

TONGA AND DEEP SEA MINING: AN EVALUATION OF LEGAL FRAMEWORKS, OBLIGATIONS, LIABILITY RISKS, AND MEASURES FOR STRENGTHENING THE KINGDOM'S CAPACITIES WITH REGARD TO ENVIRONMENTAL IMPACT ASSESSMENT

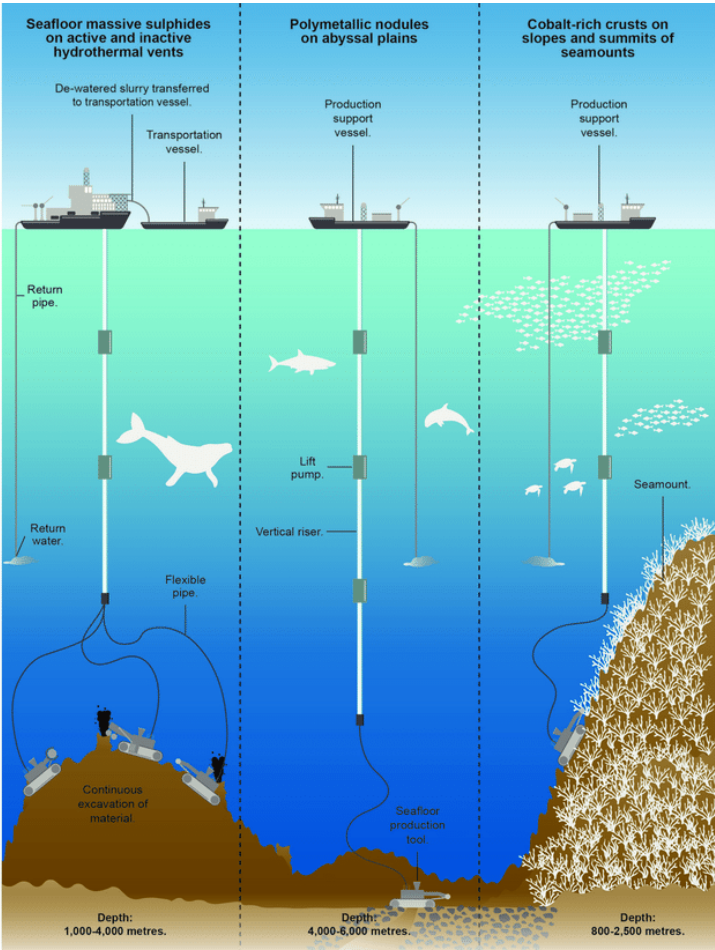


Figure from K.A. Miller et al., An Overview of Seabed Mining Including Current State of Development, Environmental Impacts, and Knowledge Gaps, *Frontiers in Marine Science* (Jan. 2018)

Commissioned By: Civil Society Forum of Tonga
 Contractor: Lori Osmundsen, J.D., LL.M.
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Acronyms

BBNJ	Biodiversity Beyond National Jurisdiction Treaty (entry into force pending)
CBD	Convention for Biological Diversity
CCZ	Clarion-Clipperton Zone
DSM	Deep Sea Mining (including prospecting, exploration, exploitation)
EEZ	Exclusive Economic Zone
EIA	Environmental Impact Assessment
EIS	Environmental Impact Statement
EU	European Union
HNS	International Convention on Liability and Compensation for Damage in connection with the Carriage of Hazardous and Noxious Substances By Sea
ISA	International Seabed Authority
ITLOS	International Tribunal for the Law of the Sea
LTC	Legal and Technical Commission (of the ISA)
MAFFF	Ministry of Agriculture, Food, Fisheries and Forestry
MARPOL	International Convention for the Prevention of Pollution from Ships (1973) and Protocol of 1978
MEIDECC	Ministry of Meteorology, Energy, Information, Disaster Management, Environment, Climate Change and Communication
MLNR	Ministry of Lands and Natural Resources
MPA	Marine Protected Area
NORI	Nauru Ocean Resources Inc.
SIDS	Small Island Developing State(s)
SMA	Special Management Area
SPC	Secretariat of the Pacific Community
SPREP	South Pacific Regional Environment Programme
TOML	Tonga Offshore Mining Ltd.
UNCLOS	1982 United Nations Convention on the Law of the Sea
UNFCCC	United Nations Framework Convention on Climate Change

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Executive Summary

This report reflects work conducted at the direction of CSFT on 3 main objectives:

- (i) Review of legal and technical analyses of the NORI collector test EIA and EIS submissions to identify components applicable to the Tongan context of DSM activities and contracts.
- (ii) Review of Tonga's DSM-related legal framework, including Tonga's obligations and potential liability risks under applicable international environmental instruments and existing agreements or arrangements with mining companies. This review will also encompass all known commitments and statements of the Tongan Government at ISA meetings or other international fora regarding the ocean environment that are relevant to DSM.
- (iii) Design of legal tools for addressing gaps and strengthening capacity of Tonga's local institutions to properly evaluate DSM project EIAs.

Principal Findings are:

1. The NORI EIA and EIS submissions highlight several significant flaws in the current ISA process for exploration stage EIA/EIS that compromise the ability to forecast and mitigate environmental risks of DSM. These flaws include, but are not limited to: lack of transparency of the ISA EIA process; insufficient stakeholder engagement; insufficient substantive content of the EIS regarding baseline data, impacts, monitoring plans, and mitigation measures; and unclear review and decision-making processes. These issues are likely to arise with respect to any exploration (or exploitation) EIA/EIS conducted by Tonga's sponsored DSM contractor.
2. At present Tonga has approximately 20 Acts and corresponding sets of regulations that relate directly or indirectly to DSM activities within the Kingdom. Considerable overlap and potential for conflicts exist between various pieces of legislation that govern in whole or in part activities in Tonga's maritime zones. Forthcoming new legislation regarding ocean management and marine spatial planning may address some of this overlap, but there is likely to still be a need to make all of Tonga's ocean-related laws consistent with each other. Of key importance is strengthening Tonga's domestic EIA framework to meet the new and highly complex regulatory challenges of DSM.
3. As a Sponsoring State under the UNCLOS Part XI Area regime, Tonga has a due diligence obligation to ensure that the activities of its contractor, TOML, comply with all applicable laws to protect the marine environment. Failure to meet that obligation exposes Tonga to risk of financial liability for damage caused by its contractor. Under the current legal framework at the ISA level and at the national law level, it is uncertain and unlikely that Tonga has sufficient capacity to exercise "effective control" over its sponsored contractor to meet due diligence requirements.
4. Tonga has legal obligations under other parts of UNCLOS and other international instruments, including but not limited to the Convention on Biological Diversity and the Paris Agreement, to establish marine reserves within its EEZ and take all necessary measures to (a) safeguard the Tongan marine environment, and (b) not cause damage or pollution to the marine areas of other States. Breach of these obligations would also expose Tonga to potential risk of liability.
5. The Sponsorship Agreement of September 23, 2021 between Tonga and TOML for DSM activities in the Area appears in general to be more favorably weighted toward the contractor's interests. A better balance in this and any future agreements could be achieved

by restructuring contract terms concerning duration, indemnification, amendment, default conditions, and Tonga's ability to enact domestic laws that are in the best interests of the Tongan people.

6. Key legal and policy tools and measures for strengthening Tonga's EIA capacities include:
 - (a) expanding and better integrating meaningful public consultation in the EIA process at all stages;
 - (b) developing and enacting comprehensive regulations to implement the Seabed Minerals Act;
 - (c) expand and improve the existing regulations to the Environmental Impact Assessment Act to make EIA required for all DSM-related activities, with defined parameters and standards of review;
 - (d) craft complaint and consultation mechanisms for addressing community concerns about environmental and social impacts resulting from DSM;
 - (e) establish an independent review board to assess and make recommendations concerning Government's implementation and enforcement of DSM-related and ocean-focused laws;
 - (f) conduct regular transparency assessments with regard to carrying out the Seabed Minerals Act, the EIA Act, and other relevant laws, including financial transparency in managing marine resource revenues;
 - (g) develop and integrate in all DSM and ocean-related laws a long-term holistic approach to EIA that considers cumulative impacts of current and future proposed resource extraction activities;
 - (h) build in sufficient timelines to: (1) conduct and share necessary research on deep ocean ecosystems so as to properly evaluate environmental impacts, and (2) identify core competencies and resources needed within Ministries and supporting groups in Tonga to carry out robust and effective EIA; and
 - (i) support and enable full freedom of information on behalf of the Tongan public to be advised in advance of proposed contracts concerning DSM or other marine resource extraction that would legally bind the Kingdom and affect Tonga's obligations and liabilities at the national and international level.

I. Introduction

The Kingdom of Tonga is a Polynesian archipelagic nation of over 170 islands in the central South Pacific, situated along a north-south axis just west of the International Dateline between 15° and 23°30' south latitude. With a relatively small population¹ and modest total land mass (750 km²), Tonga is considered a SIDS. With national sovereignty extending over approximately 700,000 km² of marine territory, it is also termed a Large-Ocean State.

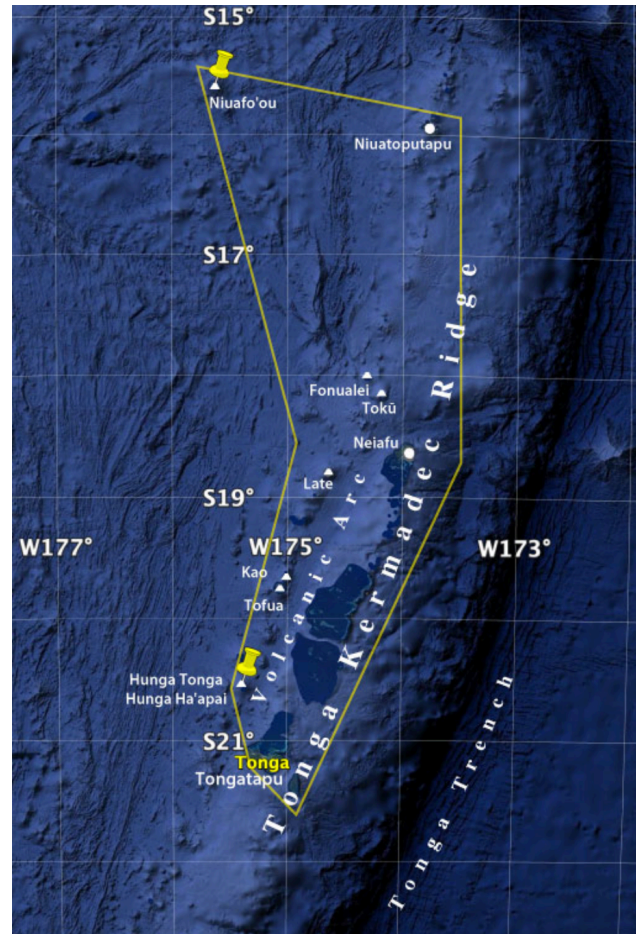


IMAGE: NATIONS ONLINE PROJECT/GOOGLE EARTH

For as long as people have inhabited the islands of Tonga the sea has been a main source of sustenance and cultural identity. For many decades it has also been a staple of the Tongan economy, with significant revenue earnings generated both locally and in export markets

¹ According to the Tonga Statistics Department, the population of the Kingdom as of the last census in November 2021 was 100,179. The majority (74,320) reside on the main island, Tongatapu, followed by the island groups of Vava'u (14,182), Ha'apai (5,665), 'Eua (4,864) and the Niua (1,148).

abroad from the sale of fish and other marine animals harvested from Tongan waters.² Other important revenue streams deriving from Tonga's ocean realm include tourism and ocean recreation, cargo transport, vessel charters, and whale watching.

Another emerging commercial use of the ocean – deep sea mining (DSM) of metals and minerals from the Pacific seabed – has generated considerable interest and preliminary steps toward implementation by the Tongan Government. The shift to green technologies such as electric vehicles and the transition to renewable energy sources like wind and solar have accelerated the need for more batteries and their rare earth metal components (e.g. cobalt and nickel). These and other in-demand metals and minerals have traditionally been mined on land, but are also present in deep sea areas around the globe. The attraction of DSM to Pacific SIDS like Tonga lies in prospects of collecting potentially lucrative royalties and other passive revenue with minimal investment of government funds, since the technologically demanding and expensive mining exploration and exploitation activities are largely conducted by private companies funded by foreign investors.

Tonga's involvement in DSM currently follows both a domestic and international track. Within Tonga's EEZ, polymetallic sulphide deposits containing copper, lead, zinc and gold have been located near hydrothermal vents at depths of 400-2000 m. Extraterritorially, Tonga sponsors a contractor, TOML, with respect to six exploration areas in what is known as the Clarion-Clipperton Zone (CCZ) in the Central Pacific midway between Hawaii and Mexico. The CCZ covers more than 4.5 million km² with an average depth of 4000 m. The ocean floor of the CCZ is governed by the ISA and features polymetallic nodules containing nickel, copper, manganese and cobalt on its abyssal plain. These nodules are the target of proposed DSM operations.

The problem is that DSM is not environmentally benign. Extracting polymetallic nodules and mineral deposits entails scraping the surface of the seabed and picking up sediment using large robotic harvesting machinery. Disturbed sediment disperses laterally over the sea floor and vertically in the water column, interfering with marine life. Whole-scale removal of nodules may alter, degrade or destroy seabed habitats. The nodules themselves have been found to provide habitat to microbes previously unknown to science. The mined nodules and sediment are pumped up long shafts for hundreds or thousands of meters to a surface support vessel. After completion of mechanical sorting processes, the remaining sediment "waste" is discharged back to the sea, either at surface level or at depth. This discharge presents additional significant water and habitat fouling issues. Considerable concern has also been raised about underwater noise and vibrations from mining equipment and operations negatively impacting whales and other large pelagic species.

Underpinning all of the environmental concerns regarding DSM is the fact that so little is known about the deep seabed. Less than 20% of it globally has even been mapped. A lack of detailed knowledge of deep-sea ecosystems and their interconnectivity, a lack of robust scientific data, and uncertainty as to the scale, duration and manageability of impacts from DSM present legal challenges in terms of developing fit-for-purpose regulations, enforcing

² Export fisheries have accounted for 2-7% of GDP in recent years, depending on fluctuating production levels. *Tonga Fisheries Sector Plan 2016-2024*, p. 6.

compliance, and punishing violations.

At present there is a growing call among scientists, policy-makers, institutions, civil society, and countries for imposition of a moratorium on DSM, either indefinitely or at least until sufficient data and knowledge are acquired to answer the many unknowns of deep sea ecosystems. At the same time, several countries including Tonga are proceeding with exploration phase DSM within their national boundaries, and the ISA is progressing with establishing a DSM regime in the Area. In the absence of certainty whether or when DSM may ultimately move forward as a viable extractive industry anywhere in the world, proper regulatory frameworks at the domestic and international level need to be in place now that are clear, comprehensive and executable so as to guide all DSM participants – as well as hold them accountable – while fully protecting the marine environment.

II. Objectives

The Civil Society Forum of Tonga (CSFT) has commissioned this report to review and assess the strength and capacity of current legal frameworks and institutions in Tonga that will be instrumental in Tonga's implementation of any form of DSM, including its due diligence obligations with respect to DSM in the Area. Of particular importance is Tonga's ability to properly evaluate any EIS submitted by mining companies/contractors. Under applicable international law, Tonga as a State Sponsor of DSM activities in the Area has a legal duty to ensure its sponsored mining contractors follow international rules. With this responsibility also comes potential liability for environmental damage that occurs from sponsored contractors' DSM activities, including situations where the harm relates to the State's failure to conduct sufficient EIA oversight.

It is equally critical to the safeguarding of Tonga's own marine environment that Tonga has the legal tools it needs, and the ability to use them, for handling the EIA process in the context of domestic DSM. Assessment of an EIS is at once a highly technical undertaking and indispensable to Government's ability to make thorough and unbiased decisions concerning the complex, impactful industrial activity that DSM represents in the Kingdom. At present it appears that this function primarily involves the MLNR and the Ministry of Environment section of MEIDECC. Other Ministries, departments, offices and branches of Government may well be needed to provide expertise and resources.

