



DIRECTORATE-GENERAL FOR INTERNAL POLICIES

POLICY DEPARTMENT **A**
ECONOMIC AND SCIENTIFIC POLICY

Towards a Possible International Agreement on Marine Biodiversity in Areas Beyond National Jurisdiction



- Economic and Monetary Affairs
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Towards a Possible International Agreement on Marine Biodiversity in Areas Beyond National Jurisdiction

Study for the ENVI Committee



DIRECTORATE GENERAL FOR INTERNAL POLICIES
POLICY DEPARTMENT A: ECONOMIC AND SCIENTIFIC POLICY

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STUDY

Abstract

As a result of the structure of international law some 64 % of the world's oceans lies beyond the national jurisdiction of coastal States. Over recent years growing concerns within the international community over the adequacy of the existing legal framework for the conservation and sustainable use of biodiversity in areas beyond national jurisdiction have led to discussions under the auspices of the United Nations General Assembly on the possible development of a new international legal instrument.

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LIST OF ABBREVIATIONS

- CBD** Convention on Biological Diversity, 1992
- CITES** Convention on International Trade in Endangered Species, 1973
- CMS** Convention on Migratory Species of Wild Animals, 1979
- COP** conference of the parties
- EEZ** exclusive economic zone
- FAO** Food and Agriculture Organization of the United Nations
- IA** implementing agreement
- ILM** International Legal Materials
- IMO** International Maritime Organization
- IPR** intellectual property rights
- ISA** International Seabed Authority
- ITLOS** International Tribunal for the Law of the Sea
- IUCN** International Union for the Conservation of Nature
- IWC** International Whaling Commission
- MARPOL** International Convention for the Prevention of Pollution from Ships, 1973
- PSSA** Particularly Sensitive Sea Area
- RFMO** regional fisheries management organisation
- SOLAS** International Convention for the Safety of Life at Sea, 1974
- SPAMI** Specially Protected Area of Mediterranean Interest
- UN** United Nations
- UNCLOS** United Nations Convention on the Law of the Sea, 1982
- UNEP** United Nations Environment Program
- UNGA** United Nations General Assembly
- UNTS** United Nations Treaty Series
- USA** United States of America
- WIPO** World Intellectual Property Organization
- WTO** World Trade Organization

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EXECUTIVE SUMMARY

International law, based around the notion of State sovereignty, confers exclusive rights on each State to adopt its own national laws and policies within its land territory and the maritime zones over which it has jurisdiction, subject only to its obligations under international law. But what about the estimated 64 % of the world's oceans that are beyond national jurisdiction? Home to a significant part of the world's biodiversity they are also fragile and increasingly vulnerable to increased human activity at sea. There is increasing concern within the international community that the international legal framework, based as it is around the doctrine of the freedom of the high seas, is no longer adequate in so far as the conservation and use of biodiversity in areas beyond national jurisdiction is concerned. There is particular concern as to how the ambitious Aichi Targets, adopted by the international community in 2010, will be met: these call for at least 10 % of coastal and marine areas (especially those of particular ecological importance) to be conserved through effective systems of marine protected areas and other effective area-based conservation measures. This report sets out the background to these concerns and describes possible measures currently being discussed by the international community to remedy them.

The United Nations Convention on the Law of the Sea (UNCLOS) forms the cornerstone of the law of the sea, the branch of international law that is concerned with all uses and resources of the sea. One of the ways it seeks to balance the interests of States in different capacities is through the organisation of marine space into different maritime zones. Coastal States enjoy sovereignty or sovereign rights over the maritime zones in the waters adjacent to their coasts and thus the jurisdiction to establish, in accordance with their laws and policies, marine protected areas there subject to their obligations regarding international navigation.

Beyond the maritime zones under coastal State jurisdiction lie the high seas and the international sea bed which is defined in UNCLOS as the 'Area'. All States enjoy conditional freedoms over the high seas including as regards navigation, fishing and marine scientific research. The high seas freedoms also apply to the Area except as regards deep-sea mining there, which is regulated by the International Seabed Authority (ISA) an international body established under UNCLOS. No State may claim sovereignty over the high seas or the Area. Instead the regulation of activities on the high seas takes place on the basis of flag State jurisdiction meaning that each State is responsible for regulating the activities of vessels that fly its flag. A different regime, that of State sponsorship, applies to deep-sea mining activities in the Area.

The Convention on Biological Diversity (CBD) is the principal instrument of international law concerned with the conservation and sustainable use of biodiversity. Its jurisdictional scope is as follows. As regards the 'elements of biological diversity' it applies only within the land and marine areas under the national jurisdiction of States although it applies generally as regards processes and activities carried out under the jurisdiction or control of a State. The CBD imposes a number of duties on its State Parties with regard to *in situ* conservation. These include the establishment of protected areas and the conduct of an impact assessment of proposed projects, policies and programmes in cases where there are risks of significant adverse impacts on biological diversity, with a view to avoiding or minimising such impacts. The CBD also sets out a regime, further developed in the Nagoya Protocol, concerning access to and the benefits from the use of genetic resources, primarily for the biotechnology sector. In outline this regime provides that the benefits, including financial benefits, from biotechnology products created on the basis of genetic resources should be shared with the countries in which those resources were obtained. However, as the CBD must be applied consistently with UNCLOS, this means that States acting singly or together

cannot establish marine protected areas beyond their national jurisdiction and the provisions on access and benefit sharing do not apply to genetic material sourced from the high seas and the Area.

UNCLOS, which was developed during the 1970s, does not specifically refer to biodiversity or sustainability although it does contain provisions on the protection of the marine environment that are capable of being used to protect biodiversity. Moreover its chapter on the protection of the marine environment is one of the longest in the convention although its focus is primarily on the prevention of pollution. Other provisions relating to the protection of the marine environment, which have direct or indirect relevance as far as the conservation and sustainable use of biodiversity are concerned, are contained in a range of other legal instruments that form part of the law of the sea. Most of these are concerned with a single sector and include a range of instruments adopted under the auspices of the International Maritime Organization (IMO) that are relevant to pollution from shipping and can potentially be used for area-based management in terms of ships routing and other navigational restrictions on the high seas. The management of high seas fisheries takes place on the basis of provisions in UNCLOS, backed up by the UN Fish Stocks Agreement, through a range of regional fisheries management organisations certain of which have adopted area-based restrictions. Marine scientific research on the high seas is a high seas freedom and is currently subject to minimal regulation under international law. Deep-sea mining is regulated by ISA on the basis of Part XI of UNCLOS as amended by the Part XI Implementation Agreement, which has introduced a system of environmental assessment and has established closed areas for deep-sea mining on the basis of ecological criteria in parts of the Pacific Ocean. In addition a number of regional seas organisations have been established to protect the marine environment including in areas of the high seas. Several of these organisations have taken steps to seek to establish high seas marine protected areas or area-based management on the high seas.

Notwithstanding this range of instruments, there are a number of regulatory gaps in so far as the conservation and sustainable use of biodiversity in marine areas beyond national jurisdiction is concerned. Most attempts to establish area-based management or marine protected areas on the high seas have been undertaken for a single sector (e.g. for fishing, deep-sea mining etc.) and there are as yet no global mechanisms for the establishment of multi-purpose marine protected areas. Attempts by regional seas organisations to establish high seas marine protected areas have not been entirely satisfactory based as they are on limited participation and voluntary measures. Apart from the fact that a large number of organisations are involved with different issues that may affect marine biodiversity, there is no mechanism to co-ordinate measures to ensure the conservation and sustainable use of marine biodiversity in areas beyond national jurisdiction. Although UNCLOS does require environmental impact assessments to be undertaken there is little guidance on this and nor is there a clear legal framework for the evaluation of programs and plans relating to the conservation and use of biodiversity in areas beyond national jurisdiction or to assess cumulative impacts. Bio-prospecting in areas beyond national jurisdiction is not regulated and there are no mechanisms for sharing the benefits from resources obtained there.

In response to concerns expressed in a range of international fora, the United Nations General Assembly (UNGA) established the 'BBNJ (biodiversity beyond national jurisdiction) Working Group' in 2004 to discuss the conservation and sustainable use of marine biodiversity in areas beyond national jurisdiction and the need for a new international legal instrument. A range of different opinions have been expressed in the working group and the issue of access and benefit sharing has been particularly controversial. In 2011 the EU, the G77 group of developing countries, China and Mexico agreed the outline of a negotiating 'package' in the form of an implementing agreement (IA) under UNCLOS that

would address: (a) access and benefit sharing; (b) marine protected areas; (c) environmental impact assessment; and (d) capacity building/technology transfer.

In 2012 the Rio+20 Summit called on the UNGA to determine by August 2015 whether or not to launch negotiations on the conclusion of an IA. Nevertheless a number of countries including the USA, Russia, Canada, Japan, Iceland, Norway and Korea remain opposed and it is not yet possible to say with certainty whether the negotiations will actually start or, if they do start, how they will take place. Nor is it possible to state with any certainty what a possible IA might contain, other than the elements in the package, or how it will address them, while discussion of the possible institutional arrangements has yet to start.

The challenge for the conservation and sustainable use of marine biodiversity in areas beyond national jurisdiction derives from the very structure of the law of the sea and the limitations on State sovereignty and jurisdiction that it provides for in terms of the division of the seas into maritime zones. This structure, based around the freedom of the high seas, dates back to the seventeenth century and the high seas freedoms are still hugely important in today's globalised economy, in particular as regards navigation, communication and fishing. Moreover the development of the law of the sea, and even UNCLOS itself, did not and could not reflect the current understanding of marine ecology. The development of an IA will not alter the fundamental structure of the law of the sea, meaning that any new regime will be based on flag State jurisdiction. Both UNCLOS and the CBD represent a balancing exercise between the interests of States acting in different capacities. While the negotiating 'package' that is advocated by the EU, the G77 group of countries, China and Mexico appears to take a similar approach, it is too early to be able to assess whether or not it will lead to a successful outcome in terms of the conservation and sustainable use of marine biodiversity in areas beyond national jurisdiction.

1. INTRODUCTION

KEY FINDINGS

- The principle of State sovereignty enables States to adopt and implement legislation for the conservation and sustainable use of biodiversity in areas under their national jurisdiction including marine areas.
- However roughly one half of the earth's surface, some 64 % of the world's oceans lies beyond national jurisdiction.
- There is increasing concern within the international community that the existing framework under international law, based around the doctrine of the freedom of the high seas, is no longer adequate in so far as the conservation and sustainable use of biodiversity in areas beyond national jurisdiction is concerned.
- This report sets out the background to these concerns and possible measures currently being discussed by the international community to remedy them.

The notion of State sovereignty is fundamental to international law, the body of law that regulates the relationships between States and other actors recognised under international law¹. Sovereignty implies, among other matters, the exclusive right of each State to adopt its own national laws and policies within its territory and, in the case of a coastal State, those adjacent maritime zones over which it has sovereignty, sovereign rights or jurisdiction, subject only to its obligations under international law. International law also recognises that States have sovereign rights over their natural resources, including biological resources, and thus the necessary legal powers to adopt laws and policies on the conservation and sustainable use in land and marine areas under their jurisdiction, for example through the creation of protected areas, and to ensure the sustainable use of the components of those resources.

But what about those parts of the planet that are not subject to the sovereignty or sovereign rights of States, namely the high seas and the deep-sea bed of the world's oceans? In spatial terms these areas beyond the national jurisdiction of States are not insignificant: they make up roughly one half of the earth's surface, an estimated 64 % of the world's oceans and are home to a significant part of the world's biodiversity². They are also both fragile and increasingly vulnerable to increased human activity at sea.

As States do not have sovereignty over such areas, the basic question is how is marine biodiversity to be protected there? Who makes the legal rules to ensure the sustainable use of high seas biodiversity and how are these rules enforced? As will be seen in this report, international law is not silent on the matter. Nevertheless, there is growing concern within the international community that the existing legal framework, based around the doctrine of the freedom of the high seas that can be traced back to the 17th century, is no longer adequate as far as the conservation and sustainable use of marine biodiversity in areas beyond national jurisdiction is concerned. There is particular concern as to how the ambitious Aichi Targets, adopted by the international community in 2010, will be met: these call for at least 10 % of coastal and marine areas (especially those of particular ecological importance) to be conserved through effective systems of marine protected areas and other effective area-based conservation measures. Such concerns have led to

¹ Such as international organisations.

² Corrigan, C. & Kershaw, F. (2008). *Working Toward High Seas Marine Protected Areas: An Assessment of Progress Made and Recommendations for Collaboration*. UNEP- WCMC, Cambridge, UK.

ongoing discussions at the international level over the need for a new international legal agreement or other measures to specifically address the issue. The purpose of this study is to describe the background to these discussions and to outline the potential elements of a possible new agreement.

In examining the legal framework relating to marine biodiversity in areas beyond national jurisdiction, the starting point is the law of the sea and in particular its provisions on maritime zones and the legal status of marine areas beyond national jurisdiction. This is the topic of chapter two.

In chapter three, international law regarding the conservation and sustainable use of biodiversity (with a particular focus on the Convention on Biological Diversity) is briefly described so as to show how it applies or does not apply to marine areas beyond national jurisdiction.

Existing provisions and instruments under the law of the sea for the protection of the marine environment are outlined in chapter four, while the 'gaps' in this framework in connection with the protection and sustainable use of marine biodiversity are described in chapter five. Chapter six contains a description of the steps taken to date by the international community in order to fill these gaps. Finally, some conclusions are drawn in chapter seven.

2. THE LAW OF THE SEA, MARITIME ZONES AND AREAS BEYOND NATIONAL JURISDICTION

KEY FINDINGS

- The United Nations Convention on the Law of the Sea (UNCLOS) forms the cornerstone of the law of the sea and seeks to balance the interests of States in different capacities.
- Part of this balancing exercise is achieved through the organisation of marine space into different maritime zones.
- Coastal States enjoy sovereignty or sovereign rights over the maritime zones in the waters adjacent to their coasts and thus the jurisdiction to establish, in accordance with their laws and policies, marine protected areas there subject to their obligations regarding international navigation.
- Beyond the maritime zones under coastal State jurisdiction lie the high seas and the international seabed which is defined in UNCLOS as the 'Area'.
- All States enjoy conditional freedoms over the high seas including as regards navigation, fishing and marine scientific research.
- The high seas freedoms also apply to the Area except as regards deep-sea mining there which is regulated by the International Seabed Authority.
- No State may claim or exercise sovereignty over the high seas or the Area.
- The regulation of activities on the high seas takes place on the basis of flag State jurisdiction meaning that each State is responsible for regulating the activities of vessels that fly its flag.
- A different regime, that of State sponsorship, applies to deep-sea mining activities in the Area.

The law of the sea is the branch of international law that is concerned with all uses and resources of the sea. The sources of the law of the sea are the same as those of international law in general and include treaties (also known as agreements or conventions) as well as customary international law.

The cornerstone of the law of the sea is the United Nations Convention on the Law of the Sea (UNCLOS)³, which was adopted in 1982, and its two implementing agreements: the Part XI Implementation Agreement⁴ and the UN Fish Stocks Agreement⁵. The overarching objective of UNCLOS is to establish a universally accepted, just and equitable legal order, or 'Constitution'⁶, for the oceans that lessens the risk of international conflict and enhances peace and stability in the international community.⁷ Comprising 320 articles, in 17 parts,

³ United Nations Convention on the Law of the Sea, Montego Bay, 10 December 1982, 1833 *United Nations Treaty Series* (UNTS) 3.

⁴ Agreement relating to the Implementation of Part XI of the United Nations Convention on the Law of the Sea of 10 December 1982, New York, 28 July 1994, 1836 UNTS 3.

⁵ Agreement for the Implementation of the Provisions of the United Nations Convention on the Law of the Sea of 10 December 1982 relating to the Conservation and Management of Straddling Fish Stocks and Highly Migratory Fish Stocks, New York, 4 August 1995, 2167 UNTS 3.

⁶ Remarks by Tommy Koh, Chair of the Third United Nations Conference on the Law of the Sea.

⁷ See the fifth preambular paragraph of UNCLOS.

and nine annexes it is a long and detailed text. It was intended to be, as far as possible, comprehensive in scope and universal in participation⁸.

The negotiation of UNCLOS required a complex balancing exercise between: (a) the competing interests of States as flag States, coastal States and port States (see Box A); (b) geographical differences between States, such as landlocked States and archipelagic States; and (c) the different priorities and interests of industrialised States and developing States. It also required the interests of States to be balanced against the interests of the international community as a whole in terms of, for example, navigation, international communication, and the conservation, management and use of marine living resources⁹.

Box 1: Flag States, Coastal States and Port States

Although they are not defined, the terms 'flag State', 'coastal State' and 'port State' are used throughout UNCLOS.

