors conducting activities with a license from the ISA. Later in the memorandum, we review the standards and regulations sponsoring States are required to meet by the ISA, insofar as they may be relevant to DSM in areas under national jurisdiction.

[35] Tanaka, supra note 15, at 147.
[36] Convention on the Continental Shelf, art 2(2), Apr. 29, 1958, 7302 U.N.T.S. 499; supra note 33.
[37] Tanaka, supra note 15 , at 148..
[38] UNCLOS, supra note 12, Art 133.
[39] *Id*. Art 136.
[40] Tanaka, supra note 15, at 180-181.

**Figure 2: Division of Maritime Zones**




*Source: Arctic Council, Arctic Marine Shipping Assessment 2009 Report (Tromsø, Norway: 2009), p. 52*, available at: **www.pame.is/images/stories/PDF_Files/AMSA_2009_Report_2nd_print.pdf.**

## 1.3 Protection of the Marine Environment

Marine environmental protection is an issue of considerable importance in LOS, especially in the context of DSM. In principle, UNCLOS regulates marine pollution according to its legal sources and standards, such as vessel-source pollution, dumping and pollution from seabed activities. Accordingly, this part of the memorandum examines the rules of international law regulating marine pollution which stems from seabed activities. In this sub-section, we examine Articles under Part XII UNCLOS, devoted to the protection and preservation of the marine environment, which establish obligations towards States wishing to permit or develop DSM in areas under their national jurisdiction.

### 1.3.1 General Obligation to Protect and Preserve the Marine Environment and Biodiversity under UNCLOS

The provisions of Part XII of UNCLOS are intended to protect the marine environment from marine pollution. As explained in the introduction to this memorandum, DSM can pose a significant threat to the life and survival of marine species as well as to the biological diversity of marine ecosystems.[41] UNCLOS provides guidelines for regulating activities to preserve the marine environment.

[41] Waseem Ahmad Qureshi, Marine Biodiversity Conservation: The International Legal Framework and Challenges, 40 *Hous. J. INT'l L.* 845, 854 (2018).

Article 192 UNCLOS provides that "states have the obligation to protect and preserve the marine environment".[42] According to its ordinary meaning, the term "marine environment" includes the ocean as a whole, without distinguishing between marine spaces under and beyond national jurisdiction.[43]

Article 193 UNCLOS relates to territories under national jurisdiction and declares that states have a sovereign right to exploit the natural resources therein but obliges them to protect and preserve the marine environment while doing so.[44] This provision emphasizes that the sovereign right to exploit marine resources does not release states from the obligation to protect and preserve the marine environment.[45]

Article 194 UNCLOS adds to the previous , and requires states to do everything possible to prevent, reduce and control marine pollution, from all sources mentioned above, and to use for this purpose all the means at their disposal, and in accordance to their ability.[46] Such means must also ensure the protection of endangered marine species and their habitats.[47] This provision is considered part of customary international law.[48]

The protection and conservation of the marine environment under Article 194 UNCLOS includes the protection of biodiversity and ecosystems in the ocean. Thus, general obligations for the protection of the marine environment are also relevant for the protection and conservation of biodiversity.[49]

### 1.3.2 Pollution Caused by Seabed Activities

Activities in the seabed can cause heavy marine pollution. An example which highlights the risk involved in utilizing the seabed is the accidental explosion of the *BP Deepwater Horizon* oil rig in 2011.[50] Marine pollution may be caused by drilling operations which produce drilling mud and drill cuttings which include known toxic pollutants such as Hydrocarbons, concentrations of heavy metals including Chromium, Copper, Zinc and Nickel.[51]

UNCLOS obligates coastal States to legislate domestic laws and regulations to prevent, reduce and control pollution of the marine environment arising from or in connection with seabed activities subject to their

[42] UNCLOS, supra note 12, Art 192.
[43] Tanaka, supra note 15, at 276.
[44] UNCLOS, supra note 12, Art 193.
[45] Rudiger Wolfrum. The Interplay of the United Nations Convention on the Law of the Sea and the Convention on Biological Diversity, in MAX PLANCK YEARBOOK OF UNITED NATIONS LAW 445, 451 (J.A Frowein & R. Wolfrum eds., 2000).
[46] UNCLOS, supra note 12, Art 194.
[47] *Id.* Art 194(5).
[48] The MOX Plant Case (Ireland v. United Kingdom), Judge Wolfrum, p. 3, Case No.10, order of Dec. 3, 2001, https://www.itlos.org/fileadmin/itlos/documents/cases/case_no_10/published/C10-O-3_dec_01.pdf.
[49] Chagos Marine Protected Area A (Mauritius v United Kingdom), Final Award, ICGJ 486, para 211 (Perm. Ct. Arb. 2015).
[50] The BP Deepwater Horizon exploratory rig exploded, killing 11 people and initiating the largest oil spill in the history of the United States. Nearly 5 million barrels of oil spilled into the Gulf of Mexico, causing catastrophic damage to the ecosystem and economy of the region; Liz Kimborough, Decade After BP Deepwater Horizon Spill, Oil Drilling is as Dangerous as Ever, MONGABAY (Apr.20, 2020), https://news.mongabay.com/2020/04/decade-after-bp-deepwater-horizon-spill-oil-drilling-is-as-dangerous-as-ever/.
[51] H. Esmaeili, THE LEGAL REGIME OF OFFSHORE OIL RIGS IN INTERNATIONAL LAW, .148-149 (2017).

jurisdiction.[52] Importantly, the convention states that such laws and regulations shall be no less effective than international rules, standards and recommended practices and procedures.[53] This obligation on coastal States is stated in Article 208 UNCLOS and applies to seabed activities "subject to their jurisdiction". Therefore, its application is quite broad in scope. It would apply not only to seabed activities in the coastal State's internal waters and territorial sea, but also to seabed activities in their EEZ and on their continental shelf.[54] UNCLOS also requires the coastal state to enforce the same regulations and laws enacted to prevent pollution.[55]

Although UNCLOS obliges coastal states to enact laws and regulations in this respect, it does not specify the content of this obligation and does not specify which standards coastal States will have to meet. In fact, UNCLOS requires (through Article 208) that States draw the standards from international law, though it does not explicitly state which international law sources coastal States should draw these legal standards from. International laws and standards specifically applying to DSM in areas under national jurisdiction have yet to be established internationally and officially.[56] Nevertheless, in the next sub-section we present the rules and standards that in our opinion, States must draw from in order to fulfill the obligation under Article 208.

## 1.4 Article 208 UNCLOS as a Conduit of International Standards

Article 208(1) of UNCLOS provides that coastal States shall adopt laws and regulations to prevent, reduce and control pollution of the marine environment arising from or in connection with seabed activities subject to their jurisdiction. These laws shall be no less effective than "international rules, standards and recommended practices and procedures" which are to be established through "competent international organizations or diplomatic conference" on a global or regional level.[57] As stated above, it is not clear from which sources coastal states should draw such standards and regulations. Therefore, in this section we examine the literature and the positions of scholars in relation to the scope of Article 208 UNCLOS.

Our findings are mapped out in detail below, following the general structure seen in Figure 3. The sources that Article 208 UNCLOS can incorporate are arranged according to the strength of each source. We have mapped out the strength of each source based on the opinions of scholars on the extent they believe that it is probable or highly probable that a source may be adopted into national legislation in accordance with Article 208 UNCLOS. The green arrow describes the types of sources that scholars believe are most relevant for drawing standards from in accordance with Article 208, the yellow arrow represents those found to less probable, the red arrow – least probable. The red arrow represents the ISA standards, which are found to be controversial by scholars as a binding basis for domestic regulation, although highly pertinent.

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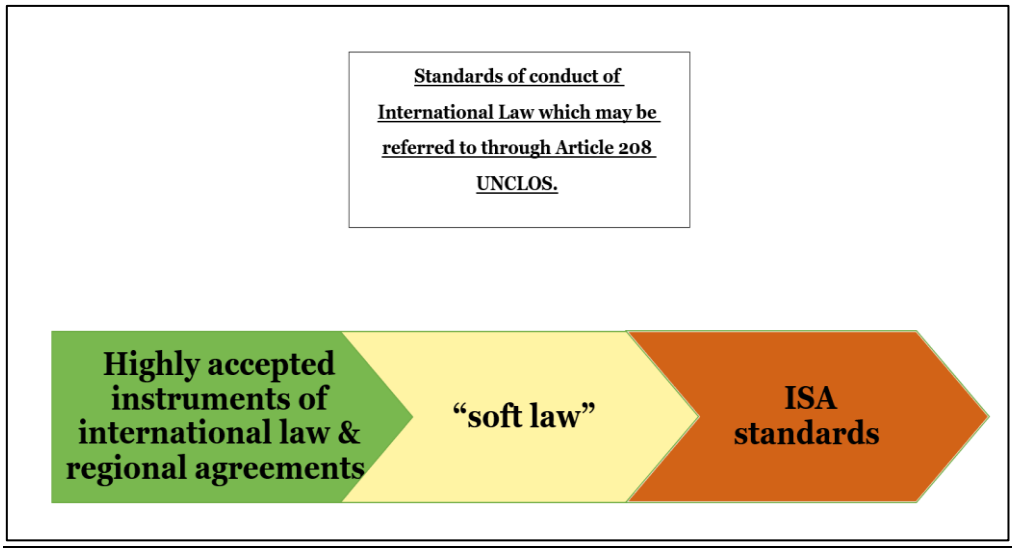
[52] UNCLOS, supra note 12. Art 208(1).
[53] *Id*. Art 208(3).
[54] Robert Beckman, Global Legal Regime Governing on the Decommissioning of Offshore Installation and Structures, in THE REGULATION OF CONTINENTAL SHELF DEVELOPMENT, RETHINKING INTERNATIONAL STANDARDS, 273,259-280 ( Myron H. Nordquist., 2013).
[55] UNCLOS, supra note 12. Art 2014.
[56] Till Markus & Pradeep Singh, Promoting Consistency in the Deep Seabed: Addressing Regulatory Dimensions in Designing the International Seabed Authority's Exploitation Code, RECIEL 25(3) 347, 351, (2016,). [hereinafter Markus and Singh]
[57] Supra note 52.

**Figure 3**




### 1.4.1 International Law Standards

UNCLOS uses a method of *incorporation by reference* to internationally accepted rules and standards to determine the content of the desired laws and regulations.[58] The obligation has been widely interpreted as requiring that those referenced rules will be generally accepted in state practice. The reason for this is that powerful rights like sovereign rights can only be limited by those rules and standards that are "truly international by virtue of their widespread acceptance".[59] Notably, this does not refer to customary international law, which would be binding on states regardless of Article 208 UNCLOS.[60] There seems to be some convergence among scholars that certain International Maritime Organization (IMO) conventions such as MARPOL,[61] which includes detailed technical requirements, enjoy wide acceptance by states and thus qualify as a source for standards in this context. It is also evident that some biodiversity-related agreements have reached the same level of acceptance and can also be considered as rules in forming the standard required by Article 208 UNCLOS.[62]

Along with the approach that contends that laws and standards should be drawn from binding international legal sources, there is a broader approach that argues that the existence of standards from non-binding international legal sources, such as soft law, cannot be ignored for the purposes of Article 208 UNCLOS.[63]

[58] Nikolas Giannopoulos, Global Environmental Regulation of Offshore Energy Production: Searching for Legal Standards in Ocean Governance, RECIEL 28(3) 289, 296, (2019). [hereinafter Giannopoulos].
[59] Bernard H. Oxman, The Duty to Respect Generally Accepted International Standards, 24 N.Y.U. J. Int'l L. & Pol. 109, 132-133, (1991).
[60] Josef L. Kunz, The Nature of Customary International Law, 47 American Journal of International Law 663, 662-669 (1953).
[61] International Convention for the Prevention of Pollution from Ships, Feb. 17, 1973, 61 U.N.T.S 1340. [hereinafter MARPOL]
[62] Supra note 58.
[63] A Boyle, 'Some Reflections on the Relationship of Treaties and Soft Law' (1999) 48 International and Comparative Law Quarterly 901, 906.

Declarations of environmental principles and action plans adopted at international conferences, codes of conduct, technical standards and recommendations adopted by international organizations, and ocean corporate responsibility instruments are just a few examples.[64] Next to their precursory role in the creation of rules of international environmental law,[65] non-binding instruments can also impact on the standard of environmental protection by influencing UNCLOS through interpretation.

The approach that 'adopted non-binding yet relevant' international standards 'harden' through incorporation by reference can be found in several international regulatory systems. These include Article 2.4 of the World Trade Organization (WTO) Agreement on Technical Barriers to Trade (TBT),[66] and Article 3.1 of the WTO Agreement on the Application of Sanitary and Phytosanitary Measures (SPS),[67] which similarly to Article 208 UNCLOS, refer member states to international standards, as a basis for their technical regulations and sanitary and phytosanitary measures, subject to some exceptions.[68] In a few WTO decisions, such as the US-Tuna II (Mexico) case[69] and the EC-Hormones (Canada) case,[70] this has been interpreted as applicable to non-binding standards.[71] Moreover, Article 3.1 of the SPS that requires WTO members to "base their sanitary or phytosanitary measures on international standards, guidelines or recommendations, where they exist", has been interpreted as incorporating also non-binding international standards.[72] Therefore, relevant international standards found in non-binding instruments and "soft law' will be presented in this memorandum as well.

