

TOWARDS AN ITLOS ADVISORY OPINION ON THE GENETIC RESOURCES OF THE OUTER CONTINENTAL SHELF

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I. INTRODUCTION

The exploitation of marine genetic resources of the outer continental shelf has received little attention in international legal commentary thus far. However, current advancements and growing commercial interest in marine biotechnology are increasing the importance of this topic in practice. Of particular concern is the lack of clarity as to which legal principles apply to the exploitation of these resources. The resulting uncertainties are bound to give rise to many legal controversies in the near future, in particular between biodiversity-rich coastal States and biotechnology-rich third States.

This contribution identifies the major uncertainties in the current legal regime and considers the possibility of requesting the International Tribunal for the Law of the Sea (ITLOS) to render an advisory opinion on these matters. It is suggested that this would be an appropriate and timely first step towards the clarification of the rules and principles on the exploitation of outer continental shelf marine genetic resources¹.

II. DEVELOPMENTS IN MARINE GENETIC RESOURCES

The development of scientific knowledge on genetics has added a new dimension to the exploitation of living resources: their genetic value. This is especially so for marine genetic wealth. The discovery of deep-sea ecosystems has expanded not only our knowledge of the extraordinary diversity of life at sea but also the possibilities for exploitation of marine resources. In particular the marine genetic richness of hydrothermal vents—chimney-like features on the seabed—has been at the forefront of these developments.

Hydrothermal vents are found on active spreading ridges, in subduction zones, fracture zones, back-arc basins and on seamounts.² The vents can be present on the

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¹ This contribution will be followed by a second article in a subsequent issue of *Law of the Sea Reports*. The analysis will build on the present one in considering the substantive issues that the ITLOS would have to pronounce on in rendering an advisory opinion on the question proposed in the present article.

² See V. Tunnicliffe, A.G. McArthur and D. McHugh, *A Biogeographical Perspective of the Deep-sea Hydrothermal Vent Fauna*, (1998) 34 *Advances in Marine Biology*, pp. 355-442.

seabed of the territorial sea, the continental shelf, as well as on the seabed and ocean floor, beyond the limits of national jurisdiction (the Area). They are formed through a process that starts with the infiltration of seawater into fractures of the seabed. That cold water reaches the underlying layers of magma, and then, again through fractures in the sea-bottom, returns to the seabed as boiling water enriched by the minerals from the rocks. These minerals precipitate when in contact with the cold water, thereby forming “chimneys” or vents. So far, more than a hundred sites containing hydrothermal vents have been identified around the world³. These sites host one of the highest levels of animal abundance on Earth⁴. Their special and extreme conditions (high temperatures, high pressure and darkness) have created a completely different fauna in the surrounding deep-sea benthos⁵. The micro-organisms—principally chemoautotrophic microbes—living around these hydrothermal vents are at the base of the ecosystem’s food chain and share symbiotic relations with other organisms, like tube worms (*Riftia pachyptila*), through chemosynthesis. All these features make hydrothermal vent ecosystems extremely vulnerable to any interference caused by human activities.

This extreme vulnerability adds a factor of potential concern to their increased economic appeal. Their enhanced popularity is part of the growing attention that biotechnology has given to microorganisms over the past fifteen years. The incredible diversity of microbes, combined with their all-pervasive existence and advances in technology have led to renewed interest in their use for energy saving, climate control, pollution control, biomaterials, and many other applications⁶. But the unusual physiological characteristics of hydrothermal vents are subject to special scientific and commercial interest⁷ due to the genetic value of their hyperthermophile organisms⁸. By means of bioprospecting, enzymes from hydrothermal vent thermophiles have already been developed on the market⁹.

Biotechnology companies seek access to genetic material, which are either collected from nature or acquired through external collections. The majority of

³ P. Ré, *Deep Sea Hydrothermal Vents “Oasis of the Abyss”*, in: J. Beurier, A. Kiss and A. Mahmoudi (eds.) *New Technologies and the Law of the Marine Environment* (Kluwer Law International 2000), at p. 69.