A **flag State** is commonly understood to be the State in which a vessel is registered or whose flag it flies. A **coastal State** is a State that has a sea-coast (as opposed to a 'landlocked State' which does not) and which exercises rights and jurisdiction over its adjacent maritime zones, subject to conditions and obligations imposed by international law, including in specified circumstances as regards foreign vessels navigating there. A **port State** can be understood to be a State that exercises rights and jurisdiction, subject to conditions and obligations, over foreign vessels that are voluntarily in or wish to enter one of its ports.

The particular interests of a State depend on the context: the same State may have interests as: (a) a flag State in terms of ensuring the freedom of navigation of its ships; (b) a coastal State as regards, say, the protection of the environment within its maritime zones; and (c) a port State in connection with activities within its sea ports.

The issue of deep-sea mining in areas beyond national jurisdiction was particularly controversial (with industrialised States and developing States taking strongly divergent positions) and is one of the reasons why UNCLOS was finally adopted by a vote (rather than by consensus as had been hoped at the start of the negotiations) and why it did not enter into force until 1994¹⁰.

Although the EU and the Member States are party to UNCLOS, it is to be noted that notwithstanding its 'constitutional' aspirations a number of States are not including the United States of America (USA), Colombia, Israel, Libya, Peru, Syria, Turkey and Venezuela¹¹.

Part of the balancing exercise achieved by UNCLOS was through the organisation of marine space into a system of various different maritime zones, each of which is subject to specific rules that govern activities that may take place there. Certain of these zones are under coastal State jurisdiction. Others are not.

⁸ Boyle, A. 'Further development of the 1982 Convention on the Law of the Sea: Mechanisms for Change' in Freestone, D., Barnes, R. and Ong, D. *The law of the sea: progress and prospects* Oxford University Press 2006 at p. 40. However the last preambular paragraph does indicate that some matters are not regulated by UNCLOS and remain subject to customary law.

⁹ Ecorys Nederland BV, MRAG Limited & s.Pro *Study in support of Impact Assessment work on Blue Biotechnology* European Commission, DG MARE, 2014 at p. 195.

¹⁰ Ecorys Nederland BV, MRAG Limited & Grid Arendal *Study to investigate the state of knowledge of deep-sea mining* European Commission, DG MARE, forthcoming at p. 46.

¹¹ As at 9 September 2014 there were 166 parties to UNCLOS. See http://www.un.org/depts/los/reference_files/status2010.pdf.

One final point to note is that many of the provisions in UNCLOS that relate to maritime zones are generally accepted to be declaratory of customary international law and therefore of general application.

2.1. Maritime areas under coastal State jurisdiction

With regard to maritime zones that are under coastal State jurisdiction, UNCLOS recognises that the sovereignty of each coastal State extends beyond its land territory and internal waters to an adjacent belt of sea described as the **territorial sea**, which may extend up to 12 nm from the baseline. The normal baseline is the low-water line along the coast although UNCLOS provides specific rules regarding, for example, the mouth of rivers and for the drawing of straight baselines along deeply indented coastlines and across bays¹².

Within the territorial sea the authority of the coastal State is in principle absolute except as restricted by UNCLOS and other rules of international law. The most important restriction included in UNCLOS is the right of 'innocent passage' through the territorial sea, which is enjoyed by ships of all States. UNCLOS contains detailed rules as to what amounts to innocent passage.

UNCLOS also recognises that each coastal State has sovereignty over its **internal waters** which are the waters contained in ports, rivers, estuaries and lagoons that are landward of the baseline. Such waters are not subject to the right of innocent passage, which implies that a coastal State can also regulate access to and within its ports¹³.

A coastal State may also claim a **contiguous zone** that extends up to 24 nm from its baselines in which it has power to enforce its customs, fiscal, immigration and quarantine laws applying in or landward of the territorial sea, though no power to legislate for the zone itself.

Beyond its territorial sea a coastal State may claim an **exclusive economic zone (EEZ)** that can extend up to 200 nm from the baseline¹⁴. Within its EEZ a coastal State does not enjoy sovereignty as such but a more limited set of 'sovereign rights' relating to living and non-living resources and with regard to other activities for the economic exploitation and exploration of its EEZ (such as the production of energy). Such rights apply for the purpose of 'exploring and exploiting, conserving and managing the natural resources, whether living or non-living, of the waters superjacent to the seabed and of the seabed and its subsoil' as well as other activities for the economic exploitation of the zone¹⁵. A coastal State also has the necessary jurisdiction related to these sovereign rights as well as jurisdiction for the establishment and use of artificial islands, installations and structures, marine scientific research and the protection and preservation of the marine environment¹⁶.

Coastal State regulatory competence in the EEZ is confined to the matters expressly indicated in UNCLOS in respect of which sovereign rights or jurisdictional powers are granted to a coastal State. A coastal State is not obliged to claim an EEZ, in which case the regime of the high seas will apply to the water column and surface beyond its territorial

¹² MRAG Limited, Öko Institute e.V. & Lamans s.a. *Legal Aspects of Maritime Spatial Planning* European Commission, DG MARE, 2008 at p. 9.

¹³ Special rules also apply with regard to waters within the baselines of 'archipelagic States', which are in essence assimilated to territorial seas and will not be discussed further, as well as with regard to waters that form straits used for international navigation.

¹⁴ MRAG Limited, Öko Institute e.V. & Lamans s.a.. *op cit* at p. 9.

¹⁵ UNCLOS, article 56.

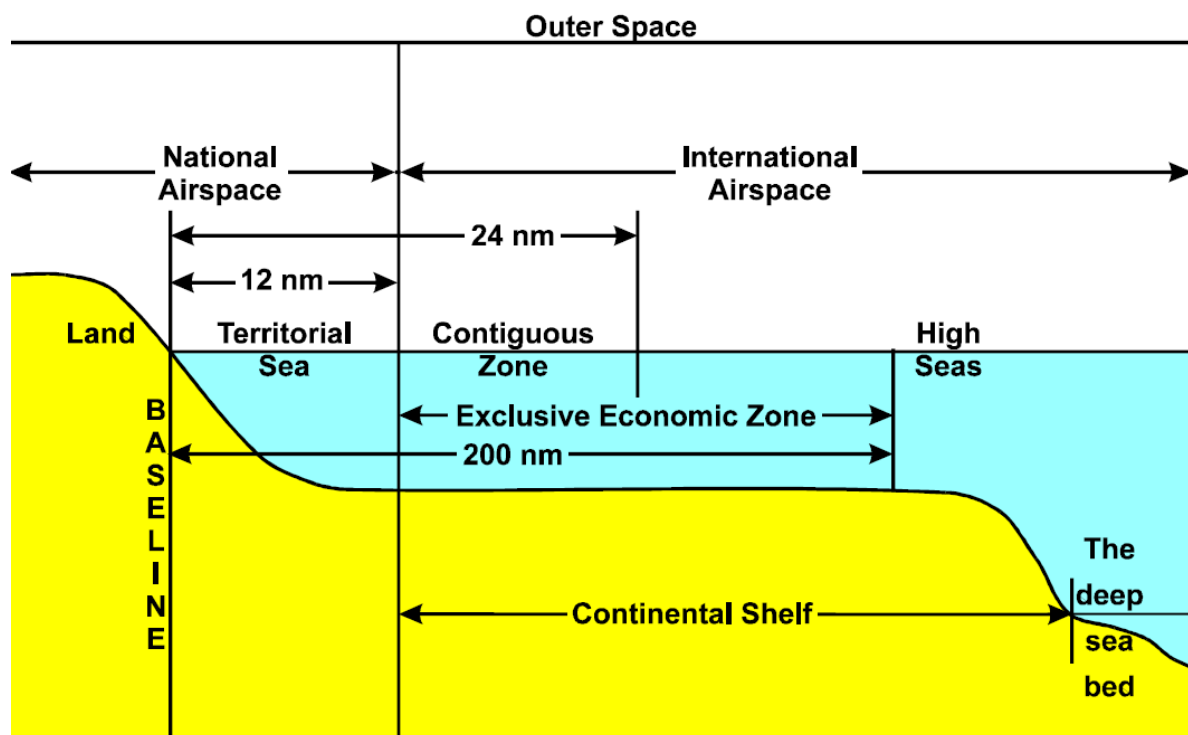
¹⁶ UNCLOS, article 56(1)(b).

sea. However a coastal State may claim less than the full complement of EEZ rights by claiming, for example, an 'exclusive fishing zone' or an 'exclusive ecological zone'¹⁷.

Finally UNCLOS also recognises the rights of each coastal State over its adjacent **continental shelf**, which comprises the seabed and subsoil of the 'submarine areas' beyond the territorial sea and which may extend as far the natural prolongation of the land territory to the outer end of the continental margin or to a distance of 200 nm from the baseline in cases where the outer edge of the continental margin does not extend that far. In other words some but not all coastal States may be entitled to a continental shelf that extends beyond 200 nm from the baseline and thus beyond the outer edge of the EEZ in accordance with a procedure laid out in UNCLOS¹⁸. As regards its continental shelf each coastal State has 'sovereign rights for the purpose of exploring it and exploiting its natural resources'. Such rights include the exploitation of living organisms belonging to 'sedentary species' (which are defined as organisms that, at the harvestable stage of their lifecycles, are either 'immobile, on or under the seabed or are unable to move except in constant physical contact with the seabed or the subsoil') as well as other activities relating to the seabed and its subsoil such as the extraction of oil and minerals.

In terms of the protection of marine biodiversity it is clear that within the boundaries of its maritime zones a coastal State is entitled to take measures to regulate fishing and scientific research and to protect the environment. UNCLOS, and in particular its provisions on maritime zones under coastal State jurisdiction, is also the source of a coastal State's right to establish marine protected areas, albeit subject to its obligations under international law which relate mainly to navigation.

Figure 1: Maritime zones under UNCLOS: cross-section view¹⁹



¹⁷ MRAG Limited, IDDRI & Lamans s.a. *Costs and benefits arising from the establishment of maritime zones in the Mediterranean Sea* European Commission, DG MARE, 2013 at p. 15.

¹⁸ MRAG Limited, Öko Institute e.V. & Lamans s.a. *op cit* at p. 12.

¹⁹ Based on the diagram contained in R.R. Churchill and A.V. Lowe, *The Law of the Sea* (Manchester, Manchester University Press: 3rd ed., 1999), at p. 30. Note: the figure does not show internal waters landward of baselines.

2.2. Areas beyond national jurisdiction

As regards maritime areas beyond national jurisdiction UNCLOS distinguishes between: (a) the seabed; and (b) the surface and water column, which together make up the 'high seas'. Apart from the fact that States may not claim or exercise sovereignty or sovereign rights over either of them, these zones are subject to separate legal regimes.

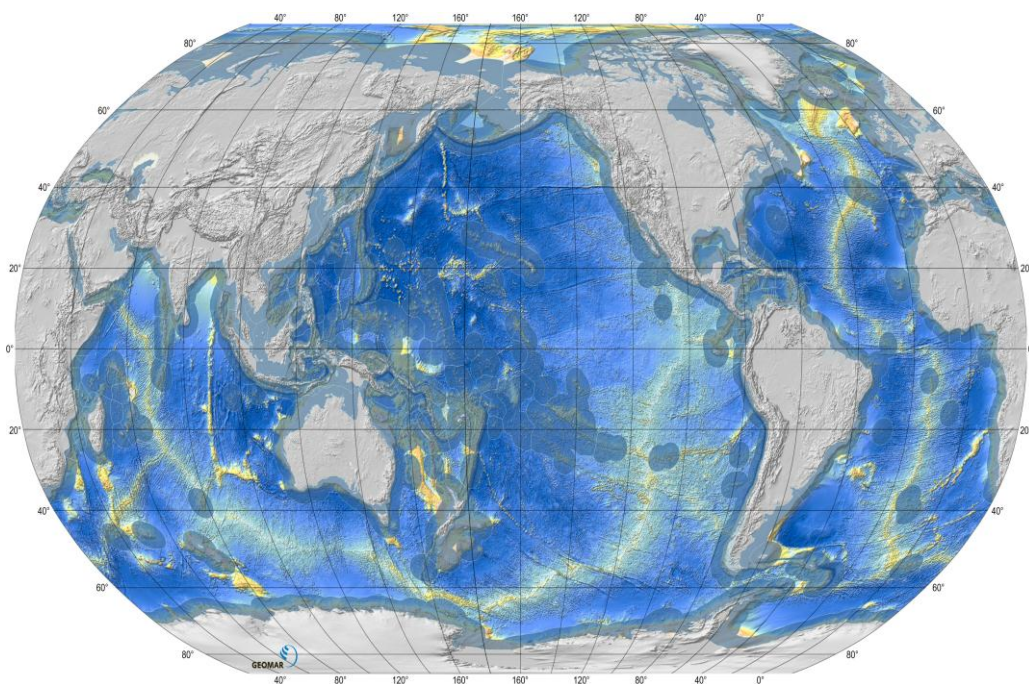
2.2.1. The Area

Turning first to the seabed, UNCLOS defines the 'Area' as the 'seabed and ocean floor and subsoil thereof, beyond the limits of national jurisdiction'. The legal regime for the Area is the subject of Part XI of UNLCOS.

No State may claim sovereignty or sovereign rights over any part of the Area or its resources. Instead, all rights in the 'resources' of the Area are 'vested in mankind as a whole' under the supervision of the International Seabed Authority (ISA), an international organisation established pursuant to UNCLOS. All parties to UNCLOS are automatically members of ISA.

Part XI does set out a number of generally applicable principles with regard to the general conduct of States in relation to the Area (including peace, security international co-operation and mutual understanding and the responsibility to ensure compliance and liability for damage, the use of the Area for exclusively peaceful purposes). However, the focus of Part XI is on the exploration and exploitation of the 'resources' of the Area, which are defined in article 133 of UNCLOS as 'all solid, liquid or gaseous mineral resources *in situ* in the Area at or beneath the seabed, including polymetallic nodules'. In other words the focus of Part XI is on the mineral resources of the Area rather than on the biological resources found there. The implications of this will be returned to below.

Figure 2: Map showing approximate EEZ boundaries to give an indication of the scale of the marine areas beyond national jurisdiction in terms of the surface and water column



2.2.2. The High Seas

Rather than offering a definition for the term 'high seas', UNCLOS defines the spatial scope of application of its Part VII, which is entitled 'High Seas', in Article 86, as follows:

The provisions of this Part apply to all parts of the sea that are not included in the exclusive economic zone, in the territorial sea or in the internal waters of a State, or in the archipelagic waters of an archipelagic State.

All States enjoy the freedom of the high seas. Article 87 defines the scope of this freedom, stipulating that:

1. It comprises, inter alia, both for coastal and land-locked States:
 - (a) freedom of navigation;
 - (b) freedom of overflight;
 - (c) freedom to lay submarine cables and pipelines, subject to Part VI;
 - (d) freedom to construct artificial islands and other installations permitted under international law, subject to Part VI;
 - (e) freedom of fishing, subject to the conditions laid down in section 2;
 - (f) freedom of scientific research, subject to Parts VI and XIII.
2. 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 this Convention with respect to activities in the Area.

However the notion of 'freedom of the high seas' is frequently misunderstood²⁰. It does not mean that on the high seas States, entities and private persons can do whatever they like but rather that all States are entitled to exercise the high seas freedoms. Moreover all of the freedoms are subject to conditions and obligations as set out in UNCLOS and other instruments of international law²¹. For this reason they are perhaps more correctly characterised as conditional freedoms²².

Two further points must be made about the regime of the high seas. First of all article 89 of UNCLOS states that '(N)o State may validly purport to subject any part of the high seas to its sovereignty'. In other words States are not entitled to exercise jurisdiction in a coastal State capacity with respect to the high seas, which is why the high seas are also referred to as an 'area beyond national jurisdiction' or an 'international commons'.

And second, there is no overarching legal regime for the management of the high seas, only sectoral controls for various activities. Some of these are contained in UNCLOS (including in Part VII) while others are set out in separate instruments.

2.3. The regulation of activities in areas beyond national jurisdiction

So the next question is how, if no State holds sovereignty or sovereign rights over any part of the high seas or the Area, can rules be made applicable to activities in areas beyond national jurisdiction? There are basically two answers.

²⁰ de La Fayette, L.A. 'A New Regime for the Conservation and Sustainable Use of Marine Biodiversity and Genetic Resources Beyond the Limits of National Jurisdiction', *The International Journal of Marine and Coastal Law*, 24(2), 2009, p. 221 at p. 236.

²¹ UNCLOS, article 87(1).

²² Freestone, D. 'International Governance, Responsibility and Management of Areas beyond National Jurisdiction' *27 International Journal of Marine and Coastal Law* (2012), p. 191 at p. 200.