### 1.4.2 National Standards and Regional Agreements

Article 208(4) UNCLOS obligates States to strive to harmonize domestic policies and appropriate regional policies on the regulation of pollution caused by seabed activities.[73] There are laws and standards that may be found in regional conventions that coastal states may need to adopt in their national law in accordance with Article 208.[74] For example, the 'Pacific-ACP States Regional Legislative and Regulatory Framework for Deep Sea Minerals Exploration and Exploitation' (RLRF),[75] is a regulatory framework developed in collaboration

[64] For example: multilateral treaties, such as: U.N. Conference on Environment and Development, Rio Declaration on Environment and Development, U.N. Doc. A/CoNF.151/26/Rev.1 (Vol. 1), annex | (Aug.12,1992) [hereinafter Rio Declaration]; ICJ cases and more.
[65] Supra note 63.
[66] Agreement on Technical Barriers to Trade, Apr.15,1979 1868 U.N.T.S. 120.
[67] Agreement on the Application of Sanitary and Phytosanitary Measures, Apr. 15, 1994, 1867 U.N.T.S. 493.
[68] While WTO agreements require member states to use international standards as a basis for local legislation, UNCLOS only requires local legislation to be no less effective than international standard.
[69] Appellate Body Report, US-Tuna II, para. 351-353, WTO Doc. WT/DS381/49/Rev.1 (adopted Jan.17, 2019).
[70] Panel Reports, Canada-Continued Suspension of Obligations in the EC — Hormones Dispute, para 8.72,WTO Doc. WT/DS321/16 (adopted Nov. 21, 2008) ; Panel Reports, United States-Continued Suspension of Obligations in the EC-Hormones Dispute, para. 8.69, WTO Doc. WT/DS320/18 (adopted Nov.21, 2008) [hereinafter EC Hormones].
[71] See more in WTO Analytical Index, TBT Agreement – Article 2 (Jurisprudence), pp 32. Available at: https://www.wto.org/english/res_e/publications_e/ai17_e/tbt_art2_jur.pdf.
[72] Supra note 70.
[73] UNCLOS, supra note 12, Art 208(4).
[74] Tanaka, supra note 15, at 317.
[75] SECRETARIAT OF THE PACIFIC COMMUNITY (SOPAC DIVISION), Pacific-ACP States Regional Legislative and Regulatory Framework for Deep Sea Minerals Exploration and Exploitation prepared under the SPC-EU EDF10 Deep Sea Minerals Project, (1st ed. July 2012). [hereinafter RLRF]

between the European Union and the Secretariat of the Pacific Community, issued in 2012. The states involved are: the Cook Islands, the Federated States of Micronesia (FSM), Fiji, Kiribati, Republic of the Marshall Islands (RMI), Nauru, Niue, Palau, Papua New Guinea (PNG), Samoa, the Solomon Islands, Timor Leste, Tonga, Tuvalu and Vanuatu. The document's specific objective was to strengthen the system of governance and capacity of Pacific island States in the management of deep-sea minerals through the development and implementation of sound and regionally integrated legal frameworks in national legislation.[76] This framework is especially consequential because of the significant potential for DSM operations in the region. P-ACP[77] States have sovereignty over a vast area of the Pacific Ocean – estimated at 165,250,000 square kilometers,[78] their aggregate Exclusive Economic Zones are almost 100 times larger than their total island area.[79] This area may be expanded through continental shelf claims under UNCLOS, bringing high potential for interest in DSM development under national jurisdiction. The RLRF aims to assist States in responsible development not only as sponsoring States of DSM in the CCZ, but also in areas under national jurisdiction.[80]

### 1.4.3 Relationship Between the Regulatory Regime in the Area and DSM in Areas Under National Jurisdiction

The most detailed and relevant regulatory framework for DSM operations generally is the framework developed by the ISA. The issue here is that the ISA's regulatory regime concerns DSM in the Area, not in maritime zones under national jurisdiction. Therefore, we must ask whether States should draw on the standards developed by the ISA? On the one hand, the standards that are adopted by ISA are, by their very nature, international standards that apply to the Area. However, they are not necessarily international standards that apply in areas under national jurisdiction. Moreover, Article 208(4) UNCLOS provides that States should harmonize their policies at the appropriate regional level, while Article 208(5) says that: "States, especially acting through competent international organizations, shall establish global and regional rules, standards and recommended practices and procedures to prevent, reduce and control pollution of the marine environment" arising from inter alia seabed activities in areas under national jurisdiction. If the ISA exploitation regime, or at least its provisions on environmental protection, must be applied automatically to areas under national jurisdiction then it makes little sense for the word 'organizations' to be in the plural and the reference to 'regional standards' is superfluous.[81]

[76] THE WORLD BANK, PRECAUTIONARY MANAGEMENT OF DEEP-SEA MINING POTENTIAL IN PACIFIC ISLAND COUNTRIES (2016). [hereinafter THE WORLD BANK- PRECAUTIONARY MANAGEMENT].

[77] The Organisation of African, Caribbean and Pacific States is a group of countries in Africa, the Caribbean, and the Pacific that was created by the Georgetown Agreement in 1975, Formerly known as African, Caribbean and Pacific Group of States (ACP), the Organization's main objectives are sustainable development and poverty reduction within its member states, as well as their greater integration into the world's economy ; The Georgetown Agreement created the African, Caribbean and Pacific Group of States (P-ACP states),Aug.12, 1982, 1277 U.N.T.S 3.

[78] Charles Henry Cotter, Pacific Ocean, Encyclopedia Britannica (Dec. 26, 2019), https://www.britannica.com/place/Pacific-Ocean.

[79] RLRF, supra note 75, at 4.

[80] *Id.*

[81] ECROYS RESEARCH AND CONSULTING, STUDY TO INVESTIGATE STATE OF KNOWLEDGE OF DEEP SEA MINING (2014), https://webgate.ec.europa.eu/maritimeforum/system/files/Annex%202%20Legal%20analysis.pdf.

On the other hand, it has been argued that because DSM conducted in areas under national jurisdiction is not part of the ISA's regulatory regime, there is concern that the level of seabed protection in these areas will be different. Such a difference in the level of protection of the marine environment does not comport with the idea of protecting the marine environment presented in UNCLOS.[82] Thus, coastal states need to develop, adopt and enforce standards in a coordinated effort to streamline mining activity standards within and beyond national jurisdiction. UNCLOS encourages states to act 'through competent international organizations'[83] to develop rules and standards. Given the ISA's in-depth knowledge and familiarity in the subject matter, as well as the involvement of many UNCLOS States in the development of its rules and regulations, it would be reasonable to argue that the ISA fits this description. In this manner, general standards already developed by ISA may be regarded as 'normative standards' which sould be adopted by states or developed and adjusted accordingly.[84]

Since the question of the application of the ISA regulatory regime to the areas under national jurisdiction is undetermined, all ISA standards to be presented in the memorandum must be taken with a limited guarantee and understanding that even if they apply, they apply *mutatis mutandis* to areas under national jurisdiction.[85]

In 2011, the International Tribunal for the Law of the Sea (ITLOS) issued an Advisory Opinion on the issue of "Responsibilities and Obligations of States Sponsoring Persons and Entities with respect to Activities in the Area" (the Advisory Opinion).[86] As a general statement, The ITLOS Chamber decided that developing States have the same responsibilities and liabilities as developed states while sponsoring DSM in the Area. The goal of this statement is to prevent commercial enterprises based in developed States from setting up companies in developing States, acquiring their nationality, and obtaining their sponsorship in the hope of being subjected to less burdensome regulations and controls.[87] To the extent that the standards applicable to the ISA are relevant to mining in areas under national jurisdiction, the standards that will apply to developing States are the same as the standards that will apply to other States.

## 1.5 International Laws and Standards Potentially Relevant to DSM

This part of the memorandum presents the laws and standards which, according to our assessment, should be adopted by States into national legislation regarding DSM with respect to the Law of the Sea and environmental law. The sources of law from which we derive these standards were selected in accordance with the criteria under Article 208 UNCLOS as discussed above.

[82] Markus and Singh, supra note 56, at 358.
[83] UNCLOS, supra note 12, Art 208(5).
[84] Supra note 81.
[85] R. Makgil & A.P Linhares, Deep Seabed Mining: Key Obligations in the Emerging Regulation of Exploration and Development in the Pacific, in ROUTLEDGE HANDBOOK ON MARITIME REGULATION AND ENFORCEMENT 231, 232 (R. Warner and S. Kaye ed., 2016).
[86] Responsibilities and Obligations of States with respect to activities in the Area, Advisory Opinion, Case No 17, order of Feb. 1, 2011, ITLOS /PV.2011/1/Rev.2. [hereinafter ITLOS Advisory Opinion]
[87] *Id.* Para. 158-159.

### 1.5.1 The Precautionary Principle

The Precautionary Principle is perhaps the most fundamental principle in environmental policy[88] and the most relevant environmental principle to DSM. The core concept of the principle being that regulatory frameworks should not favour industrial or economic development when there is a lack of evidence regarding potential adverse impacts.[89] In other words, scientific uncertainty of environmental harm is not a justification for carrying out developmental activities. Domestic legislation implementing the Precautionary Principle should allow three things – first, to obligate decision-makers to consider the available information on activities. Second, to identify uncertainties or insufficiencies in the information provided, and third, to exercise caution when such uncertainties arise.[90] The principle does not prohibit development projects outright, but rather creates an obligation of States to act with caution cognizant of unknown potential harm,[91] and appropriate checks and balances. This introduces a shift in legal culture, from responsive legal action such as claiming damages *ex post facto* to pre-emptive actions that seek to avoid the occurrence of irreversible damage.

The customary status of the Precautionary Principle is a topic of ongoing controversy. Though the principle has received wide recognition under domestic law and jurisprudence, possibly creating State practice, it is still argued that its international customary status has not fully crystalized. The following paragraphs outline current jurisprudence on the customary status of the principle.

The ITLOS Advisory Opinion given in 2011 addressed questions regarding the responsibilities and obligations of "States sponsoring persons and entities with respect to activities in the Area". The Chamber found that the Precautionary Principle may crystalize into customary international law,[92] following the incorporation of the principle into a growing number of international treaties and other instruments, many of which reflect the formulation of Principle 15 of the Rio Declaration. This finding was based on the "standard clause" of the Sulfides Regulations[93] and the ICJ statement that "a precautionary approach may be relevant in the interpretation and application of the provisions of the Statute"[94] in its Pulp Mills decision.[95] The WTO has lent some credence to a corollary of the Precautionary Principle through its own treaty law (Article 5.7 SPS), but has not applied it as customary law broadly. It has recognized the possibility of narrowly applying the principle in the field of environmental law. In the WTO Beef Hormones Case,[96] the Appellate Body found that "The status of the precautionary principle in international law appeared less than clear, and at least outside the field of international environmental law, still awaited authoritative formulation".[97] The International Court of Justice

[88] Rosey Cooney, INTERNATIONAL UNION FOR CONSERVATION OF NATURE, THE PRECAUTIONARY PRINCIPLE IN BIODIVERSITY CONSERVATION AND NATURAL RESOURCE MANAGEMENT: AN ISSUES PAPER FOR POLICY-MAKERS, RESEARCHERS AND PRACTITIONERS 2 (2004). [hereinafter IUCN Precautionary Principle].
[89] *Id.* at 9.
[90] RLRF, supra note 75, Para 18.21.
[91] *Id.* Para 18.18.
[92] ITLOS Advisory Opinion, supra note 86, Para 135.
[93] International Seabed Authority [ISA], Regulations on prospecting and exploration for polymetallic sulphides in the Area, Annex 4, ISBA/16/A/12 Rev. 1 (Nov.15, 2010).
[94] i.e., the environmental bilateral treaty whose interpretation was the main bone of contention between the parties, the Treaty in question is the 1975 Statute of the River Uruguay.
[95] Pulp Mills case (ARG v. URU), judgement, I.C.J. 113, Para 164 [hereinafter Pulp Mills case].
[96] EC Hormones, supra note 70.
[97] *Id.* Para 23.

(ICJ) strongly limited its use in its 2010 Pulp Mills decision, reversing a trend within international environmental law of broad application of the Precautionary Principle.[98]

It seems that even when tribunals dismiss the customary status of the Precautionary Principle or the broad scope of its application, there is an agreement on its relevance to situations involving potential environmental damage. A claimant in a dispute over DSM operations could claim that the Precautionary Principle has crystalized as customary law, though the Court would not be obligated to accept this claim. It can therefore be argued that the Precautionary Principle may be held, at least, as a standard for environmental protection, and can therefore be applied as a standard of Article 208 UNCLOS, applicable in national jurisdictions.

The most prominent definition of the Principle is stated in Principle 15 of the Rio Declaration:[99] "Where there are threats of serious or irreversible damage, *lack of full scientific certainty shall not be used* as a reason for postponing cost-effective measures to prevent environmental degradation" (emphasis added).