⁴ See J.F. Imhoff and M. Hüglér, *Life at Deep Sea Hydrothermal Vents—Oases Under Water* (2009) 24 *TIJMCL*, pp. 201–208; and *Deep Seabed Polymetallic Nodule Exploration: Development of Environmental Guidelines*, Proc ISA Workshop, Sanya, China, 1–5 June 1998, ISA Pub No ISA/99/02 (1999), at p. 44 stating that “[t]he macrofaunal abundance of the continental shelf is estimated to be about a hundred times greater than that of the Abyssal seafloor”.

⁵ H. Korn, S. Friedrich and U. Feit, *Deep Sea Genetic Resources in the Context of the Convention on Biological Diversity and the United Nations Convention on the Law of the Sea* (Federal Agency for Nature Conservation 2003), at p. 13.

⁶ *Recent Trends in Biological Prospecting*, UNEP paper by S. Laird, R. Wynberg and S. Johnston, Antarctic Treaty Consultative Meeting 2006, Agenda item 18 (ATCM XXIX S.A.), at p. 10.

⁷ *Marine and Coastal Biological Diversity: Status and Trends of, and Threats to, Deep Seabed Genetic Resources beyond National Jurisdiction, and Identification of Technical Options for their Conservation and Sustainable Use*, CBD Subsidiary Body on Scientific, Technical and Technological Advice, Eleventh Meeting, Montreal, 28 Nov-2 Dec 2005 (UNEP/CBD/SBSTTA/11/11), at p. 10.

⁸ Korn, Friedrich and Feit, above (note 5), at p. 16.

⁹ Approximately 135 patents relevant to marine genetic resources have thus far been identified. See also M. Vierros et al, *An Update on Marine Genetic Resources: Scientific Research, Commercial Uses and a Database on Marine Bioprospecting*, Report for the UNU/UNESCO/Man and the Biosphere Program, UNICPOLOS, 8th meeting, United Nations, New York, 25-29 June 2007, at p. 6. On commercialised products arising from marine biological samples see further www.bioprospector.org. This site (developed and maintained by the UNU and The Christensen Fund) provides access to a web-based database to assist in assessing and documenting the extent of bioprospecting in marine areas.

companies and research institutes maintain in-house collections of microorganisms, plants, insects, human genetic material, animals, fungi, bacteria, and derivatives such as enzymes, purified compounds and extracts¹⁰. Most collections made by biotechnology companies include microorganisms¹¹. When collecting from nature, these companies are not only interested in areas with microbial diversity associated with endemic flora and fauna but also in samples from ecological niches and extreme environments—including hydrothermal vents.

The market of hydrothermal products has been estimated to be worth about USD 100 million per year¹², and patents have an important role to play within this market. In general, patents confer exclusive rights on the patent holder to exploit the patented invention for 20 years. Certain patents pertain to scientific discoveries of bioactive compounds of biological properties, while others pertain to inventions related to technology and techniques such as scientific methods¹³. Both are relevant to the exploitation of hydrothermal vents since they provide legal protection to the financial gains pertaining to the investments in bioprospecting.

Considering the foregoing aspects together, it shall be clear that the legal regime has to cater to different needs: it has to protect the ecosystems, encourage scientific research and boost investments. The present technological advancements, environmental concerns and political interests taken together create a scenario of potential controversies that could remain beyond the reach of current legal regulation. To effectively mediate among potentially conflicting uses of the ocean's exotic and ephemeral deep sea vents, any conservation and management regime must be comprehensive, adaptive and incorporate criteria for prioritizing among expected uses¹⁴. As the next section discusses, this requires us to look beyond the existing rules on marine resources towards a specific legal regime applicable to the exploitation of hydrothermal vents resources.

III. THE CURRENT LEGAL UNCERTAINTIES

Both under the United Nations Convention on the Law of the Sea (UNCLOS)¹⁵ and the Convention on Biological Diversity (CBD)¹⁶, the international community pursues the objectives of marine biodiversity conservation and the sustainable use of its components¹⁷. Exactly how these objectives translate to the regulation of the

¹⁰ K. ten Kate, *Biotechnology in Fields other than Healthcare and Agriculture*, in: K. ten Kate and S.A. Laird, *The Commercial Use of Biodiversity: Access to Genetic Resources and Benefit-sharing* (Earthscan 1999).