This report reflects work on three main objectives:

- (i) Review of the NORI exploration-phase EIA/EIS submissions and existing legal/technical analyses to identify components applicable to the Tongan context of DSM activities and contracts.
- (ii) Review of Tonga's DSM and ocean-related legal framework, including Tonga's obligations and potential liability risks under applicable international environmental instruments and existing agreements or arrangements with mining companies. This review will also encompass all known commitments and statements of the Tongan Government at ISA meetings or other international fora regarding the ocean environment that are relevant to DSM.

(iii) Design of legal tools and measures to address gaps and strengthen the capacity of Tonga's local institutions to properly undertake and evaluate DSM project EIAs.

The report also includes sections covering the legal framing of DSM within UNCLOS, and a preliminary analysis of the 2021 Sponsorship Agreement between the Kingdom of Tonga and its sponsored DSM contractor in the CCZ.

III. UNCLOS, the ISA, and DSM in the Area

Seventy percent of Earth's surface is ocean. Of that 70% oceanic domain, approximately 38% is considered "national" waters encompassing the territorial seas and EEZs of countries, and 62% consists of the high seas beyond national jurisdiction. The definition of various maritime zones, what falls under coastal states' jurisdiction, and what does not grew out of nearly two decades of multinational discussions culminating in UNCLOS, which opened for signature on 10 December 1982. The Convention entered into force on 14 November 1994. Currently, UNCLOS has 167 State Parties and the European Union as members. Tonga became a party to UNCLOS in 1995.

The Convention contains 320 articles, arranged in 17 parts, as well as 9 annexes. Parts II to XI concern the different maritime zones: territorial sea and contiguous zone, straits used for international navigation, archipelagic waters, the exclusive economic zone, the continental shelf, the high seas, the Area, and special provisions on the regime of islands and of enclosed and semi-enclosed seas. Parts XII to XIV concern marine activities and responsibilities in all areas: the protection of the environment, marine scientific research, and the development and transfer of marine technology. Part XV (and annexes 5 to 8) concerns the settlement of disputes. Parts XVI and XVII set out general and final clauses.

In addition to the main Convention, the UN General Assembly adopted an Agreement on the Implementation of Part XI of the Convention in July 1994 (the "Part XI Agreement"). This was necessitated by the concerns and demands of many industrialized States over how the mineral resource regime of the Area – defined in UNCLOS Art. 1(1) as the seabed, ocean floor and subsoil beyond limits of national jurisdiction (*i.e.*, the bottom of the high seas) – should be managed. The Part XI Agreement entered into force in 1996. Part XI of UNCLOS and the Part XI Agreement established the ISA (also known as the "Authority") as an autonomous institution charged with supervision and regulation of DSM activities so as to administer the resources of the Area as the common heritage of humankind (UNCLOS Arts. 136, 140 and 157(1)). All State Parties to UNCLOS are also deemed members of the ISA. (UNCLOS Art. 156(2))

As set out in UNCLOS Art. 158(1), the ISA's main constituent bodies are the Assembly, the Council, and the Secretariat. The Assembly is composed of all ISA members and functions as the ultimate decision-making body on policies, regulations, and financial management. The Council is the executive branch, with authority to craft and recommend specific policies rules, regulations and procedures. Consisting of 36 of the 167 member States, it is currently vested with the authority to approve or disapprove applications for mining licenses. The Council has two sub-groups, the Legal and Technical Commission (LTC) and the Economic and

Planning Commission (which has not yet come into operation). The LTC plays an important role in reviewing plans of work for activities in the Area, reviewing and developing guidelines for environmental impact assessments, formulating rules, regulations, standards and procedures (including those governing prospecting, exploration and exploitation of deep seabed minerals in the Area, a.k.a. the Mining Code), and making recommendations to the Council concerning protection of the marine environment. The Secretariat is charged with providing administrative and legal services as well as scientific/technical input. An additional component of the ISA which is not up and running yet is the Enterprise, intended to be the ISA's operational arm for carrying out mineral activities in the Area for the equitable sharing of benefits for all of humanity.

Rules, regulations and procedures governing the prospecting, exploration and exploitation of mineral deposits in the Area must ensure the protection of the marine environment (UNCLOS Art. 145). In particular, Art. 145 directs ISA to craft rules addressing "the need for protection from harmful effects of such activities as drilling, dredging, excavation, disposal of waste, construction and operation or maintenance of installations, pipelines and other devices related to such activities." The rules must also, pursuant to Art. 145, be designed with conservation of the natural resources of the Area and the prevention of damage to living species in mind.

Article 145 reflects the obligations in Part XII of UNCLOS. The provisions of Part XII directly and unequivocally oblige States to take all necessary measures to protect and preserve the marine environment, including rare or fragile ecosystems as well as habitat of depleted, threatened or endangered species and other marine life (Arts. 192, 194, 197). A critical component of carrying out this general duty of States to protect and preserve is laid out in UNCLOS Articles 204-206, requiring an environmental impact assessment as well as monitoring and reporting where there are reasonable grounds for believing that activities may cause significant and harmful changes to the marine environment.

The members of UNCLOS and the ISA are States, and the ISA is mandated to manage activities in the Area on behalf of the world's people as a whole. The entities that conduct DSM operations are for the most part private companies and persons that are not subjects under or bound by UNCLOS. To bring legal accountability of commercial actors into play, UNCLOS employs the mechanism of "sponsorship." This means that anyone intending to explore or exploit mineral resources in the Area must be sponsored by one or more State Parties (UNCLOS Art. 153(2)).

The ISA has been working on developing sets of regulations and complementary instruments known as the Mining Code for the control and management of mineral resources of the Area since 2011. The much-anticipated exploitation regulations are still in draft form and subject to ongoing negotiations and debate among member states. Until these are finalised, the operating assumption has been that extraction-phase DSM cannot proceed in the Area.

In mid 2021, however, Nauru triggered 'the two-year rule.' This rule is found in a provision of the Part XI Agreement (Section 1, para. 15(b)), and provides that upon the request of a Sponsoring State Party, the Council shall complete the adoption of rules, regulations and procedures necessary to facilitate the approval of plans of work for exploitation within two

years of the request. Accordingly, Nauru's request means the Council would need to finalise the relevant rules by July 2023. If the Council does not meet that deadline, which most observers believe is likely, the Council is bound to consider and provisionally approve a plan of work for exploitation if submitted, basing its consideration on the provisions and norms of UNCLOS as well as any rules, regulations and procedures the Council has adopted to date. (Section 1, para. 15(c)).

The implications and consequences of the two-year rule have been widely discussed since 2021 and will likely be a principal topic at the ISA's July 2023 meeting. Perhaps in recognition that the looming 2-year trigger has had the effect of galvanizing growing support for a DSM moratorium in the Area, Nauru announced at the 28th Council Session in March 2023 that as a Sponsoring State it will not entertain an application for a plan of work from its sponsored entity, NORI, in July 2023 so as not to prejudice Council deliberations at that session on handling of the draft exploitation regulations. (See *Statement by Her Excellency Margo Deiyee, Permanent Representative of the Republic of Nauru*, Part 1, Council Session at 28th Session of the ISA in Kingston, Jamaica, 31 March 2023.)

IV. The NORI Collector Test EIA and EIS

A. The ISA's Process for EIA

Pursuant to UNCLOS Arts. 145, 165, and the Part XI Agreement, ISA has developed provisions, regulations and recommendations related to the assessment of possible environmental impacts arising from exploration for marine minerals in the Area. These describe the types of activities that require EIAs, the form and content of an EIS containing results of any EIA conducted, and guidance on baseline studies, monitoring and reporting. The Draft Exploitation Regulations are expected to include further detailed provisions regarding the EIA process and submission of an EIS. The exploitation regulations are to be supplemented by a set of environmental standards and guidelines, which at present have not been developed.

For exploration phase activities such as test-mining and equipment trials, the EIA/EIS process is currently outlined in the LTC's *Recommendations for the guidance of contractors for the assessment of the possible environmental impacts arising from exploration for marine minerals in the Area* (ISBA/25/LTC/6/Rev.2). This instrument has been revised and reissued several times, with the most recent version published in July 2022. Notably, the guidelines detail the ISA's expectation that exploration contractors perform extensive baseline data collection of all physical, chemical, geological, biological and other parameters characterizing the environments where exploration will occur before test-mining or component testing occurs.

B. Submission and Handling of the NORI Collector Test EIS

Shortly after Nauru submitted its request under Section 1(15)(b) of the Part XI Agreement that triggered the two-year rule, its sponsored contractor, NORI, completed and delivered to the LTC an EIS for the testing of its nodule collecting equipment. The timeline of events and decisions regarding this EIS illustrates what a similar process could be with respect to an exploration phase EIS submitted by Tonga's sponsored contractor, TOML.

- 30 July 2021: NORI submits its collector test EIS to LTC.
- 1 March 2022: NORI submits an amended EIS after conducting stakeholder consultations.
- March 2022: LTC requests more information from NORI, including details of an Environmental Monitoring and Management Plan (EMMP).
- 2 May 2022: NORI submits an EMMP.
- 15 July 2022: LTC informs NORI it is not able to recommend inclusion of the EIS to NORI's program of work, citing as reasons the lack of sufficient detail in the EIS and monitoring plan regarding overall sampling design and integrated monitoring specifications.
- 1 August 2022: NORI provides additional details to LTC.
- August 2022: Discussions of the LTC working group tasked with reviewing the EIS occur. The working group concludes the additional information provided by NORI was adequate, and recommends approval of the EIS. Chair of LTC places the working group's recommendation under the "silence procedure" for adoption by LTC as a whole.
- 2 September 2022: After passage of 3 days of the silence procedure with no objections received from LTC members, the working group's recommendation is adopted and communicated to the ISA Secretary-General and NORI.
- early September 2022: NORI proceeds with its collector test in its contract area of the eastern CCZ.
- mid September 2022: ISA issues a press release confirming the NORI collector test EIS was accepted for inclusion in the contractor's work program.

C. Procedural Problems with ISA's Handling of the NORI EIA and EIS

The manner in which the NORI test EIA/EIS was conducted, reviewed, and ultimately approved illustrates significant flaws in the current ISA process for exploration stage EIA/EIS that make it inadequate for mitigating environmental risks of DSM. Several ISA observers and even member states on the Council raised objections to the LTC's handling of the NORI EIS. Examples include the Statement of Belgium regarding LTC's Report on NORI Testing (10 11 22 / HV), expressing regret and concern that NORI's revised EIS submissions and LTC's recommendation that NORI was clear to proceed were not communicated to the Council.

Deep Sea Conservation Coalition sent a letter on 15 September 2022 to the ISA Secretary-General, President of the Council, and Chair of the LTC criticizing the NORI EIS review procedures and decision-making as rushed, secretive, and lacking accountability.

Major gaps in the ISA EIA process highlighted by the NORI collector test include:

1. Standards of Review of the contractor's EIS: Under the current *Recommendations for guidance of contractors* the LTC reviews an exploration contractor's EIS for "completeness, accuracy and statistical reliability" (para. 41.c). There is no explanation of those terms, which seem to be more administrative than substantive, or metrics by which to gauge them. To be useful and comport with the objectives of UNCLOS as well as norms of international environmental law, review of the contractor's EIS should be based on criteria regarding degree of environmental risk presented by the proposed activities, as well as measures to address or mitigate those risks to achieve effective protection of the marine environment.
2. Stakeholder consultation: The *Recommendations for guidance of contractors* mention but do not actually require consultation with stakeholders during the EIA process. Contractors are asked to provide information about any stakeholder consultations they have conducted and comments received, but no guidance is given as to what to do with the views expressed. A robust stakeholder consultative process that includes due consideration of views and responses is critical to identifying gaps and errors in the EIA that the contractor may have overlooked. Stakeholders should also have an opportunity to review and comment on the contractor's EIS when submitted to the ISA, as well as any revised versions that are re-submitted.
3. Timing: The period of review and deliberation by the LTC of NORI's revised EIA and supplemental information was exceedingly brief, and there was no time allowed for referral of the LTC working group's recommendation to the Council before a decision was made to move forward with approving the EIS. This gives the impression that the process was fast-tracked to accommodate the contractor's desired work timetable rather than carrying out a thorough, substantive and critical evaluation.
4. Chain of Decision-Making: While the LTC has primary responsibility for reviewing the EIS, it is a subsidiary body of the Council and should therefore report all of its findings and recommendations in the first instance to the Council. Instead, under current procedures the LTC makes recommendations regarding the EIS to the Secretary-General. But it is not clear what discretion, if any, the Secretary-General has other than accepting the LTC's recommendations. The line of authority and input as to final disposition of the contractor's EIS is thus very murky, and needs to be clarified if member states and the public are to have any confidence in the decision-making process.
5. Propriety of the Silence Procedure: The ISA "silence procedure" consists of written notice of an action to be taken with a short period of time to object or otherwise be deemed to assent. It is not appropriate for decisions of major importance such as whether EIS revisions and additional information submitted by NORI were sufficient to earn a passing grade. No explanation was given by the LTC for why only 3 days was allotted for response, or why a virtual meeting could not have been conducted. The ISA's rules of procedure should be

amended to strictly confine the use of the silent procedure to administrative matters or defined emergency situations.

6. Non-binding Status of Guidance/Recommendations: The *Recommendations for guidance of contractors* are non-binding. They should be transposed into binding rules, with appropriate revisions to address the gaps and ambiguities noted. This would have the beneficial effect of stabilizing and standardizing procedures and expectations regarding the contractor's EIA/EIS.

7. Transparency: The current EIS review process happens behind closed doors at the LTC with little in the way of contemporaneous disclosure to the public or even its parent body, the Council. The revised EIS and monitoring plan that the LTC considered and recommended to be included in the contractor's program of work was not published on the ISA's website. The LTC did not issue a report to the Council on its exchanges with NORI regarding additional information requests, and NORI's supplemental submissions in response, until 26 October 2022 – nearly 2 months after NORI began actual work on its collector test. (See *Report of the Chair of the Legal and Technical Commission on its Work at the 27th Session*, part 3. ISBA/27/C/16/Add.2) ISA Member States should insist that these omissions of communication are rectified. Transparency is the hallmark of an effective EIA/EIS process as it fosters trust in the system and leads to improved outcomes.

The foregoing issues and other procedural deficiencies in the exploration phase EIA/EIS require the attention of ISA Member States to address and correct before finalising the Mining Code. Otherwise, the same problems will likely be carried forward with respect to the EIA/EIS that contractors must conduct and prepare when submitting an application for exploitation, where the environmental stakes are even higher.

D. Specific Shortcomings of NORI's Collector Test EIS

The LTC itself noted that NORI's initial EIS lacked sufficient detail on the level of benthic sediment plume monitoring, pelagic sampling of biological impacts of plume discharge, monitoring survey design, timing and duration of noise impacts, and the extent of noise monitoring. Lack of complete environmental and biological baseline data and the absence of a detailed monitoring plan were major deficiencies noted by several commentators, including Deep Sea Conservation Coalition and MiningWatch Canada. Other significant shortcomings cited by independent reviewers include insufficient level of sediment plume modelling and monitoring, and inadequate sampling of biological impacts of plumes, noise, and vibration on pelagic as well as benthic species.

The lack of baseline data is particularly problematic as the NORI EIS described its collector test project as an opportunity to collect some of this critical data while the test work was ongoing. This conception not only contravenes the intent if not the letter of ISA's *Recommendations for guidance of contractors*, but also common EIA practice. The norm is that a complete biological inventory of the proposed project site is conducted before any of the proposed project activities begin, not during or after the project work is performed.

During the stakeholder feedback NORI conducted after submission of its initial EIS, the UK Government provided extensive comments on evidence and process gaps. These included the following elements that are part of ISA guidelines as well as necessary from a general EIA best-practice perspective:

- full geologic, chemical and biological characterisation of the seafloor
- proposed mitigation measures, and analysis of each, to address anticipated impacts
- full commentary from any stakeholder consultation conducted
- a complete comments log showing how previous stakeholder comments were addressed
- consideration of wider scale issues, e.g climate change
- consideration of spatial and temporal alternatives to the proposed impact scenarios, e.g. using different run times and speeds of the equipment, or changing the test area location.

In general, the NORI EIS as originally submitted fell far short of accomplishing the core activity of EIA: prediction, evaluation and mitigation of adverse effects on the environment. For instance, the NORI EIA focused on potential impacts to some marine species but not others, e.g. demersal and pelagic fish. It omitted consideration and evaluation of nodule removal itself and return of wastewater into the water column as sources of impact. In terms of mitigation discussion, the NORI EIS spoke only in terms of impacts being temporary, or noting simply that "area impacted will be negligible." These are conclusory and unrealistic assertions rather than data-supported measures for how impacts will actually be mitigated.

