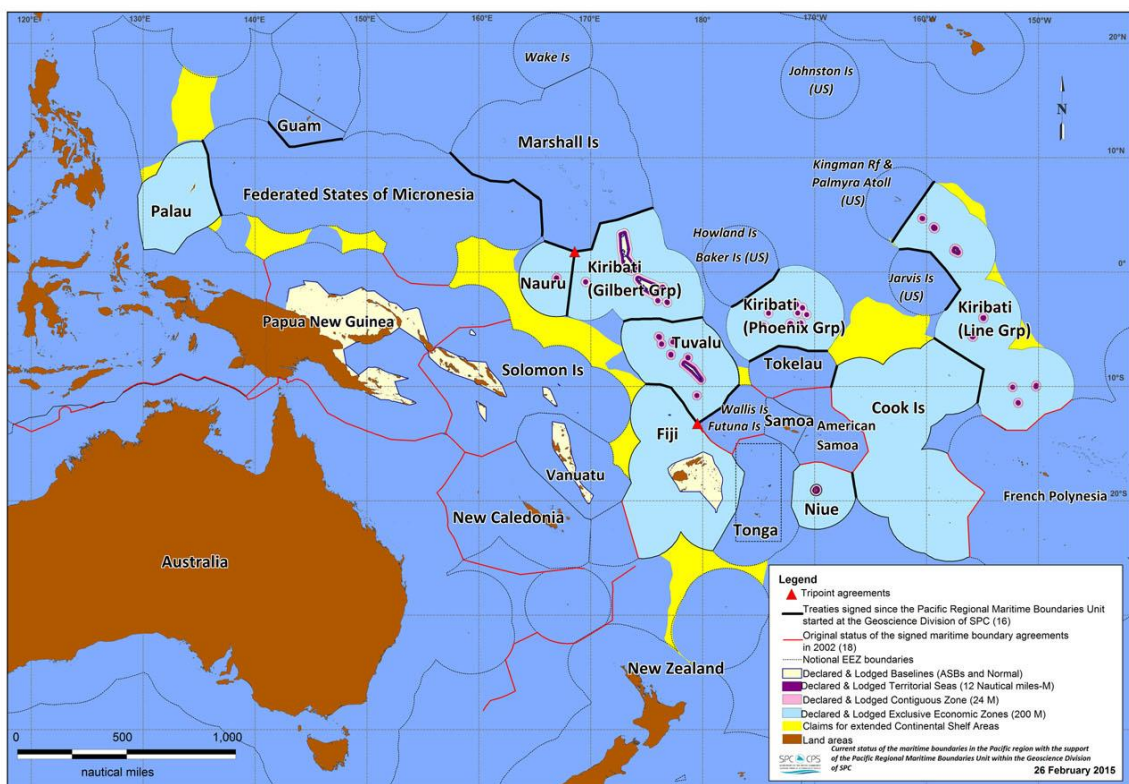


Biodiversity Beyond National Jurisdiction: Technical Report for the Pacific Islands Region

Paper by the Office of the Pacific Ocean Commissioner in collaboration with partners of the Pacific Ocean Alliance

December 2015



Picture courtesy of the Regional Secretariat of the Pacific Community (2015)

Foreword

The inaugural meeting of the Pacific Ocean Alliance “*High Hopes for High Seas – Implementing the United Nations Convention on the Law of the Sea for sustainable development of Areas Beyond National Jurisdiction in the Pacific*” was held from 25 to 27 May 2014 at the Novotel Hotel in Suva, Fiji. The meeting discussed issues as they relate to areas beyond national jurisdiction, within the context of the upcoming international negotiations on a new legal instrument for biodiversity beyond national jurisdiction. The meeting heard presentations from international, regional and national participants and convened breakout groups aimed at:

- a) Assessing emerging issues, risks and opportunities that areas beyond national jurisdiction provide [Action 6A, [Framework for a Pacific Oceanscape](#)];
- b) Exploring and building on national and regional approaches to conserve and manage high seas resources and deep sea ecosystems for the common good [Action 3C, *Framework for a Pacific Oceanscape*]; and
- c) Connecting people at national, regional and international levels to share knowledge, learn and take action on the sustainable development, management and conservation of Pacific ocean resources in areas beyond national jurisdiction [Action 4C, *Framework for a Pacific Oceanscape*].

The outcomes of the meeting, in particular the Pacific priorities and objectives as identified by breakout groups, fed into a smaller Pacific Ocean Alliance technical working group¹ that focused on the technical detail for a new international instrument on the conservation and sustainable use of marine biodiversity in areas beyond national jurisdiction.

This report provides some background for consideration by Pacific Ocean Alliance stakeholders in the lead up to the preparatory committee. It seeks to: articulate definitions as a basis for common understanding in the region; provide context as to the importance of areas beyond national jurisdiction to the region; provide a summary of the key legal frameworks as background for negotiations; provide some history to UN Resolution 69/292 on a new international legally binding instrument for biodiversity beyond national jurisdiction; and, discuss some key technical issues that make up the elements of the package open for negotiation. The intent of the report is not to establish any negotiating position, but rather to provide regional technical advice that Pacific states may draw from in forming positions.

It should be noted that the Pacific Ocean Alliance is an inclusive partnership and includes the Pacific Island countries and territories. Unfortunately, Pacific Island territories were either unavailable or unaware of the meeting and accordingly the report does not include any specific issues that may have been raised by the territories. Written submissions by territories on the issues raised in this report will be welcome and taken into account in the development of further reports on BBNJ by the Office of the Pacific Ocean Commissioner.

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Executive summary

On 19 June 2015, the United Nations General Assembly adopted [Resolution 69/292](#) – *Development of an international legally-binding instrument under the United Nations Convention on the Law of the Sea on the conservation and sustainable use of marine biological diversity of areas beyond national jurisdiction*. This resolution establishes a preparatory committee, prior to holding an intergovernmental conference, to make substantive recommendations to the General Assembly on the elements of a draft text of an international legally-binding instrument under the Convention. The preparatory committee will start its work in 2016 and, by the end of 2017, report to the General Assembly on its progress.

The legally-binding instrument on the conservation and sustainable use of marine biological diversity of areas beyond national jurisdiction (BBNJ) will be developed based on the following elements, as agreed by the General Assembly in 2011:

- marine genetic resources, including questions on the sharing of benefits;
- measures such as area-based management tools, including marine protected areas;
- environmental impact assessments; and,
- capacity building and the transfer of marine technology.

The Pacific is a world leader on oceans, championing efforts for a standalone sustainable development goal on oceans, seas and marine resources. The regional ocean policy and related *Framework for a Pacific Oceanscape* give the Pacific strategic guidance and direction to claim a global stake as large ocean island states. Part of this includes a commitment by Pacific Leaders to ensure benefit is not lost from the sustainable development, management and conservation of their ocean by proclaiming their maritime boundaries as a matter of urgency. A key challenge for Pacific Island countries in this regard is the cost, resourcing and sequencing required. The Parties to the Nauru Agreement provides an exemplary demonstration of how powerful Pacific Island states can be when they work together. This is important to remember for the upcoming negotiations recognizing that these approaches should be built upon.

The high seas are imperative for socio-economic development in the Pacific region through trade in goods and services through shipping, marine-based tourism through cruise ships and migratory species, migration and mobility. High seas ecosystems are rich with life and diversity and purported to be the international 'highway' for migratory species that Pacific communities rely on for tourism, culture and food security. Threats such as marine pollution, over-exploitation of resources, ocean acidification and climate change are anticipated to have significant impact on high seas biodiversity.

While the proposed implementing agreement provides an opportunity to address the increasing pressures in these new areas - existing processes such as United Nations Convention on the Law of the Sea (UNCLOS) and the Convention on Biological Diversity (CBD) should be used and built on as much as possible to improve understanding and management of high seas areas. At the time when UNCLOS was negotiated ABNJ were considered nutrient poor and low in productivity and biodiversity. Vulnerable Marine Ecosystems and Ecologically or Biologically Significant Areas are two existing mechanisms for identifying areas of significant biodiversity value under the Convention on Biological Diversity.

The canoe is an important part of Pacific Island history. As great voyagers, the ancestors of Pacific people explored vast spans of ocean, which did not involve artificial boundaries. The Pacific cultural connection through the ocean is real and has been invigorated through the *Vaka*.

The potential benefits from marine genetic resources (MGR) are yet to be realized. Whilst it may be a complicated road ahead, it is imperative that Pacific interests are protected and Pacific people benefit and are empowered under any new regime. There is a low probability of monetary benefits from MGRs due to the capital cost of exploration and development, the length of time it takes to reach production and no guarantees it will reach a marketable product. However, there are immediate non-monetary benefits available to Pacific Island countries, including participation in international research cooperation, access to data, samples and knowledge and targeted research to priority needs. Some considerations for the proposed implementing agreement include: legal certainty, which is essential for promoting investment in research and development; managing inequalities between developed and developing countries; and the traceability of MGRs.

There is a need to find balance between the economic, environmental and social dimensions of area based management (ABM). ABM has the potential to manage the potential conflict over space and use, but objectives must be clear and area based responses must be targeted to suit the relevant objective. While Marine Protected Areas (MPAs) can be insurance policies for the ocean in the absence of adequate scientific information, where biodiversity would be protected inside a MPA in case of loss outside, it may be more beneficial to take a balanced approach to managing all areas rather than completely protecting some areas and fully exploiting others. Current ABM approaches are generally sectoral and fail to address other activities or all conservation values, are short-term and unsystematic and involve little coordination, common criteria or scientific basis. A new implementing agreement should address the gaps and improve coordination between existing sectoral approaches in this regard.

Pacific Leaders have endorsed the need for prior environmental assessments for ocean-related activities and have indicated that, where necessary, the precautionary principle should be applied. Challenges for environmental impact assessments (EIAs) in ABNJ include: geographical-related issues; practical difficulties; and governance issues. There is a need for transparency with respect to data, noting the challenge of standardizing data, and a need to look into the social impacts of operations and whole ecosystem approaches, inclusive of cumulative impacts. Companies need to be held accountable and should pay the price of assessment and impact (planned or unplanned).

Traditional knowledge is rich and of particular importance in the Pacific, but Pacific countries face ongoing resource constraints relating to human, financial and technological resources. A new agreement has the potential to deliver two types of capacity building and technology transfer: physical (business, employment, skills, collaboration) and digital (knowledge transfer and access to information and data). But capacity building must not be just a theoretical, academic endeavor - it needs to be undertaken as part of a package of real and practical measures. The Pacific region's experience of learning-by-doing in respect of maritime boundary delimitation and extended continental shelf claims are good examples of what works well and these have built strong networks in the region. Some limitations in the region include: absence of central repositories for ABNJ-related data and information; high staff turnover; limited funding; and capacity building projects by development partners are not always well coordinated and are sometimes ad-hoc – therefore a more strategic approach should be taken, which must be led by national governments (with technical support from regional organizations).