¹¹ See *Recent Trends in Biological Prospecting*, above (note 6), at p. 10.

¹² I. Mgbeoji, *(Under)Mining the Seabed? The ISA Mining Code, Precautionary Tales, and Sustainable Use of Hydrothermal Vent Ecosystems in the International Seabed Area* (2003-4) 18 *Ocean Yb*, at p. 537.

¹³ D.K. Leary *et al.*, *Marine Genetic Resources: A Review of Scientific and Commercial Interest* (2009) 33 *Marine Policy*, at p. 189.

¹⁴ Cf. also C. Allen, *Protecting the oceanic Gardens of Eden: International Law issues in Deep-Sea Vent Resource, Conservation and Management*, (2000-2001) 13 *Geo. Int'l Envtl. L. Rev.* 563, at p. 658.

¹⁵ United Nations Convention on the Law of the Sea (opened for signature 10 December 1982, entered into force 16 November 1994) 1833 UNTS 3.

¹⁶ Convention on Biological Diversity (opened for signature 5 June 1992, entered into force 29 December 1993) 1760 UNTS 79.

¹⁷ States Parties to the UNCLOS recognize “the desirability of establishing through this Convention [...] a legal order for the seas and oceans which will facilitate [...] the equitable and efficient utilization of

exploitation of hydrothermal vents is difficult to determine, however, when we examine the relevant UNCLOS and CBD provisions.

The UNCLOS and CBD do not provide clarity as to which legal regime applies to outer continental shelf hydrothermal vents. What is more, considerable difficulty arises from the need to ‘fuse’ distinct UNCLOS and CBD approaches that would be relevant to the management of hydrothermal vents ecosystems. The process of exploitation is characterized by a complex and unique interface of scientific, technological, finance and intellectual property aspects, which do not fit well into marine legal parameters. The partly conflicting confluence of the zonal approach of the UNCLOS and the essentially territorial approach of the CBD does not properly cover the realities of marine genetic value. On the one hand, the legal regime under the UNCLOS reflects a so-called “zonal approach”: the sea is divided into different zones or marine spaces shaped along lines of distance rather than based on differences in the nature of the resources¹⁸. For the present discussion, this means that the UNCLOS does not follow the vicissitudes of hydrothermal vents ecosystems. On the other hand, the CBD defines ‘biological diversity’ as “*the variability among living organisms from all sources including, inter alia, terrestrial, marine and other aquatic ecosystems*”¹⁹, and specifically provides that “*Contracting Parties shall implement this Convention with respect to the marine environment consistently with the rights and obligations of States under the law of the sea*”²⁰. As can be seen from these provisions, the negotiators of the CBD clearly recognized the difference between territorial and marine environment. The fact that they have so liberally left the implementation of the CBD subject to the law of the sea demonstrates the intrinsic territorial approach of the Convention.

Under the UNCLOS²¹, the continental shelf of a coastal State comprises the seabed and subsoil of the submarine areas beyond its territorial sea up to the outer edge of the continental margin, or to a distance of 200 nautical miles if the outer edge of the continental margin does not extend up to that distance. The coastal State exercises sovereign rights over the continental shelf for the purpose of exploring it and exploiting its natural resources²². Coastal States also enjoy sovereign rights for the exploration and exploitation of the natural resources of the adjacent water column beyond the territorial sea up to 200 nautical miles: the Exclusive Economic Zone (EEZ)²³. The effect of this is that within 200 nautical miles coastal States have sovereign rights over the seabed and water column that, although they are not entirely equivalent, effectively establish a coherent regime for the regulation of resource exploitation²⁴. Beyond 200 nautical miles, however, the coastal State rights over the continental shelf coexist with the

their resources, the conservation of their living resources, and the study, protection and preservation of the marine environment” (Preamble, UNCLOS) and States Parties to the CBD affirm that “*the conservation of the biological diversity is a common concern of humankind*” (Preamble, CBD).