It should be noted that NORI's revised EIS submitted to the ISA in March 2022 did respond to some of the suggestions and criticisms made during the stakeholder consultation. The revised EIS is still not published on the ISA website, however, more than a year after its submission. It can be found at external webpages set up by Nauru and NORI (<https://www.eisconsultationnauruun.org/>) for a webinar presentation. Running to 681 pages of text and appendices, it is approximately 250 pages longer than the original version. Most of the extra pages appear to be parts of reports from scientific teams NORI contracted to perform baseline studies or run laboratory trials to estimate plume impacts. Also included in the revised EIS are partial results of public comments made on the initial EIS. According to NORI's own reporting of stakeholder consultation, it received 632 comments from 18 different sources including 3 countries, 5 NGOs and 10 individuals. NORI devised its own selection matrix as to which comments it felt warranted consideration and response, which came to 132 out of the 632 comments. In its Public Comment Summary, NORI noted: "After careful consideration of the novel, valid and relevant comments received, changes were made to the EIS report as appropriate."

The revised EIS, however, was never put forward for any follow-up stakeholder consultation. The only known commentary on the revised EIS that NORI acknowledged receipt of and action on came from the LTC, when it advised NORI in March 2022 that more information was required about monitoring measures. Specifically, the plan needed to include details concerning overall sampling design and "integrated environmental monitoring specifications that the Commission needed in order to adequately evaluate the accuracy and statistical

reliability of the environmental impact statement and the Monitoring Plan." (*Report of the Chair of the Legal and Technical Commission on its Work at the 27th Session*, part 2. ISBA//27/C/16/Add.1) To date, there are no publicly available documents revealing NORI's response to the LTC with supplemental information, which formed the basis of LTC's subsequent decision that the EIS was sufficient. As discussed above, the revised NORI EIS should have been vetted by entities other than the LTC, and ideally by independent scientific and legal experts.

Further shortcomings with respect to post-EIS monitoring and incident handling have recently come to light with respect to the conduct of NORI's collector equipment testing in the CCZ. NORI began its collector test in early September 2022. On 12 October 2022, during production ramp-up on NORI's vessel *Hidden Gem*, a water overflow incident occurred. According to the contractor, this happened when the airlift riser was switched on and a surge in the volume of water flow resulted which exceeded the buffer capacity of a separator unit at the top of the riser. Seawater containing sediment and fragments of nodules was discharged at a higher volume and rate than expected. This continued for several hours until vessel crew made equipment modifications and controlled the overflow.

The ISA was not informed of the NORI collector incident until 28 October 2022, when the contractor submitted a letter report and classified the incident as minor with no potential to cause serious harm to the marine environment. ISA's Compliance Assurance and Regulatory Management Unit (CARMU) insisted on making its own inspection, which under ISA guidelines it was obliged to do, but this did not happen until 18 November. Based on vessel records, the contractor's own summary of events, and independent review of the information received, CARMU concluded that the overflow incident was "likely" limited in volume and extent, and "likely" did not cause serious harm to the environment. However, all independent reviewers noted the lack of real-time onsite data collected by the contractor during and immediately after the incident. The CARMU inspectors also noted several other problems, all of which harken back to the criticisms of NORI's monitoring and emergency response plans raised during the EIS submissions: (1) lack of detail and robustness in NORI's applied risk management process; (2) failure by NORI to follow its own risk management procedures; (3) absence of a structured process for collecting and reporting incident data, which may have caused under-estimation of the amount of seawater and sediment discharged; and (4) failure to report the incident immediately. The NORI collector test incident raises serious concerns about the self-reporting nature of contractor mishaps in either the exploration or exploitation phase of DSM. If there are no strict safeguards in place for accident reporting, control and evaluation beyond what the contractor decides is appropriate, then there is essentially no independent or effective protection for the marine environment from the consequences of such accidents.

The NORI collector test EIA/EIS experience since 2021 offers an instructive preview of what Tonga could expect with regard to its sponsored areas in the CCZ. The numerous substantive criticisms of what NORI submitted and how the LTC handled it procedurally should be taken into account, and guide efforts by Tonga and its contractor to avoid the same. Admittedly there may not be a lot of incentive to do so seeing as NORI's exploration stage EIS was approved fairly quickly by the ISA despite the many issues noted. However, other ISA Members

States, observers, and the wider public are now on better notice and alert as to what should and should not happen with the contractor EIA/EIS process and outcomes. Additionally, Tonga can benefit from lessons learned in the NORI/ISA context when it comes to domestic application of EIA to DSM in its EEZ. Given the similar nature of activities and state of knowledge regarding DSM in the Area and within Tongan waters, it is likely many of the same EIA shortcomings (e.g. lack of baseline data, insufficient monitoring/incident response plans, inadequate process controls, limited stakeholder consultation) present in the NORI/ISA situation will arise also with respect to DSM contractors' EIA for operations in Tonga's EEZ.

V. Review of Tonga's national laws and international legal obligations concerning the ocean and deep sea mining

A. National Laws Pertaining to the Ocean and Of Relevance to DSM in Tongan Waters

The conduct of DSM within Tonga's sovereign domain is subject to both domestic laws and policies, and norms of international environmental law. In terms of domestic legislation, the analysis herein groups the Kingdom's laws into two categories: (1) those directly related to DSM, either explicitly or by cross-reference, and (2) those indirectly related. The latter category includes existing laws in Tonga that while not specifically mentioning seabed minerals or DSM, nonetheless reasonably affect, or are affected by, DSM activities.

LEGISLATION	DIRECT	INDIRECT
Constitution of Tonga		✓
Land Act		✓
Minerals Act	✓	
Petroleum Act		✓
Shipping Act		✓
Parks and Reserves Act		✓
Companies Act	✓	
Fisheries Management Act		✓
Ports Management Act		✓
Aquaculture Management Act		✓
Environmental Impact Assessment Act	✓	
Environmental Impact Assessment Regulations	✓	

Marine Pollution Prevention Act	✓	
Renewable Energy Act		✓
Maritime Zones Act	✓	
Whale Watching & Swimming Act and Regulations		✓
Environment Management Act	✓	
National Spatial Planning and Management Act		✓
Tonga Tourism Authority Act		✓
Seabed Minerals Act	✓	

A discussion of key provisions of the identified laws in the context of DSM follows. For each legislation the initial year of adoption is indicated in parentheses, and the content discussed is inclusive of all amendments to date that are currently in force. The provisions noted are those most likely implicated to some degree in considering, administering, managing and reviewing DSM and its effects in Tonga.

1. Constitution of Tonga (1875)

The founding governance document of the Kingdom as a nation guarantees the freedom of the people of Tonga and all who sojourn there forever (Clause 1). This fundamental human right underpins all that follows in the Constitution, with the overriding purpose being the preservation of the country and its resources for the Tongan people. Of importance to governance of any industry or activity affecting Tonga's resources is the declaration that there is one and the same law that applies to all people equally in Tonga (Clause 4), and the Government by and through the King must act on behalf and for the good of all persons equally and without partiality to any one person, family or class (Clause 17). The Constitution guarantees that the people of Tonga have a voice in the promulgation of laws enacted on their behalf, and affords all persons the right to petition the Crown or Legislative Assembly, and to meet and consult, regarding any matters they consider should become law as well as existing laws that should be repealed (Clause 8). As is commonly known, all land in Tonga is the property of the Crown and it is unlawful to sell any parcel of land whatsoever (Clause 104). Land may be leased and mortgaged pursuant to the Land Act for a maximum of 99 years (Clause 105). "Land" is not defined in the Constitution, but its meaning has been supplemented in other laws of the Kingdom to include areas below the sea.

2. Land Act (1927)

Section 3 reiterates the Constitution's provision that all "Land" of the Kingdom is the property of the Crown. The Minister of Lands represents the Crown in all matters concerning Tongan land; has the power to grant leases and sub-leases; acts as Register-General of all land titles;

and is charged with collecting rents for all allotments on Crown land as well as all leases, sub-leases, and permits (Section 19). The pertinence of the Land Act to ocean matters lies in the modern-day conception of Tongan "land" extending beyond shorelines, such that the ocean floor is likewise deemed property of the Crown and ostensibly within the purview of the Ministry of Lands.

3. Minerals Act (1949)

A recent amendment to the Minerals Act specifically expands the definition of "land" to include all "submerged lands lying within the maritime zones of the Kingdom" (Section 2). Of relevance to DSM, "to mine" includes disturbing, removing, carrying, washing, sifting, refining, crushing or any other movement of earth for the purpose of obtaining minerals (Section 2). All minerals on or under all lands are the property of the Crown, which retains full discretion at all times to search, extract and transport any minerals (Section 3).

Of particular interest with respect to DSM is Section 5, Exploration Licenses, which authorizes the granting of licenses by the Government affording the right to enter on lands and conduct geologic mineral exploration to a depth not exceeding 50 feet below surface. This may pose a conflict with the Seabed Minerals Act discussed below, since with the amended definition of "land" in the Minerals Act the depth prohibition of 50 feet below surface would seem to apply equally to all seafloor areas within Tonga's marine territorial limits.

Also significant is that the Minerals Act, Section 5, provides that holders of exploration licenses must pay reasonable compensation for all injury caused by the licensee or its agents, as well as keeping the Government indemnified at all times against any actions, claims or demands for costs by anyone affected in respect of injury caused. There is no definition or qualification of the term "injury" in the Act. An appropriate legal interpretation within the context and purposes of the Act could be quite broad as a result, and include environmental damages as well as harmful economic impacts on people's livelihoods.

4. Petroleum Mining Act (1969)

"Land" for purposes of the Petroleum Mining Act means any onshore areas and offshore land adjacent to and contiguous with onshore land (Section 2). While DSM is not likely to overlap with petroleum exploration and exploitation, the overall structure and provisions of this Act bears similarity to the Seabed Minerals Act in terms of recognizing the need for environmental restrictions placed on exploring, prospecting and mining activities.

5. Shipping Act (1973)

Application of the Shipping Act may well be in play with any ocean-based industry in Tongan waters. Section 7 defines "qualified person" as a Tongan subject or a corporation that is registered in Tonga under the Companies Act. "Eligible person" is an individual or corporation that maintains an office in Tonga with at least one staff being a Tongan subject 'accountable' to the Government on behalf of a ship charterer. An "approved person" is any non-Tongan individual or corporation approved by the Minister of Transport to register a ship on the Tongan Registry of Ships. Pursuant to Section 8, every ship greater than 15 m in length and owned by a Qualified Person must be registered; every bareboat charter of a ship greater

than 15 m in length chartered by an Eligible Person is "eligible," but not required, to be registered in Tonga; and every ship owned by an Approved Person "may" be registered.

Section 50 provides that owners, bareboat charterers and vessel operators are subject to any monetary penalty imposed by the Act or other law. Section 202 affords the Minister of Transport the authority to order an inquiry with regard to any ship registered in Tonga in the interest of orderly marine transport and commerce, and to take further appropriate action. It is likely that the Shipping Act will have some application to DSM vessels if they are part of the Tongan Registry of Ships or are operated by or on behalf of TOML in Tongan waters.

6. Parks and Reserves Act (1976)

This Act may well intersect with the Seabed Minerals Act and DSM activities in the planning and establishment of MPAs in any deepwater zones of Tonga's EEZ. The provision with greatest cross-over applicability is likely to be Section 9.

Section 2 provides that any "reserve" established under the Act includes marine reserves.

Section 3 notes that the decision-making body is the Parks and Reserves Authority, to be appointed by Cabinet. In the absence of any appointment by Cabinet, the Minister of Lands is the Authority. (It should be noted that the Minister of Lands also appears to be designated as the principal "Authority" under the Seabed Minerals Act.)

Section 4 - The Authority may, with consent of Cabinet, declare any area of land or sea to be a park or reserve. All parks and reserves whether terrestrial or oceanic are to be registered and recorded in accordance with the Land Act.

Sections 7 and 8 - Every park is to be administered for the benefit and enjoyment of the people of Tonga, and every reserve is to be administered for the protection and preservation of any valuable features. Entry to and activities within reserves are subject to conditions and restrictions set by regulations and/or the Authority.

***Section 9 - Every marine reserve must be administered for the protection and preservation of aquatic forms of life, and any organic or inorganic matter therein.**

Section 11 - Offences under the Act include willful damage, removal or interference with any feature, or depositing of rubbish in a park or reserve. The penalty for infringement upon conviction is a relatively meager fine, not to exceed \$500, or 3 months' imprisonment. Amending this section to substantially increase the level of penalties could be considered to better incentivize compliance with the Act.

7. Companies Act (1995) and Companies Amendment Act (2009)

The relevance of the Companies Act and its 2009 amendments to DSM and mineral activities in general in Tonga is direct and substantial. Both the Minerals Act and the Seabed Minerals Act require license applicants to be companies that are registered in Tonga. Under Section 13 of the Minerals Act, licensees must be a Tongan company, or a company registered in some part of the British Commonwealth – but under the revised Companies Act all foreign companies doing business in the Kingdom must register in Tonga as well. The Seabed Minerals Act requires that any applicant for a Sponsorship Certificate from Tonga for DSM in the Area must

be a corporation registered in Tonga. The significance of registration under the Companies Act is that it affords some measure of legal accountability to the Government and some degree of recourse to the Tongan judicial system with respect to foreign commercial actors.

8. Fisheries Management Act (2002)

The Fisheries Management Act is among the first ocean-related legislative measures in Tonga targeting environmental and natural resource risks. Developed as a regulatory response to the serious problem of overfishing, the Act charges the Minister of Fisheries with responsibility for conserving, managing, and sustainably developing fisheries resources in the Kingdom throughout "fisheries waters," which are defined in Section 2 as encompassing not only internal waters and Tonga's territorial sea zone but also "all such other waters over which Tonga claims sovereign rights or jurisdiction with respect to marine living resources."

Section 4 - In conducting fisheries management, the Minister is also charged with ensuring application of the *precautionary approach* at a standard comparable to criteria set out in the UN Fish Stocks Agreement. The precautionary approach or principle has come to be considered customary international law, and forms a core component of nearly all multilateral environmental treaties that have entered into force since the 1992 Rio Declaration. It posits that when there are threats of serious or irreversible damage, the lack of full scientific certainty shall not be used as a reason for delaying cost-effective measures to prevent environmental degradation.

The Act also references two other norms of international environmental law and policy, namely inter-generational equity (the need to conserve living resources of the sea and protect biodiversity for present and future generations) and ecosystem-based management. The overlap of this Act with DSM and potential for conflict is already becoming clear, as DSM prospecting activities have intruded on prime fishing areas in Tonga and a growing number of Tongan fishing operators are reporting concern over disturbance from DSM to local fish stocks and habitats.

Under Section 7 the CEO for Fisheries is required to prepare, review and implement plans for the conservation, management and sustainable use of fisheries in Tonga's fisheries waters. This formed a foundation for the *Tonga Deepwater Fishery Management Plan 2017-2019* and subsequent plans, which seek to safeguard Tonga's important snapper, sea bass and other deepwater fish populations. Since these species often congregate near seamounts at depths of 400 m or more, they are potentially at risk of impact from DSM operations to extract polymetallic sulphide deposits.

Section 13 - The Minister may issue orders to declare any area of the fisheries waters and corresponding subjacent area to be a SMA for purposes of coastal community management, application of conservation and management measures, subsistence fishing operations, or any other purpose. As with the Parks and Reserves Act's section 9, this provision establishing SMAs has the potential to collide with designation of DSM areas under the Seabed Minerals Act.

9. Ports Management Act (2003)

Tonga's port and harbour areas are not directly implicated with the conduct of DSM other than

situations where mining vessels may call at Tongan ports. In that instance, the anti-pollution provisions of the Ports Management Act would apply to any DSM vessels and operators while accessing any ports in the Kingdom.

"Ports" are defined as any harbour, wharf or other place declared to be a port under this Act or the Ports Authority Act (1998), as well as any Tongan ports that are yet to be declared (Section 2).

Section 42 dictates that no person or vessel is permitted to discharge any harmful substances into any port waters, or emit smoke or pollutants to the atmosphere at ports, or cause noise in the environment at or near ports in excess of levels permitted by international conventions or standards. "Harmful substance" is defined as any substance that is liable to create hazards to human health, harm marine life, or interfere with other legitimate uses of the sea (Section 42(5)).