In practice, the principle obligates a State and private developers to assess both the *probability of harm to occur* and the *possible extent of that harm* if it does occur, when considering the available information on activities. These factors are addressed in several legal bodies, though they lack clear or universal definition under international law. The *extent of harm* factor could be considered in light of the terms used by the following legal instruments. The Rio Declaration uses the term "serious or irreversible damage",[100] while UNCLOS and the ISA Mining code employ the term "serious harm to the marine environment". The International Law Commission's 2001 Articles on the Prevention of Transboundary Harm from Hazardous Activities formulate a criteria as follows: "'risk of causing significant harm' includes risks taking the form of a high probability of causing significant harm and a low probability of causing disastrous harm".[101] Regarding the *probability of harm* factor, there is little guidance on the strength of evidence required to show potential for harm. However, the International Union for the Conservation of Nature stated in their 2007 guidelines of the Precautionary Principle that the potential threat must be towards human health or ecosystem survival.[102] Additional considerations may include recognition of the well-being and interests of non-human entities and concern for inter-generational impact on future generations, protected under the principle of intergenerational equity.[103]

In order to identify uncertainties or insufficiencies in the information provided and exercise caution when uncertainties arise, DSM operators are required to submit periodic reports (Environmental Impact Assessments). The European Commission Communication on the Precautionary Principle stated that science-based risk assessments are an essential first step for applying precaution.[104] The burden of proof and provision

[98] Daniel Kazdan, Precautionary Pulp: "Pulp Mills" and the Evolving Dispute between International Tribunals over the Reach of the Precautionary Principle, 38 *Ecology Law Quarterly* 527, 527 (2011).
[99] Rio Declaration, supra note 64.
[100] *Id*. Princ 15.
[101] ILC (2001) Draft articles on prevention of transboundary harm from hazardous activities, with commentaries (30 Nov 2001). UN Doc A/54/10, Art. 2(a).
[102] IUCN Precautionary Principle, supra note 88, at 7.
[103] Inter-generational equity raises the issue of the allocation in time of natural resources – that is the principle that resources should be preserved today that will have a higher value later.
[104] COMMISSION OF THE EUROPEAN COMMUNITIES, COMMUNICATION FROM THE COMMISSION ON THE PRECAUTIONARY PRINCIPLE (2000), https://eur-lex.europa.eu/LexUriServ/LexUriServ.do?uri=COM:2000:0001:FIN:EN:PDF.

of information rests on DSM operators wishing to carry out DSM activities.[105] However, the decision that activities may proceed in light of evidence provided rests with the State or other regulatory authority.[106] Additionally, states could require that operators use the best available tools to avert potential harm (even as additional harm), that work proceeds in marked stages to allow better observation of the effects of DSM, and that DSM operators incorporate mining methods which encourage generation of biodata.[107]

In a court proceeding, the Precautionary Principle as interpreted by the ICJ would invoke a high standard of proof of existing potential harm, which rests on the party claiming that the principle was violated, not the respondent. In its 2010 Pulp Mills decision, the ICJ rejected the claim that the principle shifts the burden of proof onto the party accused of violation of the principle.[108] The Court also rejected the argument that the Precautionary Principle lowered the standard of proof required to show environmental harm.[109] A high standard of proof of environmental damage could impede the ability of governments and indigenous communities to trigger the Precautionary Principle in relation to DSM activities, as it is difficult at this stage to estimate the environmental impacts. However, it is possible that the Court's jurisprudence on procedural burden of proof is applicable in some cases but not others. The Pulp Mills case addressed violations of *treaty* obligations between Argentina and Uruguay. It is possible that the Court was unwilling to apply the Precautionary Principle in order to uphold principles of treaty law.[110] However, in cases where a dispute does not stem from obligations agreed upon in a treaty, the Court may be willing to apply the principle and shift or lower the burden of proof. Moreover, domestic authorities, including courts, are free to establish the burden and standard of proof in this respect, making it less onerous to challenge projected DSM activities.

Standards of conduct relating to DSM activities in territorial waters could also be derived from the 2011 ITLOS Advisory Opinion, in accordance with Article 208 UNCLOS, as the decision could be considered an international standard for the purposes of the Article. The Chamber concluded that sponsoring States have two kinds of obligations. The first being a due diligence obligation of the sponsoring State to ensure contractor compliance with mining contracts, obligations set out in UNCLOS and international law.[111] This is a 'conduct' rather than 'result' obligation, which requires sponsoring States to deploy all adequate means and exercise the best possible efforts in order to obtain contractor compliance. When applied to domestic DSM activities, the due diligence obligation would require States to adopt laws, regulations, and administrative measures which are within the framework of its legal system, reasonably appropriate for securing compliance by persons under its jurisdiction. The second obligation found by the Chamber is to employ 'best environmental practices', ensuring compliance

[105] RLRF, supra note 75, Paras 18.15-18.21.
[106] *Id.* Para 18.21.
[107] *Id.* Para 18.23.
[108] Pulp Mills case, supra note 95, Para 164.
[109] *Id.*
[110] Under international law and Articles 31 and 32 of the Vienna Convention on the Law of Treaties, treaties should be interpreted so as not to change the obligations agreed upon by States in the original agreement. In presiding over disputes between States, an international court should abstain from interpretations which would broaden the obligations of State parties to the treaty or change the agreement in retrospect. Interpretation should be made with the principle of State sovereignty and taking into account the intentions of State parties to the treaty. General principles of law, such as the Precautionary Principle can be applied if they do not change the agreement between the relevant States.
[111]ITLOS Advisory Opinion, supra note 86, Para. 241.

with international customary law to conduct an environmental impact assessment, and providing recourse for compensation.[112] These findings may serve as standards for implementing the Precautionary Principle in cases of DSM activities in national waters.

In summary, though the Precautionary Principle's customary status is under dispute, it may serve as an important standard in managing DSM operations, even if carried out in national waters. This may aid a State wishing to enforce regulation in its national waters, though States are limited in enforcement of such regulation, as will be discussed further in the Investment Law section of this memorandum. A coastal community may utilize the principle under the consultation obligation of States in context of the principle of Free, Prior and Informed Consent, which will be discussed in the Indigenous Peoples Section of this memorandum. This central environmental principle continues to become unquestionably more and more relevant as DSM operations develop.

### 1.5.2 Environmental Impact Assessment

An Environmental Impact Assessment (EIA) is the process of evaluating, reporting, and publishing an assessment of possible risks and environmental implications of projects that propose major activity or alterations affecting the natural and man-made environment.[113] An EIA isn't a requirement of a singular action or report submission but incorporates a few different stages in a continuous procedure. These stages may include an initial assessment to determine whether a EIA is required,[114] reports of a project's location and operation, and a survey of the different communities or natural habitats that may be affected in each development stage.[115]

EIAs are a widely accepted tool in environmental management,[116] though their customary status is unclear. The process' ultimate goal is to provide decisionmakers with information indicating the likely consequences of their legislative or policy choices.[117] Indigenous Peoples may demand that local authorities incorporate EIAs as a requirement for DSM activities. Moreover, they may demand to make the EIAs public in order to enable the public to raise concerns over the proposed project.

Different international law instruments establish the requirement of an EIA in the context of activities that may harm the marine environment. Under Article 206 UNCLOS, States are required to assess potential effects of activities where there are reasonable indications of possible substantial pollution or significant harmful changes to the marine environment. Article 14 to the Convention of Biological Diversity (CBD), requires contracting

[112] *Id.* Para 3.
[113] Christopher Wood & Mohammed Dejeddour, STRATEGIC ENVIRONMENTAL ASSESSMENT: EA OF POLICIES, PLANS AND PROGRAMMES, Impact Assessment, 10:1, 3-22, DOI: 10.1080/07349165.1992.9725728 PAGE 3.
[114] J.M. Durden, L.E. Lallier, K. Murphy, A. Jaeckel, K. Gjerde &D.O.B. Jones, Environmental impact assessment process for Deep-sea mining in The Area, 87, MARINE POLICY 194, 196 (2018).
[115] Daniel O.B. Jones, Jennifer M. Durden, Kevin Murphy, Kristina M. Gjerde, Aleksandra Gebicka, Ana Colaço, Telmo Morato, Daphne Cuvelier & David S.M. Billett, Existing Environmental Management Approaches Relevant to Deep-Sea Mining, Marine Policy 103 172, 178(2019); UK MARINE MANAGEMENT ORGANIZATION, MARINE LICENSING: IMPACT ASSESSMENTS (2017).
[116] Peter Wathern, Environmental Impact Assessment Theory and Practice, 1 (Peter Wathern edt. 1988).
[117] *Id.*

parties to introduce procedures requiring EIAs of proposed projects that are likely to have significant adverse effects on biological diversity. The Article further details possible state interventions to such actions, such as arrangements of emergency responses to adverse effects or notifying effected states. Article 16 of the Noumena Convention[118] obligates State parties to assess the impact of potential projects so that appropriate measures can be taken to prevent any substantial pollution of, or significant and harmful changes within the Convention Area.

Regarding DSM activities, conducting EIA assessments is addressed both in the ISA Draft regulations and the ITLOS Advisory Opinion in 2011. These regard activities within the Area, not national jurisdiction. The ISA draft regulations include a general obligation to conduct EIAs,[119] and specific obligations in the ISA 'Recommendations for the guidance of contractors for the assessment of the possible environmental impacts arising from exploration for marine minerals in the Area'.[120] The second document details the process of conducting an EIA, including the type of information needed for baseline environmental studies, reporting of data and types of scientific methods for data collection. The ITLOS advisory opinion, as stated in the Precautionary Principle section above, regards an EIA as part of the obligatory process for Sponsor States. These obligations may apply mutatis mutandis in areas under national jurisdiction in which DSM operations are being carried out.

### 1.5.3 Vessel-Source Marine Pollution

DSM activities require the use of vessels at sea both to process and transport mined materials. International shipping and safety law will therefore also apply to DSM operations and States should ensure that vessels involved in DSM will be subject to international standards.[121] MARPOL[122] is a main, widely accepted international convention concerning prevention of pollution of the marine environment by ships from operational or accidental causes.[123]

The operation of mining vehicles, as well as other types of vehicles[124] that can be used to carry out DSM activities could be regulated under MARPOL standards. This includes prevention of pollution by oil and oily water,[125] which obligates port States to inspect ships,[126] and imposes prohibition on any vessel-source discharge. [127] prevention of pollution from disposal of sewage, garbage or air pollutive substances, is also required.[128] Additionally, the convention stipulates that pollution by harmful substances carried by sea must be prevented.

[118] The Convention for the Protection of the Natural Resources and Environment of the South Pacific Region, Nov. 25, 1986, 26 I.L.M. Art 16.
[119] International Seabed Authority [ISA], Draft Regulations on Exploitation of Mineral Resources in the Area, Annex XI, ISBA/24/LTC/WP.1 (Apr. 30, 2018), https://isa.org.jm/files/files/documents/isba24-ltcwp1-en.pdf.
[120] *Id.,* Annex VII, Art 1(f).
[121] RLRF, supra note 75, Art 6.13; THE WORLD BANK- PRECAUTIONARY MANAGEMENT, supra note 76, at 28.
[122] MARPOL, supra note 61.
[123] As of 2018, 156 States are party to the convention, representing 99.42% of the world's shipping tonnage.
[124] The relevance of the standards contained in this Convention depends on whether the mining vehicles are considered "ships". According to Article 2 to MARPOL "Ship" means a vessel of any type whatsoever operating in the marine environment and includes hydrofoil boats, air-cushion vehicles, submersibles, floating craft and fixed or floating platforms", and so, mining vehicles are considered ships. ; MARPOL, supra note 61, Art 2.
[125] *Id.* Annex I, Reg 9,11.
[126] *Id.* Reg 8.
[127] *Id.* Reg 14.
[128] *Id.* Annexes 4-6.

According to 'Maritime Dangerous Goods Code' (IMDG Code),[129] some of the substances mined in DSM activities may constitute “harmful substances” under MARPOL and could, therefore, be limited under the convention.[130] For that matter, the convention regulates packing, marking and labeling, and limits the quantities that can be packed on the vessel.[131]

### 1.5.4 Community Partnership and Consultation

Because this memorandum deals with the tools available to Indigenous Peoples and coastal communities vis-à-vis DSM in areas under national jurisdiction, regulations requiring the coastal state to consult with the community are highly relevant. While this is not a broadly agreed upon standard found in international conventions, it is found in sources defined as 'soft law' - specifically, under Section 17 of “Agenda 21”[132] - and in the ISA's Draft Regulations on Exploitation of Mineral Resources in the Area.[133]

The Regulations recommend that coastal states provide concerned individuals or organizations access to relevant information and opportunities to participate in planning and decision-making at appropriate levels.[134] The agenda also recommends coastal states to consider local communities and Indigenous Peoples’ interests and their right to subsistence while making decisions that may affect them.[135] Moreover, the Draft includes an obligation to publish DSM contractors' environmental obligations as part of the information made accessible to the public.[136] This standard may be adopted in DSM activities under national jurisdiction.

This recommendation echoes the Aarhus convention on Access to Information, Public Participation in Decision-Making, and Access to Justice in Environmental Matters.[137] According to the Aarhus convention, member State's citizens have a right to receive environmental information that is held by public authorities and a right to participate in environmental decision-making. Moreover, whenever public decisions are being made without public participation, civilians have a right to review procedures.[138] More relevantly to DSM activities, the

[129] International Maritime Organization [IMO], The International Maritime Dangerous Goods Code (IMDG Code) Vol.1, 49 CFR 172.519(f) (2006).
[130] Such as Zinc.
[131] MARPOL ,supra note 61, at annex III, Reg 3-6.
[132] Agenda 21 is a non-binding comprehensive plan of action to be taken globally, nationally and locally by organizations of the United Nations System, Governments, and Major Groups in every area in which human impacts on the environment and sustainable development, adopted by 178 states.
Agenda 21 is not a treaty or legally binding document and does not infringe upon the sovereignty of any nation, state, or local government, but due still have much importance as a "soft law" instrument; U.N. Conference on Environment and Development AGENDA 21, *Rio Declaration on Environment and Development*, U.N. Doc. A/CONF.151/26/Rev.1(Vol. I) (June 14, 1992). [hereinafter Agenda 21]].
[133] International Seabed Authority, Draft Regulations on Exploitation of Mineral Resources in the Area, ISBA/25/C/WP (Mar.25, 2019). [Hereinafter Draft Regulations on Exploitation of Mineral Resources].
[134] *Id.*
[135] Agenda 21, supra note 132. Art 17.82.
[136]ISA Draft Regulations on Exploitation of Mineral Resources, supra note 133, Reg 11.
[137] A regional treaty adopted on 25 June 1998 in the Danish city of Aarhus, and it is relevant to its 47 European members states ; Convention on Access to Information, Public Participation in Decision-Making and Access to Justice in Environmental Matters, Jun.25, 1998, vol. 2161 p.147. [hereinafter Aarhus convention].
[138] *Id.* Art 4(7).