Table of Contents

Executive summary.....	3
1 <i>Defining terminology used in this paper</i>	6
2 <i>Background</i>	8
3 <i>Legal frameworks for areas beyond national jurisdiction</i>	10
3.1 United Nations Convention on the Law of the Sea (UNCLOS).....	11
3.2 Intergovernmental Oceanographic Commission of UNESCO (IOC).....	12
3.3 Convention on Biological Diversity (CBD).....	12
3.4 International Maritime Organisation (IMO) instruments.....	13
3.5 Food and Agriculture Organisation of the UN (FAO) instruments	14
3.6 Protected Species Conventions	14
3.7 The Noumea Convention.....	15
3.8 Convention for the Conservation and Management of Highly Migratory Fish Stocks in the Western and Central Pacific Ocean (WCPF Convention).....	15
3.9 The Nauru Agreement Concerning Cooperation in the Management of Fisheries of Common Interest (the Nauru Agreement).....	15
3.10 South Pacific Regional Fisheries Management Organisation (SPRFMO).....	16
3.11 Lessons learnt from existing regimes	16
3.11.1 Membership, ownership and buy-in	16
3.11.2 Scope	16
3.11.3 Decision-making	17
3.11.4 Implementation	17
4 <i>Background to a new international agreement for the conservation and sustainable use of biodiversity beyond national jurisdiction (BBNJ)</i>	19
4.1 The BBNJ process and gaps in the current regime	19
4.2 Key issues for elements of the BBNJ package	21
4.2.1 Marine genetic resources, including questions on the sharing of benefits	21
4.2.2 Measures such as area-based management tools, including marine protected areas.....	24
4.2.3 Environmental impact assessments	29
4.2.4 Capacity building and the transfer of marine technology.....	34
4.2.5 New and emerging uses	35
5 Conclusion and next steps.....	36
6 References.....	37

1 Defining terminology used in this paper

Term	Definition
The Area	The areas of the seabed beyond the continental shelf. The Area has the status of the 'common heritage of mankind' and is governed by the International Seabed Authority (ISA).
Area based management	Whilst there is no universally agreed definition of area based management, in this context it is proposed to include spatial (e.g. marine protected areas) and non-spatial (e.g. gear restrictions) tools to manage uses for the sustainable development, management and conservation of marine biodiversity.
Biodiversity (Marine biodiversity)	<p>The variability among living organisms from all sources including, inter alia, terrestrial, marine and other aquatic ecosystems and the ecological complexes of which they are part; this includes diversity within species, between species and of ecosystems (CBD)</p> <p>Marine biodiversity includes the plants, animals (including fish) and microorganisms found in the marine environment, the genes they contain as well as the proteins or other metabolites genes produce and the ecosystems that they form.</p>
Biotechnology	Any technological application that uses biological systems, living organisms, or derivatives thereof, to make or modify products or processes for specific use (Nagoya Protocol Article 2).
Common Heritage of Mankind	The Area and its resources (all solid, liquid or gaseous mineral resources in situ in the Area at or beneath the seabed, including polymetallic nodules) are the common heritage of mankind (UNCLOS Article 136). The principle broadly means that elements of common heritage (cultural and natural) should be held in trust for future generations and be protected from exploitation by individual nation states or corporations. The exploration and use of resources in this scenario is for the benefit and in the interests of all countries, irrespective of their degree of economic or scientific development, and is the province of all mankind.
Derivative	A naturally occurring biochemical compound resulting from the genetic expression or metabolism of biological or genetic resources, even if it does not contain functional units of heredity.
Freedom of the High Seas	<p>The high seas are open to all States, whether coastal or land-locked. Freedom of the high seas is exercised under the conditions laid down by UNCLOS and by other rules of international law. It comprises, inter alia, both for coastal and land-locked States:</p> <ul style="list-style-type: none"> (a) freedom of navigation; (b) freedom of overflight; (c) freedom to lay submarine cables and pipelines; (d) freedom to construct artificial islands and other installations permitted under international law; (e) freedom of fishing; (f) freedom of scientific research. <p>These freedoms shall be exercised by all States with due regard for the interests of other States in their exercise of the freedom of the high seas, and also with due regard for the rights under UNCLOS with respect to activities in the Area (UNCLOS Article 87)</p>

Marine biological resources	Includes genetic resources, organisms or parts thereof, populations, or any other biotic component of ecosystems <u>with actual or potential use or value for humanity</u> (CBD)
Marine genetic resources	Genetic material (any material of plant, animal, microbial or other origin containing functional units of heredity) of actual or potential value (CBD)
Marine protected areas	Any defined area within or adjacent to the marine environment, together with its overlying water and associated flora, fauna, historical and cultural features, which has been reserved by legislation or other effective means, including custom, with the effect that its marine and/or coastal biodiversity enjoys a higher level of protection than its surroundings (CBD) – this can, but does not necessarily mean total exclusion of resource use and can include multiple use.
The Pacific	That part of the Pacific Ocean in which the following Island countries and territories are located: American Samoa, Australia, Cook Islands, Federated States of Micronesia, French Polynesia, Fiji, Guam, Kiribati, Nauru, New Zealand, Tokelau, New Caledonia, Northern Marianas Islands, Niue, Palau, Papua New Guinea, Republic of Marshall Islands, Samoa, Solomon Islands, Tonga, Tuvalu, Vanuatu, Wallis and Futuna. As such, the extent of the region includes not only the area within the 200 nautical miles Exclusive Economic Zone (EEZ) boundaries circumscribing these islands, but also the ocean and coastal areas that encompass the extent of the marine ecosystems that support the region (MSWG, 2005; Pratt and Govan, 2011).
Pacific High Seas Pockets	High seas in the Pacific which are continuously bounded by the Exclusive Economic Zones of Pacific Island States.
Strategic Environmental Assessment	Strategic assessments are large scale assessments and, unlike project-by-project assessments that look at individual actions, they can consider a much broader set of actions and take into account cumulative impacts. Strategic environmental assessments generally focus on policy, plan or programme (PPP) making to achieve both conservation and development outcomes.
Utilisation of genetic resources	To conduct research and development on the genetic and/or biochemical composition of genetic resources, including through the application of biotechnology (Nagoya Protocol Article 2).

2 Background

The ocean provides many ecosystem services that can be generally categorised as follows (Rogers *et al*, 2014):

- Provisioning services (seafood; raw materials; genetic resources; medicinal resources; ornamental resources);
- Regulating services (air purification; climate regulation; waste treatment; biological control);
- Habitat services (biodiversity lifecycle maintenance; gene pool protection); and
- Cultural services (recreation and leisure; aesthetic information; information for culture, art, design and for cognitive development).

The value of key ocean assets is estimated to be at least USD24 trillion, globally, of which more than two-thirds rely on healthy ocean conditions (Hoegh-Guldberg *et al*, 2015). High seas comprise more than 60% surface area of the ocean and more than 70% by volume. High seas ecosystems are estimated to be responsible for nearly half of the biological productivity of the global ocean (Rogers *et al*, 2014).

It is estimated that 68% of global fish harvests are of species that can be captured in both EEZs and the high seas (migratory or transboundary). The global economic value of high seas fisheries is estimated at >USD16 billion in gross landed value per year (Rogers *et al*, 2014). In the Pacific, tuna from the Western and Central Pacific Fishery supplies nearly 60% of the global tuna supply, with nearly 35% supplied from within national waters of Pacific Island countries. Despite the jurisdictional separation within the fishery, the impacts of high seas fishing are felt by all whom share and depend on this highly migratory resource.

Deep sea minerals in areas beyond national jurisdiction offer development potential if managed sustainably. To date, nineteen (19) contracts for exploration in areas beyond national jurisdiction have been approved by the International Seabed Authority in the Pacific Ocean's Clarion Clipperton zone, the Western Indian Ocean and the Mid-Atlantic Ridge. Four of these contracts have been with Pacific Islands as sponsoring states (Druel and Gjerde, 2014). However, there is still a major step between exploration and future exploitation, in terms of technology as well as regulations (exploitation regulations are currently being developed), let alone the specific implementing rules for benefit-sharing (these also still need to be developed at some point in the future).

Around 90% of world trade is carried out by the shipping industry (Druel and Gjerde, 2014). In a region that is predominantly ocean, shipping is the backbone of most national economies. Whilst this relies on the freedom of navigation through EEZs and high seas areas, the impacts of shipping must be well managed to ensure minimal impact on other marine sectors and environment in the region. This is particularly relevant to the Pacific and its high seas pockets, which is reflected in the region's *Convention for the Protection of the Natural Resources and Environment of the South Pacific Region* (the 'Noumea Convention').

Despite a large degree of inherent uncertainties, the high seas are estimated to sequester the equivalent of over 1.5 billion tonnes of carbon dioxide annually, which equates to between USD74 billion and USD222 billion annually in terms of the social cost of carbon (Rogers *et al*, 2014).

Tourism is the only economic sector to have grown consistently in the Pacific, over the last five years, and it continues to offer growth opportunities (SPTO, 2014). Much of the Pacific's tourism relies on the health of the marine environment, such as diving/snorkeling ventures that rely on healthy reefs, whale/dolphin watching ventures that rely on the presence and health of migratory species populations and

recreational/game fishing ventures that rely on healthy fish stocks. Activities on the high seas, if not managed for the sustainable development, management and conservation of ocean resources, could impact local economies.

The Pacific region (as defined in the *Framework for a Pacific Oceanscape*) is unique in the fact that the high seas are embedded between its national jurisdictions (herein referred to as Pacific High Seas Pockets). These Pacific High Seas Pockets both connect and divide us.

Pacific Leaders have provided clear guidance on their expectations with respect to the sustainable development, management and conservation of the ocean and its resources. This is encapsulated in the region's ocean policy framework, which includes the *Pacific Islands Regional Ocean Policy*², endorsed by Leaders in 2002, and its companion *Framework for a Pacific Oceanscape*³, endorsed by Leaders in 2010.

These documents made clear the region's interest in managing areas beyond national jurisdiction, through setting the geographic scope of the region as "not only the area within the 200 nautical miles Exclusive Economic Zone (EEZ) boundaries circumscribing these island countries, but also the ocean and coastal areas that encompass the extent of the marine ecosystems that support the region." In particular, a call for action was made by Leaders through the *Framework for a Pacific Oceanscape* for regional and intergovernmental bodies to explore and build on approaches to conserve and manage high seas resources and deep sea ecosystems for the common good.

Further to this, at their 2014 meeting in Palau, Pacific Leaders endorsed the Palau Declaration - *The Ocean: Life and Future, Charting a Course to Sustainability*, through which Leaders supported "a decision in favour of launching negotiations by September 2015 for an International Agreement under the United Nations Convention on the Law of the Sea on the conservation and sustainable use of marine biological diversity of areas beyond national jurisdiction".

In September 2015, United Nations member states adopted the Sustainable Development Goals (SDGs). Pacific Island countries have played an active role in these negotiations, and have successfully led efforts to advocate and secure a stand-alone goal on Oceans – SDG 14, to "conserve and sustainably use the oceans, seas and marine resources for sustainable development." Of particular relevance to the high seas is target 14.7, which aims, by 2030, to increase the economic benefits to small island developing States and least developed countries from the sustainable use of marine resources, including through sustainable management of fisheries, aquaculture and tourism.

It is within this context that we further explore the options of what such an agreement might look like. This paper will discuss the existing legal frameworks, the gaps and the technical considerations for negotiations that would best support the objectives of the Pacific.