10. Aquaculture Management Act (2003)

Aquaculture falls under the supervision of the Minister and Secretary for Fisheries under MAFFF (Section 2). The Minister has responsibility for the control and development of aquaculture on land or any marine areas, and may with the consent of Cabinet declare any area to be an aquaculture area (Sections 3,5). In addition, the Minister may declare buffer zones in the vicinity of designated aquaculture areas (Section 6). The Act prohibits anyone from engaging in any restricted activities within an aquaculture area or buffer zone without prior written consent of the Minister (Section 9), although the Act does not define what those "restricted activities" are.

Anyone wishing to conduct aquaculture operations must first obtain an aquaculture development license, and the license application must include an environment impact assessment report (Section 13(4)). Holders of aquaculture development licenses are required at all times to take all measures reasonably possible to avoid or minimise pollution or other environmental harm (Section 26), with penalties for violations including fines, cessation of operations or termination of the holder's license (Section 31).

This Act has the potential to intersect with DSM because it defines "marine area" broadly, including fisheries waters and subjacent areas (Section 2). "Fisheries Waters" are similarly defined broadly in the Fisheries Management Act as encompassing in practical terms all oceanic waters over which Tonga has sovereignty. Therefore, like fishing, aquaculture activities may extend anywhere in Tongan waters and present another area of overlap – and potential conflict with – DSM activities. In the event of any such conflict, it is unclear which Acts (Fisheries Management, Aquaculture Management, Seabed Minerals) would be predominant.

11. Environmental Impact Assessment Act (2003)

Other than the Seabed Minerals Act itself, this Act and its accompanying Regulations are the most directly on-point Tongan laws for the administration and control of DSM activities.

Section 2 defines "environmental impact assessment" as the study and evaluation of the potential effects that a development project may have on the environment. "Land" for

purposes of the Act includes all land above and under water. "Major project" means any development activity listed in the Schedule or as determined by the Minister for the Environment. "Development activity" means any new project, including extensions or additions to existing projects, undertaken in private or government sectors which requires any license or other government approval and falls under criteria established by regulations made pursuant to the Act. "Natural resources" include land, soil, minerals, water, air, plants, animals, and habitats.

*Section 6 mandates that **"all major projects shall be supported by an appropriate environmental impact assessment."** The Act does not specify what "appropriate" means, or set out any required elements.

Section 8 enumerates factors that the Minister must consider in determining an EIA. Of most relevance to DSM is factor **(e): whether any project is likely to result in or increase pollution, or have features, the environmental effects of which are not certain, and the potential impact of which warrants further investigation.**

Section 9 - Further to the scope of what constitutes a "major project" triggering the requirement of an EIA, if the Minister determines that any of the conditions set out in Section 8 is likely to occur to a significant degree, the project shall be deemed a major project.

Sections 12, 13, 14 - All major projects are to be referred to the Environmental Assessment Committee (EAC) for processing. The EAC consists of the CEO, Solicitor General, the CEO for Health, the CEO for Finance and National Planning, and a member appointed from the private sector.

*Section 15 - an EIA report must be submitted with any major project proposal.

*Section 16 - **No major project can proceed unless it has satisfied the appropriate EIA requirements under the Act.**

Sections 17, 18, 19 - Non-compliance with any environmental conditions required is an offence, liable for a fine not exceeding \$5,000 for individuals and \$10,000 for corporations, and/or 1 year's imprisonment. Modest penalties apply for supplying false information, and carrying out any project without approval.

Section 22 - For offences by corporations, its directors and officers may be charged and convicted jointly.

It is worthy of note that the Schedule for this Act, which lists Major Projects requiring an EIA, has been amended to include "mining, being an activity that disturbs the surface of the land in excess of one hectare." In conjunction with the definition of "land" as including all areas underwater, this amendment effectively brings DSM within the ambit of Major Projects requiring an EIA.

12. Environmental Impact Assessment Regulations (2010)

The Regulations are an important supplement to the EIA Act, providing much-needed procedural details. That being said, these Regulations are in need of review and expansion to address the many added complexities of DSM activities. Overall, the Regulations might also

benefit from adding specific details as to how the EIA Act can be more effectively, consistently, and practically implemented across the board in Tonga.

Section 6 requires that all Major Project assessments follow a process of notification, EIA, review, and final decision (with or without conditions).

Section 8 - Notification of proposed development activities is to be made to the Minister of the Environment, or if any license is to be issued by another Determining Authority, to that body with referral as necessary to the Minister of Environment.

Section 9 - Notification must include information necessary for the Minister acting with the advice of the Secretariat of the EAC "to determine whether any environmental impact assessment is necessary." However, without further delineation of standards of review this provision leaves the important decision whether EIA should proceed open to arbitrary discretion, with the risk that too many projects may go without any EIA.

Section 11 - If the Minister or other Determining Authority has not advised the project proponent within 30 days of notification that an EIA is required (or that additional information is needed), then the proponent may assume no EIA is required, and project activity may commence. This seems to be far too short of a wait period. For complex projects such as DSM, 30 days will likely not be adequate time to make an informed decision regarding EIA requirements. The contractor should not be permitted to simply proceed with project activity because the responsible Ministry or Authority has not completed its review and issued a decision.

Section 12 - Factors that must be considered by the Minister and EAC Secretariat when evaluating likely impact of activity on the environment include effects on ecosystems, endangerment of any species, any long-term effects on the environment, any curtailing of beneficial uses, and any pollution.

Section 15 - A Major Project EIA shall involve a "thorough assessment" of environmental impacts and be determined by the appropriate Determining Authority with the recommendations of the EAC. As with previously noted provisions, the term "thorough assessment" needs to be defined and should include specific standard elements.

Section 16 - An EIA for a Major Project must follow Form 3 set out in Schedule 1 of the Act, and comprise a written Environmental Study which, among other tasks, must "assess the way in which the project accords with the current Government of Tonga Development Plan, environmental policy, and any international environmental policies, agreements, conventions, and treaties to which Tonga is, or is considering becoming, a signatory." This is an important and commendable list of mandatory items to take into account.

Section 17 requires a project proponent to seek guidance of the EAC Secretariat in determining how much assessment must be done, and such advice is final. This provision warrants substantial revision, as it is unclear how in practice this works, or its benefit. At present there appear to be no procedures described or criteria listed for ascertaining in any given case "how much" assessment is appropriate.

Section 19 contemplates that the EAC Secretariat will prepare guidelines for Major Project

assessment, but there does not appear to be any indication that has happened yet.

Section 20 - The EAC is charged with making recommendations to the appropriate Determining Authority after reviewing the application, EIA, Secretariat's report, and any other relevant reports.

Sections 23, 25, 29 - These sections set out in general terms the procedural progression of EIA review. The EAC must prepare an Assessment Review Report of its consideration of the EIA study. Depending on the results of the Review Report, the Minister notifies the project proponent or appropriate Determining Authority to certify completion of the EIA process. Certification can be cancelled if new or previously undisclosed information of ecological significance comes to light. The EAC may determine whether the development activity should cease and/or the project should be cancelled and environmental restoration sought.

Schedule 1 includes forms for determination of category of assessment, and a list of general topics or questions the EIA study for a Major Project should cover. This list is a good start for basic EIA elements, but could be improved by including more detailed checklists and matrices tailored to the nature and complexity of specific projects.

Schedule 2 sets out applicable fees. Of particular note is that upon final scoping of a project proposal, a final fee of 1% of the capital cost of the proposed development is required. It is not specified where such fees go and for what purpose. If the 1% assessment goes toward funding the Ministry's EIA oversight, the Schedule should so state. There should also be an audit mechanism added to the Regulations for tracking collection of the 1% assessment, and to ensure and report publicly on project developers' compliance with this requirement.

13. Marine Pollution Prevention Act (2005)

This Act explicitly incorporates a number of international maritime conventions and protocols as having the force of law in Tonga, including the London Convention and Protocol, MARPOL, the International Oil Pollution Compensation Fund Convention, the International Convention on Civil Liability for Oil Pollution Damage, the HNS Convention, and the SPREP Convention and its protocols.

Section 1 - The Act applies to all vessels in Tongan waters; all Tongan vessels wherever they are; and all potential sources of marine pollution incidents in Tongan territory.

Section 2 - "Discharge" means any release into the sea from a vessel, platform or place on land of pollutants, harmful substances or effluents containing such pollutants or substances. "Release" includes any escape, disposal, spilling, leaking, pumping, emitting or emptying (but excludes 'dumping' within the meaning of the London Convention, and the release of substances for purposes of scientific research regarding pollution control).

*Section 5 - "Pollutants" include, in addition to the MARPOL categories of contaminants, "any other substance that when added to any waters has the effect of contaminating those waters so as to make them unclean, noxious or impure or detrimental to the health, safety or welfare of any person, or poisonous or harmful to marine life." Discharge of any pollutants from a vessel, platform or other place into Tongan waters is prohibited. Of note with regard to DSM, Section 5(2)(e) provides that if such discharge occurs as a result of operations for

exploration of the seabed or exploitation of natural resources from the seabed or subsoil, the vessel owner and master/person in charge is deemed to commit an offence under the Act punishable by a fine up to \$250,000 or 10 years imprisonment, and in addition may be held liable to pay for the total costs of any cleanup operation necessary to restore the environment to its previous condition.

Section 14 - The Minister responsible for marine transport and ports may appoint properly trained and qualified persons as Inspectors to report to the CEO (designated in Section 2 as the Government CEO responsible for marine ports) whether the Act's provisions have been complied with, and what measures have been taken to prevent the discharge of pollutants.

Section 16 - The Minister is to establish a National Marine Pollution Committee to advise on matters including response to specific marine pollution incidents, and the assessment of Marine Pollution Levies under Section 25.

Sections 51, 52 and 53 - These provisions pertain to "dumping," defined in Section 2 as any deliberate disposal into the sea of wastes or other matter from vessels, platforms or other man-made structures. They are somewhat confusing as regards consistency with principles and provisions of the London Convention and 1996 Protocol, which the Act specifically invokes as applicable to Tonga. In general the dumping of any wastes or other matter is prohibited, but the prohibition does not apply to "dredged material" or "inert, inorganic geologic material" Any person or entity seeking to dump matter that is not prohibited must apply for a permit to do so. The CEO in assessing a permit application shall conduct an assessment of alternatives to dumping, taking into account several factors. One of the listed factors that clearly implicates DSM is characteristics of the proposed dump site. These characteristics include chemical and biological characteristics of the water column and seabed, and possible effects of the proposed dumping on marine life and on "other uses of the sea including interference with fishing or navigation through deposit of waste or solid objects on the sea floor, and protection of areas of special importance for scientific or conservation purposes."

14. Renewable Energy Act (2008)

This Act establishes a Renewable Energy Authority in the Kingdom (Sections 2 and 7), although without specifying who fulfills that role. The significance of this Act in relation to DSM activities is that the Renewable Energy Authority may enter into concession agreements permitting persons or entities to produce, store, and distribute energy derived from any renewable source anywhere in Tonga (Section 14). Renewable energy sources identified in the Act include wave energy, wind, tidal, and ocean thermal energy conversion (Section 4(2)). Operations seeking to develop these energy sources could potentially operate anywhere in Tongan waters, and thus the potential for overlap and conflict with DSM operations cannot be discounted.

15. Maritime Zones Act (2009)

This Act replaces the former Continental Shelf Act and the former Territorial Sea and Exclusive Economic Zone Act, both of which were repealed in 2009.

"Maritime zones" of Tonga are defined as encompassing all archipelagic waters and contiguous

zones, which include Tonga's EEZ, continental shelf, historic waters, internal waters, maritime cultural areas, and territorial sea (Section 2). Of significance to DSM and any oceanic industries in Tonga's maritime zones, "natural resources" are defined as including "mineral and other non-living resources of the seabed and subsoil, and living organisms belonging to sedentary species."

The Act acknowledges that UNCLOS and any protocols, annexes, and appendices are incorporated into and have the force of law in Tonga. The Kingdom declares itself to be an archipelagic State within the meaning of UNCLOS (Section 3). Schedules 1 through 4 of this Act recite by way of incorporation UNCLOS Arts. 2-33 and 46-85, defining all of the maritime zones and their boundaries.

*Section 13 is a key provision of the Act as it declares Tonga has sovereign rights in its EEZ pursuant to UNCLOS Art. 56 and other applicable international law rules to: (1) explore and exploit, conserve and manage natural resources; (2) exercise jurisdiction in the EEZ in accordance with international law, and respecting protection and preservation of the marine environment; and (3) act with respect to the seabed and subsoil in accordance with UNCLOS and other applicable international law.

*Section 14(3) - In exercising its rights and performing duties in the EEZ, Tonga shall have due regard to the rights and duties of other States, and act in a manner compatible with international law.

Sections 15,16,17 - Tonga's continental shelf comprises the seabed and subsoil of the submarine area that extends beyond the territorial sea. Tonga may exercise exclusive sovereign rights over its continental shelf with regard to natural resources in accordance and compliance with UNCLOS Art. 77. All laws in force in Tonga extend to its continental shelf to the extent recognized under international law.

*Section 22 - Government can make regulations providing authorisation of persons to explore for non-living natural resources in the exclusive economic zone or continental shelf, or to recover any such resources, in accordance with terms and conditions set by the Prime Minister with the consent of Cabinet. This provision is mostly subsumed now by the Seabed Minerals Act, but it is noteworthy that it includes a curb on Government's power to authorise DSM in Section 22(m): **"notwithstanding any other enactment, [Government is obligated] to protect and preserve the marine environment and to prevent, reduce and control pollution of the marine environment...from or in connection with seabed activities subject to its jurisdiction and from artificial islands, installations and structures under its jurisdiction, pursuant to articles 60 and 80 of UNCLOS."**

16. **Whale Watching and Swimming Act (2009) and Regulations (2013)**

The Act itself is short on specifics other than basic licensing requirements for operators of whale watching and whale swimming businesses. The 2013 regulations supporting the Act, however, provide more details of not only commercial licensing but also general conduct and restrictions pertaining to all vessels and persons in the vicinity of whales. There is nothing to preclude application of the provisions of this Act to DSM operations occurring anywhere in Tongan waters.

Section 4 - The purpose of the regulations includes "protection, conservation, and management of whales by regulating human contact or behaviour with whales either by service providers or other persons, in order to prevent adverse effects on and interference with whales." The fairly broad scope of this provision opens the possibility that enforcement of it could be invoked against DSM contractors if their operations were found to have negative effects on whale populations in Tonga.

Similar to Section 4, the conditions outlined for governing interactions with whales in Section 9 and 10 would, on their face, apply to DSM contractors and their employees. These conditions apply to any person, and include using best endeavours to operate vessels and aircraft so as not to disrupt the normal movement or behaviour of any whale; refraining from causing any whale to become separated from a group of whales, or cause any members of a whale pod to be scattered; minimising vessel speed within 300 m of any whale; and refraining from making any loud or disturbing noise near whales.

17. **Environment Management Act (2010)**

This Act established the Ministry of Environment and Climate Change, with the mission of protecting and managing Tonga's environment in general while also promoting sustainable development. It encompasses "natural resources," which are defined as including minerals, water, all plants and animals, and most notably in the context of DSM, animal and plant habitats (Section 2).

*Section 4 - A main objective of the Act is to enhance Government coordination in regard to all environmental decision-making. This includes "meaningful public involvement," and observance of Tonga's international obligations with respect to environmental protection. A critically important tool for doing so is "assessment of the impacts on the environment of any activity likely to affect it, prior to a proposed activity taking place (Section 4(e), emphasis added).

Section 8 - Functions of the Ministry of Environment include facilitating measures necessary for proper observance of Tonga's obligations under international and regional conventions, and ensuring that all Tongan laws pertaining to management and protection of the environment are observed, implemented and enforced. To accomplish that, the Ministry may undertake monitoring of environmental impacts in Tonga at the request of Government (Section 14).

Section 15 - Any person designated as an Environment Officer pursuant to the Act can issue a Precautionary Notice when he/she suspects an activity may be impacting the environment.

Section 16 - A notice to cease activity may be issued by the Ministry of Environment CEO when an act occurs involving "immediate threat or risk to the environment."