International Marine Minerals Society (IMMS)[139] environmental code for marine mining,[140] is a voluntary code that every State may adopt into domestic legislation. The IMMS document includes codes of conduct for community partnership and dialog within its suggested framework for responsible environmental programs. Another source that may qualify under Article 208, is the ISA Draft Regulations on Exploitation of Mineral Resources in the Area.[141] One of the main principles mentioned in the draft is transparency in decision-making and encouragement of effective public participation.[142] In addition, while DSM is carried out in the Area, there is a duty to publish the contractor's environmental obligations, while allowing the members of the Authority, shareholders, and other parties of interest to express an opinion on the undertaking. This standard might have to be applied *mutatis mutandis* to areas under national jurisdiction.

### 1.5.5 Protection of Biodiversity

DSM can cause irreversible damage to the marine environment and biodiversity, which in turn may greatly affect coastal communities and Indigenous Peoples. In light of the significant relevance of biodiversity protection law, we examine how the regime of biodiversity law may be applied to prevent or reduce such harm.

The Convention on Biological Diversity (CBD),[143] is a multilateral treaty which entered into force in December 1993, after its adoption at the 1992 Rio Earth Summit. The convention has 196 State parties and 168 signatories (essentially all UN Members, except the US, that has signed but not ratified).[144] The convention addresses a wide range of issues including ecosystem protection, exploitation of genetic resources and conservation. It has three main goals: the conservation of biological diversity, the sustainable use of its components and the fair and equitable sharing of benefits arising from genetic resources. Of direct relevance to DSM, the CBD recognizes as part of its principles, in Article 3, the sovereign right to exploit natural resources. However, this right is restricted under the party's' environmental obligations, and the provisions of the Convention.[145] Article 4(b) CBD states that the provisions of the Convention apply to territories under the national jurisdiction of states.[146] Article 8 provides the main avenues of action for conservation and protection of biodiversity, and may be particularly relevant to DSM. Paragraph (a) requires State parties to: "Establish a system of protected areas or areas where

[139] The International Marine Minerals Society (IMMS) is a non-governmental professional society whose members share a common interest in marine minerals as a resource for study and sound application to meet world demands for strategic minerals. Founded in 1987, IMMS has a worldwide membership of individuals from industry, national and international governmental and non-governmental agencies and organizations, and academia; INTERNATIONAL MARINE MINERAL SOCIETY, https://immsoc.org/welcome.html.

[140] Its comprehensive scope ranges from research, exploration, prospecting, and exploitation to decommissioning and rehabilitation. the Code offers a framework to develop and implement a responsible environmental program for marine minerals exploration and extraction, and to assess proposed and actual applications of best environmental practices at marine mining sites, both in the area and in area under national jurisdiction.

[141] Draft regulations on exploitation of mineral resources in the Area, issued in March 2019. This draft forms the basis for an overall mining code in the Area. This draft contains several principles, and duties imposed on sponsoring states of DSM in the Area ; Draft Regulations on Exploitation of Mineral Resources, supra note 133.

[142] *Id.* Reg 2(e).

[143] The Convention on Biological Diversity, Jun. 5, 1992 ,*1760 U.N.T.S. 69*. [hereinafter CBD].

[144] UN TREATY COLLECTION, https://treaties.un.org/pages/ViewDetails.aspx?src=TREATY&mtdsg_no=XXVII-8&chapter=27#1.

[145] CBD, supra note 144, Art 6(a).

[146] *Id.* Art 4(b).

special measures need to be taken to conserve biological diversity". The phrase "where special measures need" has been interpreted so that states will have to examine whether there is "exceptional species richness" in the area.[147] It can be argued that if a State wishes to perform DSM in its territory, it should test the richness of biodiversity in the area designated for mining. Paragraph (d) obligates States to promote the protection of ecosystems and maintenance of viable populations, as well as rehabilitation of degraded eco-systems. In contrast to paragraph (a) of this Article, under which parties are obliged to set up a system of protected areas for biodiversity conservation, paragraph (d) refers to all areas: those within and outside protected areas, on both public and private land.[148]

The CBD recognizes that Indigenous and local communities have close links to biological resources.[149] Article 8(j) CBD addresses the protection and preservation of knowledge of Indigenous communities relevant to the conservation and sustainable use of biodiversity. According to scholars, subject to its national legislation, a contracting party is required to respect, preserve and maintain the knowledge, innovations and practices of Indigenous and local communities embodying traditional lifestyles relevant to the conservation and sustainable use of biological diversity,[150] and to encourage the equitable sharing of the benefits arising from the utilization of such knowledge, as well as innovations and practices. Therefore, one can claim that according to the CBD, a contracting party is required to protect coastal communities from DSM effects on traditional lifestyles. Scholars argue that the first step towards fulfilling sub-section 8(j) CBD is for a Party to identify and eliminate the impact of harmful policies which contribute to the loss cultural diversity through the erosion of biological diversity.[151] Therefore, it may be argued that the convention obligates States to eliminate impacts of DSM in cases where operations are likely to cause losses to biodiversity. This is especially imperative in places where the sea and its ecosystems constitute a large part of coastal communities' culture and practices, and where DSM operations of the state may jeopardize the continuation of Indigenous cultural life.

Article 7(c) CBD requires Parties to identify processes and categories of activities which or are likely to have significant adverse impacts on conservation of biodiversity. Article 8(l) CBD requires Parties to regulate or manage the identified processes and activities if they are found to have a significant adverse effect on biological diversity. It may be argued that even though the full effects of DSM have yet to be understood, existing scientific and scholarly studies establishes justification for domestic legislation establishing environmental protections. Many scientists and experts on biodiversity have voiced the opinion that the potentially severe damage to biodiversity from DSM may constitute a "significant impact"[152] which justifies procedures of local legislation in accordance with the CBD. Article 14 to the CBD obligates contracting parties to perform evaluations of their developmental or other projects that could adversely affect natural biodiversity.[153] The obligation to perform an

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[147] Lyle Glowka, Francoise Burhenne-Guilmin & Hugh Synge, INTERNATIONAL UNION FOR CONSERVATION OF NATURE, A GUIDE TO THE CONVENTION ON BIOLOGICAL DIVERSITY 40 (1994). [hereinafter A Guide to the Convention on Biological Diversity].
[148] *Id.* at 41.
[149] *Id.* at 48.
[150] *Id.* at 49.
[151] *Id.*
[152] See more in: Holly J Niner, Deep-Sea Mining With No Net Loss of Biodiversity—An Impossible Aim, Frontiers in Marine Science, vol 5 (2018), http://nora.nerc.ac.uk/id/eprint/520511/1/fmars-05-00053.pdf.
[153] CBD, supra note 143, Art 14(a).

EIA is applied to both governmental and private projects, and under the CBD has three main purposes: To identify what aspects of the project are likely to have significant adverse effects on biological diversity, to assess what steps could be taken to avoid or minimize significant adverse effects, and to evaluate whether the proposed project complies with existing environmental legislation.[154] Scholars argue that site selection for DSM operations is critical for biodiversity conservation because once a site of operations is chosen, it will be difficult, if not impossible, to substantially reduce the project's direct effects on biodiversity in the operated site.[155] Therefore, one goal of an EIA in relation to biodiversity protection should be to identify available sites within an area, and then, after considering biodiversity and other environmental impacts, to select an appropriate project site which will eliminate or minimize adverse effects.[156] Paragraph l(a) emphasizes the importance of public participation within the EIA procedures established. As discussed earlier in this memorandum, "Public participation" includes all government agencies concerned, as well as private parties such as citizens and NGOs.[157] Therefore, Indigenous Peoples and coastal communities can participate in the EIA and try to influence the protection of biodiversity.

### 1.5.6 Transboundary Harm

Pollution and environmental threats often take a transboundary dimension, inflicting damage on States other than the source State, including global "common" areas. As stated in the introduction to this memorandum, DSM may lead to pollution of the marine environment, which may extend beyond the waters under the national jurisdiction of the state in which the DSM activity takes place. This is particularly true given that DSM operations would be conducted in the ocean, where currents greatly affect the spread of sediments or pollutive discharges from mining. Therefore, one of the standards and regulations which obligates States in DSM operations is the prevention of transboundary harm. This legal principle may be used by States in which coastal communities suffer transboundary harm from DSM activities performed in other state.

The obligation to prevent transboundary harm is based on the balance between two principles of State sovereignty. On the one hand, States have sovereignty over natural resources in their jurisdiction; on the other hand, States have an obligation to respect the territory of other States when utilizing such resources. The right of States to manage the environment within their territory is reflected in the principle of Permanent Sovereignty over Natural Resources (PSNR principle).[158] Despite the absolute formulation of the PSNR principle, it is beyond doubt that there are limitations to how states can dispose of their own natural resources. In fact, the territorial sovereignty of States is also limited by another principal corollary of State sovereignty: the duty not to intervene in an area of exclusive jurisdiction of other States.[159]

The principle of 'not causing' transboundary harm is, at least, a due-diligence obligation, obligating States to take measures to protect persons or activities beyond their respective territories, and to prevent harmful events

[154] A Guide to the Convention on Biological Diversity, supra note 147, at 70.
[155] *Id.*
[156] *Id.*
[157] *Id.* at 71.
[158] Marte Jervan, The Prohibition of Transboundary Environmental Harm. An Analysis of the Contribution of the International Court of Justice to the Development of the No-harm Rule, Pluri-Courts Research Paper No. 17-18 (Aug.25, 2014), https://papers.ssrn.com/sol3/papers.cfm?abstract_id=2486421.
[159] The Trail Smelter arbitration, (US v. Canada, 1938 and 1941, RIAA vol. 3 1908, 1905.

and outcomes.[160] This principle of 'no harm' is breached when the State of origin has not acted diligently with regard to its own activities over State-owned enterprises or private activities within its control.[161] The "no harm" principle can be violated by an act as well as an omission.[162]

The no harm principle is widely referred as part of customary international law,[163] and has been mentioned in several sources of international law, such as multilateral treaties, soft law, and international arbitrations. Principle 21 to the Stockholm declaration defines the obligation as 'responsibility to ensure that activities within their jurisdiction or control do not cause damage to the environment of other States or of areas beyond the limits of national jurisdiction'.[164] This Article may be viewed as another iteration of the standards set in Article 3 of the CBD that may serve as *lex specialis* under specific circumstances. It may be concluded therefore, that a coastal State that performs DSM in its territory must not cause harm to another state, and is obligated to undertake active measures in order to prevent such harm. Few legal instruments addressed this principle and gave specific content to it. According to Principle 19 to the 1992 Rio declaration,[165] States shall provide prior and timely notification and relevant information to potentially affected States on activities that may have a significant adverse transboundary environmental effect and shall consult with those States at an early stage and in good faith. Similarly, international arbitrations also clarify Article 21 of the Stockholm Declaration. For example, in the Pulp Mills case, the ICJ ruled that:

> "A State is thus obliged to use all the means at its disposal in order to avoid activities which take place in its territory, or in any area under its jurisdiction, causing significant damage to the environment of another State".[166]

At the same time and in line with the development of the obligation through treaties and arbitrations, the ILC has created a more comprehensive and detailed legal framework for dealing with transboundary harm, with the understanding that the rule contained in the Stockholm Declaration is too vague. The ILC divided its work on the subject into two core topics, the first being the scope and nature of the duty to prevent transboundary harm, and the second deals with liability. This sub-section of our memorandum reviews the obligations of States rather than its liabilities as a result of a breach, discussing the 2001 Draft Articles on Prevention of Transboundary Harm from Hazardous Activities (Articles on Prevention ).[167]

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[160] The Corfu Channel case (UK v. Albania), judgement, 1949 I.C.J. 4, at 15. [hereinafter Corfu Channel Case].
[161] Gabčikovo-Nagymaros Project (Hungary v Slovakia), judgement, 1997 I.C.J 88, at 41.
[162] Corfu Channel Case, supra note 160, at 23.
[163] *Id*.; Legality of the threat or use of nuclear weapons, Advisory opinion, 1986 I.C.J 226 (Jul. 8), at 242.
[164] G.A Res 2994, United Nations Conference on the Human Environment (Aug.12, 1972).[hereinafter Stockholm Declaration].
[165] Rio Declaration, supra note 64, Princ. 19.
[166] Pulp Mills, supra note 95, Para 101.
[167] The works have resulted in two separate texts; the 2001 Draft Articles on Prevention of Transboundary Harm from Hazardous Activities and the 2006 Draft Principles on the Allocation of Loss in the Case of Transboundary Harm Arising out of Hazardous Activities ; ILC Draft Principles on the Allocation of Loss in the Case of Transboundary Harm Arising out of Hazardous Activities, adopted by the Commission at its fifty-eighth session, 2006 ; ILC (2001a) Draft articles on prevention of transboundary harm from hazardous activities, with commentaries (30 Nov 2001). UN Doc A/54/10.