² <http://www.forumsec.org.fj/resources/uploads/attachments/documents/PIROP.pdf>

³ <http://www.forumsec.org.fj/resources/uploads/embeds/file/Oceanscape.pdf>

3 Legal frameworks for areas beyond national jurisdiction⁴

Table 1 Summary of global and regional ratifications – the following table is provided, not to highlight non-ratifications, but rather to demonstrate interests within the region

Instrument/organisation	Entered into force	Total ratifications	Pacific ratifications (of total 16⁵)
<i>United Nations Convention on the Law of the Sea (UNCLOS)</i>	1994	167	16
Agreement relating to Implementation of Part XI of UNCLOS	1996	147	15 (not Marshall Islands)
Agreement for the Implementation of the Provisions of UNCLOS relating to the Conservation and Management of Straddling Fish Stocks and Highly Migratory Fish Stocks	2001	82	15 (not Vanuatu)
<i>Intergovernmental Oceanographic Commission of UNESCO (established under resolution 2.31 of the UNESCO General Conference)</i>	1960	147	13 (not FSM, Nauru, RMI)
<i>Convention on Biological Diversity</i>	1993	196	16
International Convention for the Prevention of Pollution from Ships (MARPOL)	1973	161	13 (not Fiji, FSM, Nauru)
Convention for the Prevention of Marine Pollution by Dumping of Wastes and Other Matter (London Convention)	1972	90	8 (not Cook Is, Fiji, RMI, FSM, Niue, Palau, Samoa, Tuvalu)
International Maritime Organisation (established under the IMO Convention)	1958	171	13 (not FSM, Niue, Nauru)
FAO Compliance Agreement	2003	40	3 (Aus, NZ, Cook Is)
FAO Port State Measures Agreement	Not in force	12	1 Signed Agreement (Samoa)
Convention on the Conservation of Migratory Species of Wild Animals	1983	120	6 (Cook Is, Fiji, Palau, Samoa, Aus, NZ)
Convention on International Trade in Endangered Species of Wild Flora and Fauna (CITES)	1975	181	8 (Aus, Fiji, NZ, Palau, PNG, Samoa, Sol Is, Vanuatu)
International Convention for the Regulation of Whaling	1948	89	8 (Tuvalu, Sol Is, Palau, NZ, Nauru, RMI, Kiribati, Aus)
Noumea Convention	1990	12	10 (not Kiribati, Niue, Palau, Tonga, Tuvalu, Vanuatu)
Western and Central Pacific Fisheries Commission (WCPFC)	2004	25 (+7 participating territories)	16
South Pacific Regional Fisheries Management Organisation (SPRFMO)	2012	12	4 (Aus, NZ, Cook Is, Vanuatu)

⁴ Please note that this is not an exhaustive list, but indicative of the main frameworks of most relevance.

⁵ Australia, Cook Islands, Federated States of Micronesia, Fiji, Kiribati, Nauru, New Zealand, Niue, Palau, Papua New Guinea, Republic of Marshall Islands, Samoa, Solomon Islands, Tonga, Tuvalu and Vanuatu

3.1 United Nations Convention on the Law of the Sea (UNCLOS)

UNCLOS is the international umbrella treaty covering all ocean uses, and all 16 Pacific coastal states have ratified UNCLOS (refer to Table 1). A number of legal instruments have been developed to complement and build on UNCLOS that cover specific sector uses and/or impacts in more detail. UNCLOS divides the marine space into a number of zones measured from baselines extending along the coast, including:

- areas within national jurisdiction (internal waters, archipelagic waters, territorial sea, contiguous zone, exclusive economic zone (EEZ), including the continental shelf);
- extended continental shelf (ECS) comprising the sea-bed and subsoil, can be claimed where the continental shelf extends beyond 200nm – here coastal states have the right to exploit living organisms belonging to sedentary species associated with the ECS as well as the seabed mineral resources, but face benefit-sharing obligations regarding the exploitation of the latter; and
- areas beyond national jurisdiction (water column beyond EEZs or the territorial sea where no EEZ has been declared – called the high seas, seabed beyond the continental shelf – called the Area).

UNCLOS was developed in a period when areas beyond national jurisdiction were considered nutrient poor and low in productivity and biodiversity. Of the Pacific Island States that have ratified UNCLOS, seven are yet to proclaim the outer limit of their EEZs. Ten Pacific Island States have made further submissions to the UN for claims of potential extended continental shelf.

UNCLOS is supplemented by two implementing agreements:

- *1994 Agreement relating to Implementation of Part XI of UNCLOS*
The Part XI Implementation Agreement provides a regime relating to minerals on the seabed beyond the continental shelf. This includes solid, liquid or gaseous mineral resources at or beneath the seabed, including polymetallic nodules, polymetallic massive sulphides and cobalt-rich crusts, which are managed as the common heritage of mankind by the International Seabed Authority. 15 Pacific states have ratified Part XI (only the Republic of the Marshall Islands has not).
- *1995 Agreement for the Implementation of the Provisions of UNCLOS relating to the Conservation and Management of Straddling Fish Stocks and Highly Migratory Fish Stocks*
The United Nations Fish Stocks Agreement – UNFSA – strengthens UNCLOS by: requiring fisheries management to be based on precautionary and ecosystem approaches; and enhancing means for monitoring, control and enforcement by flag States and international cooperation. 15 Pacific states have ratified the UNFSA (only Vanuatu has not).

A number of institutions are created under UNCLOS for its implementation, including the:

- **International Tribunal for the Law of the Sea** (21 independent Tribunal members adjudicate disputes arising out of the interpretation and application of UNCLOS);
- **Commission on the Limits of the Continental Shelf** (usually meets twice yearly to consider ECS claims and provide advice to coastal States on their submissions); and,
- **International Seabed Authority** (sets rules, regulations and procedures governing activities in the Area such as prospecting and exploration for polymetallic nodules, polymetallic massive sulphide and cobalt-crust deposits).

The United Nations General Assembly also holds the annual United Nations Open-ended Informal Consultative Process on Oceans and Law of the Sea (referred to as UNICPOLOS or ICP).

3.2 Intergovernmental Oceanographic Commission of UNESCO (IOC)

The Intergovernmental Oceanographic Commission of the United Nations Educational, Scientific and Cultural Organisation (IOC/UNESCO) was established by resolution 2.31 adopted by the General Conference of UNESCO. The IOC is the only organization for marine science within the UN system. The purpose of the Commission is to promote international cooperation and to coordinate programmes in research, services and capacity-building, in order to learn more about the nature and resources of the ocean and coastal areas and to apply that knowledge for the improvement of management, sustainable development, the protection of the marine environment, and the decision-making processes of its Member States. In addition, IOC is recognized through UNCLOS as the competent international organization in the fields of Marine Scientific Research (Part XIII) and Transfer of Marine Technology (Part XIV).

IOC coordinates ocean observation and monitoring through the Global Ocean Observing System (GOOS), which aims to develop a unified network providing information and data exchange on the physical, chemical, and biological aspects of the ocean. Governments, industry, scientists, and the public use this information to act on marine issues. IOC also coordinates and fosters the establishment of regional intergovernmental coordinating tsunami warning and mitigation systems in the Pacific and Indian Oceans, in the North East Atlantic, Mediterranean and Caribbean seas.

3.3 Convention on Biological Diversity (CBD)

The CBD binds State parties to the conservation of biological diversity, the sustainable use of its components, and the fair and equitable sharing of benefits arising from the use of genetic resources within national jurisdiction. All 16 Pacific States have ratified CBD. Twenty “Aichi Biodiversity Targets” have been established by the Conference of the Parties to CBD as part of their 10-year Strategic Plan for Biodiversity. One such target is to conserve at least 10% of the world’s marine and coastal areas by 2020 through equitably managed, ecologically representative and well-connected systems of protected areas and other effective area-based conservation measures.

To understand where to focus these efforts, the Parties to the CBD adopted a scientific process to identify global ecologically or biologically significant marine areas (EBSAs). One such process was conducted out of Nadi, Fiji for the Western South Pacific, which resulted in the identification of 26 EBSAs that covered areas in national jurisdiction and beyond. Other CBD Aichi targets of particular relevance to the marine environment address issues such as sustainable management and harvesting of fish (target 6); sustainable management of areas under aquaculture (target 7); and minimizing multiple anthropogenic pressures on coral reefs and other vulnerable ecosystems impacted by climate change or ocean acidification (target 10).

However, all 20 Aichi targets contain elements that are relevant to the oceans, their resilience, and ensuring human livelihoods and wellbeing⁶. In addition, the CBD Parties have adopted guidance that is useful for marine areas both within and beyond national jurisdiction. One important example for the current debate on BBNJ are the 2012 voluntary guidelines for the consideration of biodiversity in

⁶ For full text of the Aichi targets, see <https://www.cbd.int/sp/targets/>

Environmental Impact Assessments and Strategic Environmental Assessments in marine and coastal areas.

On 12 October 2014 the CBD Nagoya Protocol on Access to Genetic Resources and the Fair and Equitable Sharing of Benefits Arising from their Utilization (Nagoya Protocol), which aims to support the implementation of the CBD's third objective on access and benefit-sharing, entered into force. The implementation of the Nagoya Protocol has the effect of protecting countries' exercise of national sovereignty over their genetic resources (including marine genetic resources) by ensuring arrangements for the fair and equitable sharing of benefits from its utilization are honored. Fair and equitable benefits includes appropriate:

- access to genetic resources;
- transfer of relevant technologies, taking into account all rights over those resources and to technologies; and,
- funding, thereby contributing to the conservation of biological diversity and the sustainable use of its components.

This has special significance for the Pacific large ocean island states, with their vast Exclusive Economic Zones (EEZs). However, due to its limited geographical scope the Nagoya Protocol does not apply to areas beyond national jurisdiction, that is the High Seas and the Area. Only 5 Pacific States have ratified the Nagoya Protocol, 2 have signed but not yet ratified and 9 have not ratified (refer Table 1).

With respect to areas beyond national jurisdiction, CBD applies to activities carried out under a State party's jurisdiction or control that may have an adverse impact on biodiversity, but does not apply to the conservation and sustainable use of biodiversity *per se* as it does within national jurisdiction. Under the CBD, States are invited, but not bound, to identify activities under their control or jurisdiction that may have significant impact on deep seabed ecosystems and species beyond national jurisdiction, nor are they bound to ensure activities within their control or jurisdiction do not cause damage to the environment in areas beyond national jurisdiction. The latter obligation, however, is included in UNCLOS.

3.4 International Maritime Organisation (IMO) instruments

Shipping is generally governed globally under the auspices of the IMO, whose mandate is to ensure safe, secure and efficient shipping on clean oceans. The IMO implements two primary instruments, being the:

- **International Convention for the Prevention of Pollution from Ships (MARPOL)**, which governs accidental and intentional discharges from ships and designates "Special Areas" where more stringent discharge rules apply; and
- **1972 Convention for the Prevention of Marine Pollution by Dumping of Wastes and Other Matter (London Convention)**, which aims to prevent marine pollution caused by the deliberate disposal of wastes or other matter at sea, including in areas beyond national jurisdiction.

In addition to the "Special Areas" under MARPOL, the IMO has adopted a resolution to designate "Particularly Sensitive Sea Areas" that need special protection from shipping activities due to their ecological, socio-economic or scientific significance in areas of national jurisdiction and beyond.

The IMO also has carriage of the Convention for the Control and Management of Ships' Ballast Water and Sediments, which is not yet in force, but aims to prevent, minimize and ultimately eliminate the transfer of aquatic organisms and pathogens due to ballast water exchange.

3.5 Food and Agriculture Organisation of the UN (FAO) instruments

Around the time of the UN Fish Stocks Agreement, the Food and Agriculture Organisation of the United Nations developed an Agreement to Promote Compliance with International Conservation and Management Measures by Fishing Vessels on the High Seas (the Compliance Agreement) to address the growing problem of reflagging of vessels in order to avoid the application of high seas conservation and management measures determined by regional fisheries organizations ("flags of convenience"). Only Australia, New Zealand and Cook Islands have formally ratified this Agreement, although the principles are embodied in the Western and Central Pacific Fisheries Convention (WCPFC Convention), which Pacific States are party to, and the South Pacific Regional Fisheries Management Organisation Convention (SPRFMO Convention) on the Conservation and Management of High Seas Fishery Resources in the South Pacific Ocean (see Sections 3.8 and 3.10 below).

These agreements are supplemented by the FAO's voluntary Code of Conduct for Responsible Fisheries, which spells out flag State responsibilities for the activities of fishing vessels flying its flag and seeks to advance management measures, by agreement among States, which improve the optimal and sustainable use of fisheries resources. The FAO also has four voluntary International Plans of Action on: (i) sharks; (ii) Illegal, Unreported and Unregulated (IUU) fishing; (iii) seabirds; and, (iv) management of fishing capacity, the principles of which are already, or in the process of being, established in National Plans of Action by most Pacific States.