¹⁸ As Tanaka has remarked, “[...] *the law of the sea based on the zonal approach has not yet sufficiently considered the fluid and dynamic nature of the ocean as well as the intricate relationship of marine ecosystems and the environments that support them*” (Y. Tanaka, *Reflections on a Dual Approach in International Law of the Sea* (2004) 19:4 *TIJMCL*, at p. 486.)

¹⁹ Article 2 CBD.

²⁰ Article 22.2 CBD.

²¹ Article 76 UNCLOS.

²² Article 77.1 UNCLOS.

²³ Article 56.1(a) UNCLOS.

²⁴ Cf. the cross-reference in Article 56.3 UNCLOS. See in similar vein also J. Mossop, *Protecting Marine Biodiversity on the Continental Shelf Beyond 200 Nautical Miles* (2007) 38:3 *ODIL*, at p. 284.

freedoms of the high seas in regard to the above waters²⁵. For the outer continental shelf this means that species that are considered to be non-sedentary can freely be appropriated by third States in accordance with the principles governing the exercise of the freedoms of the high seas²⁶.

This contrast between the coastal State rights over its outer continental shelf²⁷ and the high seas freedoms that apply to the above waters renders the question of whether the exploitation of the organisms of hydrothermal vents is governed by the continental shelf regime or the high seas regime very important. Any answer to this question, however, is steeped with controversy.

On the one hand, hydrothermal vent organisms do not correspond to the category of resources with which the continental shelf regime is concerned. UNCLOS Article 77.4 provides that the natural resources of the continental shelf “*consist of the mineral and other non-living resources of the seabed and subsoil together with living organisms belonging to sedentary species*”²⁸. Sedentary species are defined as “*organisms which, at the harvestable stage, either are immobile on or under the seabed or are unable to move except in constant physical contact with the seabed or the subsoil*”²⁹. This sedentary species definition was never intended to apply to species such as those associated with hydrothermal vents³⁰. The taxonomic and community compositions of hydrothermal vents cannot be reduced to what is envisaged by the mobility criterion of Article 77. It therefore is difficult to maintain that the resources of hydrothermal vents on outer continental shelves are somehow covered by the continental shelf regime.

On the other hand, considering the resources from outer continental shelf hydrothermal vent organisms to fall under the high seas regime is problematic as well. It follows from a systemic interpretation of UNCLOS Articles 77.4, 78 and 86, that when biological resources on the outer continental shelf cannot be categorized as sedentary species, they are considered to be a high seas resource instead. But, then again, what type of resource? And which rules and principles apply to the exploitation activities?

²⁵ Coastal States have sovereign but functional rights over the continental shelf, subject to limitations: “1. The rights of the coastal State over the continental shelf do not affect the legal status of the superjacent waters or of the air space above those waters. 2. The exercise of the rights of the coastal State over the continental shelf must not infringe or result in any unjustifiable interference with navigation and other rights and freedoms of other States as provided for in this Convention” (Article 78 UNCLOS).

²⁶ Article 87 UNCLOS, which (mostly) codifies customary international law on the freedom of high seas, establishes that the “*high seas are open to all States*”. This comprises, *inter alia*, freedom of fishing, subject to the conditions laid down in section 2 (Conservation and Management of the Living Resources of the High Seas), and freedom of scientific research, subject to Parts VI (Continental Shelf) and XIII (Marine Scientific Research).

²⁷ This contrast is further nuanced by the obligation of the coastal State to “*make payments or contributions in kind in respect of the exploitation of the non-living resources of the continental shelf beyond 200 nautical miles from the baselines from which the breadth of the territorial sea is measured*” (Article 82.1 UNCLOS). These payments or contributions “*shall be made through the Authority, which shall distribute them to States Parties to this Convention, on the basis of equitable sharing criteria, taking into account the interests and needs of developing States, particularly the least developed and the land-locked among them*” (Article 82.4 UNCLOS).

²⁸ Article 77.4 UNCLOS.

²⁹ *Ibid.*

³⁰ Cf. D.K. Leary, *International Law and the Genetic Resources of the Deep Sea* (Publ. on Ocean Development Vol. 56, Martinus Nijhoff 2007), at p. 94.