First of all, as a matter of international law States can make use of their nationality jurisdiction to require their nationals, including companies formed under their laws, to act in given ways anywhere in the world, although they can only enforce such laws within their own borders. In other words a State can specify how its citizens and corporations are to act within those maritime spaces.

Second, and in a sense of more practical relevance given that activities in marine areas beyond national jurisdiction will by their very nature inevitably involve the use of a vessel, through the mechanism of flag State jurisdiction.

The ascription of nationality to ships is one of the most important means by which public order is maintained at sea. The nationality of a vessel indicates which State is to exercise jurisdiction over the vessel, what rights a ship enjoys as a result of its nationality and to what obligations it is subject. It also indicates which State is responsible in international law for the vessel, in cases where an act or omission of the vessel is attributable to the State, and which State is entitled to exercise diplomatic protection on behalf of the vessel²³.

However, apart from specifying that there must be a 'genuine link' between the State and the vessel, UNCLOS leaves it up to each State to fix the conditions for the grant of its nationality to ships, for the registration of ships in its territory, and for the right to fly its flag. UNCLOS also provides that each State must issue to ships to which it has granted the right to fly its flag documents to that effect²⁴.

In practice ships can change nationality rather rapidly and with relative ease: the notion of the 'genuine link' has not been widely observed in practice. In particular a number of States, known as 'flag of convenience' or 'open registry' States, permit foreign ship owners with no real connection to them to register their ships and to fly their flag. Indeed at present a large proportion of the world's commercial fleet sail under flags of convenience²⁵.

Consequently although UNCLOS requires every State to effectively exercise its jurisdiction and control in administrative, technical and social matters over ships flying its flag²⁶, in practice the only link that many vessels have with their flag State is the fact that they are included in the register that every flag State is required to maintain, that must contain the names and particulars of ships flying its flag, except those which are excluded from generally accepted international regulations on account of their small size.

In terms, therefore, of the regulation of activities on the high seas, the principal mechanism is flag State control. This has a number of implications as will be seen below, particularly as regards area-based controls. First of all any legal rules applicable in areas beyond coastal State jurisdiction must be binding on the flag State concerned. And secondly, to be effective, such an approach relies on the willingness and ability of the flag State concerned not only to actually translate such rules into its own national laws but also to ensure their implementation and enforcement. As regards the conservation and sustainable use of biodiversity in areas beyond national jurisdiction the structural 'constraints' of the law of the sea pose particular challenges.

A different regime, namely that of sponsorship, applies to deep-sea mining activities in the Area. UNCLOS provides that activities in the Area may be carried out by *inter alia* States Parties, or state enterprises or natural or juridical persons which possess the nationality of

²³ Churchill, R.R. & Lowe, A.V. *op cit.* at p. 257.

²⁴ UNCLOS, articles 91 and 92.

²⁵ MRAG Limited, Institute of Maritime Law, and Bird & Bird *Legal Aspects of Maritime Monitoring & Surveillance Data* European Commission, DG MARE, 2008 at p. 8.

²⁶ UNCLOS, article 94(1).

States Parties or are effectively controlled by them or their nationals, when sponsored by such States. At the request of ISA, the precise nature of the obligations of sponsoring States was recently examined by the Seabed Disputes Chamber of the International Tribunal for the Law of the Sea (ITLOS) established under UNCLOS²⁷.

²⁷ ITLOS, Advisory Opinion on the 'Responsibilities and obligations of States sponsoring persons and entities with respect to activities in the Area' February, 2011, Case No. 17, ITLOS Reports 2011, p. 10.

3. INTERNATIONAL LAW ON THE CONSERVATION AND SUSTAINABLE USE OF BIODIVERSITY

KEY FINDINGS

- The Convention on Biological Diversity (CBD) is the principal instrument of international law concerned with the conservation and sustainable use of biodiversity.
- As regards the 'elements of biological diversity' it applies only within areas under the national jurisdiction of States although it applies generally as regards processes and activities carried out under the jurisdiction or control of a State.
- The CBD imposes a number of duties on its State Parties with regard to *in situ* conservation including as regards the establishment of protected areas and the conduct of environmental impact assessment.
- It also sets out a regime, further developed in the Nagoya Protocol, concerning access to and the benefits from the use of genetic resources, primarily for the biotechnology sector.
- As the CBD must be applied consistently with UNCLOS, this means that States acting singly or together cannot establish marine protected areas beyond their national jurisdiction that are binding on non-participating States and the provisions on access and benefit sharing do not apply to genetic material sourced from such areas.

A number of international agreements are potentially relevant to the issue of marine biodiversity in areas beyond national jurisdiction. These include the CMS Convention²⁸, which deals with particular species (or groups of species) that may be present in areas beyond national jurisdiction, and CITES²⁹ which seeks to regulate trade in rare and endangered species. However much of the current debate about the conservation and sustainable use of biodiversity in areas beyond national jurisdiction is concerned with matters addressed in the Convention on Biological Diversity (CBD)³⁰.

Just as UNCLOS is the cornerstone of the law of the sea, the CBD which was adopted at the Earth Summit in Rio de Janeiro in June 1992, lies at the heart of global-level international efforts to conserve biological diversity. Participation in the CBD is nearly universal: there are currently 193 parties to the CBD including the EU and the Member States³¹.

The basic objectives of the CBD are: (1) the conservation of biological diversity, (2) the sustainable use of its components, and (3) the fair and equitable sharing of the benefits arising out of the utilization of genetic resources³².

Unlike UNCLOS, which seeks to be a constitution for the seas and therefore as far as possible a self contained 'package', the CBD is a framework convention in that it provides for the adoption of subordinate instruments in the form of protocols to develop detailed

²⁸ Conservation of Migratory Species of Wild Animals, Bonn, 23 June 1979, 1651 UNTS 333.

²⁹ Convention on International Trade in Endangered Species of Flora and Fauna, Washington D.C., 3 March 1973, 973 UNTS 243.

³⁰ Convention on Biological Diversity, Rio de Janeiro, 5 June 1992, 1760 UNTS 79.

³¹ See <http://www.cbd.int/convention/parties/list/> accessed on 18 September 2014. In other words although Andorra, the Holy See, South Sudan and the USA are not party to the CBD it has a higher rate of participation than UNCLOS.

³² Article 3.

rules on the main principles set out in the convention itself. The institutional arrangements to oversee the implementation of the CBD include the conference of the parties (COP) which keeps the implementation of the convention under review and which adopts the protocols as well as a permanent secretariat under the auspices of the United Nations Environment Programme.

Before examining how the CBD seeks to achieve its basic objectives it is first important to consider its jurisdictional scope.

3.1. The jurisdictional scope of the CBD

The jurisdictional scope of the CBD is specified in its Article 4. This states:

Subject to the rights of other States, and except as otherwise expressly provided in this Convention, the provisions of this Convention apply, in relation to each Contracting Party:

- (a) in the case of components of biological diversity, in areas within the limits of its national jurisdiction; and*
- (b) in the case of processes and activities, regardless of where their effects occur, carried out under its jurisdiction or control, within the area of its national jurisdiction or beyond the limits of national jurisdiction.*

Although the term 'components of biological diversity' is not defined, 'biological diversity' is. Article 2 provides that it means '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'.

Moreover, article 22, which is concerned with the relationship between the CBD and other international instruments, explicitly provides that it is to be implemented with respect to the marine environment 'consistently with the rights and obligations of States under the law of the sea'.

So what does this mean? First of all it is clear that the CBD applies to marine areas under the jurisdiction of coastal States. As regards areas beyond national jurisdiction, however, the position is a little more complex.

The CBD clearly does not apply to the 'components of biodiversity' in areas beyond national jurisdiction because in accordance with the law of the sea, States parties individually do not have jurisdiction or sovereign rights over these components³³. However, this does not mean that the CBD is entirely irrelevant to areas beyond national jurisdiction because States must apply the general principles of the CBD to processes and activities carried out under their jurisdiction or control. In practice this would include taking measures to control the actions of both their nationals and ships flying their flag.

In addition, Article 5 of the CBD requires the States parties to co-operate directly, or through competent international organisations, for the conservation and sustainable use of biodiversity in areas beyond national jurisdiction. Moreover, in carrying out activities in ABNJ that may have a significant adverse impact on the conservation and sustainable use of biodiversity, States parties must take into account the provisions of the CBD and the policy decisions taken by its COP.

So what are the obligations of the Parties to the CBD?

³³ de La Fayette, L.A. *op cit* at p. 243.

3.2. The conservation of biological diversity and the sustainable use of its components

The Contracting Parties to the CBD must, as far as possible and as appropriate, co-operate with other Contracting Parties directly or, where appropriate, through competent international organisations for the conservation and sustainable use of biological diversity³⁴.

They are also required to develop national strategies for the conservation and sustainable use of biological diversity. The Contracting Parties must also integrate the conservation and sustainable use of biological diversity into relevant sectoral or cross-sectoral plans, programmes and policies. To this end they are required, as far as possible and appropriate, to undertake a series of measures to identify and monitor the 'components of biological diversity' (article 7) and as well as *in situ* and *ex situ* conservation measures (in articles 8 and 9 respectively).

Among the *in situ measures* foreseen in article 8 are the following specific but highly qualified responsibilities in relation to protected areas, ecosystems and natural habitats:

- (a) establish a system of protected areas or areas where special measures need to be taken to conserve biological diversity;
- (b) develop, where necessary, guidelines for the selection, establishment and management of protected areas or where special measures need to be taken to conserve biological diversity;
- (c) regulate or manage biological resources important for the conservation of biological diversity whether within or outside protected areas, with a view to ensuring their conservation or sustainable use;
- (d) promote the protection of ecosystems, natural habitats and the maintenance of viable populations of species in natural surroundings;
- (e) promote environmentally sound and sustainable development in areas adjacent to protected areas with a view to furthering protection of these areas;
- ...
- (k) develop or maintain necessary legislation and/or other regulatory provisions for the protection of threatened species or populations;
- (l) where a significant adverse effect on biological diversity has been determined pursuant to article 7, regulate or manage the relevant processes and categories of activities.

The term 'protected area' is defined in article 2 as 'a geographically defined area which is designated or regulated and managed to achieve specific conservation objectives'.

At the tenth meeting of the Conference of the Parties to the CBD, which was held in October 2010 in Nagoya Japan, a revised and updated Strategic Plan for Biodiversity was adopted that included specific targets for the period 2011 to 2020 in the form of the 'Aichi Biodiversity Targets'. The Parties agreed to translate the Aichi targets into their revised and updated national biodiversity strategies and action plans. The target calls *inter alia* for 10 % of coastal and marine areas, and in particular areas of particular importance for biodiversity and ecosystem services, to be conserved through 'effectively and equitably managed, ecologically representative and well-connected systems of protected areas and

³⁴ CBD, article 5.

other effective area-based conservation measures, and integrated into the wider landscapes and seascapes³⁵.

In other words the provisions of the CBD on protected areas apply equally to marine protected areas (even if that term is not defined in either the CBD or UNCLOS). Moreover, as coastal States enjoy sovereign rights over the biological resources within those marine areas under their jurisdiction they also have both the authority to determine access to those resources in accordance with their applicable national legislation as well as the right to share in the benefits.

It is also necessary to mention article 14 which requires each Contracting Party, as far as possible and appropriate, to introduce procedures requiring environmental impact assessment of proposed projects that are likely to have significant adverse impacts on biological diversity with a view to avoiding or minimising such impacts as well as, *inter alia* arrangements to ensure that the environmental consequences of policies and programmes that are likely to have significant adverse impacts on biological diversity are taken into account.

3.3. Access and benefit sharing

The provisions on the fair and equitable sharing of the benefits arising out of the utilization of genetic resources for the purpose of creating biotechnology products represent a balancing exercise between the competing interests and capacity of States, in a manner not entirely dissimilar to the negotiations relating to deep-sea mining under UNCLOS. In this case the CBD sought to strike a balance between developing States and industrial States: the developing countries had (and have) the highest levels of biological diversity while the industrialised countries have the financial and technical capacity to exploit the genetic resources contained therein.

The process of searching for and acquiring genetic material for biotechnology purposes is commonly referred to as 'bio-prospecting' although there is no internationally agreed definition of this term. Particularly as regards marine scientific research, due to the enormous costs and complexities of mounting research cruises, there is an 'inextricable factual link between marine scientific research (either pure or applied) and bio-prospecting. It is impossible to establish a clear-cut distinction between one activity and the other and between one purpose and the other'³⁶.

In outline the provisions on access and benefit sharing in the CBD represent a compromise whereby the developing countries agreed to grant access to their genetic resources and to conserve that biodiversity in return for a share of the benefits³⁷. A key concern of the developing countries was to stop what was perceived to be the misappropriation of genetic resources and associated traditional knowledge by companies from the industrialised countries, a process commonly, if misleadingly, known as 'bio-piracy'³⁸. In other words benefit sharing is a fundamental component of the access regime.

In terms of understanding the CBD, the starting point is the recognition that as States have sovereign rights over their natural resources (which principle is affirmed in the preamble and formally restated in article 3), national governments also have the authority to

³⁵ See: <http://www.cbd.int/sp/targets/>.

³⁶ Scovazzi, T. 'The Concept of Common Heritage of Mankind and the Genetic Resources of the Seabed beyond the Limits of National Jurisdiction' *Agenda Internacional* Año XIV, N° 25, 2007, at p. 18.

³⁷ *Ecorys Nederland BV, MRAG Limited & s.Pro op cit* at p. 193.

³⁸ Chiarolla, C., Lapeyre, R., Pirard, R. *Biodiversity conservation: How can the regulation of bioprospecting under the Nagoya Protocol make a difference?* (2013) Studies N°06/13, IDDRI, Paris, France.

determine access to their genetic resources in accordance with the applicable national legislation. Such access must be on mutually agreed terms and subject to the prior informed consent of the State providing access in accordance with its laws and procedures. Moreover, the CBD provides that States must 'endeavour' to create conditions to facilitate access to genetic resources for environmentally sound uses by other parties³⁹.

In return, however, each contracting party to the CBD must endeavor to ensure the participation in scientific research of the State providing the resources and must take legislative, administrative or policy measures with the aim of sharing in a fair and equitable manner the results of research and development and the benefits arising from the commercial and other utilization of genetic resources with the State that provided those resources.

Moreover article 19, entitled 'handling of biotechnology and the handling of its benefits', requires each contracting party to take legislative, administrative or policy measures to provide for the effective participation in biotechnological research activities of the countries that provide the genetic resources and to promote priority access on a fair and equitable basis to the results and benefits arising from biotechnologies based on genetic resources provided by those countries, especially developing countries⁴⁰. Such access must be on mutually agreed terms⁴¹.

While these provisions established basic principles for access and benefit sharing they provided little operational guidance. The non-binding Bonn Guidelines⁴² adopted by the sixth meeting of the COP to the CBD in 1992 were not considered to be very effective. Consequently a decision was taken that the topic of access and benefit sharing needed to be addressed through the development of a legally binding protocol to the CBD. After eight years of negotiation the Nagoya Protocol on Access to Genetic Resources and the Fair and Equitable Sharing of Benefits Arising from their Utilization to the Convention on Biological Diversity (the 'Nagoya Protocol') was adopted on 29 October 2010⁴³.

One particular issue is that it is often difficult to identify where genetic material used in biotechnology products has been sourced from: in most countries intellectual property rights (IPR) legislation typically does not require this to be recorded in patent applications. Attempts by developing countries in international fora, including the World Intellectual Property Organization (WIPO) and the World Trade Organization (WTO), to reform the international legal framework to require this have been consistently rebuffed by industrialised countries.

³⁹ CBD, article 15.

⁴⁰ The issue of traditional knowledge associated with genetic resources and the rights of communities associated with such knowledge is also an important aspect of access and benefit sharing but of less relevance to marine biotechnology.

⁴¹ Ecorys Nederland BV, MRAG Limited & s.Pro *op cit* at p. 193.

⁴² Secretariat of the Convention on Biological Diversity (2002). *Bonn Guidelines on Access to Genetic Resources and Fair and Equitable Sharing of the Benefits Arising out of their Utilization*. Montreal: Secretariat of the Convention on Biological Diversity.

⁴³ Nagoya Protocol on Access to Genetic Resources and the Fair and Equitable Sharing of Benefits Arising from their Utilization to the Convention on Biological Diversity, Nagoya, Doc.: UNEP/CBD/COP/DEC/X/1 of 29 October 2010.

The Nagoya Protocol opened for signature in February 2011 and will enter into force on 12 October 2015. The EU has approved the protocol and has adopted legislation to give effect to it⁴⁴: the Member States have signed the protocol although most have yet to ratify it.