The FAO's Agreement on Port State Measures to Prevent, Deter and Eliminate Illegal, Unreported and Unregulated Fishing (Port State Measures Agreement) aims to prevent illegally caught fish from entering international markets through ports. While only Samoa has formally signed this Agreement, others are considering adapting its principles to be implemented at the regional level in a way that takes account of existing inspection regimes and allows small island developing states' capacity constraints to be effectively addressed.

3.6 Protected Species Conventions

The Convention on the Conservation of Migratory Species of Wild Animals (CMS) is a framework agreement pursuant to which both binding agreements and non-binding Memoranda of Understanding have been adopted related to the protection of migratory species and their habitats. Six Pacific States are Parties to the CMS (Cook Islands, Fiji, Palau, Samoa, Australia, New Zealand) and six are signatories to the CMS Shark MOU (Nauru, Palau, Tuvalu, Vanuatu, Australia, NZ). The Convention on International Trade in Endangered Species of Wild Flora and Fauna (CITES) regulates and in some cases prohibits international trade in endangered species. CITES has the authority to adopt binding regulations and compliance mechanisms for listed species. Among the marine listings of which these Conventions apply, are many species of fish, cetaceans and marine turtles that are highly migratory in nature and utilize areas beyond national jurisdiction for important biological processes. Eight Pacific States are Party to CITES. The International Convention for the Regulation of Whaling regulates whaling activities globally.

3.7 The Noumea Convention

The Convention for the Protection of the Natural Resources and Environment of the South Pacific Region (the Noumea Convention, 1986) is the multilateral umbrella agreement in the Pacific region for the protection of natural resources and the environment. The Noumea Convention obliges Parties to endeavour to take all appropriate measures to prevent, reduce and control pollution from any source and to ensure sound environmental management and development of natural resources, using the best practicable means at their disposal and in accordance with their capabilities. The scope of the Noumea Convention includes high seas pockets between the EEZs of neighboring Pacific Islands. Whilst Article 14 of the Convention allows for the special protection of areas such as the Pacific High Seas Pockets, it cannot affect existing rights of other Parties or third Party states under international law (such as the freedom of navigation and freedom of fishing). Ten Pacific countries are Parties to the Noumea Convention (refer Table 1).

3.8 Convention for the Conservation and Management of Highly Migratory Fish Stocks in the Western and Central Pacific Ocean (WCPFC Convention)

The WCPFC Convention entered into force on 19 June 2004. The WCPFC Convention draws on many of the provisions of the UN Fish Stocks Agreement while, at the same time, reflecting the special political, socio-economic, geographical and environmental characteristics of the western and central Pacific Ocean region. The WCPFC Convention seeks to address problems in the management of high seas fisheries resulting from unregulated fishing, over-capitalization, excessive fleet capacity, vessel re-flagging to escape controls, insufficiently selective gear, unreliable databases and insufficient multilateral cooperation in respect to conservation and management of highly migratory fish stocks. A framework for the participation of fishing entities in the Commission which legally binds fishing entities to the provisions of the Convention, participation by territories and possessions in the work of the Commission, recognition of special requirements of developing States, and cooperation with other Regional Fisheries Management Organizations whose respective areas of competence overlap with the WCPFC reflect the unique geo-political environment in which the Commission operates. All 16 Pacific countries and 7 Pacific territories are members of the governing Commission.

3.9 The Nauru Agreement Concerning Cooperation in the Management of Fisheries of Common Interest (the Nauru Agreement)

The Nauru Agreement is a sub-regional agreement between eight Pacific coastal states (the Federated States of Micronesia, Kiribati, the Republic of the Marshall Islands, Nauru, Palau, Papua New Guinea, Solomon Islands and Tuvalu). The Parties to the Nauru Agreement (PNA) have traditionally been concerned mainly with the management of tuna purse-seine fishing in the tropical western Pacific. The PNA countries' waters account for about 70-80% of the tuna caught in the Western and Central Pacific region, and about 35-40% of the raw material for the world's canned tuna. They have been driving innovative management and conservation measures in the Pacific including pushing for high seas closures, Fish Aggregating Device (FAD) closures, instituted 100% Observer coverage on purse seiners, FAD tracking and monitoring, and developing of an integrated Fisheries Information Management system (FIMS).

3.10 South Pacific Regional Fisheries Management Organisation (SPRFMO)

SPRFMO is an inter-governmental organisation committed to the long-term conservation and sustainable use of the fishery resources (excluding sedentary species, highly migratory species, anadromous and catadromous species, and marine mammals, reptiles and sea birds) of the South Pacific Ocean and in so doing safeguards the marine ecosystems in which the resources occur. The SPRFMO Convention applies to the high seas of the South Pacific and aims to manage non-highly migratory species and protect the biodiversity in the marine environment of the high seas areas of the South Pacific. It has the largest area of responsibility for a Regional Fisheries Management Organisation so far, but is in its infancy. Currently the main commercial resources managed by the SPRFMO are Jack mackerel and jumbo flying squid in the Southwest Pacific and, to a much lesser degree, deep-sea species associated with seamounts in the Southeast Pacific.⁷ In the Pacific context, only Australia, New Zealand, Cook Islands and Vanuatu are Members of SPRFMO.

3.11 Lessons learnt from existing regimes

3.11.1 Membership, ownership and buy-in

Any new regulatory regime will need to ensure that all Parties with a direct or genuine interest in the conservation and sustainable use of marine biological diversity of areas beyond national jurisdiction participate in the governance of the regime, to ensure ownership of management and/or conservation measures. This must include a commitment by all Parties to embrace the new implementing agreement as the primary governing instrument and support its implementation. In return, it is essential that Parties are given the opportunity to observe proceedings and have their views and potential interests taken into account in a fair and equitable manner.

Where Parties do not have a direct or genuine interest, there should be mechanisms included to facilitate cooperation and support so as not to undermine the intent for the conservation and sustainable use of marine biological diversity of areas beyond national jurisdiction, including the opportunity to observe proceedings and engage should interests change (Constable, 2006). Transparency and accountability are key to ensuring international recognition, support and influence.

3.11.2 Scope

The scope and its relationship to other frameworks also operating in the same geographical area, or applicable to the same States/activities needs to be considered carefully. Generally, new agreements cannot supersede pre-existing agreements/arrangements unless agreed by the originating Parties or explicit provisions to do so are included. However, this may call to question the legitimacy by non-Parties to the new agreement. Where a new agreement is superimposed, it has potential to fail where pre-existing regimes have not been duly recognised, harmonised, complemented and/or coordinated. Despite the Noumea Convention including provisions for high seas closures for instance, it only has ten signatories and its provisions clearly indicate the primacy of pre-existing rights without further exploration of integration, harmonisation or coordination.

There is an argument that the scope of RFMOs may be expanded to cover the conservation and sustainable use of biodiversity in areas beyond national jurisdiction. However, biodiversity conservation incorporates three elements, being the (Durussel, 2015):

1. Conservation on biodiversity resources (e.g. fish);

⁷ <https://www.sprfmo.int/> as accessed May 2015

2. Conservation of ecosystems; and,
3. Protection of the marine environment.

While most RFMOs manage the first of these aspects, the focus on the conservation of ecosystems (unless they relate directly to the fished species) and the protection of the marine environment are seldom key priorities for RFMOs. There may be a few exceptions to this, including the SPRFMO and CCAMLR models, which can be drawn from. However, RFMOs are fundamentally designed to manage the sustainable use of living marine resources and the impact of their harvest, and have therefore suffered a lack of success in implementing solid and enduring conservation measures for ecosystems and protection of the marine environment.

3.11.3 Decision-making

An important lesson from the Commission for the Conservation of Antarctic Marine Living Resources (CCAMLR) has been its transition from being a reactive management body responding to changes in stocks, which can be too late, to setting clear decision rules for management prior to any action being required, hence having a predetermined, proactive plan for management in response to changes in ecosystem health measures. These management responses can be evaluated for effectiveness prior to implementation.

For biodiversity in areas beyond national jurisdiction, there will always be a tension between uncertain scientific information and heightened political interest due to the lack of jurisdiction and conflict of understanding between resources being a common good or general freedom to exploit. Clear decision rules agreed prior to any sustainable use proceeding may help balance this tension and is the approach increasingly being promoted through regional fisheries management organisations.

It will also be important to ensure that decisions are timely and processes are designed to ensure progress towards achieving objectives and are not undermined by inertia to make decisions. Different options for decision-making – for example, decision-making by consensus; decision-making by majority vote; or an amalgam of both (voting when consensus cannot be achieved). The advantages and disadvantages of these options should be considered as a fundamental feature of any agreement. Similarly, the avenues for resolving disputes under the agreement must be considered. Dispute resolution mechanisms should allow progress of objectives without compromising the overall objective of intervention. Dispute resolution mechanisms must be fair and pre-agreed by all Parties.

3.11.4 Implementation

Any new agreement will need to include effective and cost-efficient monitoring, control and surveillance (MCS) and enforcement mechanisms if there are to be regulatory provisions imposed on Parties to the agreement. In the Pacific context, it is important that these do not create a disproportionate burden on Pacific Island States. For example, the FAO Port State Measures if they are implemented are considered, by some, to impose costly requirements on Pacific Island States, and disproportionate to the risk posed. Alternate measures to manage this risk are also being implemented that are argued to result in the same outcome but considered to be more appropriate to Pacific Island implementation where capacity constraints can be effectively managed.

MCS measures should also be accompanied by an appropriate and effective enforcement regime, including powers to terminate activities that unduly or uncontrollably compromise the conservation or sustainable use of biodiversity in areas beyond national jurisdiction. This may include a suite of

recognised and effective disincentives and sanctions for non-compliance, or equally a suite of manageable incentives for compliance and cooperation.

The cost of management (including research, assessment, compliance and enforcement) should be integrated into decisions about conservation and sustainable use. Likewise the mechanisms to support capacity building to ensure systems and processes are fair and equitable should be considered upfront.

4 *Background to a new international agreement for the conservation and sustainable use of biodiversity beyond national jurisdiction (BBNJ)*

4.1 *The BBNJ process and gaps in the current regime*

The preceding section demonstrates the plethora of existing regimes that govern aspects of areas beyond national jurisdiction. In terms of biodiversity in these areas, the existing regimes are likened to a patchwork quilt. Discussions on the conservation and sustainable use of marine biodiversity in areas beyond national jurisdiction have been ongoing at the United Nations for over a decade, in recognition of the lack of a comprehensive regime to govern impacts on biodiversity in the High Seas and the Area. The following two goals have provided the initial impetus for these discussions (Druel and Gjerde, 2014):

1. Eliminating the destructive practices of bottom fishing on the high seas; and
2. Establishing a representative network of MPAs in areas beyond national jurisdiction.

In 2004, the United Nations Informal Consultative Process on Oceans and Law of the Sea focused discussions on “New and sustainable uses of the oceans, including the conservation and management of the biological diversity of the seabed in areas beyond national jurisdiction.” From these discussions two main issues emerged: one being the balance between the freedom of the high seas and the duty to protect and preserve the marine environment; and, the other about the applicability of the common heritage of mankind principle to marine genetic resources in areas beyond national jurisdiction (Druel and Gjerde, 2014).

That year the United Nations *Ad Hoc* Open-ended Informal Working Group to study issues relating to the conservation and sustainable use of marine biological diversity beyond areas of national jurisdiction (the UN BBNJ Working Group) was established to “identify possible options and approaches to promote international cooperation and coordination for the conservation and sustainable use of marine biodiversity in areas beyond national jurisdiction” (Druel and Gjerde, 2014).