Hydrothermal vents are areas of high marine biodiversity. Taking into account their features and the exploitation processes involved, the (micro)organisms surrounding the “smokers” are considered to be marine (genetic) resources³¹. In accordance with the CBD, the coastal State has the right to determine the rules applicable to resources within the outer continental shelf and to regulate processes and activities that can affect biological diversity³². The CBD applies to the outer continental shelf and contains a system of regulations based on access and benefit-sharing for genetic resources. But the territorial approach makes it difficult to apply its provisions to hydrothermal vents. For instance, the CBD definition of “genetic material” does not cover the organism itself. Neither does it cover macromolecules such as proteins (e.g. enzymes), which are in fact one of the most significant features that attract growing interest in hydrothermal vent microorganisms³³.

Still, the broad CBD definition of biological resources³⁴ seriously impacts the zonal approach of UNCLOS. In effect, the latter convention identifies resources with spaces. As mentioned before, the outer continental shelf regime considers biological resources that are not sedentary species to be a high seas resource. Consequently, in applying the definition of the CBD, the hydrothermal vents organisms (as genetic resources, the population or biotic components of the ecosystem) that are not sedentary species will inevitably fall under the regime of the high seas. Why make this distinction between organisms when they are part of the same symbiotic ecosystem? The definition of the CBD would appear to break the zonal approach of the UNCLOS.

Moreover, due to the special characteristics of the exploitation, the activities related to hydrothermal vents are far from well defined in practice and difficult to

³¹ See *Conservation and Sustainable Use of Marine and Coastal Biological Diversity*, Decision II/10 of the Second Meeting of the Conference of the Parties to the CBD, Jakarta, 6 - 17 November 1995; and CBD Subsidiary Body on Scientific, Technical and Technological Advice, *Marine and Coastal Biodiversity: Review, Further Elaboration and Refinement of the Programme of Work Study of the Relationship between the Convention on Biological Diversity and the United Nations Convention on the Law of the Sea with regard to the Conservation and Sustainable Use of Genetic Resources of the Deep Seabed (Decision II/10 of the Conference of the Parties to the CBD)*, Eighth meeting, Montreal, 10-14 March 2003 (UNEP/CBD/SBSTTA/8/INF/3/Rev.1), at p. 18.

³² Article 4 CBD provides that “*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*”.

³³ Article 2 CBD defines ‘genetic resources’ as “*genetic material of actual or potential value*”, and ‘genetic material’ as “*any material of plant, animal, microbial or other origin containing functional units of heredity*”. The definition of ‘derivative’ in 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 (adopted on 29 October 2010 in Nagoya, Japan) would encompass the macromolecules. Article 2(e) of the Nagoya Protocol defines ‘derivative’ as “*a naturally occurring biochemical compound resulting from the genetic expression or metabolism of biological or genetic resources, even if it does not contain functional units of heredity*”. Note, however, that ‘derivative’ is seen as part of biotechnological applications rather than as an extension of the definition of genetic resources, since Article 2(d) of the Protocol also provides that “[*b*]iotechnology as defined in Article 2 of the Convention [CBD] means any technological application that uses biological systems, living organisms, or derivatives thereof, to make or modify products or processes for specific use” (internal quotation marks omitted). Moreover, Article 2 establishes that “*the terms defined in Article 2 of the Convention [CBD] shall apply to this Protocol*”.

³⁴ Article 2 CBD considers ‘biological resources’ to include “*genetic resources, organisms or part of thereof, populations or any other biotic component of ecosystems with actual or potential use or value to humanity*”.

characterize in law. This brings us to the problem that UNCLOS and the CBD do not define ‘marine scientific research’ or ‘bioprospecting’. What kind of activity is bioprospecting in terms of its international legal characterization? More specifically, is bioprospecting marine scientific research?

It should be borne in mind that coastal States have the right to regulate, authorize and conduct marine scientific research on their continental shelf in accordance with the relevant provisions of the UNCLOS³⁵. Yet, either on the high seas or on the outer continental shelf, patents are devoted to protect the industrial applications of bioprospectors. It is important to note that the grant of a patent is essentially a sovereign act of a State subject to international treaties such as the Agreement on Trade Related Aspects of Intellectual Property Rights (TRIPS)³⁶ or the Budapest Treaty on the International Recognition of the Deposit of Microorganisms for the Purposes of Patent Procedure (the Budapest Treaty)³⁷. But the international scheme of intellectual property rights currently reflects a highly plural nature. As a result, provisions vary from country to country and inventions can be filed in multiple jurisdictions. Therefore, in practice the ownership of the biomaterials remains controversial on both a national and international level³⁸.