Section 18 - Administrative penalties for offences under the Act are rather low, and are not likely to act as much of a deterrent to conduct with a harmful effect. However, the Act does at least provide for augmentation of assessed penalties by a Court, which may order any person convicted of an offence to reinstate the environment to its prior condition, pay Government any sum representing the cost of reinstating the environment to its prior condition, and pay compensation to Government or any person affected in respect of the

damage caused to the environment. In addition, Section 18 provides that any company officers, directors and agents contributing to a company's environmental offences under the Act are also subject to conviction and liability.

The Schedule to this Act lists international and regional conventions to which it relates, but the list is not complete. It omits for example, the Noumea/SPREP Convention, which Tonga has not formally ratified but to which it adheres.

18. National Spatial Planning and Management Act (2012)

The objectives of this Act, outlined in Section 4, are important to note because they will likely mirror the objectives of any forthcoming Ocean Management Act: (i) provide for fair and orderly sustainable use, development and management of land including protection of natural resources and maintenance of ecological processes and genetic diversity; (ii) integrate land use planning with environmental, social, cultural, economic, and conservation policies at all government and societal levels; (iii) balance present and future interests of all Tongans; and (iv) increase public participation in planning and assessment. It is anticipated that any new Ocean Management or Marine Spatial Planning Act will have to reference DSM and coordination with the Seabed Minerals Act as well as the EIA Act and Regulations.

While primary responsibilities under the Act fall to the MLNR, the Act establishes a National Spatial Planning Authority consisting of the Minister of Lands and an Advisory Committee, and an Agency charged with overseeing spatial management plans (Sections 2,3). Consultation with stakeholders is required where possible, and the Agency must provide all relevant information regarding the environment of the planning area (Section 13).

Another entity created under the Act is a Planning Tribunal, consisting of a President and other members appointed by Government. Its function is to review decisions of the Authority on draft spatial plans or development applications, and it may exercise certain adjudicatory powers in decision-making (Sections 55-61).

Pursuant to Section 32, where development consent is required by any spatial plan or regulations, the developer must submit an application to the Authority and include an EIA "if required by any other applicable laws." This provision is weaker than it should be, since development projects will in most instances constitute "Major Projects" within the meaning of the EIA Act. It would be clearer and simpler to state definitively that development consent will not be given absent completion of an EIA compliant with all applicable laws.

19. Tonga Tourism Authority Act (2012)

The objectives of this Act highlight the ambition to "enhance stronger tourism growth that facilitates sustainable economic, social/cultural, and environmental development that would deliver benefits for all Tongans" (Section 3). The interconnections between tourism and a healthy marine environment are reflected in Section 4, Guiding Principles: "environmental impacts from tourism developments are to be minimised, and due regulatory processes are to be applied to ensure the protection and conservation of biodiversity, water resources and terrestrial and marine environments."

Section 5 - "In achieving the objectives of this Act, the Authority shall... assist other

Government ministries and departments in relation to meeting their obligations relating to the development of the tourism sector, promoting the growth of tourism and development of the natural resources of Tonga in ways that are consistent with the objects of this Act."

20. Seabed Minerals Act (2014)

As this Act is Tonga's key legislation regarding DSM, it is worth noting the full title: "An Act to Provide for the Management of the Kingdom's Seabed Minerals, and the Regulation of Exploration and Mining Activities within the Kingdom's Jurisdiction or Under the Kingdom's Control Outside of National Jurisdiction, in Line with the Kingdom's Responsibilities Under International Law."

The SPC-EU Deep Sea Minerals Project assisted 14 Pacific Island countries with preparing their national DSM legislation. Tonga was among them, and the Seabed Minerals Act closely resembles model legislation developed by the SPC-EU project and drafted by EU legal specialists. Given that Tonga has no significant experience with offshore mining or managing resource revenue of this kind, it makes sense to borrow from other regulatory models. The downside, however, is that many parts of the Act may not be as easily implemented or enforced in the context of Tonga's political, legal, economic and societal frameworks as in other countries.

The following provisions of the Act highlight its main features and strengths as well as its weaknesses:

Section 2 sets out key terms and definitions. The Act uses the definition of "the Area" from Art.1(1) of UNCLOS. "EIA Act" refers to Tonga's Environmental Impact Assessment Act of 2003, including amendments and regulations. "Seabed Minerals Activities" are operations for prospecting under a Prospecting Permit, exploration under an Exploration License, mining under a Mining License of seabed minerals within Tonga's national jurisdiction, or in the Area under Tonga's sponsorship in accordance with this Act. "Incident" has several meanings, and includes seabed mineral activities or ancillary operations that result in "Serious Harm" to the marine environment, or pollution of the marine environment in breach of Tonga's obligations under international law. "Serious Harm" is defined as "any effect that represents a significant adverse change that cannot be remedied within a reasonable timeframe." "Sponsored Party" refers to the holder of a current Sponsorship Certificate issued by the Government pursuant to the Act. "Title" means rights conferred by a Prospecting Permit, License, or Sponsorship Certificate. "Title Holder" is a Prospector, Licensee or Sponsored Party. "Authority" means the Tonga Seabed Minerals Authority established by Section 9 of the Act.

Section 2(2) directs that the Act be interpreted and applied in a manner consistent with Tonga's obligations under UNCLOS and other international instruments, specifically:

- (a) protect and preserve the Marine Environment and rare or fragile ecosystems and habitats;
- (b) prevent, reduce and control pollution from seabed activities, or caused by ships or by dumping of waste and other matter at sea;
- (c) prevent trans-boundary harm;

- (d) conserve biodiversity;
- (e) apply the Precautionary Approach;
- (f) employ best environmental practice;
- (g) conduct prior Environmental Impact Assessment of activities likely to cause Serious Harm to the Marine Environment; and
- (h) take measures for ensuring safety at sea.

Section 2(3) - The Authority in making decisions on granting of permits and licences shall have regard for the duties listed in sub-section (2) above and as well as the importance of the Kingdom's sustainable economic development, and shall consider any representations made to it concerning such matters.

*Section 5 - The Act's objective is to ensure that seabed mineral activities within Tonga's national jurisdiction or under its sponsorship in the Area are conducted pursuant to internationally accepted rules, standards, and practices, including Tonga's responsibilities under UNCLOS "and specifically the Kingdom's duty to protect and preserve the Marine Environment." It also aims to establish a legal framework for development of Tonga's seabed minerals, and "efficient control of" sponsored contractors undertaking DSM in the Area. Promoting transparent decision-making in the management of Tonga's seabed minerals is also mentioned in this section, but without explaining what that means in practice.

Section 6(e) - The EIA Act and its regulations apply to seabed mineral activities.

*Section 8(b)(vi) - The Act "recognises" that as a **Sponsoring State Tonga has a duty to "effectively control any person engaged in" DSM in the Area under Tongan sponsorship to ensure compliance with UNCLOS and ISA rules.** However, the Act does not describe what effective control entails or how it is to be accomplished.

Section 12 lists 20 functions of the Authority, including review of EIA for seabed minerals activities as required under this Act and the EIA Act. The list is fairly comprehensive and commendable in terms of guiding the Act's implementation. However the execution of all these functions in practice may be difficult to achieve absent availability of considerable funding and human resources. (It should be noted that the "Authority" is not explicitly designated other than to say, in section 9 that it shall be "the Ministry responsible for the Kingdom's Seabed Minerals." Presumably the Authority is MLNR by default.

Sections 15,16 - the Authority can issue orders to obtain information and penalise failure to comply with a fine of up to \$100,000, or if false or misleading information is supplied the fine increases to \$150,000.

Section 18 - The Authority can also issue enforcement orders, and make decisions on prospecting permits, licenses, sponsorship certificates, and any variation, suspension or revocation of permits, licenses or sponsorship.

*Section 19 - The Authority is responsible for monitoring and verifying Title Holders' performance and adherence to this Act and any subsequent regulations, the terms and

conditions of the Title, and any conditions arising from an EIA.

Section 21 - The Authority "shall seek" expert advice on administration of Tonga's seabed minerals as to legal, scientific and technical matters, and may appoint qualified Inspectors to assist with monitoring and compliance functions.

Section 22 - Inspectors have 8 enumerated powers for conducting compliance checks on mining contractors, including boarding DSM vessels to conduct investigations. However, Inspectors are also obligated under this section to avoid spending "excessive time" on a contractor's vessel or disrupting the contractor's seabed mineral activities.

Sections 23, 24, 25, 26 - The Authority can issue Enforcement Orders. Failure to comply subjects the offender to fines of up to \$250,000, and can result in suspension or revocation of Title.

*Sections 31,32 - Areas available for DSM within Tonga's national jurisdiction are those portions of Tonga's continental shelf so designated for "release" for seabed mineral activities by reference to geographical coordinates. These areas cannot include "Reserved Areas," which are any areas declared to be a Marine Reserve under Tonga's Parks and Reserves Act, or a "Protected Area" established by Tonga within the meaning of the CBD.

Section 37 - The title of this section is "Prohibited Activities," but it actually only lists 1 such activity, which is engaging in any DSM without authorisation under a valid Title issued under the Act.

Section 38 lists several specific laws and provisions anyone conducting DSM in Tongan waters under a registered Title must adhere to. The list includes the Marine Pollution Prevention Act, the EIA Act and Regulations, the Environmental Management Act, the terms and conditions of the Title, any conditions imposed through the EIA review process, and the provisions of this Act and its regulations. Any Sponsored Party engaging in DSM in the Area must adhere to the rules and requirements of the ISA, this Act and its regulations, and the terms of the Sponsorship Certificate.

*Section 39 - Other duties of Title Holders include compliance with all other applicable laws of Tonga, employment of best environmental practices pursuant to international standards, application of the precautionary approach, avoidance or control of any pollution or waste material, and maintenance of adequate insurance coverage for all risks and costs of damages that may be caused by DSM. In addition, where seabed mineral activities or ancillary operations would constitute a Major Project for purposes of the EIA Act, the Title Holder must conduct an EIA and refrain from proceeding with licensed activities unless and until approval under the EIA Act has been granted. (This provision seems out of sync with the EIA Act, which has been amended to include in essence all mining activities in its Schedule of Major Projects.) A key duty, in addition to the EIA requirement, is that licensed contractors are not to proceed with DSM activities without prior written consent from the Authority if evidence arises demonstrating a likelihood of Serious Harm to the marine environment that was not anticipated in any prior EIA. This Section also imposes a duty on contractors post-DSM operations to ensure and verify rehabilitation of the Title area. That of course presupposes full rehabilitation of the affected environment would be possible.

*Section 42 - The application for a prospecting permit only requires a "preliminary assessment of likely impact" on the marine environment. There is no specification of what a preliminary assessment entails, or who is responsible for performing it.

*Section 48 - In somewhat of a contradiction with Section 42, under this provision Prospectors are required to adhere to the EIA Act, and abstain from proceeding if evidence exists that doing so would likely cause Serious Harm. The confusion about application of EIA rules to DSM prospectors is reflected in the fact that none of the permitted DSM prospecting operations in Tonga since 2008 appear to have been required to conduct an EIA prior to commencement.

*Section 49 - In terms of licensing of DSM within Tonga's national jurisdiction, exploration and mining can be conducted in Tonga's territorial seas, EEZ, and continental shelf by any person holding a valid license. This clause appears to contradict Section 31, which designates only Tonga's continental shelf for DSM activities. It will become important to clarify and resolve this discrepancy should consideration of DSM activities proceed as there are already competing interests for use and conservation of natural resources in Tonga's territorial seas and EEZ. It should be kept in mind that 'continental shelf' is not synonymous with EEZ. Continental shelf is defined within the Act as meaning Tonga's seabed and subsoil as defined under UNCLOS Art. 76, which says: "The continental shelf of a coastal State comprises the seabed and subsoil of the submarine areas that extend beyond its territorial sea throughout the natural prolongation of its land territory to the outer edge of the continental margin, or to a distance of 200 nautical miles from the baselines from which the breadth of the territorial sea is measured where the outer edge of the continental margin does not extend up to that distance...The continental margin comprises the submerged prolongation of the land mass of the coastal State, and consists of the seabed and subsoil of the shelf, the slope and the rise. It does not include the deep ocean floor with its oceanic ridges or the subsoil thereof."

Section 51 - 12 required elements are listed regarding the content of license applications, including "preliminary assessment" of possible impacts on the environment of the proposed activities, and a "proposal for oceanographic and environmental baseline studies and mitigation strategies" so as to protect the marine environment and prevent pollution. Another required element is a public engagement and information plan. There are no details, however, on what either the preliminary assessment or proposal for baseline studies and mitigation must include.

*Section 57 - **Before the Authority decides a licence application, it must make information about the application available to the Tongan public and provide opportunities for the public to submit information "that will be taken into account" by the Authority in the decision-making process.** Cabinet consent is required for issuance of a valid license (Section 54).

*Section 62 - If a licence application is granted, the terms of the licence may require an EIA "or other studies" to be conducted and reported by the Licensee before particular seabed mineral activities can commence. This provision is confusing and problematic, as it conflicts with the EIA Act and completely inverts the standard best-practices sequencing for EIA. An EIA in the licensing phase (a) should be mandatory in all instances, and (b) needs to be done

before the licence application is decided, since the outcome of the EIA may result in denial of the application.

Section 70 - The duties of a DSM licensee operating within Tongan waters include the obligation to indemnify Tonga against all actions, proceedings, costs, charges, claims and demands made or brought by any 3rd party in relation to its DSM. The Licensee is also liable for actual amounts of any compensation for damage to the marine environment arising from its failure to comply with the Act, its regulations, and the licence, as well as any wrongful acts or omissions of its personnel, agents or others acting under its direction.

***Section 73 - The Authority may suspend or revoke any exploration or mining licence to "avoid a conflict with any obligation of the Kingdom arising out of any international agreement or instrument in force for the Kingdom."** This provision may be pivotal if it becomes necessary or desirable for Tonga to extricate itself from any situation where DSM activities or impacts run afoul of Tonga's responsibilities under other treaty regimes, for example CBD and the new BBNJ treaty. Sec. 73(1)(k) also provides an exit from a licence situation where the seabed mineral activities in Cabinet's view constitute an unacceptable risk to Tonga, **"or are clearly no longer in the interests of the Kingdom due to changes in the circumstances pertaining to the Activities."** This includes changes in what is considered best environmental practice pertaining to DSM.

Part 7 of the Act concerns Sponsorship of DSM in the Area. Section 78 sets out certain Prerequisite Conditions to issuance of a Sponsorship Certificate by Tonga. Among these conditions are that the contractor/applicant: (a) is a body corporate registered in Tonga; (b) has sufficient financial and technical resources and capability to properly perform DSM in compliance with ISA rules; and (c) has paid all applicable fees and meets prescribed qualification criteria.

Section 79 - Beyond the prerequisite conditions described in Section 78, there are 17 additional items to be included in any application for sponsorship made to the Authority. One of these is that the applicant must certify that it has sufficient financial resources "to cover damage that may be caused by the seabed mining activities or the cost of responding to an Incident." Another required item is that the proposed DSM activities are compatible with applicable national and international laws, including those that are focused on protection and preservation of the marine environment.

***Section 80 - Among terms of any Sponsorship Certificate issued by Tonga is a "declaration that the Kingdom assumes responsibility in accordance with art. 139, 153(4) and Annex III, art. 4(4) of UNCLOS."** As discussed below, these provisions of UNCLOS require that Tonga as a Sponsoring State of DSM in the Area exercise due diligence in overseeing the work of its sponsored contractor to ensure compliance with all applicable laws protecting the marine environment. Failure to exercise appropriate due diligence may result in Tonga being held liable for damage caused by its sponsored contractor to the environment.

***Section 81 - As with licensing in the domestic context, a Sponsorship Certificate requires Cabinet consent. Section 81(2) provides that Cabinet may request an opinion from the Attorney General's Office, before granting consent, as to whether the Certificate complies**

with the provisions of this Act, the laws of Tonga, and Tonga's obligations under international law. This provision could be greatly strengthened by changing "may" to "shall" so as to make legal review mandatory.

Section 82 - Sponsorship Agreements: The Authority may enter into written agreements with a Sponsored Party to establish additional terms and conditions, so long as the terms do not lead to a contravention by Tonga or the Sponsored Party of ISA Rules or this Act, nor lead to inconsistencies with any international law obligations of Tonga.