Table 2 Summary of the regulatory and governance gaps in the existing regime which has underpinned discussions to date - taken from Druel and Gjerde (2014)

REGULATORY GAPS
<ul style="list-style-type: none">• Absence of global procedures and standards for applying modern conservation tools, such as marine protected areas (MPAs), environmental impact assessments (EIAs) and strategic environmental assessments (SEAs)• Absence of a global instrument or mechanism to ensure that modern conservation principles, such as ecosystem-based management and the precautionary principle, are incorporated and applied by existing global and regional bodies• Lack of a sufficient legal mandate for ecosystem-based management, biodiversity conservation, cooperation and coordination in sectoral bodies in ABNJ• Lack of compliance and enforcement mechanisms to provide incentives for effective flag State performance• Lack of standards, procedures and guidance for capacity-building and marine technology transfer

GOVERNANCE GAPS

- Absence of a mechanism to enable coordination and cooperation within and across sectors, States, regions and institutions
- Lack of a global institution or process to oversee progress, verify compliance, adopt binding decisions and provide assistance in the application of modern principles and tools
- Lack, in many regions, of organisations with a mandate for promoting conservation and sustainable use of marine biodiversity in ABNJ or with regulatory capacity for ocean uses not regulated elsewhere
- Lack of clarity regarding the applicable regime relating to the access and the utilisation of marine genetic resources in ABNJ

In January 2015, the UN BBNJ Working Group agreed by consensus on recommendations for a decision to be taken by the UN General Assembly (UNGA) to develop a new legally binding instrument on biodiversity beyond national jurisdiction, under UNCLOS. This decision effectively concluded the mandate of the UN BBNJ Working Group. Accordingly, on 19 June 2015, the UNGA adopted Resolution 69/292 – *Development of an international legally-binding instrument under the United Nations Convention on the Law of the Sea on the conservation and sustainable use of marine biological diversity of areas beyond national jurisdiction*, in which the UN Parties have decided the following:

- to develop an international legally-binding instrument under the Convention on the conservation and sustainable use of marine biological diversity of areas beyond national jurisdiction; and to that end,
- to establish, prior to holding an intergovernmental conference, a preparatory committee to make substantive recommendations to the General Assembly on the elements of a draft text of an international legally-binding instrument under the Convention, taking into account the various reports of the Co-Chairs on the work of the Ad Hoc Open-ended Informal Working Group; and
- that the preparatory committee will start its work in 2016 and, by the end of 2017, report to the Assembly on its progress.

Furthermore, States have decided that the negotiations shall be based on the package of elements that were agreed by the UN General Assembly in 2011, namely the conservation and sustainable use of marine biodiversity in areas beyond national jurisdiction, in particular, together and as a whole:

- Marine genetic resources, including questions on the sharing of benefits;
- Measures such as area-based management tools, including marine protected areas;
- Environmental impact assessments; and,
- Capacity building and the transfer of marine technology.

Finally, it was recognized that the process for determining the elements of a new implementing agreement should not undermine existing relevant legal instruments and frameworks and relevant global, regional and sectoral bodies.

4.2 Key issues for elements of the BBNJ package⁸

4.2.1 Marine genetic resources, including questions on the sharing of benefits

4.2.1.1 *Potential benefits from marine genetic resources in ABNJ & governance challenges*

Part of the negotiations on a future international instrument on the conservation and sustainable use of marine biodiversity in ABNJ will be focused on the sharing of benefits from the utilization of marine genetic resources from areas beyond national jurisdiction. Marine genetic resources in areas beyond national jurisdiction (ABNJ)⁹ could be considered to include a very large number and variety of different marine life-forms, ranging from microscopic to larger organisms, found anywhere in the ocean (throughout the water column and the seafloor). Although much of the ocean beyond national jurisdiction remains unexplored, scientific and technological advances are driving developments in understanding the potential of marine genetic resources.¹⁰ The rich biodiversity of the ocean, and the adaptations of marine organisms to extreme conditions of deep sea habitats, underpin scientific and commercial interest in marine genetic resources.

Marine genetic resources have a number of possible applications, such as in the development of: new pharmaceuticals, cosmetics and bioremediation; biofuels; different scientific and industrial processes; and, in research on life and the origins of life.¹¹ The odds of finding a compound with potential commercial value are higher for marine organisms due to the relative diversity in the oceans compared with land-based environments. However, the odds of developing a commercial product remain comparatively low. This is due to challenges involved in accessing and developing marine genetic resources for commercial applications – especially from ABNJ (see below).

The negotiations will need to clarify the different benefits that can be derived from the utilization of marine genetic resources from areas beyond national jurisdiction, and which of these can be shared amongst the global community. Primarily benefits can be summarised as monetary or non-monetary.¹² Non-monetary benefits could include scientific and technical collaboration and cooperation; sharing of samples and research results; capacity development (e.g. training of researchers) and technology transfer; social and environmental benefits (e.g. research targeted to

⁹ Although there is no internationally agreed definition for marine genetic resources, using the definition for genetic resources in the Convention on Biological Diversity (Art 2) they can be considered to be genetic material of actual or potential value. Other relevant definitions in the Convention on Biological Diversity include: 'biological diversity'; 'biological resources'; 'genetic material'. The Nagoya Protocol defines 'Utilisation of genetic resources' and 'biotechnology'.

¹⁰ See for example: Ramirez-Llodra, E et al., 'Deep, Diverse and Definitely Different: Unique Attributes of the World's Largest Ecosystem' (2010) 7(9) *Biogeosciences* 285. German, C R, E Ramirez-Llodra, M C Baker, P A Tyler and the ChEss Scientific Steering Committee, 'Deep-Water Chemosynthetic Ecosystem Research During the Census of Marine Life Decade and Beyond: A Proposed Deep-Ocean Road Map' (2011) 6(8) *PLoS ONE* 1.;

¹¹ See for example: Leary, D, M Vierros, G Hamon, S Arico and C Monagle, 'Marine Genetic Resources: A Review of Scientific and Commercial Interest' (2009) 33(2) *Marine Policy* 183; Arico, Salvatore and Charlotte Salpin, 'Bioprospecting of Genetic Resources in the Deep Sea-Bed: Scientific, Legal and Policy Aspects' (UNU IAS, 2005); European Commission Directorate-General for Maritime Affairs and Fisheries, 'Blue Growth Opportunities for marine and maritime sustainable growth Communication from the Commission to the European Parliament, the Council, the European Economic and Social Committee and the Committee of the Regions, COM(2012) 494 final.

¹² See for example: Greiber, Thomas, 'Options and Approaches for Access and Benefit-Sharing' (Paper III, IUCN, German Federal Agency for Nature Conservation, 2014).

priority needs such as health or food security). Monetary benefits could include shared revenues from the successful commercialisation of products and milestone payments (e.g. linked to intellectual property rights). However, as indicated considerable uncertainty remains about the actual economic potential of marine genetic resources from ABNJ, and as such, expectations for the likelihood of deriving monetary benefits must be realistic. This is because there are a number of challenges for commercialising a product from a marine genetic resource, including long timeframes (up to decades, depending on the product), high research and development costs, and logistical challenges inherent in accessing deep ocean samples.¹³

Research and development underpins any monetary value of a marine genetic resource. Deriving any value from marine genetic resources can only be achieved through a dynamic, non-linear research and development process - requiring a range of technological and scientific resources,¹⁴ which not all countries possess. Globally, scientific research on the genetic diversity of the oceans is mostly State-funded and predominantly carried out by developed countries, with sampling at sea costing a minimum of USD 30,000/day (Ruth, 2006). This is reflected in patent claims associated with marine genetic resources, which arise from 31 countries - 90% of claims are from just 10 countries (USA, Germany, Japan, France, UK, Denmark, Belgium, Netherlands, Switzerland, Norway) and 70% of these claims have been made by the US, Germany and Japan (Arnaud-Haond *et al*, 2011; Arrieta *et al*, 2010). The technological and financial requirements of conducting research on deep ocean areas beyond national jurisdiction can be prohibitively high.

In the Pacific, the University of the South Pacific is building capacity in a molecular ecology and evolutionary unit that will contribute to the knowledge of regional genetic diversity in natural populations of fish and other marine invertebrates. This is predominantly focused on coastal marine genetic diversity, but it may have application to ABNJ, and particularly for the Pacific High Seas Pockets.

There is no clear framework for the management of marine genetic resources under UNCLOS. There are definitional gaps, for example, marine genetic resources are not mentioned in UNCLOS, as such the legal status of marine genetic resources is not clear. For example, because marine genetic resources can be associated with the seafloor (the Area) and/or the water column (High Seas), there has been some debate as to whether they should be considered as the common heritage of mankind or from the viewpoint of freedoms of the high seas.¹⁵ On the one hand, developing countries (G77+China) support the consideration that marine biodiversity/marine resources/marine genetic resources (see Section 1 for description of terms) are the common heritage of mankind. On the other hand, some developed countries support the principle of freedom of the high seas. Focusing discussions on the creation of an equitable regime for access and benefit sharing of marine genetic

¹³ See for example: Oldham, Paul, Stephen Hall, Colin Barnes, Catherine Oldham, Mark Cutter, Natasha Burns and Leonie Kindness, 'Valuing the Deep: Marine Genetic Resources in Areas Beyond National Jurisdiction' (One World Analytics, 2014); Leary, David and S Kim Juniper, 'Addressing the Marine Genetic Resources Issue: Is the Debate Heading in the Wrong Direction?' in Clive H Schofield, Seokwoo Lee and Moon-Sang Kwon (eds), *The Limits of Maritime Jurisdiction* (BRILL, 2013) 769.

¹⁴ This is a key difference between genetic resources and mineral resources (mineral resources have an economic value once they are exploited).

¹⁵ See for example: Glowka, Lyle, 'Evolving Perspectives on the International Seabed Area's Genetic Resources: Fifteen Years after the Deepest of Ironies' in David Vidas (ed), *Law, Technology and Science for Oceans in Globalisation: Iuu Fishing, Oil Pollution, Bioprospecting, Outer Continental Shelf* (Martinus Nijhoff, 2010) 397.

resources could be a viable way forward. However, the design and implementation of an access and benefit sharing regime requires elaboration as to the scope and terms of such an arrangement.

4.2.1.2 Considerations for access and benefit sharing

Existing mechanisms for access and benefit sharing (ABS) do not apply to marine genetic resources in ABNJ. However, existing regimes could offer lessons for the design of an ABS regime for marine genetic resources in ABNJ, such as the: Nagoya Protocol,¹⁶ which provides for a bilateral access and benefit sharing approach for genetic resources within national jurisdiction, highlights the range of benefits that can be addressed in an ABS regime; FAO International Treaty on Plant Genetic Resources for Food and Agriculture (ITPGRFA), a multilateral ABS regime applicable to 64 food crops, highlights the importance of non-monetary benefit sharing (including the role of a 'common pool' for data sharing) and shows it is possible for a regime to link monetary benefit sharing and intellectual property rights; WHO Pandemic Influenza Preparedness Framework for the Sharing of Influenza Viruses and Access to Vaccines and Other Benefits, also highlights the role of 'common pools' access to data and information in an ABS regime. These existing mechanisms highlight a number of relevant elements that could be included in an ABS regime for marine genetic resources in ABNJ.

Furthermore, existing provisions under UNCLOS (e.g. marine scientific research (Part XIII), technology transfer (Part XIV), and the Area (Part XI)) provide a basis for non-monetary benefit sharing (e.g. sharing of research results, international cooperation in marine scientific research and developing scientific and technical capacity) that could be further implemented in support of ensuring fair and equitable access to marine genetic resources in ABNJ and sharing benefit arising from their use.