The Articles on Prevention are a set of Articles which develop Principle 21 of the Rio Declaration into a legal framework more suitable to judicial application. Some of the Articles codify existing obligations of international law, and some constitute progressive developments of international law. Some scholars claim that ILC norms are part of customary international law.[168] In accordance with Article 1, the Articles on Prevention apply to activities which involve a risk of "causing significant transboundary harm through their physical consequences". The Article uses the word "significant" to describe the threshold for transboundary harm, requiring that the harm in question must reach some level of severity. Article 3 requires states to undertake measures which would generally be considered appropriate and proportional to the degree of risk of harm in the specific instance. Article 4 requires states to cooperate in good faith in terms of preventing such activities from causing significant transboundary harm, while Article 5 requires states to take the necessary legislative, administrative or other action including the establishment of suitable monitoring mechanisms to implement the provisions of the Articles. In accordance with Article 6 and 7, states shall also require prior authorization for planned activities, and any decision in respect of the authorization of an activity shall be based on an assessment of the possible transboundary harm caused by that activity, including any environmental impact assessment. If the assessment indicates a risk of causing significant transboundary harm, Article 8 requires the state of origin to provide the state likely to be affected with timely notification of the risk and the assessment. States must also enter into consultations, when one of the states concerned requests it, with a view to achieving acceptable solutions regarding measures to be adopted in order to prevent harm, and shall seek solutions based on an equitable balance of interests, in accordance with Articles 9 and 10.[169]

Considering this obligation's status, states will need to adopt to their national legislation standards that contain the obligations relevant to international law in the context of trans-border damage. In respect to DSM, States suffering pollution because of a neighboring States' violations of transboundary harm may turn to arbitration as settled in a treaty beforehand or to the ICJ. This would occur in cases where pollutive substances or sediment from Mining ships where to cross sea-borders from one territory to another. According to Article 19 of the Draft Articles Prevention of Transboundary Harm from Hazardous Activities,[170] States in dispute on transboundary harm are obligated to settle in accordance with a mutual agreement, including negotiations, arbitration, or judicial settlement. However, States may also apply for the judicial settlement of the ICJ.

## 1.6 Conclusion

As DSM operations are conducted in the ocean, it appears that the most directly relevant legal systems are those of the Law of the Sea and Environmental Law principles. Under international customary and treaty law, States have the right to exploit natural resources in areas under their national jurisdiction. However, this right is subject to certain limitations, also derived from international law.

Chapter XII of UNCLOS imposes general obligations on States to protect the marine environment from pollution, including specific protection from pollutive activities on the seabed. Article 208 UNCLOS obligates

[168] Robert Esposito, The ICJ and the Future of Transboundary Harm Disputes: A Preliminary Analysis of the Case Concerning Aerial Herbicide Spraying (Ecuador v. Colombia)1, 32, Pace Int'l L. Rev. Online Companion, Aug. 2010.
[169] Articles on Prevention, supra note 167, Arts 1-10.
[170] *Id.*

States to adopt laws and regulations to prevent, reduce and control pollution of the marine environment arising from or connection with seabed activities subject to their jurisdiction. According to the Article, those laws and standards shall be no less effective than international standards. However, the Article does not refer to specific sources from which these standards are derived from. The issue of sources that constitute obligating standards under Article 208 UNCLOS is unsettled. It is generally agreed upon that standards from widely accepted multilateral and regional treaties, and soft law, constitute international standards that may apply. The applicability of ISA standards to seabed activities under national jurisdiction via Article 208 UNCLOS is possible, but still controversial.

# 2 Human Rights Relating to the Environment

This section of the memorandum examines the relationship between environmental human rights and potential damage to the environment caused by DSM activities. The main goal of this section is to outline the protections afforded under the international human rights legal regime in situations of environmental degradation. These legal tools may be used by Indigenous Peoples, coastal communities, and individuals in general in order to confront possible violations of their rights as a result of environmentally harmful DSM activities.

The intersection between human rights law and environmental protection may be applicable to DSM activities, because interventions in the oceans' ecosystem are expected to have severe impacts on the lives and health of coastal communities, as their lives are often closely linked to the oceans. [171] To the extent that DSM will impact basic human rights, victims of adverse impacts may turn to the binding protections afforded to them under established international human rights law. These protections include inter alia, the right to life, right to health, and the right to an adequate standard of living. Arguments based on human rights violations may be addressed both in international and national courts and other systems.

This section provides an overview of human rights relating to the environment in the context of DSM activities, their scope, and the extent of their protection. This is reviewed through different instruments of international law, including international treaties, UN commentary, regional conventions, and international and domestic jurisprudence.

### 2.1.1 The Right to the Highest Attainable Standard of Health:

According to the Constitution of the World Health Organization,[172] "The enjoyment of the highest attainable standard of health is one of the fundamental rights of every human being without distinction of race, religion, political belief, economic or social condition".[173] The right is also enshrined in Articles 11 and 12 to the International Covenant on Economic, Social and Cultural Rights (ICESCR).[174] Academics define States' obligations to remove all obstacles to the achievement and maintenance of the highest attainable standard of health of civilians, including the provision for situations in which fundamental needs cannot be guaranteed by personal effort.[175] In 2000, the UN Committee on Economic, Social and Cultural Rights issued General Comment (GC) No. 14, which addresses the right to the highest attainable standard of health.[176] The Committee found that everyone holds a general inherent right to the best feasible standard of health. This right contains both freedoms and entitlements that varies in feasibility across states. The notion of the right considers both the individual's biological and socio-economic preconditions and a State's available resources, in the manner of differences regarding respect, protection, and fulfillment of the right. GC No. 14 interprets the right, as an

[171] JPI OCEANS, Environmental Impacts and Risks of Deep-Sea Mining (Jul. 24, 2016), https://www.jpi-oceans.eu/ecological-aspects-deep-sea-mining.
[172] The Constitution of the World Health Organization, Jul. 22, 1946, 14 U.N.T.S 185.
[173] *Id.* preamble.
[174] U.N., Econ. & Soc. Council, Comm no.14. On The Right to the Highest Attainable Standard of Health, U.N. Doc. E/C.12/2000/4 (2000). [Hereinafter GC 14].
[175] Aart Hendriks, The Right to Health in National and International Jurisprudence, 5 EUR. J. HEALTH L. 389, 401 (1998).
[176] GC 14, supra note 174, Art 12.

inclusive right extending to the underlying determinants of health, such as access to safe and potable water and adequate sanitation and healthy occupational and environmental conditions.[177] As part of the obligation to protect, States must reduce environmental pollution from the States' and third-party activities.[178] Thus, the right to enjoy the highest attainable standard of health and the right to a healthy environment are intertwined.[179] Therefore, possible contamination of the ocean caused by DSM may hurt the coastal community's' health and lead to a violation of the right to the highest attainable standard of health.

### 2.1.2 The Right to a Healthy Environment

An adequate environment is considered a precondition for the realization of other human rights including the rights to life, food, health, and an adequate standard of living. The right to a healthy environment has been recognized in various instruments of international law, such as international treaties, regional conventions, and jurisprudence.

Various treaties incorporate the right to a healthy environment. The ICESCR defines in Article 12(2)(b) that State parties are required to improve 'all aspects of environmental and industrial hygiene'.[180] Article 24 of the African Charter on Human and Peoples' Rights states that 'all peoples shall have the right to a general satisfactory environment favorable to their development.'[181] Additionally, the right to a healthy environment is guaranteed in more than 100 national constitutions.[182]

International tribunals have also recognized this right. In 2017 The Inter American Court of Human Rights (IACtHR) issued an advisory opinion on the environment and human rights at the request of Colombia.[183] The IACtHR found that the right to a healthy environment constitutes a fundamental human right, and provided guidance on the obligations of states that cause environmental harm. Additionally, it found that a violation to the autonomous right to a healthy environment can affect other human rights including the right to health, water, and housing, as well as procedural rights. [184] The advisory opinion is not generally legally binding and cannot be enforced in related cases. However, the advisory opinions of international courts are considered by states to ensure conformity with international law and may indicate customary law.

[177] *Id.* Art 12.
[178] *Id.* Art 51.
[179] *Id;* Art 12; International Federation for Human Rights (FIDH) v Greece, Complaint No.72/201, Eur. Comm'n S.R, 59 (2011).
[180] International Covenant on Economic, Social and Cultural Rights, Art 12(2)(b), Dec.16, 1966, 933 U.N.T.S 3. [hereinafter ICESCR].
[181] African Charter on Human and Peoples' Rights Art 24, Oct.21, 1986, 1520 U.N.T.S 270.
[182] Dina L. Shelton, Human Rights and the Environment: Substantive Rights, in RESEARCH HANDBOOK ON INTERNATIONAL ENVIRONMENTAL LAW 267, 267 (Fitzmaurice, Ong and Merkouris eds., 2011).
[183] Amidst rising international concern about the human rights implications of a trans-oceanic canal in Nicaragua and concerned with implications for the people residing within the Colombian island of San Andrés, Colombia had requested an advisory opinion from the IACtHR in 2016 concerning state obligations in relation to the environment in the context of the protection and guarantee of the rights to life and to personal integrity; The Environment and Human Rights, Advisory Opinion OC-23/17, Inter-Am. Ct. H.R (Ser. A) (Nov.15, 2017).
[184] *Id.* Para 64.

### 2.1.3 Broadening recognition of human rights relating to the environment

In recent years there has been growing recognition of the connection between environmental degradation and human rights, in ways that may be relevant to the ability of coastal communities to engage with the potentially detrimental effects of DSM. This trend is reflected in the UN HRC commentaries, as well as some international and national court rulings.[185]

In 2018, the UN HRC issued General Comment No.36 on the Right to Life.[186] The document summarises existing jurisprudence of the HRC and provides interpretative direction for future cases. The GC stipulates in paragraph 26 that it is the States' obligations under Article 6 of the ICCPR to protect people from environmental harm:[187] It further adds that the obligations of states cover harm caused by both public and private actors. [188] It follows that companies conducting DSM must not violate the environmental human rights of coastal communities.

Another interesting decision issued by the UN HRC dealt with the status of an asylum seeker in New Zealand.[189] The HRC recognised that climate change impacts are covered by the right to life.[190] The connection between human rights and environmental changes may also be applicable in cases of damage caused by DSM. Article 6 of the ICCPR articulates the right to life, and the protection of life from 'real risk or irreparable harm'.[191] In its decision, the HRC demonstrated how climate change may cause irreparable harm that violates the right to life. One can claim, that if environmental damage due to climate change constitutes a 'pressing and serious' threat to the right to life of coastal communities,[192] so can similar effects caused by DSM.

In 2019, the UN HRC[193] found Paraguay in violation of its international obligations to protect individuals' right to life,[194] and responsible for failing to protect individuals from severe environmental contamination[195] by farms'

[185] For example, Sheikh Asim Farooq v. Federation of Pakistan etc, 30/8/2020, The High Court of Lahore, pages 21-22.
[186] U.N. H.R Comn no.36. On Article 6 of the International Covenant on Civil and Political Rights, UN Doc. CCPR/C/GC/36 (2018). [hereinafter GC 36].
[187] *Id.* Para 26.
[188] *Id.* Para 62.
[189] U.N. H.R Comn. Views adopted by the Committee under Article 5 (4) of the Optional Protocol, concerning communication No. 2728/2016, UN Doc. CCPR/C/127/D/2728/2016 (2020). [hereinafter Ioane Teitiota v. New Zealand].
[190] The Human Rights Committee decision concerned a complaint brought by Ioane Teitiota, a Kiribati National, against New Zealand, under the International Covenant on Civil and Political Rights (ICCPR) First Protocol. Teitiota applied for asylum in New Zealand claiming that climate change caused rising sea levels that exposed himself and his family to dangerous living conditions including lack of fresh drinking water and violent land disputes. His application was rejected by New Zealands' Immigration Tribunal, leading to his complaint to the HRC; Id.
[191] International Covenant on Civil and Political Rights, Art 6, Mar.23, 1976, 999 U.N.T.S 171. [hereinafter ICCPR].
[192] GC 36, supra note 186.
[193] The complaint against Paraguay was brought to the UN HRC by two local families who had been poisoned by chemicals used by nearby industrial farms as pesticide. The families claimed that the State had failed to provide protection as obligated by international law. As a result of the poisoning one family member had died and others were hospitalized. No significant action had been taken by the State to enforce the illegal use of these chemicals.
[194] U.N. H.R Comn. Portillo Cáceres v. Paraguay, concerning Communication No. 2751/2016, UN Doc. CCPR/C/126/D/2751/2016 (2019).
[195] *Id.* Para 7(5).

use of illegal chemicals.[196] This landmark decision linked the connection between pollution and enjoyment of human rights under the ICCPR, specifically under Article 6 (right to life) and 17 (protection of the family) ICCPR.[197] This precedent contributes to the argument that pollution from DSM may violate the right to a healthy environment, as well as the right the highest attainable standard of health and the right to life..

## 2.2 Conclusion

DSM may potentially harm the environment, and consequently harm the quality of life and health of coastal communities and Indigenous Peoples. This may constitute a violation of human rights, specifically of the right to the highest attainable standard of health and the right to a healthy environment as well as the right to life. According to various international law instruments and international customary law, these are basic human rights that the state must respect and protect. The state must protect these rights from its own activities and those of private bodies. In recent years, developments in international human rights law brought about broader recognition of human rights relating to the environment and an expansion of the scope of environmental protection. This trend is reflected in a range of international and domestic instruments and decisions.

It can therefore be argued that human rights law may be used by coastal communities to confront DSM and its negative effects in areas under national jurisdiction.