Taken together, the above-discussed aspects of the international legal landscape do little to prevent interpretative conflicts from arising. Instead, the setting contains a range of potential disputes waiting to happen. The evident position of (coastal) States that are rich in biodiversity will be that the resources of hydrothermal vent ecosystems of the continental shelf are sedentary species. However, the obvious response of third (industrialized) States that are rich in biotechnology will be to hold that the marine genetic resources of outer continental shelf hydrothermal vents are governed by the freedom of the high seas. Whichever side you are on, it is highly unrealistic to expect any State to simply give up the entitlements to hydrothermal vent resources³⁹.

Still, what all parties can agree on is that it is necessary to support rather than undermine the scientific developments in the field, and for this a clear international legal regime is needed. At the moment, however, the law is not part of the solution but rather adds confusion to the problems. The current regime of hydrothermal vents of the continental shelf fails to regulate the tremendous progress in deep sea science and technology. Definitions are wholly inadequate, and the distribution of competences between coastal States and third States remains in need of clarification. Moreover, although there has been a steady increase in attention given to policy developments in relation to marine genetic resources (mostly beyond national jurisdiction)⁴⁰, these developments thus far remain without a concrete result⁴¹.

³⁵ Article 246.1 UNCLOS.

³⁶ Agreement on Trade-Related Aspects of Intellectual Property Rights (signed 15 April 1994, entered into force 1 January 1995) Marrakesh Agreement Establishing the World Trade Organization, Annex 1C, 1869 U.N.T.S. 299.

³⁷ Budapest Treaty on the International Recognition of the Deposit of Microorganisms for the Purposes of Patent Procedure (signed 28 April 1977, entered into force 9 August 1980; amended 26 September 1980) 1861 U.N.T.S. 361.

³⁸ G. Scott, *The legal context of intellectual property rights and marine biotechnology* (1998) 38 *Ocean & Coastal Management*, at p. 241.

³⁹ Leary, above (note 30), at p. 94.

⁴⁰ Fora in which such matters have been considered include the UN General Assembly; the Meeting of the United Nations Open-Ended Informal Consultative Process on Oceans and Law of the Sea (UNICPOLOS); the Ad Hoc Open-ended Informal Working Group to Study Issues Related to the

The legal identification of the operational process of the exploitation of marine genetic resources of the continental shelf is the key issue to take into consideration. At first thought, the adoption of amendments or protocols to the UNCLOS, the CBD or the TRIPS would appear to be a promising solution. However, the current political climate that accompanies the new developments suggests that any significant modification of the relevant universal regimes is highly unlikely. It is clear that States want to maintain the relative (and fragile) success reached at the negotiation of those regimes rather than to risk opening a Pandora's box of renewed negotiations. Policy-makers therefore need a source of inspiration for the adoption of new conventional rules. An advisory opinion of the ITLOS appears to be a possible and helpful way forward in this respect⁴².

IV. A QUESTION FOR THE ITLOS

The International Tribunal for the Law of the Sea is an independent judicial body established by the UNCLOS to adjudicate disputes arising out of the interpretation and application of the Convention. As such, it has a primary responsibility for the interpretation and application of UNCLOS, including through advisory opinions.

An advisory opinion has been defined as “*an authoritative but non-binding explanation of a question or issue*”⁴³. It is the way through which an international judicial organ may express its legal views concerning a matter on which its authoritative pronouncement is requested. The regime that governs the advisory jurisdiction of the ITLOS is established by the UNCLOS⁴⁴, the Statute⁴⁵ and the Rules of the Tribunal⁴⁶.