In brief the Nagoya Protocol sets out a mechanism to share the benefits acquired from genetic resources. But what exactly are these benefits? The short answer is that these benefits will derive not from harvesting genetic material itself but rather from the information that such material can yield. More concretely the financial value of genetic resources will derive from the IPR, in particular patents, copyright and database rights that may be derived from genetic material and used to create biotechnology products including medicines, cosmetics, food and fuel products (see Box B). Non-monetary benefits may include training and capacity building.

IPR are of fundamental importance to the biotechnology sector. Copyright and database rights are also extremely important during the research phase. Without patent protection the enormous costs and effort required for the creation of biotech products cannot be commercially justified. New genes, proteins and processes resulting from research and development based on genetic material may all be subject to patent protection provided they meet the necessary criteria for patentability. The licensing, or sometimes the sale, of IPR is the main source of the potential financial benefits from genetic resources.

Box 2: Intellectual Property Rights and biotechnology

Intellectual Property Rights (IPR) confer protection on the creators of knowledge or information by giving them property rights over the results of their creative or intellectual efforts. Patents, copyright and database rights are the IPR of most direct relevance to marine biotechnology.

Patents protect the rights of inventors. In brief a patent is the right granted to an inventor by a national or regional patent office (such as the European Patent Office) to exclude anyone else from commercially exploiting the invention for a limited period (generally 20 years). Patents are usually created at the level of national law (although within the EU the 'patent package' adopted in December 2012⁴⁵ provides for a unitary EU patent, language regime and patent court) but a number of international agreements seek to harmonise patent law. The general requirements for patentability at European level are set out in the European Patent Convention⁴⁶, which states that European patents should be 'granted for any new inventions, in all fields of technology which are susceptible of industrial application, which are new and which involve an inventive step'. Similar tests for patentability are found in other jurisdictions⁴⁷ That biotech inventions may be subject to patents is clearly established at the EU level by Directive 98/44/EC of the European

⁴⁴ Regulation (EU) No 511/2014 of the European Parliament and of the Council of 16 April 2014 on compliance measures for users from the Nagoya Protocol on Access to Genetic Resources and the Fair and Equitable Sharing of Benefits Arising from their Utilization in the Union Text with EEA relevance (OJ L 150, 20.05.2014, p. 59).

⁴⁵ Regulation (EU) No 1257/2012 of the European Parliament and of the Council of 17 December 2012 implementing enhanced co-operation in the area of the creation of unitary patent protection (OJ L 361, 31.12.2012, p. 1), Council Regulation (EU) No 1260/2012 of 17 December 2012 implementing enhanced co-operation in the area of the creation of unitary patent protection with regard to the applicable translation arrangements (OJ L 361, 31.12.2012, p. 89) and Agreement on a Unified Patent Court, Brussels, 19 February 2013 (OJ C 175, 20.06.2013, p. 1).

⁴⁶ Convention on the Grant of European Patents, 5 October 1973, 1065 UNTS 199, as amended.

⁴⁷ As reflected by Article 27 of the Agreement on Trade-Related Aspects of Intellectual Property Rights (TRIPS), Marrakesh, 15 April, 1994, 1869 UNTS 299. which provides that 'patents shall be available for any inventions, whether products or processes, in all field of technology, provided that they are new, involve an inventive step and are capable of industrial application'.

Parliament and of the Council of 6 July 1998 on the legal protection of biotechnological inventions⁴⁸. New genes, proteins and processes resulting from research and development may all be subject to patent protection provided they meet the necessary criteria for patentability.

Copyright and database rights The analysis and assessment of the genetic capabilities of marine organisms involves the sequencing of their genome and annotation of the genes. This process of genomic and metagenomic analyses coupled with deep sequencing generates large datasets from resources acquired from marine environments. Specific bioinformatics resources and tools have been developed in order to try and maximise the capacity to analyze the resulting vast datasets. Such datasets are subject to, and protected by, copyright. The same may be true for the tools (e.g. computer programmes) that are developed to generate, analyse or otherwise process these datasets. Copyright arises automatically and without formality upon creation of the work, generally once it is fixed in some material (reproducible) form. Databases (in any form) can also benefit from copyright protection. In addition, or alternatively, there may be a “*sui generis* database right” protecting the content of the database (irrespective of whether there has been creativity in its arrangement), provided that there has been a substantial (qualitative and/or quantitative) investment in obtaining, verifying or presenting the material. The international harmonisation of copyright law has been achieved to a certain extent through a number of instruments although the subsistence and enforcement of copyright will mainly occur at the national level⁴⁹.

3.4. Jurisdictional scope revisited

So what are the implications of the jurisdictional scope of the CBD with regard to the duties of the States Parties in connection with the conservation of biodiversity and access and benefit sharing?

As already noted, coastal States Parties to the CBD are subject to the obligations that relate to the marine areas under their jurisdiction. Consequently they are, subject to the qualifications in the convention, required to adopt the necessary laws and policies to give effect to their obligations regarding *in situ* conservation within the waters under their jurisdiction including as regards the declaration of protected areas there, subject, as will be seen in the next chapter, to their duties under UNCLOS with regard to navigation.

As regards the marine areas beyond their jurisdiction, there is essentially no possibility for unilateral State action. Indeed as the CBD does not apply to the elements of biological diversity in areas beyond national jurisdiction, the obligations of States Parties with regard to the conservation and sustainable use of biodiversity are limited to controlling the activities of their nationals and the vessels that fly their flag and to co-operating directly, or through competent international organisations to that end.

As regards the access and benefit sharing regime, because coastal States enjoy sovereign rights over the biological resources within marine areas under their jurisdiction and because the CBD and the Nagoya Protocol clearly apply there, such States have both the authority to determine access to those resources in accordance with their applicable national legislation as well as the right to share in the benefits. Marine scientific research within areas under coastal State jurisdiction will require the prior informed consent of the coastal State under the CBD/Nagoya Protocol and also, as will be seen below, under UNCLOS.

⁴⁸ OJ L 213, 30.7.1998, p. 13.

⁴⁹ *Ecorys Nederland BV, MRAG Limited & s.Pro op cit* at p. 204.

Mention can likewise be made of article 14 of the CBD which requires each Contracting Party, as far as possible and appropriate, to introduce procedures requiring environmental impact assessment of proposed projects that are likely to have significant adverse impacts on biological diversity with a view to avoiding or minimising such impacts as well as, *inter alia* arrangements to ensure that the environmental consequences of policies and programmes that are likely to have significant adverse impacts on biological diversity are taken into account. In these circumstances co-operation offers the only way that an individual State can contribute towards the achievement of the Aichi targets: it cannot meaningfully act unilaterally.

Any measures beyond the limits of national jurisdiction must be carried out within the framework of the UNCLOS legal regime. So the question then arises, how are the State Parties to the CBD to give effect to their obligations under the CBD on the basis of the existing provisions of international law? To answer this question it is necessary to go back to the law of the sea, including UNCLOS, and its provisions on the protection of the marine environment particularly in areas beyond national jurisdiction.

4. THE LAW OF THE SEA AND THE PROTECTION OF THE MARINE ENVIRONMENT IN AREAS BEYOND NATIONAL JURISDICTION

KEY FINDINGS

- UNCLOS, which was developed during the 1970s, does not specifically refer to biodiversity or sustainability although it does contain provisions on the protection of the marine environment that are capable of being used to protect biodiversity.
- Moreover its chapter on the protection of the marine environment is one of the longest in the convention although its focus is primarily on the prevention of pollution.
- Other provisions relating to the protection of the marine environment, which have direct or indirect relevance as far as the conservation and sustainable use of biodiversity are concerned, are contained in a range of other sector-focused legal instruments that form part of the law of the sea
- A range of instruments adopted under the auspices of the International Maritime Organization (IMO) are relevant to pollution from shipping and can potentially be used for area-based management on the high seas relating to shipping.
- The management of high seas fisheries takes place on the basis of provisions in UNCLOS, backed up by the UN Fish Stocks Agreement, through a range of regional fisheries management organisations certain of which have adopted area-based restrictions.
- Marine scientific research on the high seas is a high seas freedom and is currently subject to minimal regulation under international law.
- IMO is also responsible for dumping at sea.
- Deep-sea mining is regulated by the International Seabed Authority (ISA) on the basis of Part XI of UNCLOS as amended by the Part XI Implementation Agreement which has introduced a system of environmental assessment and has established closed areas for deep-sea mining on the basis of ecological criteria in parts of the Pacific Ocean.
- A number of regional seas organisations have been established to protect the marine environment including in areas of the high seas and several have taken steps to establish high seas marine protected areas or area-based management on the high seas.

4.1. UNCLOS

A product of its time (the negotiating process began in the early 1970s), UNCLOS does not specifically refer to 'biodiversity', 'sustainability' or the 'precautionary principle'. This does not, however mean that UNCLOS lacks provisions on the protection of the marine environment or which are capable of being used to protect marine biodiversity. In particular, the protection and preservation of the marine environment is both the subject and the title of Part XII of UNCLOS one of the longest parts of the convention.

Part XII imposes a general and unqualified (in that no exceptions are permitted) obligation on States to protect and preserve the marine environment.⁵⁰ It provides both that States are responsible for fulfilling their international obligations concerning this matter and that they bear liability for the consequences of any breach of such obligations⁵¹.

Most of the focus of Part XII is on the prevention of pollution of the marine environment. This term is in fact so comprehensively defined (in article 1(4)) that no activity that affects or may affect the marine environment is excluded from the scope of UNCLOS⁵².

Article 194(1) imposes a duty on States, individually or jointly as appropriate, to take all measures consistent with UNCLOS that are necessary to prevent, reduce and control pollution of the marine environment from any source, using for this purpose the best practicable means at their disposal and in accordance with their capabilities, and to endeavour to harmonise their policies in this connection. Moreover, measures taken under Part XII must 'include those necessary to protect and preserve rare or fragile ecosystems as well as the habitat of depleted, threatened or endangered species and other forms of marine life'. In other words, although the term 'biodiversity' is not used in the Convention, it does apply to marine living resources and makes reference to rare or fragile ecosystems, habitats, species and other forms of marine life that encompass biodiversity.

In addition, article 206 imposes an obligation on States to undertake 'as far as practicable' an assessment where there are reasonable grounds to believe that the potential impacts of planned activities under their jurisdiction and control may cause 'substantial pollution' or 'significant and harmful changes to the marine environment'. In other words this environmental impact assessment obligation is not very stringent.

Nevertheless, notwithstanding the breadth of these provisions it is clear that the focus of UNCLOS is mainly on the control of pollution from land-based sources as well as activities at sea. Moreover despite the relative length of Part XII and indeed the length of the convention itself, UNCLOS does not itself set out detailed rules for all marine activities or the protection of the marine environment from such different sectoral activities. Instead it sets out general principles while confining itself to stating where the authority to make such rules lies.

4.2. Shipping

Shipping can pose a number of threats to the marine environment, including marine biodiversity, from both routine operations (such as ship-source pollution including noise, or collisions with cetaceans, particularly whales, known as 'ship strikes') as well as from accidents: if there is a collision or a vessel sinks marine pollution is quite likely to result.

In the case of shipping, UNCLOS provides that the authority to make rules lies with what it refers to as the 'competent international organisation' namely the International Maritime Organization (IMO)⁵³. IMO is the United Nations specialised agency with responsibility for the safety and security of shipping and the prevention of marine pollution by ships. The Member States are members of the IMO while the EU has observer status.

⁵⁰ UNCLOS, article 192.

⁵¹ UNCLOS, article 235.

⁵² The definition provides: "pollution of the marine environment" means the introduction by man, directly or indirectly, of substances or energy into the marine environment, including estuaries, which results or is likely to result in such deleterious effects as harm to living resources and marine life, hazards to human health, hindrance to marine activities, including fishing and other legitimate uses of the sea, impairment of quality for use of sea water and reduction of amenities'.

⁵³ Although not named as such, the IMO is universally regarded as the body meant by this phrase.

Within the auspices of IMO a wide range of binding and non-binding instruments have been adopted that are of direct or indirect relevance to the issue of marine pollution.

For example MARPOL⁵⁴ as amended, the Anti-Fouling Convention⁵⁵ and the Ballast Water Management Convention⁵⁶ are all binding instruments concerned with preventing or minimising vessel-source pollution. SOLAS⁵⁷, STCW⁵⁸ and COLREG⁵⁹ are binding instruments that are concerned with the safe operation of ships while the OPRC⁶⁰ and its HNS Protocol⁶¹, the Civil Liability Convention⁶², the Fund Convention⁶³, the Bunker Oil Convention⁶⁴ and the HNS Convention⁶⁵ specify various responses to pollution at sea.

Mention can also be made of a number of guidelines that are also relevant to the protection of the marine environment including the General Provisions on Ships' Routing⁶⁶, the PSSA Guidelines⁶⁷, the Arctic Shipping Guidelines⁶⁸ and the Polar Shipping Guidelines⁶⁹.

All of these instruments, which are legally binding or will be legally binding when they enter into force, have a global scope of application⁷⁰. They seek to impose a range of standards including (i) discharge and emission standards; (ii) construction, design, equipment and manning standards; (iii) navigation standards; (iv) contingency planning and preparedness standards; and (v) liability, compensation and insurance standards.

It is the responsibility of each flag State to adopt the necessary legislation to apply IMO standards⁷¹ to vessels flying its flag and thereafter to ensure compliance with such standards. While UNCLOS does contain provisions on coastal State enforcement in respect

⁵⁴ International Convention for the Prevention of Pollution from Ships, London, 2 November 1973, 1340 UNTS 61, as modified by the 1978 Protocol (London, 1 June 1978) and the 1997 Protocol (London, 26 September 1997) and as regularly amended.

⁵⁵ International Convention on the Control of Harmful Anti-fouling Systems on Ships, London, 5 October 2001, IMO Doc. AFS/CONF/26, of 18 October 2001.

⁵⁶ International Convention for the Control and Management of Ships' Ballast Water and Sediments, London, 13 February 2004, IMO Doc. BWM/CONF/36, of 16 February 2004.

⁵⁷ International Convention for the Safety of Life at Sea, London, 1 November 1974, 1184 UNTS 3.

⁵⁸ International Convention on Standards of Training, Certification and Watchkeeping for Seafarers, London, 1 December 1978, as amended and modified by the 1995 Protocol.

⁵⁹ Convention on the International Regulations for Preventing Collisions at Sea, London, 20 October 1972, 1050 UNTS 16, as regularly amended.

⁶⁰ International Convention on Oil Pollution Preparedness, Response and Co-operation, London, 30 November 1990, 30 *International Legal Materials* (ILM) 733 (1990).

⁶¹ Protocol on Preparedness, Response and Co-operation to Pollution Incidents by Hazardous and Noxious Substances, London, 15 March 2000, IMO Doc. HNS-OPRC/CONF/11/Rev.1, of 15 March 2000.

⁶² International Convention on Civil Liability for Oil Pollution Damage, Brussels, 29 November 1969, ILM 45 (1970).

⁶³ International Convention on the Establishment of an International Fund for Compensation for Oil Pollution Damage, Brussels, 18 December 1971, 11 ILM 284 (1972).

⁶⁴ International Convention on Civil Liability for Bunker Oil Pollution Damage, London, 23 March 2001.

⁶⁵ International Convention on Liability and Compensation for Damage in Connection with the Carriage of Hazardous and Noxious Substances by Sea, London, 3 May 1996, IMO Doc. LEG/CONF.10/8/2, of 9 May 1996.

⁶⁶ IMO Resolution A.572(14), 'General Provisions on Ships' Routing'. Adopted on 20 November 1985, as regularly amended.

⁶⁷ IMO Assembly Resolution A.982(24), of 1 December 2005, 'Revised Guidelines for the Identification and Designation of Particularly Sensitive Sea Areas' (IMO doc. A 24/Res.982, of 6 February 2006).

⁶⁸ Adopted by IMO Assembly Resolution A.1024(26), 2 December 2009.

⁶⁹ IMO Resolution A.1024(26) 'Guidelines for ships operating in Polar Waters' 2 December 2009, IMO London. IMO is currently development a mandatory International Code of safety for ships operating in polar waters (Polar Code), see <http://www.imo.org/MediaCentre/HotTopics/polar/Pages/default.aspx>.

⁷⁰ MRAG Limited, IDDRI & Lamans s.a. *op cit* at p. 23.

⁷¹ UNCLOS, article 211(2). In fact UNCLOS refers to 'generally accepted international rules and standards' but these can be understood to mean standards set through IMO.

of non-compliance with international standards within the EEZ, only the flag State has the necessary competence to ensure compliance in areas beyond national jurisdiction⁷².

In terms of area-based management, two instruments are of potential relevance.