[196] Greta Reeh, Human Rights and the Environment: The UN Human Rights Committee Affirms the Duty to Protect, EJIL: Talk! (Sep. 9, 2019), https://www.ejiltalk.org/human-rights-and-the-environment-the-un-human-rights-committee-affirms-the-duty-to-protect/.
[197] *Id.*

# 3 Indigenous Peoples Rights

## 3.1 Introduction

Having examined the application of some human rights relating to the environment to DSM in the previous section, we now turn to an examination of the rights of Indigenous Peoples regarding DSM and the legal tools applicable when these rights are infringed. As described in the ɪntroduction to this memorandum, although the potential adverse effects of DSM are not fully known, one of the main concerns regarding DSM is the possible harm to coastal communities due to environmental damage. Some of these coastal communities may also be Indigenous Peoples with special rights under international law. In addition to the ordinary and universal rights that Indigenous Peoples are entitled to as individuals under general human rights law, they may be entitled to additional rights, such as those associated with their collective identities, traditions, and territories, derived from special ethnic, cultural, religious and historical connections to these resources. As explained in the introduction to this memorandum, our working assumption is that most DSM activity in areas under national jurisdiction and its potential adverse consequences will be conducted by private corporations, albeit under national licenses and permissions. Nonetheless, the main obligations concerning the protection of Indigenous Peoples' rights rest on the State. This point will also be expanded on in this section.

The following sub-section will briefly review the meaning of the term "Indigenous Peoples"- a term that reflects the importance of territory as part of the cultural basis for Indigenous Peoples rights. Various legal tools existing in international law will then be presented and reviewed, such as treaties, UN declarations, and international bodies policy concerning Indigenous Peoples' rights. Subsequently, we will discuss the principle of Free Prior and Informed Consent (FPIC). This is the main principle regarding the protection of Indigenous Peoples' rights in connection with various projects executed by the State of residence.

## 3.2 Definition of the Term "Indigenous Peoples"

No agreed-upon definition of the term "Indigenous Peoples" exists today.[198] According to one definition, 'Indigenous' refers to anyone having a historical attachment to a specific land, including anyone who is not a recent migrant.[199] However, the term usually refers to people and groups descended from the original populations of a given country.[200] Most definitions similarly determine that Indigenous Peoples descend from pre-colonial inhabitants,[201] that they have a close connection to traditional lands and other natural resources, and that they maintain a strong sense of cultural, social, economic, and linguistic identity.[202] These

[198] John Alan Cohan, *Environmental Rights of Indigenous Peoples Under the Alien Tort Claims Act, the Public Trust Doctrine and Corporate Ethics, and Environmental Dispute Resolution**, 20 UCLA JOURNAL OF ENVIRONMENTAL LAW & POLICY 136 (2002).

[199] JEREMIE GILBERT, INDIGENOUS PEOPLES' LAND RIGHTS UNDER INTERNATIONAL LAW: FROM VICTIMS TO ACTORS 3-5 (2nd ed. 2016).

[200] Cohan, supra note 1, p. 198.

[201] The Concept of Indigenous Peoples', a background paper prepared by the Secretariat of the Permanent Forum on Indigenous Issues (2004), UN PII/2004WS.1/3.

[202] ILO, Convention Concerning Indigenous and Tribal Peoples in Independent Countries, art. 1, June 27, 1989, No. 169, 1650 U.N.T.S 383 [hereinafter Convention No.169].

characteristics may differentiate them from the rest of the state population.[203] Many definitions emphasize that Indigenous Peoples are non-dominant in the state in which they reside, being a minority group within the States' population.[204] Indigenous Peoples clearly include native peoples, tribal peoples, aboriginals, and "first nations".[205]

Although from a formal legal perspective there is no agreed upon binding definition of the term "Indigenous Peoples," many of the propositions for defining terminology in international law, including the broadest of agreements, emphasize the centrality of the territorial basis in Indigenous Peoples' cultures.[206] This territorial basis includes lands, waters, maritime areas and the natural resources found therein.[207] The special relationship of Indigenous Peoples to their traditional land and waters, and the natural resources found in the land and water, is seen as a crucial issue of concern in the protection of Indigenous Peoples under international law.[208]

## 3.3 Indigenous Peoples in International Law

Every person belonging to an Indigenous People enjoys, in any case, every human right granted to every human being.[209] However, there are some specific legal tools under international law which apply only to Indigenous Peoples and their members, such as conventions, customary international law and other extensions relevant only to Indigenous Peoples. For example, as an Indigenous People may constitute a minority group of a State (although according to some definitions,[210] being a minority group is considered a criteria of recognition as an Indigenous People) Article 27 of the ICCPR[211] would grant the Indigenous group additional rights as a minority. Moreover, there are legal sources in international law that are relevant specifically to Indigenous People.

[203] Robert K. Hitchcock, *Intl. Human Rights, The Environment and Indigenous Peoples*, 5 COL. J. INTL. ENvTL. L. & POL'Y 1-4 (1994)
[204] Sub-Commission on the Promotion and Protection of human Right, *Study on the Rights of Persons belonging to Ethnic, Religious and Linguistic Minorities'*, U.N. Doc. F/CN.4/ Sub.2/384/Rcv.1 (1979) [hereinafter Sub-Commission Study on the Rights of Minorities];
United Nation Forum on Indigenous Issues, *Factsheet: Who are Indigenous Peoples?*, https://www.un.org/esa/socdev/unpfii/documents/5session_factsheet1.pdf [hereinafter Factsheet: Indigenous Peoples]
[205] Cohan, supra note 1, p. 198.
[206] WORLD BANK ENVIRONMENTAL AND SOCIAL POLICY:
http://pubdocs.worldbank.org/en/837721522762050108/Environmental-and-Social-Framework.pdf#page=29&zoom=80 ; Gilbert, supra note 199, p. 3-5.; Convention No.169, supra note 202, Article 1; backround paper of the Forum on Indigenous Issues, supra note 201.
[207] G.A. Res. 61/295 United Nations Declaration of the Rights of Indigenous Peoples, Article 25 (Sep. 13, 2007) [hereinafter UNDRIP]; Draft Guideline on the Protection of the Cultural Heritage of Indigenous Peoples, U.N. Doc. E/CN.4/Sub.2/AC.4/2005/3, at 4, para. G.
[208] Gilbert, supra note 199, p. 3-5; UNDRIP, supra note 207, Article 25.
[209] LEE SWEPSTON, INTERNATIONAL LAW AND INDIGENOUS PEOPLES 59 (Joshua Casttelino & Hiamh Wals ed. 2005).
[210] Sub-Commission Study on the Rights of Minorities. Supra note 204; Factsheet: Indigenous Peoples, supra note 204.
[211] ICCPR, supra note 191.

It is important to underline that the duty to protect both human rights towards all people and Indigenous rights specifically, rest first and foremost with the State,[212] even when an infringement of rights is caused by a private entity. This obligation is incumbent on the State both under international law,[213] under state law,[214] and following court rulings that determined the existence of this obligation,[215] which include situations where projects are carried out by private entities.[216]

The next sub-section will present the most substantial tools under international law relevant to the issue, and the protection they may provide to the Indigenous People's rights concerning DSM projects.

### 3.3.1 Operational Directives and Policies of Development Agencies

**The World Bank Policy - (World Bank ESS 7 Standard)**

The World Bank has been an important actor in the international law community since its founding in 1944 (then, as the International Bank for Reconstruction and Development). It exercises political and economic leverage over countries through loan and credit agreements, which are binding under the international law of treaties.[217] Much of the World Bank's work is guided by the "World Bank Environmental and Social Standards (ESS)" which includes a Section concerning Indigenous People policy, namely ESS7.[218] The World Bank's policy has a great impact on the practical side of international law, due to the considerable influence of the Bank and because a significant part of the projects that have a major impact on Indigenous People is financed by the Bank.[219] Because it conditions the loan and credit agreements on compliance with its operational standards, it can drive specific policy and institutional reforms into domestic law as well.[220]

The World Bank's ESS7 has several objectives: to ensure that the development process fosters full respect for affected parties' rights; to promote sustainable development benefits and opportunities that will be accessible, culturally appropriate and inclusive; to establish and maintain an ongoing relationship based on meaningful consultation with project-affected parties; to obtain the Free, Prior, and Informed Consent (FPIC) of affected parties; and to recognize, respect and preserve the culture, knowledge, and practices of Indigenous Peoples; to provide them with an opportunity to adapt to changing conditions in a manner and in a timeframe acceptable

[212] RHIANNON MORGAN, TRANSFORMING LAW, AND INSTITUTION: INDIGENOUS PEOPLES, THE UNITED NATIONS, AND HUMAN RIGHTS 157-159 (2011).
[213] For example, ICCPR, supra note 191, Article 27; UNDRIP, supra note 207, Article 32(2).
[214] E.g., Constitution Act 1982, being Schedule B to the Canada Act 1982 (UK) 1982, c 11. s. 35(1).
The Aboriginal Land Rights (Northern Territory) Act 1996; Queensland's Mineral Resources Act 1989
[215] Maya Indigenous Communities v. Belize, Case 12.053, Inter-Am. Comm'n. H.R., Report No. 40/04, OEA/Ser.L/V/II.122, doc. 5 rev. at 1 (2004); Maya Indigenous Communities of the Toledo District, Inter-Am. Ct. H.R. Preliminary Report No. 96/03, para. 154 (Oct. 24, 2003).
[216] Mayagna (Sumo) Awas Tingni Community v. Nicaragua Judgment, Inter-Am. Ct. H.R., (ser. C) No. *79, ¶ 64* (Aug. 31, 2001) [hereinafter *Awas Tingni]*; *Kichwa Indigenous People of Sarayaku v. Ecuador,* Merits and Reparations, Judgment, Inter-Am. Ct. H.R. (ser. C) No. *245, ¶ 198* (June 27, 2002) [hereinafter *Sarayaku].*
[217] Galit A. Sarfaty, *The World Bank and the Internalization of Indigenous Rights Norms*, 114 Yale L.J. 1796 (2004).
[218] WORLD BANK ENVIRONMENTAL AND SOCIAL POLICY, supra note 206.
[219] Swepston, supra note 209, p. 63.
[220] Sarfaty, supra note 217, p. 1796.

to them, and to have access to a grievance mechanism.[221] ESS7 also recognizes that the terminology used for Indigenous Peoples and traditional local communities varies from country to country, and often reflects national considerations. [222] Therefore, if a State or private corporation carrying out a DSM project takes out a loan from the World Bank, they must meet the standards set by the ESS7. Failure to comply with one of the standards may lead to a breach of the loan agreement, which is legally an agreement that can be brought before an arbitration tribunal, international or domestic court.

### 3.3.2 Conventions

**The International Covenant on Civil and Political Rights (ICCPR)**

The ICCPR is a key international human rights convention, that recognizes the rights of peoples in general as well as ethnic and other minorities, which generally include indigenous peoples. The relevant Articles in this convention are Article 1 and Article 27.[223] Article 1 states: "All peoples have the right of self-determination. By virtue of that right they freely determine their political status and freely pursue their economic, social and cultural development".[224] Article 27 declares that: "In those States in which ethnic, religious or linguistic minorities exist, persons belonging to such minorities shall not be denied the right, in community with the other members of their group, to enjoy their own culture, to profess and practice their own religion, or to use their own language".[225]

Of course, Indigenous People can constitute a minority group in many circumstances. In such cases, Article 27 relates to their rights. Although it can be assumed literally that Article 27 confers negative rights, the prevailing legal practice, and the UN HRC interpretation of the Article show that it also includes positive obligations. [226] This Article articulates the Indigenous Peoples' right to enjoy a particular culture that may be closely associated with territory and use of resources, and can also relate to the maritime zone.[227] This protection was broadly interpreted by the HRC, which recognized that cultural harm can occur as economic harm when economic conduct is a part of the culture of the Indigenous Peoples.[228] Moreover, the HRC interpreted the word "to deprive" in Article 27 as harming not only the typical cultural economic life of the Indigenous Peoples but also

[221] WORLD BANK ESS7 STANDARD, http://pubdocs.worldbank.org/en/276101511809520481/ESS7-FactSheet-WB-ESF.pdf
[222] *Id.*
[223] ICCPR, supra note 191, Article 1, 27.
[224] *Id.,* Article 1. This is replicated also in Article 1 of the International Covenant on Economic, Social and Cultural Rights.
[225] *Id.,* Article 27.
[226] MARTIN SCHEININ, INTERNATIONAL LAW AND INDIGENOUS PEOPLES 4 (Joshua Casttelino & Hiamh Wals ed. 2005); HRC General Comment No. 23 (50), reproduced in U.N. doc. HRI/GEN/1/Rev.5, p. 147–150.
[227] UN Human Rights Committee (HRC), *CCPR General Comment No. 23: Article 27 (Rights of Minorities)*, para 3.2, 7, CCPR/C/21/Rev.1/Add.5, April 8 1994. It is also important to mention that an individual aspect of Article 27 exits as well. For example look Sandra Lovelace v. Canada (Communication No. 24/1977), Views adopted 30 July 1981, Report of the Human Rights Committee, GAOR, Thirty-sixth session, Suppl. No. 40 (A/36/40), pp. 166–175. where the HRC used the individual aspect of Article 27 to establish the right of the individual not to be denied membership in an Indigenous group with which she wishes to identify herself, and into which she belongs according to some objective criteria of, for example, ethnicity.
[228] Scheinin, supra note 226, p. 7.

the harm to the economic activity performed by the Indigenous group, albeit adapted to modern life.[229] To examine the existence of such an injury to the cultural economic life, the HRC developed a combined test of meaningful consultation or participation of the Indigenous People in decision making regarding the projects in question, and the sustainability of the Indigenous economy.[230]

The ICCPR, as well as other major human rights conventions (such as the ICESCR discussed in the previous chapter) can be used as a tool to protect the rights of Indigenous Peoples in cases of DSM projects. For example, if a particular state executing a DSM project harms fisheries in the DSM mining area, and there is an Indigenous community whose economic livelihood is dependent on the fishery. In such cases, harm to fish that leads to damage to the community's economic cultural activity could be considered, by the HRC's interpretation a violation of Article 27 by the State. It would also be considered a violation regardless of whether the economic cultural activity, fishing in this example, was conducted using modern, non-traditional tools of the community, such as motorized boats. The burden of proof would rest on the state to show that it passed the HRC's combined test.