There are a number of considerations for the development and implementation of an access and benefit sharing regime. For example:

- Different options for accessing marine genetic resources from ABNJ (*in situ*, *ex situ*, *in vitro* or *in silico*), for example, marine genetic resources could be accessed as a sample or as data;¹⁷
- What benefits will be shared and how;
- Capacity development and transfer of technology;
- Scope of application (vertical, horizontal, temporal);
- Institutional options, funding; and,
- Monitoring, compliance and enforcement, including disclosure requirements to ensure traceability of genetic resources from collection to commercial development and marketing.

Given that research and development are key to deriving benefits from marine genetic resources, a key priority for the development of a new regime will be to ensure that scientific research and innovation are facilitated rather than hampered. The bottom line is that without research and development no benefit-sharing can take place. It will also be crucial to ensure that the development of scientific research capacity in developing states, as well as technology transfer, are key priorities.

¹⁶ Nagoya Protocol on Access to Genetic Resources and the Fair and Equitable Sharing of Benefits Arising from their Utilization, to the CBD.

¹⁷ See for example: Broggiato, Arianna, Sophie Arnaud-Haond, Claudio Chiarolla and Thomas Greiber, 'Fair and Equitable Sharing of Benefits from the Utilization of Marine Genetic Resources in Areas Beyond National Jurisdiction: Bridging the Gaps between Science and Policy' (2014) 49(0) Marine Policy 176.

4.2.1.3 *Practical considerations*

It is difficult to determine how different the genetic resources associated with areas beyond national jurisdiction are from those found within national jurisdictions (UNGA, 2013). For example, many hydrothermal vent species are found both in coastal vents and in vents in the deep sea, while some may be exclusive to a specific environment. However, there can be variations even within individual species depending on the environment they live in (phenotypic plasticity or polymorphism), and this may impact their usefulness to biotechnology. Some species may also spend parts of their life cycle both attached to the seabed and floating in the water column, and thus their range encompasses both the Area and high seas as defined by UNCLOS. It is possible that the genetic diversity within the high seas pockets between Pacific Island EEZs will be related, at least to some extent, to that of its surrounding States. To ensure beneficial outcomes for Pacific Island states, the design of any access and benefit sharing regime for ABNJ could usefully consider synergies and complementarities with the Nagoya Protocol and other relevant regimes applicable to marine genetic resources in areas within national jurisdiction. In addition, a key challenge will be to identify the geographic origin of marine genetic resources used in patented inventions.

The many different threats to marine biodiversity could impact marine genetic resources activities. For example, it is unknown what impacts deep sea mining may have on the unique bacteria and microbes found in ocean floor sediments and on the various hydrothermal vent species that may be considered valuable marine genetic resources. Also unknown is whether marine genetic resources could value-add to deep sea mining operations. The potential for synergistic activities between deep sea mining operations and marine genetic resources research, particularly during the conduct of environmental impact assessments, could be an area for consideration.

4.2.2 **Measures such as area-based management tools, including marine protected areas**

Area based management tools are a key part of most national and international sustainable use and conservation strategies. This is reflected most recently through the Convention for Biological Diversity Conference of the Parties' *Strategic Plan for Biodiversity 2011-2020*, in particular Aichi Target 11, under the strategic goal to *Improve the status of biodiversity by safeguarding ecosystems, species and genetic diversity*, which states that:

By 2020, at least 17 per cent of terrestrial and inland water areas and 10 per cent of coastal and marine areas, especially areas of particular importance for biodiversity and ecosystem services, are conserved through effectively and equitably managed, ecologically representative and well-connected systems of protected areas and other effective area-based conservation measures, and integrated into the wider landscape and seascape.

There is currently no universally agreed definition of what constitutes an area-based management (ABM) tool, nor an agreed definition for Marine Protected Areas (MPAs). The UN Working Group on Biodiversity Beyond National Jurisdiction has identified this as a problem, and has noted that the new implementing instrument will need to establish a common understanding and definition of the two terms (UNGA, 2014).

This paper has taken a very broad definition of ABM tools, encompassing any spatial management tool used for the purposes of sustainable development and/or conservation. Examples of area based management tools discussed by the UN Working Group and in academic literature include (but are

not limited to): marine spatial planning; strict no take marine reserves; MPAs; multiple use marine managed areas; spatial and temporal extractive industry management measures or closures including banning of particular fishing gear or technology in a defined area; and, informative tools such as the IMO's 'particularly sensitive sea areas' (PSSAs), the ISA's 'areas of particular environmental interest' and the FAO's 'Vulnerable Marine Ecosystems'.

To date, much of the discourse on ABM in ABNJ has been focused on establishment of Marine Protected Areas (MPAs). It is important to note however, that MPAs and ABM tools are not synonymous. MPAs are a subset of tools within the broader suite of ABM tools (which may include marine spatial planning or sectoral closures). The two are also not mutually exclusive, as ABM tools can still provide support for, and accrue greater benefit to, MPAs, and vice versa (Agardy *et al*, 2003).

The Pacific is unique in its profusion of community-based marine managed areas, including approaches such as Locally Managed Marine Areas (LMMAs), most of which depend at least in part on traditional ecological knowledge. Together, such areas cover a considerable amount of ocean space, which was estimated in 2009 to be approximately 30,000 km² (Govan *et al*, 2009). Thus, communities are important stewards of many fisheries and migratory species, including turtles and dugongs, which cross borders and migrate into the high seas and beyond. One of the key challenges in the Pacific is to link community-based initiatives with larger-scale MPAs and other area-based management efforts offshore in ways that build upon and strengthen the unique properties of both approaches. It is important that existing community efforts based on traditional knowledge are supported and not disempowered by management of ABNJ.

LMMAs are successful examples of the sustainable use of natural resources and with biodiversity conservation as an evident outcome. In this paper the definition of MPAs is based on the Convention for Biological Diversity definition, to mean "any defined area within or adjacent to the marine environment, together with its overlying water and associated flora, fauna, historical and cultural features, which has been reserved by legislation or other effective means, including custom, with the effect that its marine and/or coastal biodiversity enjoys a higher level of protection than its surroundings." This can, but does not necessarily mean total exclusion of resource use. Another tool commonly used to define and describe protected areas are the 6 IUCN categories for protected area management ranging from strict nature reserves to sustainable use. These categories were intended to be a global standard for the planning, establishment and management of protected areas (Dudley, 2008).

A key difference between the CBD definition, and the IUCN category system is that all IUCN categories explicitly require that conservation objectives be given primacy in the event of conflicting interests in an MPA, whereas the CBD definition does not (Day *et al*, 2012). Further to this, even the interpretation or definition of the word conservation itself varies in different agreements, cultures and regions, and as such is the source of some debate.

Well designed and planned MPAs can be an effective tool for achieving conservation objectives (Ban *et al*, 2012). Broadening discussions on the implementing agreement package from MPAs to ABM tools reflects the evolving dialogue on protected area design and systematic planning and the importance of incorporating protected areas into the broader framework of uses. This provides the flexibility necessary to coordinate the distribution and management of the numerous human uses of the ocean

in a more coordinated fashion, while supporting healthy ecosystems and ensuring coordinated governance structures (Gjerde and Rulska-Domino, 2012; Ban *et al*, 2012; Ban *et al*, 2013).

This integrated approach to the conservation, management and development of ocean resources is also supported by Pacific Leaders under the Framework for a Pacific Oceanscape (2010), for example the use of marine spatial planning is called for under Action 3B of the *Framework for a Pacific Oceanscape* calls for PICTS to “...explore and build on marine spatial planning mechanisms for improved EEZ management to achieve economic development and environmental objectives”. Non-ABM tools such as environmental impact assessments and strategic environmental assessments can also provide invaluable information to support the planning and design of ABM tools.

As discussed earlier, the existing regulatory and governance frameworks in ABNJ do not support the establishment and implementation of MPAs or other area based management tools that can coordinate multiple uses, support ecosystem based approaches and conserve biodiversity in situ. There is also no central coordination and integration mechanism for existing sectoral efforts (Drankier, 2012).

The current regime impedes efforts towards sustainable development, management and conservation of ABNJ because: efforts are often short term, not systematic, lacks coordination, lacks common criteria or scientific advice leaving them open to potentially conflicting results, doesn't address other activities or all the features of conservation importance, and provides no management options for overall conservation (Pacific Ocean Alliance, 2015).

While large scale, multi-sector area-based management tools such as marine spatial planning and comprehensive marine protected areas are yet to be implemented in the **high seas areas** of the Framework for a Pacific Oceanscape region,¹⁸ there are a number of other relevant case studies to look to, including the effective closure of Pacific High Seas Pockets to commercial purse seining by the PNA, the high seas marine protected areas in other regions formed by regional agreements such as OSPAR and CCAMLR, efforts at the local scale such as LMMAs and large scale area based management tools such as Australia's Great Barrier Reef Marine Park, Kiribati's Phoenix Islands Protected Area (PIPA) and Palau's Marine Sanctuary.

¹⁸ “The geographic scope of this Framework...is that part of the Pacific Ocean in which the island countries and territories (Pacific Communities), that are members of the organizations comprising the Council of Regional Organisations of the Pacific (CROP) are found. As such, the extent of the region includes not only the area within the 200 nautical mile Exclusive Economic Zone (EEZ) boundaries circumscribing these island countries, but also the ocean and coastal areas that encompass the extent of the marine ecosystems that support the region. The ‘ocean’ is defined to include the waters of the ocean, the living and non-living elements within, the seabed beneath and the ocean atmosphere and ocean-island interfaces.” (Pratt & Govan, 2011)

Box 1: The Convention on the Conservation of Antarctic Living Marine Resources High Sea Marine Protected Areas

The Convention is the current international legislative instrument regulating the conservation of marine resources in the Antarctic, including fisheries and scientific research. It is considered to be unique in that its primary objective is stated as being the conservation of marine life, rather than to manage the fisheries, bearing in mind that the definition of conservation taken by the Convention includes 'rational use'.¹⁹ The Convention established the Commission for the Conservation of Antarctic Marine Living Resources (CCAMLR), which is an international commission with 25 Members, and a further 11 countries have acceded to the Convention. CCAMLR requires decision by consensus, and also remains the only high seas fisheries management organization that includes nations that do not fish. CCAMLR was the pioneer in the development of what is now known as the 'ecosystem approach' to management, which includes consideration of the fishery impacts on 'dependent and related species' (Kock, 2000). The Commission also has the mandate to employ various area based management tools, including marine protected areas.²⁰ This led to the establishment of the first known individual high seas MPA, the South Orkney Islands Shelf MPA in 2009. Subsequent proposals to establish southern ocean MPAs have not been able to achieve consensus by all CCAMLR parties, with objections to the proposals including interference with fishing, duration of MPA designation, sufficiency of research and monitoring plans, and sufficiency of science.

Box 2: The Convention for the Protection of the Marine Environment of the North-East Atlantic (OSPAR Convention) High Seas Marine Protected Areas

The OSPAR Convention is the current legislative instrument regulating international cooperation on environmental protection in the [North-East Atlantic](#), and has 15 signatory nations and representatives of the European Union. The OSPAR Convention is the first example of a **network** of high seas marine protected areas (MPAs) being set up through a regional agreement. The motivation for this network originally arose from international commitments under the Convention on Biological Diversity and World Sustainability Summit to establish a network of representative MPAs by 2012, which has since been replaced by Aichi Target 11 with a deadline of 2020. OSPAR's competencies extend to research, cable laying, waste, construction of installations and artificial islands and deep sea tourism, but do not extend to fishing, mining or shipping. Consequently, in order to create a representative network of MPAs in ABNJ, it is essential for OSPAR to work with other international organisations that have a legal competence over activities within their regulatory area, and have adopted a formal MoU with the International Maritime Organisation, International Seabed Authority and the North East Atlantic Fisheries Commission (O'Leary *et al*, 2012). The MPAs are still in their infancy, with the effectiveness of their governance arrangements and conservation efforts still to be fully seen. For example, in accordance with UNCLOS and the Convention, OSPAR parties cannot take measures concerning environmental protection on the high seas against foreign ships which are not party to the Convention (Luck-Matz and Fuchs, 2014). It is also understood that these agreements and relationships are very resource intensive to manage.