The first instrument is MARPOL, which provides for the designation of 'Special Areas' in which the adoption of special mandatory methods for the prevention of pollution is required. Under the convention, these Special Areas are provided with a higher level of protection than other sea areas, such as stricter vessel discharge restrictions. The Mediterranean is an example of a Special Area.

The second instrument is the Particularly Sensitive Sea Area ('PSSA') Guidelines, which build upon MARPOL. The PSSA is a unique soft-law concept devised by IMO to provide protection for environmentally sensitive sea areas, both within and beyond national jurisdiction, from the harmful effects of international shipping activities⁷³.

A PSSA is defined as an 'area which needs special protection through action by IMO because of its significance for recognised ecological or socio-economic or scientific reasons and which may be vulnerable to environmental damage by maritime activities'⁷⁴. In order to be identified as a PSSA, an area beyond or within the limits of the territorial sea should meet at least one of the ecological criteria defined in the guidelines (uniqueness, high dependency, high representativeness, diversity, vulnerability and so forth).

In PSSAs, special protective measures within the competence of IMO under SOLAS may be proposed for adoption by the Maritime Safety Committee of IMO. These include *inter alia* 'area to be avoided' designations and traffic separation schemes under SOLAS. In contrast to most of the other measures, traffic separation schemes are, if adopted, compulsory. In other words a PSSA can be used to route shipping away from a particular marine area, such as a particular biodiversity hotspot or areas with a particular concentration of cetaceans.

Measures for PSSAs lying beyond the territorial sea have to be international in character, in other words based on an existing treaty⁷⁵. Designation as a PSSA does not in itself carry any legal significance, but is rather a framework for the adoption of particular measures available under pre-existing instruments⁷⁶. PSSA boundaries appear on international navigational charts and the designation carries with it the associated protective measures recognised by the IMO as necessary to prevent damage to the ecosystem included in the PSSAs from international shipping. Moreover there is nothing in principle to prevent an area of the high seas from being declared a PSSA, although this has yet to be done⁷⁷. Moreover,

⁷² One partial exception in this respect are the regional Port State Control (PSC) regimes developed in connection with the implementation of a range of IMO Conventions, such as the Paris Memorandum of Understanding on Port State Control (the Paris MoU). As the name implies such regimes rely on the right of a port State to inspect a vessel that is voluntarily in one of its ports to assess compliance with IMO standards and as appropriate to detain it. Although it is not a binding treaty in terms of international law, the Paris MoU sets out a clear procedure for inspection, detention and rectification in connection with a specific list of legal instruments (listed in Section 2) that in turn impose defined legal obligations, in terms of standards, on Parties to those instruments.

⁷³ MRAG Limited, IDDRI & Lamans s.a. *op cit* at p. 27.

⁷⁴ "Revised Guidelines for the Identification and Designation of Particularly Sensitive Sea Areas", forming the Annex to IMO Assembly Resolution A.982(24) adopted on 1 December 2005

⁷⁵ Churchill, R.R. and Lowe, A.V. *op cit* at p. 394.

⁷⁶ IMO Resolution A.982 (24) *op cit*.

⁷⁷ Roberts, J., Chircop, A. & Prior, S. 'Area-based Management of the High Seas: Possible Application of the IMO's Particularly Sensitive Sea Area Concept' 25 *International Journal of Marine and Coastal Law* (2010) 483-522 at p. 500.

by its nature, a high seas PSSA would only apply to shipping and would not, indeed could not, restrict or regulate other activities taking place there.

4.3. Marine living resources

Fishing, or rather overfishing, poses a threat to marine biodiversity, including in areas beyond national jurisdiction.

As already noted, all States enjoy the 'freedom of fishing' on the high seas although this freedom is subject to section 2 of Part VII (the part of UNCLOS concerning the high seas) which is entitled 'Conservation and Management of the Living Resources of the High Seas'. In other words the freedom of States in connection with high seas fishing is subject to their international obligations (Article 116 (a)), to the rights, duties and interests of coastal States (Article 116 (b)), as well as to the obligations of all States to co-operate for the conservation and management of the living resources of the high seas (Articles 117 to 119). Article 118 in particular provides that:

States shall co-operate with each other in the conservation and management of living resources in the areas of the high seas. States whose nationals exploit...living resources in the same area, shall enter into negotiations with a view to taking the measures necessary for the conservation of the living resources concerned. They shall, as appropriate, co-operate to establish sub-regional or regional fisheries organisations to this end.

In other words UNCLOS is largely confirmatory of the principle of customary law providing for freedom of fishing on the high seas subject, *inter alia*, to a general duty to co-operate in the conservation and management of high seas fish stocks, which will often entail entering into negotiations to agree any necessary conservation measures. To this end numerous such agreements have been concluded to establish regional fisheries management organisations (RFMOs). Such agreements are, however, as a matter of international law, only binding on the States that are party to them. Subject to what follows, no State or group of States can unilaterally impose conservation measures in respect of high seas fish stocks on another State, or on any vessel flying the flag of another State⁷⁸.

Table 1: Selected list of RFMOs with competences over high seas fisheries

RFMO	Tuna only	Area of competence	Members
Commission for the Conservation of Antarctic Marine Living Resources (CCAMLR)	No	Southern ocean (south of the Antarctic Convergence and all areas south of 60° South).	Australia, Argentina, Belgium, Brazil, Bulgaria, Canada, Chile, China, Cook Islands, EU, Finland, France, Germany, Greece, India, Italy, Japan, Republic of Korea, Mauritius, Namibia, Netherlands, New Zealand, Norway, Pakistan, Peru, Poland, Russia, South Africa, Spain, Sweden, Ukraine, United Kingdom, USA, Uruguay, Vanuatu

⁷⁸ MRAG Limited, Öko Institute e.V. & Lamans s.a. at p. 22.

RFMO	Tuna only	Area of competence	Members
Commission for the Conservation of Southern Bluefin Tuna	Yes		Australia, Indonesia, Japan, New Zealand, Republic of Korea
General Fisheries Commission for the Mediterranean (GFCM)	No	The Mediterranean Sea, Black Sea & connecting waters	Albania, Algeria, Bulgaria, Croatia, Cyprus, EU, Egypt, France, Greece, Israel, Italy, Japan, Lebanon, Libya, Malta, Monaco, Montenegro, Morocco, Romania, Slovenia, Spain, Syria, Tunisia, Turkey
Inter-American Tropical Tuna Commission (IATTC)	Yes	Eastern Pacific Ocean	Belize, Venezuela, Canada, China, Colombia, Costa Rica, Ecuador, El Salvador, EU, France, Guatemala, Japan, Kiribati, Mexico, Nicaragua, Panama, Peru, Republic of Korea, Taiwan Province of China, USA, Vanuatu & Venezuela
International Commission for the Conservation of Atlantic Tuna (ICCAT)	Yes	Atlantic & adjacent seas	Albania, Algeria, Angola, Barbados, Belize, Venezuela, Brazil, Cabo Verde, Canada, China, Côte d'Ivoire, Egypt, Equatorial Guinea, EU, France, Gabon, Ghana, Guatemala, Guinea, Honduras, Iceland, Japan, Libya, Mauritania, Mexico, Morocco, Namibia, Nicaragua, Nigeria, Norway, Panama, Philippines, Republic of Korea, Russian Federation, Saint Vincent/Grenadines, Sao Tome & Principe, Senegal, Sierra Leone, South Africa, Syria, Trinidad and Tobago, Tunisia, Turkey, United Kingdom, USA, Uruguay & Vanuatu
Indian Ocean Tuna Commission (IOTC)	Yes	Indian Ocean	Australia, Belize, China, Comoros, Eritrea, EU, France, Guinea, India, Indonesia, Iran, Japan, Kenya, Madagascar, Malaysia, Maldives, Mauritius, Mozambique, Oman, Pakistan, Philippines, Republic of Korea, Seychelles, Sierra Leone, Sri Lanka, Sudan, Tanzania, Thailand, UK, Vanuatu, Yemen.
Northwest Atlantic Fisheries Organization (NAFO)	No	Northwest Atlantic Ocean	Canada, Cuba, Denmark (Faroes & Greenland), EU, France (St Pierre & Miquelon), Iceland, Japan, Republic of Korea, Russian Federation, Ukraine, USA

RFMO	Tuna only	Area of competence	Members
North East Atlantic Fisheries Commission (NEAFC)	No	North East Atlantic Ocean	Denmark (Faroes & Greenland), EU, Iceland, Norway, Russian Federation
North Pacific Fisheries Commission (NPFC)	No	North Pacific	Canada, China, Japan Republic of Korea, Russian Federation, Taiwan Province of China, USA (signatories – treaty not yet in force)
South East Atlantic Fisheries Organisation (SEAFO)	No	South East Atlantic	Angola, European Union, Japan, Korea, Namibia, Norway and South Africa
Southern Indian Ocean Fisheries Agreement (SIOFA)	No	Southern Indian Ocean	Australia, Cook Islands, EU, France, Japan, Mauritius, Seychelles.
Western & Central Pacific Fisheries Commission (WCPFC)	Yes	Western & Central Pacific	Australia, Canada, China, Cook Islands, EU, Federated States of Micronesia, Fiji, France, Indonesia, Japan, Kiribati, Marshall Islands, Nauru, New Zealand, Niue, Palau, Papua New Guinea, Philippines, Republic of Korea, Samoa, Solomon Islands, Taiwan Province of China, Tonga, Tuvalu, USA & Vanuatu
South Pacific Regional Fisheries Management Organisation (SPRFMO)	No	South Pacific Ocean	Australia, Belize, Chile, China, Cook Islands, Cuba, European Union, Denmark (Faroe Islands), Republic of Korea, New Zealand, Russian Federation, Chinese Taipei and Vanuatu.

Source: FAO <http://www.fao.org/figis/geoserver/factsheets/rfbs.html>.

In regulating international fishing beyond the limits of their EEZs, States depend on either direct co-operation between them or on international conventions and RFMOs to adopt measures for management and conservation of living resources⁷⁹.

The UN Fish Stocks Agreement was adopted to give effect to the provisions of article 63 of UNCLOS on 'straddling stocks' (stocks that occur within both the EEZ of a coastal State and an adjacent area of the high seas) and article 64 on highly migratory species (both within and beyond areas under coastal State jurisdiction). It requires coastal States and States

⁷⁹ MRAG Limited, Öko Institute e.V. & Lamans s.a. *op cit* at p. 23.

fishing on the high seas for such stocks and species to co-operate to ensure conservation and optimum utilisation of fish resources both within and beyond EEZs.

The UN Fish Stocks Agreement, which now has 82 parties including the EU and all 28 Member States⁸⁰, has instituted a number of important substantive and procedural clarifications to the duty of co-operation. In particular the UN Fish Stocks Agreement requires States to apply the ecosystem and precautionary approaches and to protect marine biodiversity from any adverse effects of fishing. Moreover Article 8(4) contains a notable addition to the norms of UNCLOS by limiting the freedom of fishing on the high seas only to those States which are members of sub-regional or regional fisheries organisations or participants in conservation and management arrangements, or which agree to apply the measures established by such organisations or arrangements.

This strengthens the hand of RFMOs, in that States having a “real interest” in the relevant fishery are now obliged to pursue co-operation in relation to those stocks, either directly or through appropriate RFMOs. In other words, where the RFMO has the competence to establish conservation and management measures for such stocks, States must give effect to their duty to co-operate by joining the RFMO or applying the measures established by it, the only alternative being to refrain from fishing for the stocks concerned⁸¹.

Other international agreements that seek to strengthen the management of high seas fisheries include the Compliance Agreement⁸² and the Port State Measures Agreement⁸³, both of which were negotiated under the auspices of the Food and Agriculture Organization of the United Nations (FAO). Mention can also be made of a series of non-binding measures adopted through FAO including the International Plan of Action to Prevent, Deter and Eliminate Illegal, Unreported and Unregulated Fishing⁸⁴ and the International Guidelines for the management of deep-sea fisheries in the high seas⁸⁵ which may directly impact on marine biodiversity. Deep-sea trawling has aroused particular controversy due to concerns over potential impacts on the fragile ecosystems of the deep seabed.

⁸⁰ Table recapitulating the status of the Convention and of the related Agreements, as at 20 September 2011. Information obtained from http://www.un.org/Depts/los/reference_files/status2010.pdf on 7 September 2014.

⁸¹ MRAG Limited, Öko Institute e.V. & Lamans s.a. *op cit* at p. 23.

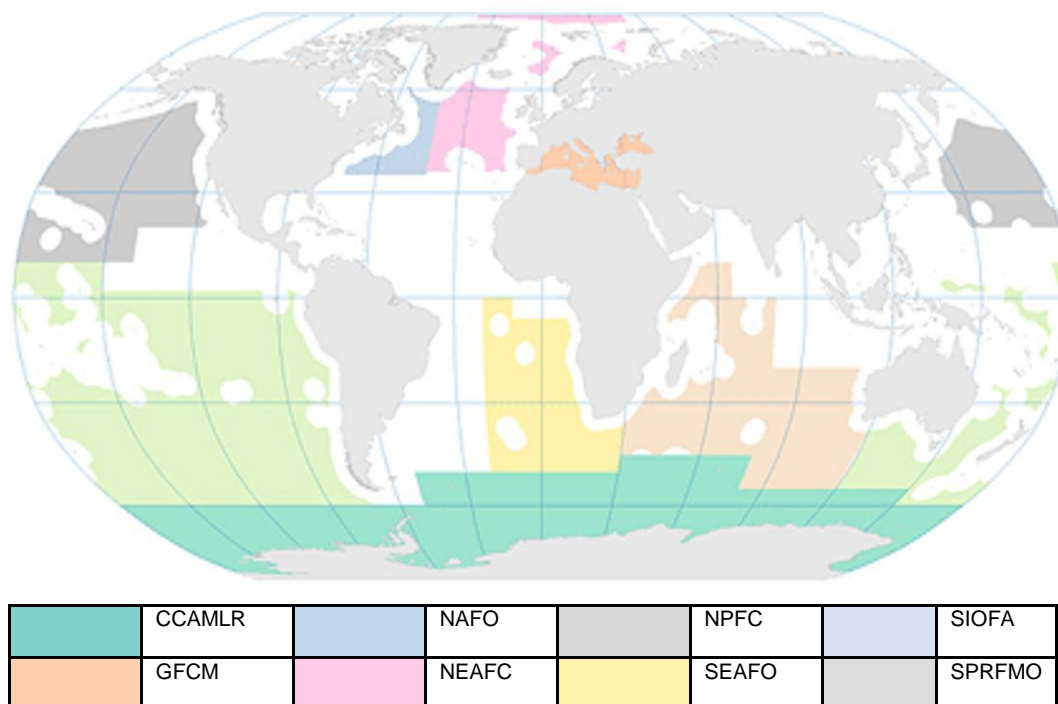
⁸² Agreement to Promote Compliance with International Conservation and Management Measures by Fishing Vessels on the High Seas, 24 October 1993, 2221 UNTS 79.

⁸³ Agreement on Port State Measures to Prevent, Deter and Eliminate Illegal, Unreported and Unregulated Fishing, 22 November 2009, FAO, Rome, available at: http://www.fao.org/fileadmin/user_upload/legal/docs/2_037t-e.pdf (not yet in force).

⁸⁴ International Plan of Action to Prevent, Deter and Eliminate Illegal, Unreported and Unregulated Fishing, FAO Rome, 2001, available at: <ftp://ftp.fao.org/docrep/fao/012/y1224e/y1224e00.pdf>.

⁸⁵ International Guidelines for the management of deep-sea fisheries in the high seas, FAO Rome, 2009 available at: <http://www.fao.org/3/a-i0816t.pdf>.

Figure 3: Map showing RFMO areas of competence



Source: FAO: <http://www.fao.org/fishery/topic/166304/en>⁸⁶.

Nevertheless it is at the level of individual RFMOs that binding legal rules are set with regard to high seas fishing, including area-based management tools in particular closed areas. Such RFMOs address either particular species, such as tuna, or all fisheries within a specific region. However, not all geographic regions and not all species are covered by such agreements (in particular the Arctic, Central and Southwest Atlantic are gaps) meaning that the regulation of fishing there is left to the discretion of individual flag States⁸⁷. Moreover only a limited number of RFMOs have adopted measures to regulate deep-sea trawling. And given the continued perilous state of fish stocks concerns have been expressed at the international level as to the effectiveness of RFMOs.