*Section 84 - This section and the next, section 85, are the heart of the Act's liability and responsibility provisions with respect to Tonga and its sponsored contractors for DSM activities in the Area. The principal language is quoted below in full, with key clauses in bold:

"(1) The Sponsored Party shall be responsible for the performance of all Seabed Mineral Activities carried out within the Contract Area, and their compliance with the Rules of the ISA; and **will be liable for the actual amount of any compensation or damage or penalties arising out of its failure so to comply, or out of any wrongful acts or omissions** and those of its employees, officers, subcontractors, and agents in the conduct of the Seabed Mineral Activities."

"(2) Any obligations which are to be observed and performed by the Sponsored Party shall at any time at which the Sponsored Party is more than one person be joint and several obligations."

"(3) A Sponsored Party shall at all times keep the Kingdom **indemnified against all actions, proceedings, costs, charges, claims and demands which may be made or brought by any third party in relation to its Seabed Mineral Activities.**"

*Section 85 - The most critical of the Crown Responsibilities listed in this section with far-reaching effects is subpart (c), obligating Tonga to "**take all appropriate means to exercise its effective control over Sponsored Parties or, seeking to ensure that their Seabed Mineral Activities are carried out in conformity with the UN Convention on the Law of the Sea, the Rules of the ISA and other requirements and standards established by general principles of international law.**" Significant questions arise from this language. What are "all appropriate means"? What are the indicia of "effective control"? How in practice will this work? It is doubtful that the qualification "*or seeking to ensure*" will suffice under international law to discharge Tonga's responsibilities. Pursuant to the 2011 Advisory Opinion of ITLOS on Sponsoring State responsibilities regarding DSM in the Area, Tonga has a duty to ensure compliance of its contractor, not merely seek to do so.

Also problematic is Section 85(d), providing that the Crown will not impose "unnecessary, disproportionate, or duplicate regulatory burden" on the contractors. It is not clear who decides what regulations may be unnecessary or disproportionate, and under what criteria.

Section 85(e), which requires the Crown to "promote the application of the Precautionary Approach," is helpful and reflects a general trend globally to incorporate this important principle of customary international law in domestic legislation concerning the environment. But "promote" is too vague of a term to have much or any legal effect. This provision could

be strengthened by deleting "promote" and instead stating simply that Government must apply the Precautionary Approach.

*Section 88 - The conditions specified in this section for variation, suspension, and revocation of a Sponsorship Certificate are similar to those pertaining to domestic licences in Section 73. Of particular note is subsection (c): **"...where the variation or revocation is in the reasonable opinion of the Authority necessary to prevent serious risk"** to human health or safety, or the marine environment, or to avoid conflict with any binding obligations of Tonga under international agreements. If the Authority decides to revoke a Sponsorship Certificate, it must give the Sponsored Party at least 6 months' notice before the revocation goes into effect. This reflects ISA rules on when revocation of sponsorship becomes effective administratively at the ISA.

Section 91 - Fiscal arrangements: A Contractor Licensee or Sponsored Party must pay an annual administration fee to the Authority, as well as commercial recovery payment for mining and seabed mineral royalties.

Section 92 - Money payable per section 91 is considered a debt due to Government and is recoverable in the Supreme Court of Tonga or other court of competent jurisdiction.

Section 93 - The Authority may require a security deposit before granting Title as a performance guarantee, in an amount to be determined by the Authority with Cabinet's consent.

*Section 94 - A Seabed Minerals Fund is to be established to ensure prudent management of seabed mineral resources "for the benefit of both current and future generations." Since there are no other details regarding this Fund in the Act, it will be essential to enact comprehensive regulations outlining how the Fund will be organised and managed, as well as putting in place stringent financial controls.

Section 102 - The terms of any environmental conditions stemming from an EIA conducted pursuant to the EIA Act shall be adopted as part of the terms and conditions of any Title.

Section 109 - A Title Holder shall conduct DSM so as not to interfere with navigation, fishing, submarine cabling, marine research, or conservation of marine and seabed resources. Any "interference" must not be greater than necessary for reasonable exercise of its rights and duties. An offence under this Section is subject to a fine not exceeding \$250,000, and strict liability applies. The imposition of strict liability on the contractor in this regard is interesting and potentially useful, although likely difficult to enforce given the ambiguities in determining what amounts to unreasonable interference in a particular situation.

Section 122 - This section provides that any dispute between Tonga and another State regarding DSM is to be resolved pursuant to the dispute resolution provisions of UNCLOS. Disputes between Tonga and Title Holders regarding administration of this Act are to be handled (a) by the parties' attempt to reach mutual agreement through mediation, or failing such, (b) by application to the Supreme Court of Tonga.

*Section 123 - This provision grants the Minister with consent of Cabinet authority to make regulations to, among other things, "classify particular aspects of seabed mining activities as a

Major Project under the EIA Act ... or absolutely prohibited due to unacceptable anticipated harm to the Marine Environment." The Regulations are also anticipated to set out "requisite content, format, consultation, independent verification and timeframe for an EIA and establishment of environmental baseline data."

The complete list of additional topics to be covered in Regulations is extensive (23 separate items) and ambitious. A set of regulations that did, in fact, include all 23 items would be a substantial boost to Tonga's management of – or any decision to pause – DSM in the Kingdom. These Regulations have been announced by Tonga's delegation to ISA meetings as "forthcoming" since 2016, and yet there are no Regulations at all as of mid 2023. It would be reasonable to ask what has become of the long-promised Regulations, as they would, if drafted pursuant to Section 123, provide a much stronger tool for effective oversight and control of DSM than any other laws which currently exist.

*Section 125 - This provision, the last in the Act, lists "Consequential Amendments" and notes that:

(1) The Minerals Act is amended by repealing (and replacing) the definition of "land" in section 2 of that Act.

(2) With respect to the EIA Act, "Seabed Mineral Mining" shall be deemed a 'Major Project' and is added to the Schedule to that Act.

(3) Also with respect to the EIA Act, in any instance where "Seabed Mineral Exploration" upon a "preliminary assessment" by the Minister of the Environment is considered likely to cause Serious Harm to the Environment, such Exploration shall be deemed a 'Major Project' and is hereby added to the Schedule to that Act.

There are discrepancies and problems with regard to what this Section notes about the EIA Act. First, the specified amendments to the Schedule to the EIA Act do not actually appear in the Schedule as of the most recent 2020 revised edition of Laws of Tonga. Second, Seabed Mineral Exploration should not be qualified in this way as only triggering a mandatory EIA when the Minister thinks there is a likelihood of "serious harm," a term lacking sufficient definition. Most if not all "exploration" involves some mining on a discovery or equipment testing basis. There should be no distinction between exploration and exploitation in terms of EIA requirements, as has been amply illustrated by the recent experience of the NORI Collector Test EIA and EIS.

B. Particular Aspects of Tongan Laws that Warrant Improvement to Adequately Manage DSM

This segment will focus on the two most critical Acts, the EIA Act and the Seabed Minerals Act. In addition to the specific Section comments noted above, there are several overarching gaps that need to be filled to make these Acts more effective at protecting Tonga's marine environment as well as minimizing Tonga's exposure to liability.

Three DSM companies are known to have obtained prospecting licenses and conducted prospecting activities in Tonga: Nautilus Minerals,³ KIOST (Korea Institute of Ocean Science and Technology), and Blue Water Metals. It appears no EIAs were required by Government for these licenses.

The current EIA law in Tonga allows for prospecting and exploration to skip performing an EIA altogether if a "preliminary assessment" indicates that "serious harm" to the environment is not likely. This is a substantial loophole and places virtually no limits on what contractors can do in the guise of exploration, since they are not being held to account up front on the environmental risks posed by it. As it stands, the absence of stricter EIA requirements for prospecting and other forms of exploration makes Tonga's compliance with Article 206 of UNCLOS somewhat questionable.

That being said, the EIA Act and EIA Regulations do constitute a good starting point for equipping Tonga to critically evaluate the compatibility of large-scale new industries and projects with preservation of the environment. What is needed is further precision as to what information is required, how it is assessed and by whom, and how the information informs the decision-making process. For the most part information control in the current EIA framework is left to the contractor/applicant, with no independent standards set by Tongan regulators against which to measure the contractor's information. The practice of having EIAs conducted by applicant companies themselves is largely a resource problem, and Tonga is certainly not alone among SIDS in lacking the financial capacity to undertake independent EIAs. However, institutional capacity can be enhanced to at least facilitate independent reviews of EIAs. At present there are too many ambiguities as to what Ministry takes the lead on EIA review and what the exact process is. The input of coastal communities and the public in general in the review process is likewise unclear. Adding specific requirements regarding public consultation is one measure for strengthening institutional capacity in this regard.

Fee collection and enforcement is another aspect of the EIA Act and regulations that bears improving. There appears to be no direct mechanism to collect the required 1% administrative fee of the total capital cost of all major projects going through the EIA process. Presumably this fee is meant to fund the costs of Government's review and monitoring of projects. Stronger rules are needed for collecting such fees up front and making non-payment grounds for instant rejection of any licence applications, or revocation of any licences issued.

Tonga need look no further than Papua New Guinea's experience with the Solwara 1 project for an example of how inadequate EIA processes and weak enforcement can leave Government financially in the lurch with a DSM project. The Solwara project involved DSM within PNG's EEZ. The PNG government had approved the EIA of the mining company, Nautilus. However, later independent review of the EIA by an NGO found several major flaws including incomplete baseline studies, inadequate risk assessments, insufficient analysis and data to evaluate all mining impacts, underdeveloped mitigation measures, lack of stakeholder engagement and lack of procedural transparency. Nautilus went bankrupt in 2019 and the project terminated, leaving the government of PNG with deficit costs resulting from the

³Tonga is also sponsoring Nautilus Minerals through its local subsidiary, Tonga Offshore Minerals Limited (TOML), in the CCZ of the Area.

project collapse of \$AUD 157 million.

Another example of incomplete EIA implementation that has occurred within Tonga in recent years concerned a different sort of "mining" – the excavation of beach and near-shore sand by commercial entities for use in cement production. Construction demands have stripped sand from many beaches in Tongatapu and Vava'u, as noted by several community members during discussion sessions regarding this Report. Large-scale sand mining not only has significant local effects such as beach diminishment and erosion, but also interrupts long-shore sand drift critical to maintaining shorelines and shore habitats. This activity has largely escaped any in-depth EIA, and illustrates the consequences of failing to consider long-term and widescale cumulative effects of resource extraction.

Turning to the Seabed Minerals Act, a major gap at present is the lack of accompanying regulations. The Act emphasizes general principles and relegates many important details to subsequent regulations which have yet to be enacted. The absence of regulations hampers effective implementation of the Act and leaves open many important questions about its functionality. It may be that Government prefers to wait until the ISA has completed its exploitation regulations for the Area under the ISA Mining Code so as to model and reflect the ISA regulations in Tonga's domestic legislation. However, this leaves a regulatory vacuum and heightened risk for an indefinite period regarding the handling of DSM activities within Tongan waters, which have already been underway in the prospecting phase for several years.

A few other improvements to the Act to consider include:

- Section 15, "Information Order," requires the Authority to obtain the consent of the mining company before disclosing information, or a court order for the disclosure, and requires that the information does not relate to several aspects of the company's affairs or trade secrets—enough restrictions to pose a significant barrier to both government and public access to potentially important information regarding activities in Tonga's waters.
- Section 22, "Inspectors' Powers," requires that an Inspector take all reasonable steps to avoid spending excessive time on a Title Holders' vessel or platform at-sea." Monitoring and ensuring compliance by DSM contractors are critical functions required by law, and may require substantial amounts of time on board DSM vessels. The process should not be shortened or rushed to suit the contractor's schedule.
- Section 57 on Licence Decision-Making and public input would benefit from having clear mechanisms set up for conducting public consultation throughout the Kingdom and incorporating results in the actual decision-making process. Such mechanisms must provide sufficient time and opportunity for comment and response.
- In general, penalties for infringements of the Act by licensees are higher than in many other Tongan environmental laws but are only of benefit if enforced. It also appears that penalties for those obstructing DSM activities, which could include legitimate investigators, are somewhat disproportionate compared to those for breaches of the Act by well-financed contractors.

- Disclosure of information regarding mineral locations, quantities and grade needs to be less skewed in favor of the mining companies' desire for supreme confidentiality. In the near future there will also likely be a need to have regulatory mechanisms in place to ensure that DSM companies share valuable genetic and biodiversity data they collect as well, to be made available in a way useful to scientists and Pacific communities. This data centralisation and sharing will be required under the new BBNJ Treaty, when it enters into force.
- The Act and any future regulations must be reviewed alongside and harmonised with existing Tongan laws concerning protection of the marine environment and its resources, both living and non-living.

Overall, institutional resource capacity is a considerable concern for which there are no easy solutions. Government ministries such as MEIDECC and MLNR appear to be understaffed for the workloads assigned to them under multiple Acts. This compromises Government's ability to effectively review EIAs submitted by well-financed, sophisticated DSM companies. Securing adequate funding and technical training from internal and external sources will likely be necessary to build government capacity in this regard. One promising initiative is the technical assistance provided by SPREP in 2022 to MEIDECC with developing a national registry of approved consultants to conduct EIA. This complements Tonga's recent Registration of EIA Consultant Regulation, requiring that anyone preparing an EIA report must be registered and hold a valid EIA certificate.

C. Tonga's Obligations under International Law with respect to DSM

(i) *Responsibilities under UNCLOS*

Tonga as a coastal state enjoys guaranteed sovereign rights within its EEZ to explore, exploit, conserve and manage both living and non-living natural resources of the seabed and its subsoil (UNCLOS Art. 56(1)(a)). With those recognized sovereign rights come responsibilities under international law. Tonga is bound to act with regard to its EEZ in a manner compatible with the rights and duties of other States, as well as all other UNCLOS provisions. A coastal state's EEZ rights and obligations extend to its continental shelf (Art. 56(3), Art. 77).

With respect to the Area and DSM in the CCZ, Tonga has a due diligence obligation to ensure that the activities of its Sponsored Contractors are conducted according to approved plans of work, the obligations of UNCLOS, and any relevant rules, regulations and procedures of the ISA. (UNCLOS Arts. 139(1) and 153(4); Annex III Art. 4(4)). "Due Diligence" equates to conduct rather than achieving a particular result, and requires that a State "deploy adequate means, to exercise best possible efforts, to do the utmost" to ensure the Sponsored Contractor's compliance. (See the 2011 Advisory Opinion ["AO"] issued by the Seabed Disputes Chamber of

ITLOS, para.110).⁴ This includes ensuring compliance by the Contractor with its duties to provide a complete assessment of the potential environmental impacts of the proposed activities under a plan of work (ITLOS AO, para. 141). If Tonga fails to meet its due diligence obligations, it may be held liable for damage caused by the Contractor.

There are two modifications to State liability in this regard. One is that pursuant to UNCLOS Art. 139(2) and the 2011 ITLOS Advisory Opinion, a Sponsoring State will be exempt from liability for damage caused by its Contractor if the State has taken "all necessary and appropriate measures to secure effective compliance" by the contractor under Art. 153(4) and Annex III, Art.4, paragraph 4. Article 4 of Annex III to UNCLOS explains that the requirement to take "all necessary and appropriate measures" may be satisfied when the State "has adopted laws and regulations and taken administrative measures which are, within the framework of its legal system, reasonably appropriate for securing compliance by persons under its jurisdiction." The 2011 ITLOS Advisory Opinion notes that it is not enough for a Sponsoring State to simply have laws and regulations on the books concerning Area Sponsorship. Administrative measures for effectively securing contractor compliance may also be needed, and such measures as well as laws and regulations "may include the establishment of enforcement mechanisms for active supervision of the activities of the sponsored contractor." (See ITLOS AO, para. 218).

Another mitigating factor with respect to Sponsoring State liability is that there must be a causal link established between the State's failure to ensure the Contractor's compliance and the actual, compensable environmental damage caused. (See ITLOS AO, para. 179, 181-184). It is not entirely clear, however, what level and nature of damage would be deemed legally compensable and who would be entitled to bring such claims, as there have been no test cases before adjudicatory bodies yet. It is a virtual certainty that such a case will arise if and when full-scale mining operations begin in the Area, and it would not appear to be in Tonga's interests to be a defendant in the first (or any) Area DSM damages claim case.