**ILO Convention 169**

The International Labor Organization (ILO) Convention No. 169 is a central feature of international law's contemporary treatment of Indigenous Peoples' demands.[231] The convention concerns the rights of Indigenous and tribal people. It refers to the need to respect the continued existence and ways of life of Indigenous Peoples and to involve them fully in making a decision that concerns them. It refers to land rights, protected areas owned or traditionally occupied by Indigenous Peoples, and grants them special rights in both renewable and non-renewable resources associated with their lands.[232] The importance of this convention is that it creates treaty obligations among ratifying states - thus affecting the formation of international customary law.[233] This effect is, however, limited by the low ratification rate of the convention – only 23 states, mainly in Latin America.

The main provisions of the ILO Convention that are relevant to the question at hand regarding DSM are: Article 15(2) which provides that in cases where Indigenous Peoples' lands and minerals and sub-surface national resources are affected by State action, States must consult the people "to ascertain whether and to what degree their interests would be prejudiced before undertaking or permitting any programs, for the exploitation of such resources pertaining to their lands".[234] Article 4(1) requires States to adopt special measures to safeguard Indigenous and tribal peoples' property, cultures, and environment.[235] Article 6(1)(a) requires states to consult with Indigenous and tribal peoples and their representatives "whenever consideration is being given to legislative or administrative measures which may affect them directly" and states in Article 6(2) that such

[229] Ilmari Länsman et al. v. Finland ('Länsman No. 1') (Communication 511/1992), Views adopted 26 October 1994, Report of the Human Rights Committee, Vol. II, GAOR, Fiftieth Session, Suppl. No. 40 (A/50/40), paragraph 9.3.
[230] *Id.,* paragraphs 9.6, 9.8; Scheinin, supra note 226, p. 7; S. JAMES ANAYA, INDIGENOUS PEOPLES IN INTERNATIONAL LAW, 58-59 (2nd ed. 1996)
[231] *Id.*
[232] Swepston, supra note 209, p. 59; Convention No.169, supra note 202, Article 24.
[233] Lawrence Rosen, *Indigenous Peoples in International Law*, 107:1 Yale L.J. 5 (1997).
[234] *Id.* Article 15(2).
[235] *Id.* Article 4(1).

consultation must have "the objective of obtaining Indigenous and tribal peoples' agreement or consent to the proposed measures".[236] The ILO constitution also includes a representation procedure found in Article 24, and a complaint procedure found in Article 26.[237]

Indigenous Peoples can file a complaint to the ILO's Governing Body,[238] or choose a non-state body to represent them and file a complaint about wrongdoing by the state, which will be investigated by a Special Committee appointed by the Governing Body. The ILO has very loose admissibility requirements, and there are no substantive requirements such as exhaustion of local remedies, rather than just procedural requirements.[239] Generally, the complaints filed are in cases of a lack of consultation with the Indigenous community by the State regarding projects in lands that belong to or once belonged to the Indigenous Peoples. These operations are usually related to oil drilling, mineral exploitation, or mining licenses. In many of these cases, the ILO found the consultation process provided by the States lacking, inappropriate and not properly implemented and therefore required the States to consult the Indigenous Peoples as required.[240]

For example, the Committee found in some complaints, lack of active participation,[241] and lack of true representation,[242] and determined that such consultation does not comply with provisions of the convention and therefor consists a violation of the convention.[243] The Committee also determined explicitly in a different case that consultations with the affected Indigenous community should be adequate and meet the requirements of the convention.[244]

Regarding DSM operations, the complaints procedure might be useful for Indigenous Peoples residing in a State that has ratified the Convention, specifically, when Indigenous Peoples' lands and minerals and sub-surface national resources are affected by the DSM operations, and consultation by the State is either found lacking or insufficient.

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[236] *Id.* Article 6(1)(a)
[237] *Id.* Articles 24, 26.
[238] FERGUS MACKAY, A GUIDE TO INDIGENOUS PEOPLES' RIGHTS IN THE INTERNATIONAL LABOUR ORGANIZATION, 21-23 (2003), http://www.forestpeoples.org/sites/fpp/files/publication/2010/09/iloguideiprightsjul02eng.pdf.
[239] *Id.*
[240] Swepston, supra note 209, p. 56-58.
[241] International Labour Organization (ILO) Doc. GB.282/14/4, para. 68 (a) (Nov. 2011)
[242] *Id.*, para. 44 (Nov. 2011)
[243] *Id.*
[244] *Id.*, para. 74 (Nov. 2011)

### 3.3.3 The Declaration on the Rights of Indigenous Peoples (UNDRIP or The Declaration)

The Declaration,[245] though not formally universally accepted,[246] has received broad support, and is arguably the single most important development in the history of international law relating to Indigenous Peoples.[247] The importance of UNDRIP is reflected in the fact that it is implemented not only by the operational bodies committed to it under the Declaration itself, but also in several international, regional, and domestic courts.[248]

There are different views among scholars as to the status of the Declaration. While some argue that UNDRIP is considered customary international law due to the broad consensus and application by different international legal bodies,[249] others do not agree. Those who disagree claim that as a UN General Assembly Resolution, the Declaration is not legally binding on States as such.[250] However, even the second group of scholars agree that the Declaration is probably one of the most important sources in international law regarding the rights of Indigenous Peoples, as it determines the individual and collective rights of Indigenous Peoples worldwide and sets international moral and political standards and legal guidelines for states,[251] and contributes to the development of customary international law.[252]

The Declaration recognizes the wide range of basic human rights and fundamental freedoms of Indigenous Peoples. It addresses the Indigenous Peoples' inalienable collective right to the ownership, use, and control of lands, territories, and natural resources; their right to maintain and develop cultural and religious practices; their right of self-determination; their right to establish and control their educational systems; their rights to

[245] On September 13, 2007, the United Nations General Assembly adopted the UN Declaration on the Rights of Indigenous Peoples, supra note 207.

[246] 143 states voted in favor, four states voted against it (Australia, Canada, New Zealand, and the United States), and the rest abstained. Even though both Australia and Canada have taken steps to implement UNDRIP, there are still very significant differences between the law applied in Canada and the way UNDRIP outlines it. For examples see Rachel Ariss, Clara MacCallum Fraser & Diba Nazneen Somani, *Crown Policies on the Duty to Consult and Accommodate: Towards Reconciliation?*, 13 MCGILL J. SUST. DEV. L. 17-18 (2017).

[247] Christopher J. Fromherz, *Indigenous Peoples' Courts: Egalitarian Juridical Pluralism, Self-Determination, and the United Nations Declaration on the Rights of Indigenous Peoples,* 156:5 U. PA. L. REV. 1 (2008).

[248] *Id.,* p. 127-132; Aurelio Cal and the Maya Village of Santa Cruz v. Attorney General of Belize and Manuel Coy and Maya Village of Conejo v Attorney General of Belize, (Consolidated) Claim Nos 171&172, 2007, Supreme Court of Belize (18 October 2007); Minority Rights Group and CEMIRIDE (on behalf of the Endorois Community) v. Kenya, Communication, para 232, 276/2003. The ruling of the African Commission on Human and Peoples Rights was made public in February 2010; Case of the Saramaka People v. Suriname (series C No 172) (2007) IACHR 5, para 131. (28 November 2007); Case supported by the Niger-based anti-slavery association, Timidria, and London-based Anti-Slavery International. Hadijatou v. Niger (ECOWAS court, 27 October 2008)

[249] ALEXANDRA XANTHAKI AND STEVE ALLEN, REFLECTIONS ON THE UN DECLARATION ON THE RIGHTS OF INDIGENOUS PEOPLES 122-124 (2011); S. James Anaya, *The UN Declaration on the Rights of Indigenous Peoples: Towards Re-empowerment*, JURIST (OCT. 3, 2007 08:01 AM), https://www.jurist.org/commentary/2007/10/un-declaration-on-rights-of-Indigenous-2/.

[250] United Nations, Report of the Special Rapporteur on the situation of human rights and fundamental freedoms of Indigenous people (Rodolfo Stavenhagen), U.N. Doc A/HRC/4/32 (2007), para 79,. daccess-ods.un.org/TMP/3658674.html; Fromherz, supra note 247, p. 1.

[251] ELVIRA PULITANO, INDIGENOUS RIGHTS IN THE AGE OF THE UN DECLARATION 1 (2012); id., Fromherz, p. 1343.

[252] Rodolfo Stavenhagen (Special Rapporteur on the situation of human rights and fundamental freedoms of Indigenous people), *Implementation of General Assembly Resolution 60/251 of 15 March 2006 Entitled "Human Rights Council",* ¶ 79, U.N Doc. A/HRC/4/32 (Feb. 27, 2007).

traditional medicine and cultural and traditional knowledge.[253] The most powerful tool that appears in the Declaration that applies to DSM operations, is the principle of Free Prior and Informed Consent (FPIC). Article 32(2) UNDRIP mandates that States shall consult in good faith with Indigenous Peoples to obtain their FPIC prior to any project "affecting their lands, territory and other resources, particularly in connection with the development, utilization, or exploitation of minerals, water, or other resources" may be undertaken.[254] As the FPIC is the most important principle regarding the protection of Indigenous Peoples rights vis-à-vis any project developed by the State, derivable from many of the instruments presented in this memorandum, including the ICCPR, which can be considered a normative basis of the FPIC principle,[255] a separate section will be dedicated to it, below.

Regarding DSM, to the extent that UNDRIP is part of customary law, we may draw the conclusion that non-compliance with the provisions of the Declaration may establish claims in appropriate forums by Indigenous Peoples whose rights have been infringed, against States in question. Even if the customary status of the Declaration is not fully accepted, it may be argued that it is the accepted normative outline concerning the legal framework regarding Indigenous Peoples' rights, and the adoption of this position may influence the interpretation of existing state laws or practices.

## 3.4 Free, Prior, and Informed Consent

As indicated above, the principle of FPIC appears, either implicitly or explicitly, in almost all of the legal instruments discussed in this memorandum, with various modifications, not least with respect to Indigenous Peoples. Here we focus on the principle itself, its interpretations in both domestic and international jurisprudence, and its scope of application. These are key points of consideration when various tools are put into action, as they require an examination of compliance with FPIC by the relevant State.

### 3.4.1 Judicial interpretation of the principle

There seems to be some vagueness as to FPIC granting veto rights to Indigenous Peoples in a consultation process with the State.[256] However, several significant rulings by domestic and international courts have

[253] UNDRIP, supra note 207.
[254] *Id.,* Article 32 (2).
[255] Commission on Human Rights, Sub-Commission on the Promotion and Protection of Human Rights, Working Group on Indigenous Populations Standard-Setting Legal Commentary on the Concept of Free, Prior and Informed Consent, Paras. 33-34, U.N. DOC. E/CN.4/Sub.2/AC.4/2005/WP.1 (Jul. 18-22, 2005).
[256] For example, see James S. Phillips, *The Rights of Indigenous Peoples under International Law*, 26:2 GLOBAL BIOETHICS 120,-122 (2015) - leading to the conclusion that the veto right applies only in situations where the Indigenous Peoples have been removed from their land; S. James Anaya, *Indigenous Peoples' Participatory Rights concerning Decisions about Natural Resource Extraction: The More Fundamental Issue of What Rights Indigenous Peoples Have in Lands and Resources*, 22 ARIZ. J. INT'L & COMP. 7 (2005), claiming that there is a lack of clarity as to whether or not there is a veto right; Draft study on Free, Prior and Informed Consent: A human rights-based approach, Study of the Expert Mechanism on the Rights of Indigenous Peoples, U.N. Doc. A/HRC/EMRIP/2018/CRP.1 (2018), para 27,: https://www.icmm.com/position-statements/Indigenous-peoples;
https://www.ohchr.org/_layouts/15/WopiFrame.aspx?sourcedoc=/Documents/Issues/IPeoples/EMRIP/Session11/StudyFreePriorInformedConsent.doc&action=default&DefaultItemOpen=1-, determining that UNDRIP requirements for FPIC include a veto right granted to the Indigenous Peoples. Also see at Carla F. Fredericks,

recognized stringent preliminary consent requirements in cases of large-scale investments or development projects that have a significant impact on Indigenous Peoples' way of life, environment, and culture. Furthermore, in cases where these requirements were not fulfilled, courts have ordered the halting projects, even if they had already begun operations.[257]

**What constitutes adequate consultation?**

Before considering the issue of consent by the Indigenous community, the criteria of sufficient consultation must be met. The state must implement the obligation to consult the Indigenous Peoples through an "effective mechanism" and/or "special measures". The government must ensure that the Indigenous Peoples can freely participate and "provide the resources necessary for this purpose".[258] The consultations should be undertaken in good faith and in a form appropriate to the circumstances, in order to achieve agreement or consent to the proposed measures.[259] The state's duty to consult Indigenous Peoples to obtain FPIC is non-delegable.[260]

The Supreme Court of Chile, while halting a mining project until the Indigenous Peoples were properly consulted, set forth specific guidelines that its government should follow in consulting with the Indigenous Peoples in question. These guidelines included:

(1) Good faith negotiations;
(2) The state must determine the impact on the people concerned;
(3) To set forth the manner of the people consultation;
(4) Assure participation by Indigenous Peoples and other citizens;
(5) Make a good faith effort to obtain the free, prior, and informed consent of the people;
(6) The consultation must be in accordance with the peoples' customs and traditions.[261]

In a different case, the IACtHR set an even higher standard of the good faith requirement when it held that "good faith" must be absent of any form of coercion, whether committed by the state or third party.[262] Coercion was defined by the Court as including the circumvention of the organized representation of the Indigenous community, payment, giving of gifts or job offers to individual community members in order to recruit their support.[263] It was also found that Indigenous Peoples should be provided with detailed information on all aspects of the project that may affect them, including potential impacts on the environment. The State must

*Operationalizing Free, Prior, and Informed Consent*, 80 ALB. L. REV. 429, 439 (2016); International Council on Mining & Metals, Mining And Indigenous Peoples: Position Statement (2008),

[257] Constitutional Court of Guatemala. (2013). Mataquescuintla vs. Guatemala; Supreme Court of Belize. (2007). Cal et al. vs. Attorney general claims nos. 171 and 172; IACtHR (2007), Saramaka People vs. Suriname (Ser. C) No. 172, 11-28-07); Sarayaku, supra note 216; Phillips, supra note 256 , p. 122-124.