Finally mention too can be made of article 120 in Part VII of UNCLOS which provides that article 65 of UNCLOS is also to apply to the conservation and management of marine mammals on the high seas. The effect of this provision is to require States to co-operate with a view to the conservation of marine mammals and in the case of cetaceans to work through the appropriate international organisations for their conservation, management and study. In this context the appropriate organisation is the International Whaling Commission (IWC)⁸⁸ under whose auspices a decision has been taken to place a moratorium on commercial whaling. Mention can also be made of the two sanctuaries established by IWC in which commercial whaling is prohibited, namely the Indian Ocean Sanctuary (which covers the whole of the Indian Ocean south to 55° South) and the Southern Ocean Sanctuary which covers the waters of the Southern Ocean around Antarctica.

⁸⁶ See Table 1, above, for RFMO acronyms.

⁸⁷ de La Fayette, L.A. *op cit* at p. 251.

⁸⁸ Which was established pursuant to the International Convention for the Regulation of Whaling, Washington, 2nd December, 1946, 161 UNTS 72.

4.4. Marine scientific research

Marine scientific research, which term is not actually defined in the convention, is addressed in Part XIII of UNCLOS. As regards marine scientific research in areas beyond national jurisdiction it is necessary to distinguish between research (a) in the high seas (meaning on the surface of the sea and in the water column) and (b) research on the seabed, in other words the Area.

On the high seas, marine scientific research is a high seas freedom. In other words every State enjoys the right to undertake marine scientific research subject only to the broad duty imposed by article 244 to publish and disseminate information and knowledge resulting from marine scientific research.

However, as regards marine scientific research in the Area, the relevant provision of Part XIII also provides that all States have the right to conduct marine scientific research but only in conformity with the provisions of Part XI⁸⁹. Article 143, which provides that scientific research in the Area shall be carried out exclusively for peaceful purposes and for the benefit of mankind as a whole, states that States may carry out marine scientific research in the Area and requires States to 'promote international co-operation' through *inter alia* participation in international programmes and disseminating research results. It is, however, important to note that UNCLOS distinguishes between marine scientific research and prospecting and exploration activities relating to (mineral) resources that are subject to the prior approval of ISA (as described in more detail below).

The question of access to marine genetic resources in the Area and on the high seas is not at present effectively addressed under either UNCLOS or the CBD. Put another way, the CBD does not directly apply to genetic resources within such areas (although it does apply to activities under the jurisdiction or control of contracting parties in ABNJ) and the rather broad wording of the provisions in UNCLOS on the freedom of the high seas, tempered only by the rather general provisions on marine scientific research in Part XIII and on the protection and preservation of the marine environment in Part XII provide little guidance on the topic.

Consequently there at present are effectively no restrictions on access to marine genetic resources in areas beyond national jurisdiction or any substantive controls as to how the acquisition of such resources is to be undertaken. Although, unlike a harvesting operation, only very small quantities of such resources are needed for the purposes of gathering marine genetic material, such material may be located within very delicate ecosystems such as hydrothermal vent ecosystems, which are often hotspots for marine biodiversity. Consequently there may be a risk of damage to marine biodiversity as a result of the acquisition of marine genetic resources from or near the seabed (sampling techniques mean that negative impacts in the water column are likely to be negligible).

4.5. Dumping at sea

The issue of dumping at sea is regulated at the international level through the legal regime of the London Convention. The original Convention on the Prevention of Marine Pollution by Dumping of Wastes and Other Matter⁹⁰ (the London Convention) imposed a system with three different categories: dumping of waste of category I was generally prohibited, waste of category II required a prior special permit, while for waste of category III a prior general

⁸⁹ Article 256.

⁹⁰ London, Mexico City, Moscow and Washington, 29 December 1972, 1046 UNTS 120.

permit was needed. Contracting Parties were required to designate an authority to deal with permits, keep records, and monitor the condition of the sea (article VI).

The 1996 Protocol to the London Convention⁹¹ was agreed in order to further the Convention and replaces it generally. The Protocol prohibits all at-sea incineration of wastes, waste storage in the seabed, and all other waste dumping, except for a "reverse list" of substances that may be dumped at sea (such as dredged material, sewage sludge and fish waste from fish processing operations)⁹².

4.6. Deep-sea mining

While commercial deep-sea mining, in the sense of the extraction of minerals from the seabed has yet to begin, if it is not correctly undertaken, it has the potential to cause significant harm to the marine environment and thus to marine biodiversity.

In contrast to the other activities described in this part, UNCLOS itself contains relatively detailed provisions on deep-sea mining in its Part XI as modified by the Part XI Implementation Agreement. As noted above, all rights in the mineral resources of the Area are 'vested in mankind as a whole' under the regulatory control of ISA. The EU and Member States are members of ISA.

The regulatory regime for deep-sea mining in the Area is set out principally in Annex III of UNCLOS, as modified by the Part XI Implementation Agreement and supplemented by a series of rules, regulations and procedures adopted by ISA that together make up the 'Mining Code'⁹³. To date three sets of regulations describe the regimes for exploration for nodules, crusts and sulphides respectively. Exploration activities may only be carried out in areas specified in detailed and approved plans of work by suitably qualified applicants in terms of financial and technical capabilities and on the basis of authorisations issued by ISA. The regulations specify how an application is to be made for an approved plan of work as well as the form and content of the contracts for exploration. Some 16 contracts for exploration have been concluded to date. The Mining Code is not yet complete, however, as regulations on exploitation are currently in the process of being developed by ISA. The issue of how the benefits, from mining fees, of deep-sea mining in the Area are to be distributed to the world community will only be addressed once those benefits start to accrue.

UNCLOS provides that activities in the Area may be carried out by *inter alia* States Parties, or state enterprises or natural or juridical persons which possess the nationality of States Parties or are effectively controlled by them or their nationals, when sponsored by such States. As noted above, at the request of ISA, the precise nature of the obligations of sponsoring States was examined by the ITLOS Seabed Disputes Chamber. Its advisory opinion provided guidance on the notion of 'sponsorship' of contractors engaged in deep-sea mining in the Area, and the need for such States to adopt laws, regulations and administrative measures to ensure compliance by such contractors⁹⁴.

Although its focus is on deep-sea mining, ISA has from the beginning of its existence, taken environmental issues rather seriously. To this end it is necessary to mention the development by ISA of a detailed management plan for the Clarion-Clipperton Zone of the

⁹¹ London, 7 November 1996, (1997) 36 ILM 1.

⁹² MRAG Limited, Öko Institute e.V. & Lamans s.a. *op cit* at p. 41.

⁹³ See: <http://www.isa.org.im/en/mcode>.

⁹⁴ ITLOS Advisory Opinion *op cit*.

Central Pacific in 2012 which contains a number of 'areas of particular environmental interest' which are closed to deep-sea mining activity⁹⁵.

4.7. Regional seas agreements

In addition to the international agreements of global application described in the previous paragraphs, a number of agreements regarding the sea and its protection and use have been concluded at the regional level. More than 140 countries participate in 13 Regional Seas Programmes established under the auspices of the United Nations Environment Programme (UNEP) in the Black Sea, the Wider Caribbean, East Africa, South East Asia, the Mediterranean Sea, North-East Pacific, North-West Pacific, the Red Sea and Gulf of Aden, South Asia, South-East Pacific, and West and Central Africa. There are in addition five independent programmes for the Antarctic, the Arctic Ocean, the Baltic Sea, the Caspian Sea and the North-East Atlantic⁹⁶.

While most of these programmes, and their associated agreements, apply only to areas under coastal State jurisdiction, a number apply to areas of the high seas. These include the Barcelona Convention, which applies to the Mediterranean Sea, the OSPAR Convention, which applies to parts of the North Atlantic Ocean, the Noumea Convention, which applies to parts of the Pacific Ocean, as well as the Antarctic Treaty and associated instruments which apply to Antarctica and a large part of the Southern Ocean.

The **Barcelona Convention**⁹⁷ was concluded within the framework of the Regional Seas Programmes of UNEP, which is intended to foster regional co-operation for the benefit of the marine and coastal environment. The EU and its Mediterranean Sea Member States are party to the Barcelona Convention. Comprising 35 articles, the Barcelona Convention is essentially a framework convention. Although it sets out a number of general obligations (in article 4) as well as specific norms relating to certain activities (such as pollution caused by dumping (article 5), pollution from ships (article 6), pollution from land-based sources (article 8) and the conservation of biodiversity (article 10)), these tend to be somewhat qualified in that the contracting parties are required to take 'appropriate measures', or to undertake measures 'as far as possible'. Most of the detail of the legal framework created under the auspices of the Barcelona Convention is contained in a series of protocols adopted at diplomatic conferences of the contracting parties in accordance with article 21⁹⁸. Most of the protocols, which require the contracting parties to implement their provisions through national legislation, relate to measures against pollution.

The establishment of marine protected areas is recommended by the 1995 Protocol to the Barcelona Convention Concerning Mediterranean Specially Protected Areas and Biological Diversity in the Mediterranean⁹⁹. Article 4 of the 1995 Protocol provides a comprehensive statement of the objective of marine protected areas with strong antecedents in the CBD. The Protocol places a general obligation on the Parties "to protect, preserve and manage in a sustainable and environmentally sound way areas of particular natural or cultural value, notably by the establishment of specially protected areas (Article 3(1)(a) - called "Specially Protected Area of Mediterranean Interest" (SPAMI)) and provides for a set of protective measures to use in case such an area is established, including the regulation of the passage

⁹⁵ Environmental Management Plan for the Clarion-Clipperton Zone ISBA/17/LTC/7.

⁹⁶ de La Fayette, L.A. *op cit* at p. 250.

⁹⁷ Convention for the Protection of the Marine Environment and Coastal Regions of the Mediterranean. Originally the Convention for the Protection of the Mediterranean Sea against Pollution, Barcelona, 16 February 1976, 1102 UNTS 27.

⁹⁸ MRAG Limited, IDDR & Lamans s.a. *op cit* at p. 6.

⁹⁹ Barcelona, 10 June 1995, 2102 UNTS 181.

of ships or the regulation or prohibition of any activity involving the exploration or modification of the soil or the exploitation of the subsoil.

The Protocol is applicable to all marine waters, irrespective of their legal status, as well as to the seabed and subsoil and to coastal terrestrial areas designated by each Party. A particular feature of the Mediterranean Sea is that, until recently at least, many of the coastal States had not claimed an EEZ or some form of derivative zones (such as an exclusive fishing zone or an exclusive ecological zone), meaning large areas of the surface and the water column remained under the regime of the high seas¹⁰⁰. If a SPAMI is established on the high seas the protection measures are those prescribed by the State proposing the SPAMI: other parties must comply with the agreed measures but enforcement must be in accordance with international law¹⁰¹.

The historical focus of the **OSPAR Convention**¹⁰², and the earlier Oslo and Paris Conventions from which it emerged, has been on pollution prevention. It also requires the Contracting Parties to 'take the necessary measures to protect the maritime area against the adverse effects of human activities so as to safeguard human health and to conserve marine ecosystems and, when practicable, restore marine areas which have been adversely affected'¹⁰³. In addition, the OSPAR Commission, established pursuant to the OSPAR Convention, may adopt non-binding recommendations and also binding decisions (Articles 10 (3) and 13). There are currently 16 Contracting Parties to the OSPAR Convention: the coastal States bordering the North-East Atlantic except the Russian Federation, three States (Finland, Luxembourg and Switzerland) that are located on bodies of water adjacent to the OSPAR Maritime Area or upstream on watercourses reaching it, and the EU¹⁰⁴.

The OSPAR Convention contains a set of basic rules and principles that are elaborated in its five Annexes and three accompanying Appendices¹⁰⁵. Annex V on the Protection and Conservation of Ecosystems and Biological Diversity of the Maritime Area was adopted in 1998, together with Appendix 3 containing criteria for identifying human activities for the purpose of Annex V, and entered into force in 2000. The main pillars to guide the implementation of the OSPAR Convention and its Annexes are the six strategies that were reaffirmed and updated in 2003, including the Biological Diversity and Ecosystems Strategy (OSPAR Biodiversity Strategy)¹⁰⁶.

Annex V to the OSPAR Convention and a related Biodiversity Strategy expand on the OSPAR Convention in terms of nature conservation provisions. In order to perform their obligations under the OSPAR Convention and the Convention on Biological Diversity, the Contracting Parties are obliged by Article 2 of Annex V:

¹⁰⁰ But not the respective continental shelves of the coastal States as the continental shelf does not need to be claimed.

¹⁰¹ Churchill, R.R. and Lowe, A.V. "The Law of the Sea", *op cit*, p. 393.

¹⁰² Convention for the Protection of the Marine Environment of the North-East Atlantic (OSPAR), Paris, 22 September 1992, 2354 UNTS 67.

¹⁰³ Article 2(1)(a).

¹⁰⁴ Ecorys Nederland BV, MRAG Limited & Grid Arendal *Study to investigate the state of knowledge of deep-sea mining* European Commission, DG MARE, forthcoming, Annex 2, p. 33..

¹⁰⁵ The four Annexes that were adopted together with the Convention deal with pollution from land-based sources (Annex I), pollution by dumping or incineration (Annex II), pollution from offshore sources (Annex III) and the assessment of the quality of the marine environment (Annex IV).

¹⁰⁶ Strategies of the OSPAR Commission for the Protection of the Marine Environment of the North-East Atlantic, Chapter I (OSPAR Agreement 2003-21, Summary Record OSPAR 2003, OSPAR 03/17/1-E, Annex 31).

- to take the necessary measures to protect and conserve the ecosystems and the biological diversity of the maritime area, and to restore, where practicable, marine areas which have been adversely affected; and
- to co-operate in adopting programmes and measures for those purposes for the control of the human activities identified by the application of the criteria in Appendix 3 of Annex V.

Measures according to Annex V include the designation and the establishment of marine protected areas or rather a system of marine areas that need to be protected by means of appropriate programmes and measures against the adverse effects of human activities¹⁰⁷.

The **Noumea Convention**¹⁰⁸, which was adopted in 1986, aims to ensure that resource development in the Pacific takes place in harmony with the maintenance of the unique environmental quality of the region and the evolving principles of sustained resource management. The parties to the Noumea Convention are the Cook Islands, Fiji, Federated States of Micronesia, Nauru, Papua New Guinea, Republic of the Marshall Islands, Samoa and the Solomon Islands. The Convention has two Protocols: one on dumping and the other on co-operation in combating oil pollution. It applies to the contracting parties' EEZs and also to areas of the high seas beyond national jurisdiction that are completely enclosed by these EEZs (the 'Convention Area').

The Noumea Convention requires contracting Parties to prevent, reduce and control pollution of the Convention Area, from any source, and to ensure sound environmental management and development of natural resources, using for this purpose the best practicable means at their disposal, and in accordance with their capabilities. Moreover the parties must prevent, reduce and control pollution in the Convention Area caused by discharges from vessels, and resulting directly or indirectly from exploration and exploitation of the seabed and its subsoil¹⁰⁹.

Mention can also be made of the body of five international agreements that make up the **Antarctic Treaty System**. Central to this system is the Antarctic Treaty of 1959¹¹⁰, which applies to all areas south of 60° South and therefore includes large areas of the Southern Ocean. The Antarctic Treaty was supplemented by the Protocol on Environmental Protection to the Antarctic Treaty, which was adopted in Madrid on 4 October 1991 and entered into force in 1998¹¹¹. The protocol designates Antarctica as a 'natural reserve, devoted to peace and science'. In particular article 7 prohibits all activities relating to Antarctic mineral resources, except for scientific research¹¹².

¹⁰⁷ Ecorys Nederland BV, MRAG Limited & Grid Arendal *op cit* Annex 2, p. 34.

¹⁰⁸ The Convention for the Protection of Natural Resources and the Environment of the South Pacific Region. 24 November 1986, Noumea, New Caledonia 26 ILM 38 (1987). <http://www.sprep.org/attachments/NoumeConventiontextATS.pdf>.

¹⁰⁹ Ecorys Nederland BV, MRAG Limited & Grid Arendal *op cit* Annex 2, p. 35.

¹¹⁰ Washington, 1 December 1959, 402 UNTS 71.

¹¹¹ Protocol on Environmental Protection to the Antarctic Treaty, Madrid, 4 October 1991, 30 ILM 1455 (1991).

¹¹² Ecorys Nederland BV, MRAG Limited & Grid Arendal *op cit* Annex 2, p. 35.

5. REGULATORY AND INSTITUTIONAL 'GAPS'

KEY FINDINGS

- Most attempts to establish area-based management or marine protected areas on the high seas have been undertaken on a sectoral basis (e.g. for fishing, deep-sea mining etc.) and there are as yet not global mechanisms for the establishment of multi-purpose marine protected areas.
- Attempts by regional seas organisations to establish high seas marine protected areas have not been entirely satisfactory based as they are on limited participation and voluntary measures.
- Due to the number of organisations involved there is no mechanism to co-ordinate measures to ensure the conservation and sustainable use of marine biodiversity.
- Although UNCLOS calls for environmental impact assessments to be undertaken in respect of activities on the high seas it provides little guidance as to how this to be done and nor is there a clear legal framework for the evaluation of programmes and plans relating to the conservation and use of biodiversity in areas beyond national jurisdiction or to assess cumulative impacts.
- Bio-prospecting in areas beyond national jurisdiction is not regulated and there are no mechanisms for sharing the benefits from resources obtained there.