Making a Sponsoring State both responsible and liable serves as a necessary mechanism to procure mining companies' compliance with the obligations set out in UNCLOS and related instruments because private entities are not parties to or bound by international conventions. The ISA needs the sponsoring state's assistance in controlling and supervising the contractor's activities by establishing monitoring and enforcement measures within its domestic legal system.

Hence UNCLOS Annex III, Art. 4 stipulates that applicants must meet the nationality or control and sponsorship requirements of Article 153(2)(b), as well as qualification standards set by the ISA. Natural or juridical persons (e.g. corporations) are qualified to apply if (i) they possess the nationality of States parties or are effectively controlled by them or their nationals, and (ii) are sponsored by such States. If a different State than the Sponsor exercises "effective control," or if the applicant has more than one nationality, the sponsorship of more than one State is required. (UNCLOS Art. 153(2))

⁴ *Responsibilities and obligations of States with respect to activities in the Area, Advisory Opinion*, 1 February 2011, ITLOS Reports 2011, p. 10

Under the Seabed Minerals Act Tonga adopts “nationality” or registration as a necessary requirement to apply for a Sponsorship Certificate. Whether this constitutes “effective control” is doubtful, despite the lack of any explicit definition of the term in UNCLOS or other relevant legal instruments. Requiring sponsored companies to register as Tongan companies would seem to be a positive first step in exercising control, but is beset by two problems: (1) regulations applicable to Tongan companies are only effective if consistently enforced, which due to resource constraints does not always occur, and (2) an applicant could be registered as a company in Tonga but also be a wholly owned subsidiary of a large mining corporation in a much larger country. This is precisely the situation with Tonga and its sponsored contractor, TOML.

The definition of “effective control” has proven elusive, and has not yet been tested in the courts. The LTC of the ISA has admitted that “effective control” needs to be clarified, but that it should fall “under the competence of the State that exercises it” and be “left to municipal law.”⁵ Two interpretations of “effective control” have emerged from analysis of comparative legal sources and ISA practice and pronouncements. One is an economic approach, which looks to the ultimate financial control of or influence over the contractor company, and the other is a regulatory approach based on legal jurisdiction over incorporation of the company as well as enforcement capacity. Indicia of economic control include ownership of a majority of the company’s shares, ownership of a majority of its capital, holding a majority of the voting rights, having the right to elect a majority of the board of directors, having significant investment in or other comparable influence over the company sufficient to affect its decisions, or a combination of these factors. In terms of a regulatory control approach, at minimum the company must be subject to all applicable laws and regulations of the Sponsoring State directly, meaning violations of such laws by the company can be adjudicated by that State’s courts. This becomes much more complicated when the assets and governing authority of a locally registered DSM contractor company actually reside with a corporate parent in a foreign country. In terms of Tonga’s Sponsored Contractor, TOML, it appears that Tonga is relying on the regulatory approach for exercise of effective control. For the reasons discussed in this and previous sections, that approach may be largely illusory at present given the evolving state of laws, regulations, and oversight institutions in the Kingdom with regard to DSM.

In addition to the Area-specific provisions, Part XII of UNCLOS imposes additional obligations on all member states applicable in all maritime zones, both inside the national jurisdiction of States and beyond it. Article 192 states plainly and directly that States have an obligation to protect and preserve the marine environment. By inverse implication this includes the duty not to degrade the marine environment. Article 194 further requires States to “ensure that activities within their jurisdiction and control respect the environment of other States or of areas beyond national control” and do not cause damage or pollution of the marine environment of neighbouring States. The prospect of transboundary harm looms large with respect to DSM activities anywhere, and Tonga would do well to build in such considerations in its regulatory and contractual measures. The EIA component to this issue of transboundary

⁵ Issues Related to the Sponsorship of Contracts for Exploration in the Area, Monopolization, Effective Control and Related Matters (ISBA/22/LTC/13, 21 June 2016)

harm is that under UNCLOS a Sponsoring State such as Tonga has an obligation to assess the potential effects of planned activities under its jurisdiction and control that may cause substantial pollution or harmful changes to the marine environment, and must communicate the results of such assessments. (UNCLOS Art. 206, ITLOS AO para. 124, 145-146).

In sum, the Area-specific and general marine environmental protection duties mandated by UNCLOS, as further commented on in the ITLOS Advisory Opinion, have the effect of setting a high bar for States to demonstrate that they took effective measures to prevent damage from DSM activities. The necessary measures include not only enacting strong legislation, but also effectively monitoring DSM and enforcing all applicable laws and regulations in order to defend against potential liability claims. Indemnification clauses in sponsorship contracts and other attempts to hold contractors solely responsible may not prevent States from being sued in cases where their participation in DSM was part of a joint venture, or where lack of government oversight contributed to damage. Countries such as Tonga with more limited monitoring and enforcement capabilities are particularly vulnerable to such situations.

(ii) *Responsibilities under Other International Instruments and Principles*

Ocean microbes living on the seabed, and on polymetallic nodules themselves, have the potential to provide new antibiotics due to the unique compounds that they produce. Harvesting and/or destruction of these microbes and their habitat through DSM, as well as highly anticipated negative impacts on other benthic and pelagic marine life, may well come to present a direct conflict with both the CBD and the new BBNJ treaty, both of which regulate oceanic biological diversity, genetic material, and the ecological services benefits therefrom. Tonga could therefore find itself in violation of its CBD and BBNJ obligations.

The precautionary principle is not featured specifically in UNCLOS but has featured prominently in multilateral environmental agreements since the 1992 Rio Declaration on Environment and Sustainable Development. In the past two decades it has also been incorporated in the domestic environmental legislation of many countries. The precautionary principle or approach holds that in the absence of conclusive scientific evidence of the certainty of environmental harm, decision-makers have a duty to err on the side of caution in trying to avoid it. The principle increasingly applies to both state and non-state actors to examine the full range of available alternatives to a contemplated project, including that of no action. Application of the precautionary approach is both a direct obligation and an integral part of a Sponsoring State's due diligence with respect to DSM activities in the Area, as is the duty to apply best environmental practices. (See ITLOS AO, para. 135-137).

The precautionary approach receives a mention in Tonga's Seabed Minerals Act, but without any specific application, actions or implementation mechanisms noted. Given the degree and nature of gaps in scientific knowledge concerning deep sea ecosystems, and the certainty expressed by many leading ocean scientists that DSM will harm the marine environment, there is a strong legal argument to be made that DSM activities require strict application of the precautionary principle. Failure to do so could open a Sponsoring State to claims of breaching customary international law.

States have legal obligations under established international human rights law as well with respect to conduct affecting the environment and environmental services that people and communities rely on to sustain life. Most recently this includes a July 2022 resolution by the UN General Assembly declaring access to a clean, healthy and sustainable environment for all people a universal human right. All States, including Tonga, must consider the possible implications and violations of human rights as a result of DSM. Among the dimensions of this are effects on the right to a livelihood, the right to work, the right to family, the right to a clean environment, and the right to health.

D. Statements of Position or Intention by Tonga at ISA Meetings

Due to the closed nature of proceedings characteristic of the ISA, statements by member States and observers at official meetings of the Assembly or Council are available on the ISA's website (<https://www.isa.org.jm/>) only from the 22nd Session (2016) onward. No record of country or observer statements are available for meetings before 2016, and no record of proceedings of the LTC for any year are currently available online other than occasional summary reports on agendas the LTC chooses to publish on the ISA website.

Tonga's Office of the Attorney General reported that it first attended the meeting of State Parties to UNCLOS and the annual Assembly meeting of ISA in 2015, at the 21st session. This followed Tonga's adoption of its Seabed Minerals Act. According to a *Note Verbale* to the ISA of 22 August 2016, Tonga reported that it was in the process of finalising regulations for the Act and would forward them to the ISA repository in due course. To date there is no indication that Tonga's regulations for its Seabed Minerals Act have been finalised internally, and no record of any submissions to the ISA's Database of National Legislation with Respect to Activities in the Area (<https://www.isa.org.jm/national-legislation-database/>)

The table below lists all ISA sessions at which Tonga's delegation issued statements for which texts are available online.

ISA Session No.	Month and Year	ISA Body	Key Content
22	July 2016	Assembly	Statement of Mr. Mahe Tupouniua, Permanent Representative of Tonga to the U.N. Notes that Tonga places great importance on issue of "effective control" of contractors and supports study on adequacy of States' legislation to control commercial mining entities. Supports recommendations to improve economic and environmental protection planning and expertise within the LTC.

23	August 2017	Assembly	Statement of Dr. Tevita Mangisi, Deputy Permanent Representative of Tonga to the U.N. Notes that Tonga emphasizes the urgency of completing exploitation regulations and guidelines per the proposed timeline. Encourages more involvement by State parties and government officials in workshops to design DSM mechanisms, and more contribution to the Endowment Fund for support of capacity-building in SIDS.
23	August 2017	Assembly	2nd Statement of Dr. Tevita Mangisi, Deputy Permanent Representative of Tonga to the U.N. Supports recently completed Article 154 review report with recommendations on improving the operational efficiency of the ISA. Takes note of need to review DSM laws in accordance with the 2011 Opinion of the Seabed Disputes Chamber of ITLOS and in particular the "direct obligations of states." Tonga places highest importance on need to strike balance between conservation and sustainable use. Supports a comprehensive review of national laws once the Mining Code is complete. Supports establishment of an independent database for Area data management. Advocates proceeding with efforts to make the Enterprise part of ISA operational as soon as possible. Supports greater transparency and accountability regarding Authority's finances and the benefit-sharing regime.
24	July 2018	Assembly	Statement of Mr. Mahe Tupouniua, Secretary for Foreign Affairs and Head of Tongan Delegation. Supports preparation of a thorough report by ISA Secretary General on status of rules, guidelines and consultations to date regarding benefit-sharing.
24	July 2018	Assembly	2nd Statement of Mr. Mahe Tupouniua, Head of Tongan Delegation. Urges prioritisation of work on developing equitable sharing criteria, setting up a functioning Economic Planning Commission, and completion of strategic and 5-year action plans.
25	July 2019	Assembly	Intervention of the Tonga Delegation. Encourages member states to make timely payments of assessed contributions for funding operation of the Authority, pursuant to the Part XI Agreement. Supports ISA Secretariat's participation in the intergovernmental negotiating conference for a BBNJ treaty, so as to ensure decisions made in that forum do not undermine the work and mandate of ISA.

25	July 2019	Council	Intervention of the Tonga Delegation, commenting on current set of Draft Regulations for exploitation. Agrees on need for Regional Environmental Management Plans (REMPs) to be in place before approval of contractor work plans, and made part of exploitation contracts. Supports development of environmental standards to be in place once regulations are passed. Highlights importance of incorporating "lessons learned" from exploration phase into exploitation plan of work, REMPs, EIS and EMMP. Notes concern that some contractors did not respond to LTC questions regarding their annual reports. Notes need for clear and unified interpretation of "Standards" and "Guidelines" in the draft exploitation regulations. Urges that special interests and needs of SIDS be taken into account in developing the equitable sharing mechanism.
25	July 2019	Council	Intervention of the Tonga Delegation, commenting on decision-making within ISA. Supports leaving daily operational decisions to Secretary-General, with annual reporting on the exercise and results of delegated authority.
25	July 2019	Council	Intervention of the Tonga Delegation, commenting on financial models. Notes need for a simple, clear payment regime and mechanisms to optimize revenues for the Authority and for common benefit of humanity per UNCLOS. Notes intergenerational equity concerns and need to balance current vs. future revenue from mineral resources, and need for financial mechanisms to factor in all likely environmental costs through monitoring fees and other funds to ensure wellbeing of the marine environment. Questions whether 1% allocation to cover such costs is appropriate.
25	July 2019	Council	Intervention of the Tonga Delegation on independent review of environmental plans and performance assessments under exploitation regulations. Poses questions whether the review should be an automatic mandatory requirement; what is the most transparent and efficient manner for the review, and what are the likely costs; and how will the review affect processing of exploitation contracts. Supports setting up a roster of qualified experts, which should include Pacific SIDS nationals.
25	July 2019	Council	Intervention of the Tonga Delegation on inspection mechanisms for SMA in the Area. Views ensuring the security of inspectors to be essential. Supports use of a risk-based approach with inspections in light of potential costs to be incurred. Notes a need to determine minimum requirements of, and costs relating to, use of remote monitoring technology.

25	July 2019	Council	Intervention of the Tonga Delegation on REMPs and use of the Precautionary Approach. Supports a requirement that permission to mine will only be considered where a REMP is in place. Supports position of other Pacific SIDS and the IUCN that coastal and adjacent States to the CCZ be engaged in development and finalization of a REMP. Supports developing list of procedural measures for implementing the Precautionary Approach, and consideration of "cost-effectiveness" in relation to the exploitation regulations and objectives of UNCLOS.
25	July 2019	Council	Intervention of the Tonga Delegation on standards and guidelines under exploitation regulations. For developing appropriate standards & guidelines, Tonga supports reliance on existing generally accepted international standards from parallel industries; environmental performance benchmarks; best available technology standards for controlling pollution; and respective national legislation on DSM. Notes importance of including "best environmental practice" in the definition of "good industry practice."
25	July 2019	Council	Intervention of the Tonga Delegation concerning the Enterprise. Supports continuing work on a priority basis for making the Enterprise operational pursuant to UNCLOS Articles 158 and 170, and to that end welcomes recommendation of a proposed joint venture between the Enterprise and the Government of Poland, subject to the Council adopting a directive on independent operation of the Enterprise.
26	December 2021	Assembly	Statement of Ms. Jeanett Ve'a on behalf of Tonga. Notes nomination of 41 National Focal Points within ISA, including Tonga. Acknowledges contributions of contractors, including TOML, to providing training and capacity-building. Commends Abyssal Initiative for Blue Growth project implemented by the Authority. "Tonga stands ready to support the work of the Authority and relevant bodies specifically in relation to the completion of relevant regulatory frameworks in a timely fashion while ensuring due diligence where appropriate."
28	March 2023	Council	Intervention by Ms. Jeanett Ve'a, Permanent Mission of Tonga to the U.N. "Tonga reaffirms our commitment to upholding the requirements of [UNCLOS] and on that note, we welcome the historic conclusion of the negotiations of the Intergovernmental conference on an international legally binding instrument on the conservation and sustainable use of marine biological diversity of areas beyond national jurisdiction."

Overall, the published position statements of Tonga at ISA session meetings reflect no new commitments but rather underscore Government's stance that (a) DSM in the Area should proceed once exploitation regulations are in place, and (b) robust environmental and financial mechanisms still need to be developed, with special consideration of the interests of Pacific SIDS.

Given that Tonga has been and is a sitting member of both the Council and the LTC, there may well have been other unpublished statements made by or on behalf of the Tongan Government over the past several years on development of DSM in the Area. Unfortunately there does not seem to be any means of accessing meeting statements that are not posted on the ISA website.

It should be noted that one of the early issues of concern raised by the Tongan delegation at above-noted Assembly sessions is the meaning and parameters of "effective control" by a Sponsoring State over its sponsored DSM contractor. This same issue has appeared on LTC agendas for several years, and was still on the most recent LTC Agenda for the 28th Session in March 2023 under the category, Matters referred to the Commission by the Council: "Issues related to the sponsorship by States of contracts of exploration in the Area, with particular attention to the test of effective control, as well as issues related to the monopolization of activities in the Area, taking into consideration, in particular, the concept of abuse of a dominant position." The question of what "effective control" really entails in concrete terms is critically important to Tonga's sponsorship of DSM contractors and the potential extent of any liability Tonga may bear as a result of that sponsorship. The fact that the question is still under consideration by the LTC after years of referral by the Council reflects the ongoing legal uncertainties surrounding this phrase, despite the observations and conclusions of the ITLOS Seabed Disputes Chamber in its 2011 Advisory Opinion on the rights and obligations of Sponsoring States.