¹⁹ Convention on the Conservation of Antarctic Marine Living Resources. 1982. Article II. Paragraph 2.

²⁰ *ibid*

Some of the lessons learnt from the identification, design, establishment and implementation of these tools include:

- The cause of threats to marine ecosystems and biodiversity values should be understood, management responses should be appropriate to the threat, with the objectives and desired outcomes of the tool clearly articulated (Agardy *et al*, 2003; Kearney and Farebrother, 2014; Pacific Ocean Alliance, 2015).
- MPAs should be responsive to evaluation outcomes of the effectiveness of measures in achieving their objectives MPAs should be considered in the broader ecosystem context, including other users in the marine environment (Kearney and Farebrother, 2014).
- Careful cost benefit analysis should be carried out prior to declarations to ensure resourcing issues related to implementation, monitoring and enforcement can be managed over time (Kearney and Farebrother, 2014; Ban *et al*, 2012).
- Legislative requirements should be well understood to ensure effective and timely implementation (Kearney and Farebrother, 2014).
- Models need to be cost-effective and achievable within foreseeable government and governance contexts (Pacific Ocean Alliance, 2015).
- Financing, monitoring and compliance need to be considered as essential aspects of ensuring the effectiveness of the tool (Rochett *et al*, 2015).
- The design and objectives of the tool should be set in consultation with all relevant stakeholders (Agardy *et al*, 2003).
- The identification, design and establishment of marine protected areas and other ABM tools should be based on appropriate policy, and democratic and transparent processes that are legitimate and transparent (Bennett *et al*, 2015; Pacific Ocean Alliance, 2015).
- ABM tools should consider the potential impacts on the livelihoods and food security of communities, particularly for developing countries (Pacific Ocean Alliance, 2015).
- ABM tools should not inadvertently create adverse impacts on the socio-ecological wellbeing of Pacific people (Pacific Ocean Alliance, 2015).
- Any ABM tool, in particular MPAs, should ideally be aligned with definitions in existing international instruments such as the Convention on Biological Diversity (CBD), in order to ensure their contribution to global targets are recognized, as well as to promote efficiency in reporting) (Pacific Ocean Alliance, 2015).
- ABM tools for ABNJ should not be developed in isolation of supporting governance arrangements and consideration of implementation requirements including sustainable financing (Rochett *et al*, 2015).
- Regional governance efforts may benefit from revising and/or broadening mandates of competent authority to enhance synergy and complementarity, strengthening of individual organisations, and promotion of informal cooperation and coordination arrangements (Rochett *et al*, 2015).

What this tells us, and as raised through the Convention for Biological Diversity, is whilst creating a network of effectively and equitably managed, ecologically representative and well-connected systems of protected areas is important, these must be integrated into the wider picture, where all uses are considered and outcomes are managed for the sustainable development, management and conservation of resources. The breadth of available management options need to be considered,

including but not limited to: (i) no activity; (ii) reduced activity; and, (iii) the cessation of specified activities.

Although the incorporation of management and conservation principles will be welcome in existing instruments, an overarching framework is still needed. Some States do not consider regional organisations legitimate in the establishment and management of ABM in areas beyond national jurisdiction. An implementing agreement that facilitates area based management in ABNJ would allow for the management of conflicting uses, protection of sensitive areas, the incorporation of environmental impact assessments and strategic environmental assessments, and the establishment of high seas MPAs (Pacific Ocean Alliance, 2015).

4.2.3 Environmental impact assessments

Traditionally environmental impact assessments (EIAs) have been carried out on an activity-by-activity basis, seeking to identify and manage the impact of development on the environment, and the environment on the development. There is an emerging trend to supplement these assessments with strategic environmental assessment (SEA) of cumulative impacts over time that aims to address the short-comings of point-in-time assessments for a single activity, which may not account for the wider ocean environment or its uses. SEA's can be used to support strategic development or resource use plans (such as marine spatial planning or other area based management tools), to assess impacts of policies, plans or programmes; and to assess different types or classes of development projects.

The Secretariat of the Pacific Regional Environment Programme (SPREP) has prepared EIA guidelines for the Pacific, which have been endorsed by Member countries at their most recent governing council meeting in September 2015. These have been used in formulating this advice and should be considered in the context of harmonising regulatory frameworks across artificial maritime borders, especially in the context of potential transboundary environmental impacts.

In considering Transboundary EIAs, it should be noted that these need not be separate assessments; they can be included under EIAs and SEAs if/where appropriate by writing them into the terms of reference prepared for EIA and SEA reports. However, in a Pacific context understanding of baseline environments within EEZs is often limited, which makes it difficult to assess transboundary impacts.

Box 3: The Convention on Environmental Impact Assessment in a Transboundary Context (ESPOO (EIA) Convention

The Espoo (EIA) Convention might offer some lessons in terms of management of transboundary impacts that could be applied in the Pacific, where so many of our boundaries border the high seas. The Espoo (EIA) Convention sets out the obligations of Parties to assess the environmental impact of certain activities at an early stage of planning. It also lays down the general obligation of States to notify and consult each other on all major projects under consideration that are likely to have a significant adverse environmental impact across boundaries.

The Framework for a Pacific Oceanscape calls for prior environmental assessments to prevent harmful impacts from new and emerging activities. In the 2014 Palau Declaration, Pacific Island Leaders reiterated their support to ensure that, where appropriate, effective environmental impact assessments are undertaken and incorporated into approval processes for any extractive activities in the Pacific Ocean, and where necessary, the precautionary principle is applied.

EIAs and SEAs can be used to complement each other, and serve to inform planning and decision-making from the local to the national level, across different types of economic activity, and across the public and private sectors. Under EIA legislation in PICTs, the definition of **environment** typically covers natural and biophysical, social (people, culture, health, heritage and amenity) and economic aspects, as well as the relationships between these different aspects (SPREP, 2015).

An effective EIA/SEA, whether being conducted within an EEZ or in ABNJ, should incorporate at least the following procedural steps:

- i. **Screening** to determine which projects or developments require a full or partial EIA study;
- ii. **Scoping** to identify which potential impacts are relevant to assess, alternative options that avoid, mitigate or compensate adverse impacts on biodiversity, and to derive terms of reference for the EIA if a significant adverse impact is deemed likely;
- iii. **Assessment and evaluation of impacts** and development of alternatives, to predict and identify the likely environmental impacts of a proposed project or development, including the detailed elaboration of alternatives;
- iv. **Reporting**, the environmental impact statement (EIS) or EIA report, including an environmental management plan (EMP), and a non-technical summary for the general audience;
- v. ***Review** of the EIS, based on the terms of reference (scoping) and public participation;
- vi. ***Decision-making** on whether to approve the project or not, and under what conditions; and
- vii. ***Monitoring, compliance, enforcement and environmental auditing** to determine whether the impacts and proposed mitigation measures occur as defined in the EMP.²¹

There are a number of international best practice frameworks that can be referred to for further guidance on important characteristics for effective EIA/SEA processes and information requirements and/or standards. Some of these include: SPREP's EIA guidelines; the work of the International Association for Impact Assessment²²; work by UNEP²³; environmental and social safeguards systems established by the World Bank²⁴ and Asian Development Bank²⁵; and guidelines under the CBD framework²⁶.

In terms of existing international obligations to conduct EIAs and SEAs, under Article 192 of UNCLOS State parties are generally obliged to protect and preserve the marine environment. Article 206 of UNCLOS calls on States, as far as practicable, to conduct an environmental impact assessment and report on its findings if the State has reasonable grounds for believing that planned activities under their jurisdiction or control may cause substantial pollution of or significant and harmful changes to the marine environment. The obligation to conduct environmental impact assessments (EIAs) with the potential for significant impact on the marine environment both within and beyond national jurisdiction has attained customary international law status as recognised in an Advisory Opinion piece

²¹ Steps v – vii may not be required, or may vary, in the case of a Strategic Environmental Assessment depending on the context.

²² For example: http://www.iaia.org/publicdocuments/special-publications/Principles%20of%20IA_web.pdf

²³ For example: <http://www.unep.ch/etu/publications/textONUbr.pdf>

²⁴ For example: http://consultations.worldbank.org/Data/hub/files/consultation-template/review-and-update-world-bank-safeguard-policies/en/materials/clean_second_draft_es_framework_final_draft_for_consultation_july_1_2015.pdf

²⁵ For example: <http://www.adb.org/site/safeguards/safeguards-documents>

²⁶ UNEP/CBD/SBSTTA/16/INF/16 refers

from the International Tribunal of the Law of the Sea.²⁷ Despite this, UNCLOS itself only addresses environment in general terms, making provisions difficult to implement.

Some activities and States that operate in areas beyond national jurisdiction are also exposed to additional, more specific environmental impact assessment guidelines and regimes, such as Contracting Parties to the Convention on Biological Diversity and deep sea mining under the auspices of the International Seabed Authority.

Box 4: Convention on Biological Diversity (CBD)

The CBD Conference of the Parties (COP) endorsed CBD voluntary guidelines on biodiversity-inclusive environmental impact assessments (EIAs) and strategic environmental assessments (SEAs) including marine and coastal areas, recognizing that these guidelines would be most useful for activities that are currently unregulated with no process of assessing impacts. The guidelines focus on how to promote and facilitate a biodiversity-inclusive EIA process in marine and coastal areas. They do not provide a technical manual on how to conduct a biodiversity-inclusive assessment study. These have been endorsed and national authorities, regional authorities or international agencies as appropriate are encouraged to apply the guidelines in reviewing or developing EIA systems.

Box 5: Deep Sea Minerals Mining under the auspices of the International Seabed Authority (ISA)

Under UNCLOS and its 1994 Implementing Agreement relating to Part XI of the Convention, the ISA administers the mineral resources of the Area (seabed of areas beyond national jurisdiction), including prospecting, exploration and exploitation activities for those resources. The ISA's Mining Code currently consists of three sets of regulations covering prospecting and exploration for polymetallic nodules, polymetallic sulphides and cobalt-rich ferromanganese crusts. The Legal and Technical Commission of the ISA has further developed guidelines for contractors for the assessment of the possible environmental impacts arising from exploration for minerals in the Area, including procedures for the acquisition of baseline data and monitoring requirements.

There is however no global coherence of the existing different regimes, no regime for addressing cumulative impacts of multiple uses on marine biodiversity, and no mechanism to promote and evaluate environmental impact assessments for high seas activities. EIAs in areas beyond national jurisdiction are recognised as presenting some unique challenges, including:

- **Geographical difficulties** - depth, extreme conditions, lower productivity and resilience to perturbation, lack of knowledge about biodiversity.
- **Practical difficulties** – paucity of data, distance of flag state and industry from affected area, costliness, capacity needs.
- **Governance difficulties** – different legal frameworks for seabed ('the Area') and water column ('the high seas'), different institutional frameworks and stakeholders, variable standards of compliance by States with international obligations on EIA/SEAs, lack of clarity defining stakeholders because there are no communities in direct proximity, and the central role of the UNGA.

²⁷ International Tribunal of the Law of the Sea (ITLOS), Advisory Opinion on responsibilities and obligations of States sponsoring persons and entities with respect to activities in the Area, 1 February 2011, p.44, para. 145. https://www.itlos.org/fileadmin/itlos/documents/cases/case_no_17/adv_op_010211.pdf

The above challenges in turn make the assessment, development of appropriate management tools including offsets, and monitoring and compliance aspects of the EIA/SEA process in ABNJ more difficult. Ideally, relevant international, regional (CROP agencies), sub-regional (such as the Melanesian Spearhead Group and PNA) and national authorities (e.g. environment, natural resources, fisheries agencies) should work together to establish a framework for EIAs and SEAs in ABNJ (as per ISA). In practice, EIAs in an ABNJ context will likely require multidisciplinary scientific/consulting teams with relevant specialist skills and knowledge.