As seen so far, although the CBD does not apply, as regards the elements of biological diversity, to areas beyond national jurisdiction, a relatively large number of instruments address the issue of the protection of the marine environment there with provisions that relate directly or indirectly to the sustainable use and conservation of marine biodiversity. Nevertheless there are also a number of regulatory and institutional 'gaps'.

5.1. Marine protected areas beyond national jurisdiction

One of the biggest gaps in the current regulatory scheme concerns the issue of marine protected areas beyond national jurisdiction.

Unlike the term 'protected area', which as already described is defined in the CBD, there is currently no universally accepted definition for the term 'marine protected area'. A definition proposed by the International Union for Conservation of Nature (IUCN) is the most widely used. This is as follows:

Any area of intertidal or sub-tidal terrain, together with its overlying water and associated flora, fauna, historical and cultural features, which has been reserved by law or other effective means to protect part or all of the enclosed environment¹¹³.

Before proceeding any further, though, it is appropriate to reflect a little further on the concept of marine protected areas.

First of all it is important to note that protected areas are not uniform. The highly authoritative system of management categories developed by IUCN¹¹⁴, sets out the different management categories for protected areas (which range from category 1a 'Strict

¹¹³ Resolution 17.38 of the IUCN General Assembly, 1988.

¹¹⁴ See further: Day J., Dudley N., Hockings M., Holmes G., Laffoley D., Stolton S. & Wells, S. *Guidelines for applying the IUCN Protected Area Management Categories to Marine Protected Areas* 2012, IUCN, Gland, Switzerland.

nature reserve' in which human activities impacts are limited and controlled through to category VI 'Protected areas with the sustainable use of resources', which have long-established human activity). Consequently as these management categories can also be applied to marine protected areas (and Category V is 'Protected landscape or seascape'), it is clear that a range of different types of marine protected area may be envisaged with different conservation objectives.

Second, marine protected areas outside national jurisdiction will by their nature be located far offshore and in relatively deep water. And finally, irrespective of their objectives and the global public interest that they may serve, the fact remains that marine protected areas outside coastal State jurisdiction will in any event be subject to article 89 of UNCLOS, by which no part of the high seas is capable of being reduced to the sovereignty of any State.

As seen in the previous section a number of legal instruments of global application contain provisions that provide for area-based restrictions on certain sectoral activities that may potentially serve directly or indirectly to protect marine biodiversity. For example in terms of restrictions on shipping IMO can designate an area of high seas as a Special Area, thereby leading to stricter emission standards and can potentially establish high seas PSSAs in respect of shipping. In terms of living marine resources RFMOs can impose area-based restrictions on high seas fisheries to protect or restore the stocks they manage, or to protect the vulnerable marine ecosystems located on the seabed: examples include measures taken by certain RFMOs such as the North East Atlantic Fisheries Commission (NEAFC) and the Commission for the Conservation of Antarctic Marine Living Resources (CCAMLR). Mention can also be made of the Indian Ocean and Southern Ocean Sanctuaries established under the IWC and the closed 'areas of particular environmental interest' identified by ISA under the Clarion-Clipperton Management Plan mentioned in the previous chapter.

Given their sectoral approach a first and perfectly valid question is whether or not these kinds of area-based restriction can really be described as marine protected areas in view of their narrow focus. By their very nature they may restrict only one activity. A whale sanctuary can have no impact on deep-sea mining, for example, while the declaration of a high seas PSSA will have no impact on fishing activities there. Indeed while some commentators have argued that a PSSA may be regarded as a form of marine protected area others disagree on the basis that a single sector designation (in that a PSSA can only address shipping) is not a marine protected area as such¹¹⁵. The situation can be contrasted with land-based protected areas, as well as marine protected areas created in areas under coastal State jurisdiction, in which a range of human activities are typically regulated with the ultimate goal of conserving biodiversity.

The reason for this sectoral approach is that there is currently no global mechanism for the establishment of such multi-purpose or multi-sectoral marine protected areas beyond national jurisdiction¹¹⁶.

This does not mean that high seas multi-purpose or multi-sectoral marine protected areas are *per se* impossible. It is open to States to agree to institute them but the process is not without challenges or limitations. The experiences of OSPAR and the Barcelona Convention are instructive in this respect.

¹¹⁵ See Roberts *et al*, *op cit* at p. 498. For IUCN a key factor in determining whether or not a spatial area restriction is a marine protected area is whether it has a specific conservation objective.

¹¹⁶ Druel, E., Billé, R., Rochette, J. *A long and winding road International discussions on the governance of marine biodiversity in areas beyond national jurisdiction* IDDRI Policy Brief No. 7/13 September 2013 at p. 16.

OSPAR has established a regional network of high seas marine protected areas in the North East Atlantic in 2010 in particular the Charlie Gibbs Fracture Zone on the Mid-Atlantic Ridge. However, OSPAR itself has only a limited mandate to regulate human activities in areas beyond national jurisdiction and was therefore obliged to seek the co-operation of other international organisations including IMO, ISA and the relevant RFMO, the North-East Atlantic Fisheries Commission (NEAFC), to design an appropriate management plan for its marine protected areas. Co-operation was difficult to achieve: only non-binding instruments could be used,¹¹⁷ and these organisations all have diverging priorities and different memberships¹¹⁷.

And this last point is key. Regional seas organisations have no greater rights over areas beyond national jurisdiction than their members, who are often the adjacent coastal States. Therefore attempts to create high seas marine protected areas beyond national jurisdiction must rely on the consent of the flag State. As regards the Pelagos Sanctuary in the Mediterranean¹¹⁸, because it was adopted pursuant to the Barcelona Convention, its rules are binding on the Mediterranean coastal States that are party to it, but not on third countries or the vessels that their fly their flags.

There are two main problems. The key point is that at present the only legal mechanism to create marine protected areas beyond national jurisdiction relies on flag States to implement them.

On the other hand, when a broader regional seas agreement seeks to establish a marine protected area, there is a strong risk that only those countries that have a direct interest in the regional seas in question, namely the coastal States, will actually be party to the relevant agreement and thus bound by the legal rules applicable to the marine protected area. Conversely third countries may be unwilling to accept the effective 'privatisation' or regionalisation of an area of the high seas through the introduction of rules and restrictions by the coastal States.

Moreover in the absence of some form of specific multilateral enforcement mechanism, redress of breaches of such rules will depend primarily on flag State enforcement (because only the flag State will have the necessary jurisdiction). In theory, States always have the possibility of enforcing high seas marine protected areas not on the high seas but in their own ports, making access to their ports conditional on foreign vessels having acted or refrained from acting in a particular way in the relevant part of the high seas¹¹⁹. Such a view is, however, likely to provoke controversy among freedom of navigation advocates, often from States with strong shipping and naval interests, who argue strongly against any measures they see as impinging on the freedom of navigation. And in any event it is not clear how realistic this would be given that existing port state control measures are narrowly focused on vessel standards and illegal, unreported and unregulated fishing activities.

¹¹⁷ Druel, E., *et al* at p. 16.

¹¹⁸ Notarbartolo-di-Sciara, G., Agardy, T., Hyrenbach, D., Scovazzi, T & Van Klaveren, P. 'The Pelagos Sanctuary for Mediterranean marine mammals' 18 *Aquatic Conservation: Marine & Freshwater Ecosystems* 367 (2008).

¹¹⁹ As long as no positive right of access is given by some other treaty, such as the 1923 Convention and Statute on the International Regime of Maritime Ports (Geneva, 9 December 1923, 58 League of Nations Treaty Series 285). However unilaterally imposed rules that have the effect of denying access to ports might be subject to challenge as being contrary to international trade law administered by the WTO, although both cases of this kind to date were settled before the panel reached any decision.

5.2. Co-ordination

The second major gap concerns the issue of co-ordination. As will already be clear a wider range of organisations are involved in aspects of the protection of and sustainable use of marine biodiversity in areas beyond national jurisdiction. Apart from a range of different United Nations bodies, with their different mandates and focus, RFMOs and bodies created by regional seas agreements (secretariats and commissions) are involved at the formal level along with a range of different civil society actors.

Table 2: International organisations with competence over aspects of the protection and sustainable use of marine biodiversity in areas beyond national jurisdiction

UN/global body	Sector	Instruments of global application	Regional bodies
Food & Agriculture Organization of the United Nations (FAO)	Fisheries	FAO Compliance Agreement FAO Port State Measures Agreement Voluntary Guidelines etc.	RFMOs (see Table 1 above)
International Maritime Organization (IMO)	Shipping	SOLAS, MARPOL, etc.	
	Dumping	London Convention & Protocol	-
International Seabed Authority (ISA)	Deep-sea mining	Part XI Implementation Agreement, Mining Code	-
United Nations Environment Program (UNEP)	Environment	CBD	-
		CMS/CITES	ASCOBANS ¹²⁰ /ACCOBAMS ¹²¹
		Regional seas programmes	Regional seas conventions & their secretariats
International Whaling Commission (IWC)	Whaling	International Convention for the Regulation of Whaling	-
UNESCO/International Oceanographic Commission	Marine Scientific Research		-

¹²⁰ Agreement on Small Cetaceans of the Baltic and North Seas New York, 17 March 1992, 1772 UNTS 217.

¹²¹ Agreement on the Conservation of Cetaceans of the Black Sea, Mediterranean Sea and Contiguous Atlantic Area Monaco, 24 November 1996, 2183 UNTS 303.

Totally absent from the picture is an overall mechanism for co-ordinating efforts to preserve marine biodiversity in areas beyond national jurisdiction. Certain bodies such as the CBD Conference of the Parties and IUCN have taken steps to promote awareness of the topic and as will be seen in more detail below the United Nations General Assembly (UNGA) has played an increasingly important co-ordinating role. One point to note is that although UNCLOS itself does not have a formal conference of the parties, the UNGA has now taken on a central role in addressing the issue of marine biodiversity in areas beyond national jurisdiction, as recognised in numerous UNGA Resolutions and CBD decisions.

As regards co-ordination at the regional level the situation is arguably worse. Some relatively weak frameworks do exist such as the memoranda of understanding or other non-binding instruments. This is the case for example in the North East Atlantic, with an attempt to establish such a framework for the management of the OSPAR marine protected areas beyond national jurisdiction and, at a more formal level, in the Southern Ocean, with CCAMLR and the Antarctic Treaty System. But in the vast majority of ocean regions, co-ordination and co-operation between competent organisations in areas beyond national jurisdiction on marine biodiversity issues are almost non-existent¹²².

The issue of co-ordination goes beyond inter-sectoral co-ordination, such as how to co-ordinate the activities of RFMOs and regional sea organisations which typically have different objectives and geographical scope, but also includes vertical spatial co-ordination. When UNCLOS was being negotiated, little was known about the life of the deep seabed and therefore the clear vertical division between the water column and ocean floor seemed reasonable. However in reality the seabed and genetic resources form a single ecosystem; moreover there is evidence that some of the undersea formations of most interest to deep-sea miners are or were associated with areas of particular abundance of biodiversity (such as related to geothermal vents). Indeed life on the abyssal plain is far more abundant than had been imagined back in the 1970s¹²³. So how to co-ordinate deep-sea mining with the need to protect marine biodiversity on the seabed?

Underlying all of these issues with regard to co-ordination are the basic questions: how should decisions be taken and who has the final say?

5.3. Environmental Impact Assessment

In terms of environmental impact assessment, article 206 of UNCLOS imposes an obligation on States to undertake 'as far as practicable' an assessment where there are reasonable grounds to believe that the potential impacts of planned activities under their jurisdiction and control may cause 'substantial pollution' or 'significant and harmful changes to the marine environment'. In other words this environmental impact assessment obligation is not very stringent.

In the recent Pulp Mills case, the International Court of Justice held that environmental impact assessment is mandatory in the case of projects with transboundary impacts and some commentators have argued that this duty also applies to impacts that are both caused and arise in areas beyond national jurisdiction¹²⁴. But even if this is the case, the basic problem is the almost complete lack of guidance provided by international law as to how EIA is to be undertaken. For example who is to be consulted as regards areas beyond national jurisdiction? Who are the stakeholders? What are the minimum standards?

¹²² Druel, E. *et al op cit.* at p. 16.

¹²³ de La Fayette, L.A. *op cit* at p.258.

¹²⁴ Oude-Elferink, A. G., 'Environmental Impact Assessment in Areas Beyond National Jurisdiction' 27 *International Journal of Marine and Coastal Law* (2012), p. 449.

UNCLOS requires reports of the results of such assessments to be communicated to 'the competent international organisations' but otherwise provides no further guidance.

Relatively few sectoral organisations have adopted specific requirements for EIA in respect of activities in areas beyond national jurisdiction. Those that have include ISA for the exploratory phase of deep-sea mining in the Area, several RFMOs for deep-sea bottom fishing and the London Convention and Protocol in respect of the dumping of wastes and ocean fertilization. At the regional level EIA is a requirement under the Antarctic Treaty System for all activities having at least the potential for a minor or transitory impact and to a much lesser extent under the OSPAR Convention.

Missing too are provisions at the global or regional level on the strategic assessment of plans or programs that relate to the sustainable use and conservation of marine biodiversity in areas beyond national jurisdiction or for the assessment of cumulative impacts. Nor are there mechanisms in place to allow for public consultation and participation.

5.4. Bio-prospecting and benefit sharing

As regards areas beyond national jurisdiction namely the Area and the high seas, the question of access to marine genetic resources, let alone benefit sharing, is not at present effectively addressed under either UNCLOS or the CBD.

As already seen, the CBD does not directly apply to genetic resources in areas beyond national jurisdiction.

UNCLOS does not mention marine genetic resources at all. During the negotiation process, biological resources were omitted from Part XI (on the Area) because: (a) at that time it was believed they fell mainly within national jurisdiction; and (b) as very little was known about marine organisms in the open ocean and deep seabed it was assumed that these areas were largely devoid of life¹²⁵.

In the absence of an agreed definition of the term 'bio-prospecting' under international law, the acquisition of genetic material from areas beyond national jurisdiction is generally considered to fall under the heading of marine scientific research. It will be recalled that the freedom of marine scientific research is one of the high seas freedoms as qualified under UNCLOS. In the case of marine scientific research, this may be undertaken subject to the provisions of UNCLOS relating to the conservation and management of living resources (Part VII, section 2), general obligations to protect and preserve the marine environment (Part XII) as well as the specific regime for marine scientific research (Part XIII). Nevertheless, article 257 clearly provides that all States, irrespective of geographical location, have the right to conduct scientific research 'in the water column beyond the limits of the exclusive economic zone'. As regards the Area, in accordance with Part XI of UNCLOS a specific regime applies to the exploitation of the (mineral) resources situated there¹²⁶. However, for the reasons given above, that regime is silent as to the marine genetic resources of the Area. Moreover article 256 expressly indicates that all States have the right, in conformity with Part XI, to conduct scientific research in the Area.

Consequently there at present few if any restrictions on access to marine genetic resources in areas beyond national jurisdiction or substantive controls as to how the acquisition of marine genetic resources is to be undertaken.

¹²⁵ de La Fayette, L.A. *op cit* at p.268.

¹²⁶ As mentioned above the detailed regulations for exploitation are currently under development.

As regards the issue of benefit sharing there are two basic points of view. One view, which can be characterised as the industrialised country view, is that the principle of the freedom of the high seas extends to the acquisition and exploitation of the marine genetic resources found in the water column and by extension in the Area given that this issue is not expressly addressed in Part XI. As discussed in chapter three above it is impossible to distinguish between bio-prospecting and marine scientific research. But as marine scientific research in areas beyond national jurisdiction is one of the high seas freedoms, the issue of benefit sharing simply does not arise on this view.

The other view, which has tended to have more support from developing countries, is that when the principle of the freedom of the high seas was developed, back in the seventeenth century, no-one had marine bio-prospecting in mind and that a 'first come first served' legal regime favours the richer countries that have the resources to fund marine scientific research. Consequently it is argued that the spirit of UNCLOS calls for marine genetic resources in areas beyond national jurisdiction to be recognised as forming part of the common heritage of mankind and to be managed in a more equitable manner along the lines of the regime for the mineral resources of the Area¹²⁷. In support of this second argument it is further argued that article 143(1) provides that marine scientific research in the Area must be carried out 'exclusively for peaceful purposes and for the benefit of mankind as a whole in accordance with Part XIII'. Moreover it is argued that the obligation contained in article 244 of UNCLOS to make available knowledge resulting from marine scientific research is incompatible with the commercial objectives of bio-prospecting¹²⁸.