Conservation and Sustainable Use of Marine Biological Diversity beyond Areas of National Jurisdiction; the Meeting of States Parties to the UNCLOS (SPLOS); the Conference of the Parties to the CBD; the CBD Ad Hoc Open-Ended Working Group on Access and Benefit Sharing; the WTO Council on Trade Related Aspects of Intellectual Property Rights and the Committee on Trade and Environment; the World Intellectual Property Organization; the Intergovernmental Committee on Intellectual Property and Genetic Resources, the Traditional Knowledge and Folklore; the Governing Body of the International Treaty on Plant Genetic Resources for Food and Agriculture; and the Antarctic Treaty Consultative Meeting.

⁴¹ The most commonly cited obstacle is the need for more information to assess the current options and framework before engaging in discussions on a new management regime. However, the highest barrier in fact concerns the political differences between industrialized and developing countries. See A/65/69, *Oceans and the Law of the Sea: Report of the Secretary-General*, 29 March 2010, paras. 164, 178, 180 and 181; A/RES/64/71 *Oceans and the Law of the Sea*, 12 March 2010, para. 142; SPLOS/184, Meeting of States Parties to the UNCLOS, Eighteenth Meeting, New York 13- 21 July 2008, para. 113; A/62/169, *Report on the work of the United Nations Open-ended Informal Consultative Process on Oceans and the Law of the Sea at its eighth meeting*, Sixty-second Session, 30 July 2007; CBD Ad Hoc Open-Ended Working Group on Access and Benefit-Sharing, *Study on the Relationship between an International Regime on Access and Benefit-Sharing and other International Instruments and Forums that Govern the Use of Genetic Resources*; UNEP/CBD/WG-ABS/7/INF/3/Part.3; *The Antarctic Treaty System (ATS) and the United Nations Convention on the Law of the Sea (UNCLOS)*, Seventh meeting, Paris, 2-8 April 2009; and World Intellectual Property Organization, Intergovernmental Committee on Intellectual Property and Genetic Resources, Traditional Knowledge and Folklore, *Genetic Resources: Factual Update of International Developments*, Thirteenth session, Geneva, 13-17 October 2008, WIPO/GRTKF/IC/13/8(b).

⁴² B. Vukas, *Possible Role of the International Tribunal for the Law of the Sea in Interpretation and Progressive Development of the Law of the Sea* in V. Davor and W. Ostreng (eds) *Order for the Oceans at the Turn of the Century* (Kluwer Law International 1999) at p. 103.

⁴³ J.M. Pasqualucci, *The Practice and Procedure of the Inter-American Court of Human Rights* (Cambridge University Press 2003), at p. 29.

⁴⁴ Articles 159.10 and 191 UNCLOS.

⁴⁵ Articles 20, 21 and 40 Statute of the Tribunal.

⁴⁶ Articles 130 – 137 Rules of the Tribunal.

The Seabed Disputes Chamber of the Tribunal is competent to give advisory opinions on legal questions arising within the scope of the activities of the International Seabed Authority⁴⁷. The Tribunal, acting as a full court, may also give advisory opinions on a legal question if an international agreement related to the purposes of the UNCLOS specifically provides for submission of a request for such an opinion to the Tribunal⁴⁸.

A request for an advisory opinion may be transmitted to the Tribunal by “whatever body” is authorized, by or in accordance with the agreement, to make the request to the Tribunal⁴⁹. The broad concept “whatever body” covers organs, entities, organizations or States. Any such body could make a request, on behalf of the parties to the agreement, for an advisory opinion of the Tribunal. For instance, the Meeting of States Parties to the United Nations Convention on the Law of the Sea could potentially fit in the category of “whatever body”. This is worth pointing out because, in contrast to the broad advisory jurisdiction of the ITLOS under the UNLCOS, the International Court of Justice has a narrow jurisdiction in advisory proceedings, which would deny potential “whatever bodies” the possibility of submitting such a request⁵⁰.

In addition, the ITLOS has jurisdiction over any dispute concerning the interpretation or application of an international agreement related to the purposes of the UNCLOS that is submitted to it in accordance with the agreement⁵¹. In this regard, the Statute of the tribunal provides that “[t]he jurisdiction of the Tribunal comprises all disputes and all applications submitted to it in accordance with this Convention and all matters specifically provided for in any other agreement which confers jurisdiction on the Tribunal”⁵². The expression “any other agreement” appears to include “non international” agreements. Therefore, the Statute seems to allow requests for advisory opinions by any State or other entity to the Tribunal itself or to its chambers.