E. Statements of Position or Intention by Tonga regarding Ocean Management in Other International Fora

Desktop research did not reveal any specific country statements by Tonga at recent formal conferences of ocean-related international treaties or agreements other than written submissions to COP 26 and 27 of the UNFCCC concerning Tonga's Nationally Determined Contributions under the Paris Agreement. It is often very difficult to know what country delegations say at international treaty sessions unless one is in the room at the time. However, some observations on the interplay between DSM and Tonga's known positions with respect to three of the most critically important global treaties affecting oceans follow:

(1) UNFCCC/Paris Agreement

Tonga submitted its Second Nationally Determined Contribution (NDC) pursuant to the Paris

Agreement in December 2020. In its submission, Tonga reiterated a pledge made previously⁶ to expand the area covered by MPAs and Special Management Areas to 30% of its EEZ. This setting aside of nearly a third of Tonga's EEZ is presented primarily as a climate change adaptation measure, oriented toward maintenance of existing fish stocks and other marine species, but with potential mitigation value as well if enhancing Tonga's marine biodiversity also functions to enhance biological carbon sequestration.

In the Global Stocktaking submissions expected at COP 28 and in its Third NDC Tonga will have to report on its progress toward this pledge. Recent reports of the World Bank (2019) and the Tonga Fisheries Sector Plan 2016-2024 indicate there is a long way to go, with approximately 10,100 km² (equivalent to 1.5%) of Tonga's territorial waters currently set aside as MPAs.

The significance of this pledge with respect to DSM is that it has the potential effect of limiting the marine territory that can be allocated to DSM. Seabed mining activities by their nature would not be easily compatible with the purposes of MPAs or Tonga's NDC commitment in this regard. Nor would allowing DSM to proceed in designated MPAs comport legally with Tonga's Parks and Reserves Act, or the Seabed Minerals Act itself.

(2) CBD

Tonga ratified the CBD in 1998. Tonga's 6th National Report to the CBD of September 2020 identifies an action item to increase by 50% the total area of marine ecosystem under conservation management by 2030. At the time of writing, it is not known what Government's plans and intentions are to achieve the objectives of the recently adopted Kunming-Montreal Global Biodiversity Framework (December 2022) from COP 15 of the CBD. In particular, achieving Targets 1 and 3 of the new Framework will likely require additional regulations and completion of the long-pending marine spatial planning legislation on Tonga's part:

Ensure that all areas are under participatory, integrated and biodiversity-inclusive spatial planning and/or effective management processes addressing land- and sea-use change, to bring the loss of areas of high biodiversity importance, including ecosystems of high ecological integrity, close to zero by 2030, while respecting the rights of indigenous peoples and local communities. (Target 1)

...

Ensure and enable that by 2030 at least 30 per cent of terrestrial and inland water areas, and of marine and coastal areas, especially areas of particular importance for biodiversity and ecosystem functions and services, are effectively conserved and managed through ecologically representative, well-connected and equitably governed systems of protected areas and other effective area-based conservation measures, recognizing indigenous and traditional territories, where applicable, and integrated into wider landscapes, seascapes and the ocean, while ensuring that any sustainable

⁶ In June 2017 at the UN Ocean Conference Tonga announced an intention to establish MPAs covering 30% of its total EEZ by 2020. In May 2018, the Tongan Cabinet issued Decision #273 to initiate consultations for building a national marine spatial plan including a network of 30% MPAs.

use, where appropriate in such areas, is fully consistent with conservation outcomes, recognizing and respecting the rights of indigenous peoples and local communities, including over their traditional territories. (Target 3)

(3) BBNJ

The 5th and final negotiating session for a BBNJ treaty concluded on 4 March 2023. The BBNJ website does not include any individual country statements by Tonga from the final session or prior sessions. A delegation from Tonga consisting of representatives from the Office of Foreign Affairs, Attorney General's Office, Prime Minister's Office, and Tonga's Permanent Mission to the UN attended the 5th session, at which a text of the treaty was agreed to in principle. It is reasonable to assume that Tonga will ratify the treaty when it is open for accession in light of the remarks of Tonga's representative at the March 2023 ISA meeting welcoming the completion of the BBNJ agreement.

The BBNJ treaty when formally adopted will take the form of a legal, internationally binding implementing agreement under UNCLOS – the same form as the Part XI Agreement concerning the Area and ISA. It establishes a new international authority for the high seas with its own Secretariat, Conference of Parties, scientific/technical committee, and finance mechanism. Key provisions of the treaty create a process for designating MPAs and implementing ecosystem-based management, and set out ground rules for EIA of commercial activities on the high seas. At present, however, it remains unclear how these standards and processes will affect or interact with other regional and multilateral institutions regulating activities such as shipping and mining in high seas areas. The treaty will clearly overlap with ISA management actions in the Area.

F. Tonga's Potential Liability with respect to the TOML Sponsorship Agreement

Online research produced one agreement between Tonga and its sponsored contractor in the CCZ, TOML: **Sponsorship Agreement, dated as of September 23, 2021, by and between the Kingdom of Tonga and Tonga Offshore Mining Limited**. This was sourced from the following webpage: <https://contracts.justia.com/companies/sustainable-opportunities-acquisition-corp-10201/contract/201893/>

This contract version notes that it was published with certain confidential information redacted, on the basis of immateriality and/or likelihood to cause competitive harm if publicly disclosed. The redactions include all payment amounts.

The contract is 69 pages, and in general seems favorably weighted toward the contractor, TOML. The basis of the bargain is that Tonga has formally sponsored TOML's activities in the Area under a Sponsorship Certificate, "and agrees to maintain that Sponsorship on the terms of the contract." (emphasis added). In exchange, TOML agrees to pay Tonga a Commercial Recovery Payment (CRP) during exploitation operations. The CRP will be paid via the Tonga Seabed Minerals Authority to the Seabed Minerals Fund.

The agreement makes clear that Tonga does not own the polymetallic nodules in TOML's Area sector ("Tenement"), and that processing of the nodules will not occur in Tonga given geographic and infrastructure constraints.

Main contract terms of concern are:

Paragraph 1.1 – Provides that this agreement remains in force for the duration of TOML's 15 year ISA Exploration Contract, and automatically extends thereafter for another 25 years if TOML is granted an ISA Exploitation Contract, subject to termination under specified circumstances. Automatic extension for a lengthy term does not allow for any review by Tonga of contract terms, performance and objectives in the transition from exploration to exploitation activities.

Paragraph 2.1 – Tonga agrees to "provide and maintain Sponsorship of TOML and TOML's Exploration and Exploitation of the Tenement Area," including sponsorship of TOML's exploitation application, for the entire term of this agreement - which according to Para. 1.1, will be at least 40 years. (The original 15 year exploration term is due to expire in January 2027. Under current ISA rules, the exploration contract between TOML and ISA is eligible for a 5-year extension that would carry over to the Tonga-TOML Sponsorship Agreement, bringing the term to January 2032. Thereafter if TOML gains exploitation eligibility, the sponsorship term under the Tonga-TOML Sponsorship Agreement would automatically extend another 25 years to 2057.)

Paragraph 3.7 – Tonga "undertakes and affirms" that at no time will the rights it grants to TOML under the contract be "discriminately derogated from or otherwise prejudiced by any Tongan Law or the action or inaction of the State." If there are any inconsistencies between any future Tongan laws relating to taxation or financial terms and the terms of this agreement, then this agreement will govern. In essence this hands TOML a silent veto on Tongan laws for the next 3 decades that might run counter to TOML's rights under this agreement.

Paragraph 8 – TOML agrees to indemnify Tonga from and against all costs, expenses, losses, charges, damages, claims or other monetary liabilities under UNCLOS that Tonga may incur or become liable for under UNCLOS, to the extent such costs, etc. arise as a result of the activities in the Area being carried out "wrongfully and directly cause the State to breach its Sponsorship Obligations." However, section 8.5 notes that TOML is only liable for direct damages, not any indirect or consequential damages, and shall not be liable for any damages or claims arising from situations where the State acts in any way that "discriminates" against TOML. This indemnification also does not cover circumstances where monetary claims are made against Tonga under any other laws besides UNCLOS, or where mining activities may not have been conducted "wrongfully" (against which standards?) but damage to the environment occurred nonetheless. It also does not match up with the indemnification and liability provisions of Tonga's Seabed Minerals Act, which preceded this agreement.

Paragraph 10.1 – Tonga agrees that any Tongan Laws and regulations brought into effect after the commencement date of the contract "will not interfere with or diminish TOML's rights with respect to any Tenements..." Again, this provision has the effect of handcuffing Tonga's

ability to enact its own legislation that might "interfere" with TOML's contract rights.

Paragraph 10.12 – Tonga pledges that it will not take any action to interfere with the continued corporate existence and registration of TOML, unless TOML is in material breach of this contract or the Companies Act of Tonga. This limits Tonga's ability to strike off TOML from the registered companies roll.

Paragraphs 19.1 and 19.4 – TOML is in default of the agreement if it commits a material breach of either this agreement or TOML's ISA obligations, or if it fails to act in good faith. Tonga, on the other hand, is in default of the agreement if it merely "breaches," as opposed to materially breaches, not only this agreement but also its obligations under UNCLOS or ISA rules. Tonga is also deemed in default if it fails to act in good faith "or discriminates against TOML" by passing laws averse to TOML's interests; if it directly or indirectly expropriates rights or assets of the TOML Group; or if it ceases to Sponsor TOML and its activities in the Area, and "takes any action towards ceasing its Sponsorship or purports to cease its Sponsorship of TOML." The last part is especially concerning in the context of any desire that Tonga might have to (a) stop sponsoring TOML, and/or (b) support a moratorium from within the ISA regime or other fora on exploitation phase DSM. If the Tongan Government were to do so, it could face a notice of default from TOML under the terms of the 2021 Sponsorship Agreement and possible further action for breach of contract.

Paragraph 21 – Tonga has the option to terminate the agreement but only in the event of "material" breach by TOML of its contractual obligations. Even then, Tonga must first serve TOML with a termination notice and afford the contractor an opportunity to remedy its alleged material breach within 60 days. Additionally, this provision provides that termination by the State will not proceed if "there are no demonstrable material damages to the State as a result of TOML's breach," or if TOML compensates the State for any demonstrable material damages incurred by the State resulting from TOML's material breach. On the other hand, TOML appears to have a right to terminate the agreement at will at any time.

Paragraph 23 – Dispute resolution: In the first instance, the parties are to attempt to resolve any disputes by consultation and mutual agreement between the CEO of TOML and the relevant Tongan Minister. Failing that, any dispute regarding terms of the agreement, breach, termination, or validity thereof "shall be settled by arbitration in accordance with the UNCITRAL Arbitration Rules." The arbitral appointing authority is designated as the International Chamber of Commerce, and the number of arbitrators is set at one. The place of arbitration is directed to be Brisbane, Australia. These conditions of arbitration, while similar to those often found in international trade agreements, carry considerable financial costs of participation. There is a preservation of right under this provision for either Party to seek urgent injunctive or declaratory relief from a court of competent jurisdiction, which under Paragraph 25's specification of governing jurisdiction would be in Tonga.

There may be potential defences available to Tonga under the Seabed Minerals Act and other Tongan law if it wished to part company with TOML or change its position to supporting a pause of DSM activities. Section 88 of the Seabed Minerals Act, for example, authorises the Authority to suspend or revoke a Sponsorship Certificate where in the opinion of the Authority such action is necessary to prevent serious risk to the marine environment, or to avoid a

conflict with any of Tonga's obligations under any international instrument in force for the Kingdom. Either of those scenarios could arise and afford Tonga legal justification, at least under Tongan law in effect before this particular Sponsorship Agreement, for revisiting sponsorship of TOML and DSM activities.

VI. Suggestions for Design of Legal Tools to address gaps in and strengthen capacity of Tonga's local institutions for proper evaluation of DSM projects

Creating a regulatory framework for a new and untested industry such as DSM is no easy feat for any country. The task becomes much harder when a country is in the position of Tonga, attempting simultaneously to literally keep its head above water in adapting to climate change while also developing the Tongan economy in a sustainable manner to support the lives of present and future Tongans.

Tonga has made a down-payment on building such a regulatory framework, but the task is far from complete. At the same time there are increasing pressures internationally on both sides of the DSM fence. Mining companies, Sponsor States and the ISA appear determined to follow the path potentially accelerated by the two-year rule triggered by Nauru, which could result in exploitation applications in the Area being submitted or even approved by 2024. Meanwhile a growing number of States, scientists, CSOs and international institutions such as the IUCN are urging a pause on DSM everywhere at least until such time as the very large holes in our knowledge of the deep ocean can be filled. A middle approach might be to adopt and enforce more stringent EIA requirements and longer process timelines at the exploration phase, with the practical effect of imposing a temporary halt on exploitation for a few more years. The concern is that any Pacific SIDS that decide to proceed full steam ahead with DSM at this stage will not be prepared for the challenges inherent in combating and containing marine pollution, collecting and managing resource revenue, overseeing large mining company vessels in their waters, or monitoring what their sponsored contractors are doing in the CCZ so as not to incur liability themselves that could prove financially catastrophic.

The following is a list of suggested legal and policy initiatives, in no particular order of importance, for improving Tonga's capacity and readiness to evaluate and manage DSM.

1. Develop and enact comprehensive Regulations to complement and support the Seabed Minerals Act. As discussed above, these Regulations have been advertised as forthcoming for several years and are long overdue. Regulations are the engine of any effective legislation, and without them the entire Seabed Minerals Act and regulatory regime rests on weak footing.
2. In terms of DSM-specific items that should be part of any EIA and monitoring functions Tonga performs, either within its own borders or in the EEZ, a number of assessment categories are recommended:

- a) Potential for impact on or destruction of species habitat, and reduction or extinction of species.
- b) Disturbance of bottom sediment over a greater area than the defined mining footprint, and the potential of releasing carbon or methane naturally stored in the seabed which could in turn exacerbate climate change.
- c) Suspension of materials in the water column at all depths.
- d) Sediment plumes possibly containing heavy metals or other toxins from the mining process.
- e) Uptake by fish and other pelagic animals of toxic substances.
- f) Disturbance of large marine animals, including whales, dolphins, and sharks, from sustained light and noise from mining vessels and equipment.
- g) Oil and other toxic spills from DSM vessels passing through EEZ waters as well as coastal areas and harbours.
- h) Impairment of coral reefs by mining vessels and equipment operations.
- i) Geologic disturbance and the potential for increased seismic/volcanic activity.
- j) Baseline biologic, chemical, physical and geologic data for the entire proposed mining area and a large buffer zone around it, collected over a suitable period of time.

There is no logic or comfort to leaving the gathering and assessment of this knowledge entirely up to self-interested private commercial entities, but economic realities leave little choice at this time. Tonga should explore ways to secure funding and technical assistance as needed for independent performance and/or review of EIAs, not as a substitute for the contractor's submissions required by law, but as a check against them.

3. Integrate provisions outlining and requiring meaningful public consultation with project-affected communities into all DSM administrative, legislative, and regulatory instruments.
4. Develop guidelines for how the precautionary approach should be incorporated and applied in decision-making. This could take the form of steps for Government and DSM companies to take, such as compiling lists of "known unknowns" and performing risk evaluations.
5. Craft complaint and consultations mechanisms to air and resolve project-affected communities' concerns about environmental and social impacts resulting from DSM.
6. Expand public outreach on DSM, with a focus on coastal communities, women, and youth. Expand opportunities to engage in local and national conversations on DSM. It is not only important from a policy standpoint that public views are taken into account regarding the risks and benefits of DSM, the value of marine ecosystems, and the sharing of benefits, but also an expectation under international law.

7. Establish an independent review board to assess Government's enforcement of DSM laws and monitoring abilities, and make recommendations for improvements.
8. Conduct periodic transparency reviews with regard to carrying out the Seabed Minerals Act, the EIA Act, and other relevant laws, including the ability to manage resource revenue openly and responsibly.
9. Establish avenues for public as well as Government consultation with conservation groups, scientists, and environmental experts on the creation of MPAs and Special Management Areas where no DSM could occur.
10. Improve access to data and information about all aspects of DSM, domestically and within the Area.
11. Develop and integrate in DSM-relevant laws and policies a long-term holistic view of the cumulative impacts of current (or proposed) operations, taking into account the size, location, intensity and duration of mining operations, as well as environmental impacts arising from other vectors such as climate change. This should be incorporated in EIA planning and regulations.
12. Take the time to: (a) allow for conducting additional necessary research on deep ocean environments, which will in turn better inform current and new legislation, and (b) build competencies and resources within Ministries that have responsibility for ocean affairs to strengthen EIA functionality.
13. Enable full freedom of information to the citizens of Tonga before major DSM or other marine resource contracts binding the Kingdom are executed, so as to allow for broad public engagement, input and independent consideration.

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