Above all, in developing any new regime, consideration must be given to the special circumstances of small island developing states that have limited resources to engage in new processes or governing bodies. Many PICs face major resource and capacity constraints that impede effective EIA application even within areas of national jurisdiction.

The following considerations are relevant in the development of a new implementing agreement which includes EIAs and SEAs:

4.2.3.1 Scope

Any activity or development that has the potential to impact on BBNJ or related resources and ocean processes (e.g. physical, chemical, biological) ideally should be included. However, this must be considered alongside the global commitment for any new regime to not undermine existing relevant legal instruments and frameworks and relevant global, regional and sectoral bodies. In this context the relationship of the new instrument will need to be considered in the context of the International Seabed Authority, relevant regional fisheries management organisations and relevant shipping and pollution regulations.

4.2.3.2 Public consultation

Public consultation is important in managing impacts in areas beyond national jurisdiction due to the collective ownership by the global community of the high seas, the Area and its resources. It is also a way to obtain a social license to operate in these circumstances. Consultation in an ABNJ context could be managed by relevant national government agencies, international intergovernmental agencies, regional organisations and/or expert consultants depending on the scope of the assessment. However, it should be noted that in the Pacific context there will need to be innovative ways of reaching out to communities, preferably through use of existing consultation mechanisms, due to the relative proximity and understanding of the complex issues associated with ABNJ. The level of consultation and engagement required will also need to be carefully considered to determine need for engagement at community level or whether it is more appropriate to stay at a higher national level.

4.2.3.3 Information Management

Indigenous populations with specialised BBNJ knowledge may provide important baseline information/understanding to inform EIAs and SEAs and should therefore be engaged early on in these processes. However, there may be intellectual and/or cultural property issues surrounding this type of traditional knowledge, which may not be appropriate to allow full public access. Consideration of how this information could be appropriately accessed and used to support the common good would be useful for the Pacific.

- The need for information sharing as a basis for comprehensive EIAs and SEAs is essential, especially in the relatively little studied areas beyond national jurisdiction, recognising that

much of this information will be collected by the private sector. Information access issues should be considered at the international level in designing the process for ABNJ to allow for open source information as far as practicable. This will ensure the global community gets a return from development through building a better understanding of the ABNJ environment and its capacity to withstand future impact, whilst reducing duplicative survey/assessment costs for industry in the future. Merits and judicial appeal mechanisms could be included to grant stakeholders the right to legally challenge decisions.

4.2.3.4 Offsets

An offset is a conservation action that is intended to compensate for the negative impacts of an action, such as a development. The application of offsets to ABNJ could be problematic, given that these environments are largely unknown, especially from a whole-of-ecosystem perspective, and the issue of beneficiaries is likely to be hotly contested. There is little information about successful marine offsets in coastal zones, let alone in the open ocean, and there have been many challenges and issues surrounding effective offsets implementation in terrestrial environments where much more is known and environments can be more controlled.

If offsets are to be pursued, consideration would need to be given to determine how the risk of offsets being used to ‘buy’ approvals could be mitigated. Adoption of the precautionary approach is highly recommended to guide such negotiations. Offsets in theory can be included under terms of reference for EIA reports. But the EIA reports should be required to clearly present all relevant ecological and economic assessments (such as benefit-cost assessments) that support offsets proposals and risk mitigation over time.

4.2.3.5 Environment bonds

Environmental bonds are an insurance policy against unforeseen impacts by development. These are especially important with new technology and/or application and in high risk and frontier areas, such as ABNJ but should only be relied on as a last resort. Appropriate environmental management actions should be undertaken by a developer from the start of a project/activity through to project/activity decommissioning. Penalty mechanisms could be considered for cases where developers are not adhering to their environmental management responsibilities/commitments – wherein these could be used as soon as issues are identified, before environmental problems get out of hand.

However, if there is to be a framework for environmental bonds that will cover EIAs and SEAs in ABNJ under the new implementing agreement, the following considerations should be taken into account:

- Need to design clear formulas for bond calculations. In general, environmental bond calculations should be based on the cost of stabilising, repairing and rehabilitating a site, taking into account the size of a development/activity, the level of risk it poses, and the extent of environmental harm it could potentially cause.
- Need to articulate clear criteria for determining who will receive bond payments in cases where pollution/impacts move from ABNJ to EEZs.
- May need to review the bond provisions under national laws so appropriate linkages are established with bond provisions applied to ABNJ.

4.2.4 Capacity building and the transfer of marine technology

UNCLOS includes provisions for the transfer of marine technology and the UNESCO IOC is recognized through UNCLOS as the competent international organization in the fields of Marine Scientific Research (Part XIII) and Transfer of Marine Technology (Part XIV). Despite these provisions and designated leadership, implementation in these areas has been limited with an evident disparity between developed and developing States. In the context of the new implementing agreement, capacity building and the transfer of marine technology is likely to be a cross-cutting issue based on a need for:

- Improved information sharing and access to data for marine genetic research/exploitation, environmental impact assessments, identifying key biodiversity values as a basis for area based management and monitoring and enforcement;
- Capacity building in the context of international engagement, governance, enforcement and provision of science; and,
- Transfer with respect to marine genetic resource technology.

It is important to recognize that capacity building is only effective if it corresponds to the identified needs of countries and regions. Therefore, it will be important to identify the needs of the Pacific as early as possible in the BBNJ process. Capacity building needs to be sustainable and needs to bring about long-term benefits that go beyond just training courses. Consistent funding and coordination of efforts between organizations and entities is important in this regard. While capacity building should address both human and institutional aspects it should not place an undue burden on departments or agencies of the administrations of small countries. It is often best undertaken as part of practical conservation/sustainable use measures or MGR development that extend beyond theoretical exercises. Finally, capacity building could consider initiatives important for ABNJ at all scales, from local stewardship of fisheries and migratory species to large-scale ocean management and protection offshore. Conducting EIA and SEAs in the marine environment will also likely be an important consideration for capacity building, particularly in regards to assessing cumulative impacts.

Some possible activities that could be undertaken include (i) the provision of education/training in science and technologies, policy and governance, including through joint research efforts supported through the establishment of a global scholarship fund, and enhanced through collaboration in research and development on marine genetic resources; (ii) support for and development of regional centres of excellence (such as the University of South Pacific) to address regional needs and provide long-term education and training; (iii) sharing information and technologies through a central repository or clearinghouse of ABNJ information, capacity building and research collaboration opportunities, and opportunities for facilitated access to technologies, knowledge and funding; (iv) increasing cooperative links between regional institutions, for example North-South, South-South collaboration, and collaboration between Regional Seas organizations and RFMOs; and (v) designating/creating a financial mechanism to support implementation of activities.

As with all decisions in the Pacific, they need to be made on what is sensibly done in the region and what is more economically/efficiently done with overseas partners. For example with regard to marine genetic resource technology, the University of the South Pacific tries to isolate pure (and novel) compounds with interesting biological activity. Overseas partners assist with identifying the compound (due to the cost of machines required to do this) and advanced biological activity testing

that is needed to decide if there is drug potential. For biological activity USP's focus has been on activity against resistant bacteria and simple cytotoxicity (anti-cancer) tests that can be done simply and fairly inexpensively. Testing for activity against dengue fever and malaria are also being explored. The USP has basic skills in taxonomy and molecular biology and uses overseas experts to check their identification of organisms. For the high seas sampling, partnerships to collect samples from deep water would also be needed. The maintenance of a database of genetic resources that have been tested, including the results, may be beneficial in the region and the USP has an already established system, which could be used by PICTs should they so decide to develop capability in this area.

Regional *ex-situ* taxonomic and research institutions also hold examples of Pacific marine bio-resources. This creates the opportunity for future showcasing of marine genetic resources from the region and establishing a coherent benefit-sharing arrangement for material collected outside national jurisdiction with similar material collected within national jurisdiction.

4.2.5 New and emerging uses

While the focus of the negotiations is around the package of elements agreed by the UN General Assembly in 2011 (see Section 4.1), it is important to remember that when UNCLOS was drafted, the value and viability of marine genetic resources were unknown. We are still in a position where we have limited understanding and knowledge about the biodiversity of the high seas. Therefore, developing an adaptive agreement that can apply to future uses of biodiversity beyond national jurisdiction will be important.

4.2.5.1 *The special case for Pacific High Seas Pockets*

Pacific High Seas Pockets was raised as a special case throughout the Pacific Ocean Alliance meeting and by some technical experts.

The most obvious example was drawn from Pacific tuna fisheries, where it was shown that vessels sit on the borders of Pacific Island EEZs, especially in the high seas pockets, fishing Pacific tuna. Given that the Pacific contributes over 60% of the global tuna supply and Pacific Islands contribute around 35% of this supply, this is potentially a significant development issue for Pacific island countries. Pacific High Seas Pockets are managed under WCPFC as any of the high seas, therefore fishing vessels fish relatively unregulated in these waters when compared to the self-imposed regulation within the EEZs of PNA member states, through the Parties to the Nauru Agreement Vessel Day Scheme. The pressure of fishing these high seas pockets calls to question the disproportionate burden placed on Pacific Islands through regulating fishing in their EEZs without complementary or harmonised management beyond. It should be noted however, that managing this interaction would most likely be through the WCPFC rather than a new implementing agreement for biodiversity in areas beyond national jurisdiction. The UN resolution states that any new implementing agreement shall not undermine any existing arrangements. Whilst it is ultimately up to countries how they determine what is or is not undermining existing regimes, it is raised here simply as an example of the importance of the Pacific High Seas Pockets to the Pacific island countries and a lesson that may be important to remember in considering the sustainable use of any other Pacific Ocean resource that has the potential for transboundary movement.

Transboundary marine genetic resources are one such resource that could be considered in the context of transboundary management and benefit sharing under a new implementing agreement.

Also, transboundary environmental impacts from activities taking place in these Pacific High Seas Pockets may be of significant consideration. For example, Pacific island countries may want to ensure environmental regulation around deep sea mining in the Area is complementary to frameworks being established within zone and how this may relate in the Pacific High Seas Pockets, more specifically.

In addition, the region's ocean policy framework considers the region to include, not only our EEZs and the marine and coastal areas within, but also the marine ecosystems on which the region depends. This clearly includes the high seas pockets under the purview of our regional policy framework, which aims for the sustainable development, management and conservation of the Pacific Ocean and its resources for the secure future of Pacific island peoples.

Avoidance of management measures applying within the contiguous EEZs potentially damages the economic and scientific interests of countries contiguous to these Pacific High Seas Pockets. Any new implementing agreement under UNCLOS should seek to avoid creating or perpetuating a perverse incentive to operate beyond the EEZ into the Pacific High Seas Pockets.

5 Conclusion and next steps

This technical paper is being shared with Pacific Ocean Alliance stakeholders, who are invited to provide submissions to the Office (opoc@forumsec.org) of up to two pages on the technical information provided herein. In particular, submissions from our Pacific Island countries and territories are sought. The submissions will be reviewed and technical amendments may be made subsequent to receipt of these. In addition all submissions will form an Addendum to the finalised technical paper, as a complete and comprehensive package of information for the consideration and utility of governments and other key stakeholders. All papers and submissions will be made available on the [Pacific Ocean Alliance](#) website unless requested otherwise.

Further advice will be provided to countries to support their negotiation preparations as part of usual CROP agency support to countries through the Marine Sector Working Group. Other partners of the Pacific Ocean Alliance may also be called on for additional support. The Office of the Pacific Ocean Commissioner can facilitate this connection where required or requested.

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