The Seabed Disputes Chamber of the ITLOS rendered its first advisory opinion earlier this year⁵³. The request had been submitted by the Council of the International Seabed Authority and involved three questions related to responsibilities and obligations of States that sponsor persons and entities with respect to their activities in the Area. Furthermore, during advisory proceedings, some State representatives have already pointed out that “[t]he States Parties to this Convention would all benefit from any wisdom and guidance provided by the Tribunal [and that] advisory opinions would seem to be a suitable instrument for achieving this objective”⁵⁴. However, the ITLOS

⁴⁷ Article 131 Rules of the Tribunal.

⁴⁸ Article 138.1 Rules of the Tribunal.

⁴⁹ Article 138.2 Rules of the Tribunal.

⁵⁰ Only the UN General Assembly and Security Council are entitled to request the ICJ to give an advisory opinion on “any legal question” (Article 96.1 UN Charter). Other organs of the UN and specialized agencies may only make such requests when so authorized by the General Assembly and only in regard to “legal questions arising within the scope of their activities” (Article 96.2 UN Charter).

⁵¹ Article 288.2 UNCLOS.

⁵² Article 21 Statute of the Tribunal (emphasis added).

⁵³ The request for the advisory opinion was transmitted by letter dated 11 May 2010, from the Secretary-General of the International Seabed Authority, Mr Nii Odunton, to the President of the Seabed Disputes Chamber, Judge Tullio Treves (ITLOS/Press 147). The Advisory Opinion (Case No. 17) *Responsibilities and Obligations of States Sponsoring Persons and Entities with Respect to Activities in the Area (Request for Advisory Opinion submitted to the Seabed Disputes Chamber)* was rendered on 1 February 2011.

⁵⁴ Statement of the Federal Republic of Germany, 10 a.m. Public Sitting of 15 September 2010 in Case No. 17 *Responsibilities and obligations of States sponsoring persons and entities with respect to activities in the Area (Request for Advisory Opinion submitted to the Seabed Disputes Chamber)*.

acting as a full court has never received a request for an advisory opinion. The complex issue of genetic resources of the continental shelf beyond 200 nautical miles should become the first one.

To render its advisory opinion, the ITLOS will apply the UNCLOS and “*other rules of international law not incompatible with this Convention*”⁵⁵. Consequently, in doing so, the Tribunal should consider the complexity of the interplay between the law of the sea, the CBD, and the intellectual property rights to shine some light on the international legal regime that applies to outer continental shelf hydrothermal vents. The search for answers to the legal questions that the ITLOS must consider in this light will certainly be complicated, even more so since the Tribunal should also bring balance to different issues of a legal and political nature.

Nevertheless, although the advisory opinion will have to navigate many difficulties, the logical construction of the request itself could be simple. It could usefully be constructed along the following lines: “*What are the rights and duties of States in regard to the exploration and the exploitation of genetic resources of the continental shelf beyond 200 nautical miles in considering the applicable rules and principles of international law, including the UNCLOS, the CBD and intellectual property rights, and the relevant United Nations General Assembly Resolutions?*” The legal reasoning inherent in the formulation of this question attest to the need to delineate rights and duties of coastal as well as third States whilst acknowledging the need for a global (and multidisciplinary) approach to the relationship between the UNCLOS, the CBD, intellectual property rights and United Nations General Assembly Resolutions.

V. CONCLUDING REMARKS

The ITLOS was created as an independent judicial body under the UNCLOS not only to adjudicate disputes but also to provide legal guidance on law of the sea matters through advisory opinions. Following the effort expended by coastal States to chart their outer continental shelves in accordance with UNCLOS, it is now time to clarify the principles and rules that will guide the States facing one of the most complex issues in the law of the sea in the years to come. A clear legal regime on the exploitation of the genetic resources of outer continental shelf hydrothermal vents needs to be developed. Requesting an advisory opinion of the ITLOS on this matter would be a good first step.

⁵⁵ Article 293 UNCLOS.