[258] Convention No.169, supra note 202, Articles 1(b),1(c)), 4(1), 15(2), 6(1a), 6(2); UNDRIP, supra note 207, Article 32(2).

[259] Convention No.169, supra note 202, Articles 6(1)(a); 6(2).

[260] Sarayaku, supra note 216, para. 199.

[261] The Supreme Court of Chile. Diaguita v. Goldcorps (7 October 2014).

[262] Sarayaku, supra note 216, para. 186.

[263] *Id.,* para 73-74.

conduct environmental and social studies and present them in the early stages of the consulting process so that the community may have enough time to understand potential effects.[264]

The adequate consent requirement is based on the "fully informed" requirement,[265] and consent on the part of the Indigenous community was given as a whole.[266] The Indigenous group must be given time to "understand, access, and analyze information" before giving consent.[267] The consent can be made freely if it is made without mental or physical coercion, or external pressures (government or industry), such as bribery, intimidation, or externally imposed timelines.[268]

## 3.5 Conclusion

In this section we reviewed the relationship between Indigenous Peoples' rights to land, resources, and maritime territories, that are closely linked to their culture. We examined the possible violation of these rights in the context of DSM projects, under the assumption that the application of these principles and standards in DSM projects will be the same as in cases of energy and development projects.

Indigenous Peoples are granted rights beyond those granted to all persons under international human rights law. These rights stem from the fact that the Indigenous Peoples have cultural, spiritual, religious, and historical connections to their traditional lands, including maritime areas, and to the resources found in these areas. Furthermore, we examined the most important tools under international law which outline guiding principles of the rights of Indigenous Peoples and obligations of the State in situations where projects may cause harm to Indigenous Peoples. All the tools presented may be utilized by Indigenous coastal communities in the cases of wrongdoing by the State or corporations. They stem from different legal sources including treaties, agreements, and declarations. Though the legal and customary status of these principles is under dispute, they are still used by courts in order to apply protections to Indigenous Peoples.

It is demonstrated that the FPIC principle is arguably the most dominant and central principle in international law for guaranteeing and preserving the rights of Indigenous Peoples regarding the execution of projects that may affect them. The principle appears in many international and domestic legal sources and obligates the State to obtain consent from the Indigenous community before the project begins. These obligations rest on the State even if a project is carried out by private corporations. Although there is a debate whether this principal grants veto rights to Indigenous Peoples, various courts have developed this principle and additional terms relating to it, such as coercion. The fulfillment of these extended criteria are required in order to claim that the principle has been satisfied.

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[264] PHILIP ALSTON & RYAN GOODMAN, INTERNATIONAL HUMAN RIGHTS 730-731 (2012).

[265] UN-REDD Programme, *Guidelines on Free, Prior and Informed Consent*, 19 (Jan. 2013), https://www.uncclearn.org/wp-content/uploads/library/un-redd05.pdf [hereinafter Guidelines on Free, Prior, and Informed Consent].

[266] Mary and Carrie Dann v. United States, Case 11.140, Inter-Am. Comm'n H.R., Report No. 75/02, OEA/Ser.L/V/1l. 117, doc.1 rev. 1.¶ 165 (2003); Guidelines on Free, Prior and Informed Consent, Supra note 265, page 19.

[267] *Id.*.

[268] *Id.,* p. 18.

# 4 A Brief Note on International Investment Law and DSM

We turn now to a very brief discussion of the possible impact of international investment law on DSM, an area which we consider in need of further analysis. The regulation of international investment is governed by a decentralized regime developed through thousands of treaties. These treaties are generally known as International Investment Agreements (IIAs). IIAs are treaties between two or more States that aim to encourage and facilitate transnational investment,[269] subject to principles and standards of public international law.[270]

Many IIAs include arbitration provisions that allow foreign investors to initiate arbitral proceedings directly against host States in the event of a violation of IIA provisions. These are known as Investor-State Dispute Settlement (ISDS),[271] conducted in accordance with international arbitration rules such as ICSID (the Convention of the International Centre for Settlement of Investment Disputes) and UNCITRAL (United Nations Commission on International Trade Law). Arbitral tribunals may award compensation,[272] their decisions are largely not subject to appeal,[273] although their enforcement may be subject to separate legal procedures. Arbitral tribunals are established ad hoc, do not apply *stare decisis*, and do not have the authority to promulgate laws.[274]

Foreign investors are granted substantive protections through IIAs, including limitations on the host states' right to expropriate the investor's property without adequate compensation; an obligation of fair and equitable treatment and application of Most-Favoured Nation standards of treatment. Through these protections, coupled with the investor's ability to initiate ISDS, IIAs can adversely restrict a State's ability to adopt, change and enforce domestic regulation, limiting the power to govern and right to regulate.[275]

The concern relating to DSM is that governments may be limited in their ability to modify or terminate concessions given to foreign investors, even if such changes are intended to protect the public or the environment, because such changes would trigger ISDS claims or threats. States may grant exploration or even extraction concessions to foreign investors, perhaps without advance environmental and social impact assessments or consultation and FPIC processes (at least when Indigenous Peoples have rights and interests

[269] Ignacio Gómez-Palacio & Peter Muchlinski, *Admission and Establishment*, OXFORD HANDBOOKS ONLINE 5–6 (2008).
[270] Gleider I. Hernández, *The Interaction between Investment Law and the Law of Armed Conflict in the Interpretation of Full Protection and Security Clauses*, INVESTMENT LAW WITHIN INTERNATIONAL LAW: INTEGRATIONIST PERSPECTIVES (FREYA BAETENS, ED.) 21–50 (2013).
[271] Benedict Kingsbury & Stephan W. Schill, *Investor-State Arbitration as Governance: Fair and Equitable Treatment, Proportionality and the Emerging Global Administrative Law*, SSRN ELECTRONIC JOURNAL (2009).
[272] *Id.* 17, 26.
[273] Awards are subject to limited remedies provided in the ICSID convention under specific circumstances. A party may request the full or partial annulment of an award if a gross miscarriage of justice has taken place, such as corruption or failure to follow fundamental procedural rules, at: *Post-Award Remedies - ICSID Convention Arbitration*, POST-AWARD REMEDIES - ICSID CONVENTION ARBITRATION, https://icsid.worldbank.org/en/Pages/process/Post-Award-Remedies-Convention-Arbitration.aspx (last visited Jun 12, 2020).
[274] Martins Paparinskis, *Investment Treaty Interpretation and Customary Investment Law: Preliminary Remarks*, EVOLUTION IN INVESTMENT TREATY LAW AND ARBITRATION (CHESTER BROWN AND KATE MILES, EDS.), 65–96 (2011).
[275] Jörn Griebel, Manjiao Chi, *Integrating Sustainable Development in International Investment Law*, EUROPEAN YEARBOOK OF INTERNATIONAL ECONOMIC LAW 487–491 (2018).

regarding the agreement). In such cases, if an IIA applies, subsequent decisions of a State to modify or terminate concessions, even when such changes are legitimate, may be subjected to unfavorable ISDS claims or threats.

There have been many cases in which host States granted governmental licences for infrastructure development or natural resource extraction, and later terminated these grants under the reasoning of public interests or changes in domestic policy. The justifications for these terminations include changes in environmental policy, social policy, and the assertion of rights by Indigenous Peoples. These cases have implications for DSM.

For example, in April 2019 a US based company filed an investment claim under an IIA (Chapter 11 of NAFTA) against Mexico, requesting compensation of 3.5 Billion US Dollars for wrongful denial of environmental approval. The company, Odyssey Marine Exploration Inc. has expertise in deep-sea exploration (and, incidentally, has deep-sea exploration rights in the EEZ of Papua New Guinea), received an exploration concession in a maritime area in Mexico's EEZ, and reportedly discovered a very large phosphate deposit of the Pacific coast of Baja California. The company claims that the government of Mexico has been withholding environmental approval of extraction, despite the company's efforts to develop sustainable mining methods.[276]

States encounter great difficulties when defending policies against investor claims in arbitration, as foreign investors enjoy an extensive suite of rights and privileges without corresponding obligations towards environmental or public protections. When states have tried to use arbitration to challenge the misconduct of foreign investors within host states, investor-state arbitration tribunals have ignored these claims or failed to find legal bases for investor responsibility. International law has dealt with this asymmetry by interpreting investment protection agreements not only according to their content, but by broader international standards. As this is a developing and extensive topic, we recommend it to be studied further, independently, in future. In this regard, states considering granting concessions for exploration and/or extraction licenses for DSM, should be very cautious, and not rely on general public policy exceptions, to the extent that they may need to alter their policies in the future, with respect to sustainable development, human rights and Indigenous rights.

[276] Odyssey Marine Exploration, Inc. v. United Mexican States, ICSID Case No. UNCT/20/1 (23.11.2020).

# General Conclusion

With this memorandum we have sought to identify, analyze, and assess the range of legal tools available to coastal communities facing potentially harmful DSM operations, especially Indigenous communities. We would note that many of the legal and policy tools presented throughout this paper are of a preventative character, meaning that they are better utilized as a tool to mitigate harmful impacts of DSM before major or irreversible operations are underway.

The frameworks of international law examined in this memorandum are the Law of the Sea, Environmental Law Human Rights relating to the Environment, Indigenous Peoples Rights and International Investment Law. The purpose of this review was to present the the central tools and standards of each legal regime, in order to enable a better understanding of which rights belong to each party affected by DSM, specifically Indigenous coastal communities. The obligations of parties operating DSM are presented, whether they are States or private corporations.

Our principal conclusions regarding the Law of the Sea and environmental law are that States have the right to carry out DSM activities within national territory. However, this right is far from absolute, and is limited by international law. States may be obligated to adopt international standards by Article 208 UNCLOS, which, we find, may include various standards and principles. These are: the precautionary principle, environmental impact assessments, biodiversity protection, prevention of transboundary harm, prevention of vessel-source pollution and community partnership. Article 208 UNCLOS also requires that domestic legislation be no less effective than international law. More generally, UNCLOS imposes a specific duty on coastal States to prevent marine pollution from activities carried out on the seabed.

Regarding human rights relating to the environment, we present the two most relevant recognized under international law – the right to the highest attainable standard of health and the right to a healthy environment. These rights were relatively recently recognized by international and domestic tribunals and have been interpreted with a wide scope of application. This right imposes various obligations on both governments and private DSM operators to ensure the protection of human rights through the protection of the environment. The Law of the Sea must be interpreted in the light of human rights law, and therefore, laws and regulations that coastal States are obligated to adopt in accordance with UNCLOS should reflect these human rights relating to the environment. The specific human rights addressed in this section grant all peoples human rights protections in situations of environmental degradation. Indigenous Peoples may claim that their human rights have been violated, also when these protections stem from their status as Indigenous communities, rather from basic and general human rights.

Regarding Indigenous Rights, these are cumulative to fundamental individual and collective human rights. The most central principle in Indigenous Peoples protections under international law is the principle of Free, Prior and Informed Consent (FPIC). This principle demonstrates another facet of the preliminary nature of protections against negative impacts of DSM. According to FPIC, a State must obtain consent from potentially impacted Indigenous Peoples prior to project operations. The obligation of obtaining consent and preserving the rights of Indigenous Peoples is imposed on the state, even though most projects are carried out by private corporations. The FPIC principle appears in different legal tools both international and domestic and, as such,

the interpretation of the principle varies between the different legal mechanisms. While some legal tools grant Indigenous Peoples a veto right on project development, others do not. Even so, this principle serves as a significant tool for Indigenous Peoples, as it's fulfillment may in some cases serve as a condition for the continuation of DSM operations. We set out a number of possible situations in which FPIC could be utilized by Indigenous Peoples regarding DSM, what legal framework would apply the principle and how it would be interpreted in accordance with the circumstances.

With respect to international investment law, we raise the concern that this field of economic law may constrain the ability of states to make reasoned decisions regarding DSM exploration and extraction concessions, even when based on considerations of sustainable development and Indigenous rights. These concerns are in need of further analysis and research.

This concludes our memorandum, which we hope will aid our beneficiary and any other organization dedicated to mitigating potential negative effects of DSM activities.