¹²⁷ Scovazzi *op cit* at p. 21.

¹²⁸ Warner, R.M. 'Protecting the Diversity of the Depths: Environmental Regulation of Bioprospecting and Marine Scientific Research Beyond National Jurisdiction', 22 *Ocean Yearbook* (2008) p. 411.

6. FILLING THE GAPS - STEPS TOWARDS POSSIBLE REFORM

KEY FINDINGS

- In response to concerns expressed in a range of international fora, the United Nations General Assembly (UNGA) established the 'BBNJ (biodiversity beyond national jurisdiction) Working Group' in 2004 to discuss the conservation and sustainable use of marine biodiversity in areas beyond national jurisdiction and the need for a new international legal instrument.
- A range of different opinions have been expressed in the working group and the issue of access and benefit sharing has been particularly controversial.
- In 2011 the EU, the G77 group of developing countries, China and Mexico agreed the outline of a negotiating 'package' in the form of an implementing agreement (IA) under UNCLOS that would address: (a) access and benefit sharing; (b) marine protected areas; (c) environmental impact assessment; and (d) capacity building/technology transfer.
- In 2012 the Rio+20 Summit called on the UNGA to determine by August 2015 whether or not to launch negotiations on the conclusion of an IA.
- Nevertheless a number of countries including the USA, Russia, Canada, Japan, Iceland, Norway and Korea remain opposed and it is not yet possible to say with certainty whether the negotiations will actually start or, if they do start, how they will take place.
- Nor is it possible to state with any certainty what a possible IA might contain, other than the elements in the package, or how it will address them, while discussion of the possible institutional arrangements has yet to start.

Concerns over the legal framework for the protection of marine biodiversity in areas beyond national jurisdiction began to be raised in international fora, including at meetings of the COP of the CBD¹²⁹ as well as by a range of non-government organisations and researchers, in the 1990s.

Responding to these concerns, in 2004 the UNGA established the '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', commonly known as the 'BBNJ Working Group'¹³⁰.

6.1. The 'BBNJ Working Group'

Since its establishment in 2004, the BBNJ Working Group has held a series of meetings (in 2006, 2008, 2010, 2011, 2012 and 2013 and most recently in June 2014) during the course of which various options to fill the existing legal and institutional 'gap' have been discussed, each of which has its own benefits and disadvantages (see Table 2).

¹²⁹ For example Decision II/10 of COP 2 Jakarta, Indonesia, 6 - 17 November 1995 requested the CBD Secretariat to collaborate with DOALOS to prepare a study of the relationship between UNCLOS and the CBD in relation to the conservation and sustainable use of marine genetic resources on the seabed to assist the Subsidiary Body on Scientific, Technical and Technological Advice (SBSTTA) in addressing issues relating to bio-prospecting for genetic resources on the deep seabed. The study was submitted to the eighth meeting of SBSTTA in 2003.

¹³⁰ The BBNJ Working Group was established pursuant to UNGA Resolution 59/24 of 17 November 2004.

At the first two meetings in 2006 and 2008 little substantive progress was made. This was largely because of the ideological divide that emerged at the first meeting with regard to the legal status of marine genetic resources found in areas beyond national jurisdiction and the issue of access and benefit sharing.

However by the time of the 2011 meeting the EU, which has been heavily involved in the process since 2006, was instrumental in building a coalition within the BBNJ Working Group with the G77 group of developing countries, China and Mexico over the outline of a possible negotiating 'package' that would address: (a) the issue of access and benefit sharing regarding marine genetic resources in areas beyond national jurisdiction; (b) marine protected areas in areas beyond national jurisdiction; (c) environmental impact assessment; and (d) capacity building/technology transfer. Moreover discussions that year were almost entirely devoted whether or not there was a need for an UNCLOS implementing agreement (IA) on the conservation and sustainable use of marine biodiversity in areas beyond national jurisdiction.

Although the BBNJ Working Group was not able to build the necessary consensus to recommend the opening of negotiations for an IA, it was able to agree that the process should proceed around the basis of the negotiating package.

Table 3: Advantages and disadvantages of legal and institutional options

Option	Advantages	Disadvantages
Amend the scope of CBD to include areas beyond national jurisdiction (ABNJ) & consequential amendments	Coherence: the creation of a single regime for the sustainable use and conservation of biodiversity	Little appetite for amending the CBD. Opposition from other marine sectors (e.g. fisheries) Little support from international community
Adopt a protocol under the CBD	Several protocols have already been adopted	Would also require an amendment to the CBD: see above
Adopt a new agreement on marine biodiversity in ABNJ with its own implementing body	A potentially comprehensive approach	Little support at the international level especially as regards the creation of a new international organisation
Amend UNCLOS	Would update UNCLOS in the light of new knowledge while maintaining its constitutional character	Little appetite for amending UNCLOS as might open a range of other issues Procedure for amending UNCLOS is complex/challenging
Adopt an implementing agreement under UNCLOS	Could be focused on key 'gaps' Precedent for this set by the Part XI Implementation Agreement and the UN Fish Stocks Agreement	No substantive disadvantages Incomplete support at the international level

Option	Advantages	Disadvantages
Adopt an UNGA Resolution to establish basic principles	Could be relatively easy and quick to adopt	Would not be legally binding directly (though may over time contribute to the formation of customary international law)
Focus on strengthening regional seas agreements	Would be better able to take account of regional characteristics	Would not resolve issues of global/regional co-ordination Might lead to highly divergent results

While some countries had hoped that the 2012 United Nations Conference on Sustainable Development (the Rio+20 Summit) would reach a political agreement to recommend the launch of negotiations under UNGA of an IA, it was not possible in the end to obtain the necessary consensus. Nevertheless it was agreed at the Rio+20 Summit that States would decide by the end of the 69th session of the UNGA (August 2015) whether or not to launch the negotiations for the conclusion of an UNCLOS IA.

In short progress is gradually being made towards a strengthened legal framework for marine biodiversity in areas beyond national jurisdiction. But it is important to emphasise that nothing concrete has yet been agreed. It is not certain that an IA will be concluded. It is not even certain that the 69th session of UNGA will authorise the start of negotiations. All that has been agreed so far is that discussions will take place around the agreed 'package'. There is also an emerging consensus that if an instrument is to be adopted, this will be under UNCLOS and not the CBD (although Venezuela, which is not party to UNCLOS has strongly advocated the CBD option). But many questions remain not only as to whether an IA will be developed but also as to its content and the procedure whereby this may take place.

In terms of negotiating positions the EU,G77, China and Mexico have been joined by New Zealand in calling for an IA on the basis of the negotiating package. On the other hand the USA continues to argue that there is no need for any kind of formal agreement and that an UNGA Resolution will suffice. Russia has a similar but less well articulated position, as does Canada although perhaps less robustly (in that Canada seems more open to discussing various possible options). Japan and Iceland can also be included among the group of countries yet to support the package, mainly due to concerns over fisheries and whaling, as can Norway (although Norway's position may be softening) and South Korea.

The next meeting of the BBNJ Working Group is scheduled to take place in January 2015. In theory it will be the last meeting before the matter is referred to the UNGA but an additional meeting cannot be ruled out. The purpose of that meeting will be to ensure that the 69th session of the UNGA will be in a position to decide whether or not to start negotiations on a new IA. In other words the scope of the task ahead remains enormous; it is clear that a great many questions will have to be answered even if the UNGA does decide that negotiations should begin on the development of an IA in accordance with the package. Not clear, for example, is just how such negotiations should be conducted. And what would be the elements of a possible IA?

6.2. Elements of a possible implementing agreement

In fact this is a rather difficult question to answer, as it is simply too early in the process. If a decision is taken within the UNGA to begin negotiations to develop an IA on the lines of the 'package', this implies that it will address the substantive issues described in the following paragraphs. At the same time though it is clear that each element of the package raises numerous complex questions.

In terms of **marine protected areas**, the first necessary step in the negotiations will be to build a common understanding of what is meant by the term. This also implies the development of some form of agreed definition.

The next question will be how to create marine protected areas that are binding on all parties to the IA and not, as now, just those which are party to the relevant regional seas agreement or treaty creating a RFMO. And how should future marine protected areas created on the basis of the IA be linked to existing high seas area-based restrictions or protected areas? How should the mandates of existing organisations (at global and regional levels) be respected and how and by whom should marine protected areas be designated? Should a new body be established under the IA to identify and establish marine protected areas or would this lead to duplication and the weakening of existing organisations? On the other hand, without a degree of centralised authority there may be a risk of fragmentation. And how will rules relating to marine protected areas be implemented and enforced? In short, many questions remain. One other point to emphasise, though, is that it is highly unlikely that the development of an IA would actually amend the existing provisions of UNCLOS on high seas freedoms meaning that the implementation of provisions regarding marine areas beyond national jurisdiction will continue to rely primarily on flag State enforcement.

The issue of **environmental impact assessment** also raises many questions. What planned activities will be subject to environmental impact assessment and what will be the threshold? Are the provisions of article 206 of UNCLOS sufficient in this respect? Who will decide this and what will be the elements of the process? How will environmental impact assessments be undertaken and what are the procedures? How will consultation take place and who will be the consultees? Will it be an entirely inter-governmental process or will there be scope for participation by international civil society? And what will be the procedures for reporting and data management and who will have access to such information? Who will develop standards and how uniform should these be taking account of regional variations? What will be the relationship between environmental impact assessment and the decision whether or not a given planned activity is to proceed? In short answers will need to be found to a range of questions on environmental impact assessment.

And indeed further questions arise as to the scope of the notion of assessment. Should it include an assessment of planned policies and programmes (such as fisheries management plans adopted by RFMOs)? And what about the assessment of cumulative impacts?

The question of **access and benefit sharing** is likely to prove one of the hardest to resolve, given the entrenched ideological positions that have been taken. Much of the debate has been on benefit sharing, but what about rules on access? Is bio-prospecting really just marine scientific research or should it be subject to a specific access regime particularly as in practice many developing countries are *de facto* excluded by reason of the fact that they do not have the necessary technical resources (such as access to research vessels)? And what should be the spatial scope of any new provisions: the Area or the Area and the high seas?

And, of course, the whole question of benefit sharing remains controversial. Positions remain polarised: do marine genetic resources from areas beyond national jurisdiction form part of the common heritage of mankind or does the freedom of the high seas apply to them instead?

If an access and benefit sharing regime is introduced, how will it function? Should there be a role for ISA through an amendment of its mandate or should its sectoral interests preclude this? And what about the links to intellectual property rights? Should these be made explicit under an access and benefit sharing regime with a formal role for WIPO?

Finally, there is the issue of **capacity and technology transfer**. In fact there has been little discussion of this topic in comparison with the other elements of the package. Many developing countries take the position that Part XIV of UNCLOS ('Development and Transfer of Marine Technology') has not been properly implemented. But the debate and discussion as to how this should be done has really yet to begin.

Beyond the four substantive elements of the 'package' it can be expected that a number of other issues would need to be addressed in a possible IA. For a start, an IA might be expected to set out a number of basic **principles** to further develop and expand on articles 192 to 194 of UNCLOS and to restate and thus reapply existing principles of international law relating to the conservation and sustainable use of biodiversity (such as the precautionary principle).

A possible IA will also need to provide for **institutional arrangements** for its implementation in terms of a secretariat and some form of conference of the parties (although it is possible that the UNGA could have this role). A possible role for ISA has already been mentioned, although this might be limited to distributing any benefits from marine genetic resources under an eventual access and benefit sharing agreement rather than a broader management role.

Issues that are not likely to be included in a possible implementing agreement include the question of **liability** for activities that negatively impact marine biodiversity in areas beyond national jurisdiction. Nor will a possible IA contain **detailed provisions on high seas fisheries** or replace the UN Fish Stocks Agreement (although Argentina has called for this), although some means of integrating a future system of MPAs with RFMO activities will surely be needed. How exactly this will be achieved is still very much an open question. Finally, it is also clear that a possible IA will not address the issue of flag State duties, while the issue of the '**genuine link**' is simply too controversial and raises too many other difficult questions relating to the shipping sector (as regards manning and vessel standards) and fisheries sector to be realistically addressed in an instrument concerned with marine biodiversity.

7. CONCLUSIONS

KEY FINDINGS

- The challenge for conservation and sustainable use of marine biodiversity in areas beyond national jurisdiction derives from the very structure of the law of the sea and the limitations on State sovereignty that result from the system of maritime zones that it provides for.
- This structure, based around the freedom of the high seas dates back to the seventeenth century and in particular the high seas freedoms as regards navigation, communication and fishing are still hugely important in today's globalised economy.
- Moreover the development of the law of the sea, including UNCLOS, does not (and indeed could not) reflect our current understanding of marine ecology.
- The development of an IA will not alter the fundamental structure of the law of the sea.
- Both UNCLOS and the CBD represent a balancing exercise between the interests of States acting in different capacities and while the negotiating 'package' that is advocated by the EU, the G77 group of countries, China and Mexico appears to take a similar approach it is too early to be able to assess whether or not it will lead to a successful outcome in terms of the conservation and sustainable use of marine biodiversity in areas beyond national jurisdiction.

As seen in this report, the basic challenge for the conservation and sustainable use of marine biodiversity in areas beyond national jurisdiction derives from the very structure of international law and in particular the law of the sea. State sovereignty is the basis both of international law and the ability of individual States to adopt and implement their own laws and policies regarding the conservation and sustainable use of biodiversity including within the maritime zones over which they have jurisdiction. And it is the limits of the sovereignty, sovereign rights and jurisdiction of coastal States, which do not extend beyond the boundaries of those maritime zones, that results in the current situation under which international law is ill-equipped to address the issue of the conservation and sustainable use of biodiversity on such a large part of the planet.

The current situation, in terms of the different maritime zones provided for under the law of the sea, is a product of history. Since its development in the seventeenth century, the principle of the freedom of the high seas has been hugely important for Europe in terms of the spread of trade and communications and indeed shipping continues to have a fundamentally important role in today's globalised economy. As international law developed in the nineteenth and twentieth centuries, the logic of the freedom of fishing on the high seas predated modern knowledge about the dynamics and fragility of fish stocks and their relationship to marine ecology. And UNCLOS itself, the Constitution of the Seas, which was adopted only some 30 years ago does not even refer to biodiversity or ecosystems, while the issue of marine genetic resources on the seabed was omitted entirely.

It was against this background that the CBD was adopted and entered into force. The challenge now for the international community is how to knit together the specific approaches of the CBD with the existing legal framework of the law of the sea. As seen in chapter four a range of instruments of global and regional application seek to address aspects of the protection of the marine environment of direct or indirect relevance to the conservation and sustainable use of biodiversity in areas beyond national jurisdiction.

Such measures may have an important role to play but it is nevertheless clear that there are significant gaps in terms of the establishment and functioning of marine protected areas, co-ordination, environmental impact assessment and access and benefit sharing.

Finding a solution to these problems, filling the gaps as it were, will continue to be a challenging process. As described, major disagreements remain at the international level. It is also important to emphasise that, notwithstanding the outcomes of the meetings of the BBNJ Working Group and the recommendations of the Rio+20 Summit, nothing substantive has yet been agreed. There may be negotiations on an IA or there may not. If there are negotiations on the development of an IA they may be successful or they may not. No one yet knows what form any negotiations might take and at a substantive level, as sketched out in chapter six of this report, there are many questions and, as yet, no substantive answers.

It is equally clear that if an IA is adopted it will operate within the existing rules for the organisation of marine space. It is not realistic to expect a significant change to the existing rules with regard to the jurisdiction of coastal States over marine areas.

So what are the prospects for a successful outcome? At this stage it is really too early to say. However, as noted in this report, both UNCLOS and the CBD represent a balancing exercise between the different interests of States in their various capacities. The negotiating 'package' advocated by the EU, the G77 group of countries, China and Mexico clearly represents a compromise, a recognition that a range of different interests are at stake both at the international level and within individual countries. Within Europe, for example, there is clear support for measures to protect global biodiversity and the achievement of the Aichi Targets. At the same time, though, Europe is a major player in the marine biotechnology sector: if the existing freedom of high seas research is replaced by an ill-conceived and overly burdensome regulatory regime for access and benefit sharing then European companies will be negatively affected. In seeking to strike a balance between the conservation and sustainable use of marine biodiversity in areas beyond national jurisdiction it is to be hoped that the package will yield a successful outcome to a vitally important issue. In terms also of seeking a balance between scope and legal certainty, the package seems to provide the most appropriate solution. It follows that continued EU support for it will be essential if a successful outcome is to be achieved.

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NOTES

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