HOW IS THE LAW OF THE SEA COPING WITH NEW OCEAN RESOURCES?

This panel was convened at 1:30 pm, Thursday, April 4, by its moderator, Maria Gavouneli of the University of Athens, who introduced the panelists: David Balton of the Office of the Assistant Secretary for Oceans and Fisheries, U.S. State Department; Kristina Maria Gjerde of the International Union for Conservation of Nature; Michael Lodge of the International Seabed Authority; and Tullio Scovazzi of the University of Milano-Bicocca.[*]

Open Questions on the Exploitation of Genetic Resources in Areas Beyond National Jurisdiction

By Tullio Scovazzi[†]

New challenges are facing states as regards genetic resources in areas beyond national jurisdiction. The deep seabed is not a desert, despite extreme conditions of bitter cold, utter darkness, and intense pressure. It is the habitat of diverse forms of life associated with typical features such as hydrothermal vents, cold water seeps, seamounts, and deep-water coral reefs. In particular, the deep seabed supports biological communities that present unique genetic characteristics. For instance, some animal communities live in the complete absence of sunlight where warm water gushes from tectonically active areas (so-called hydrothermal vents). Several species of microorganisms, fish, crustaceans, polychaetes, echinoderms, coelenterates, and mollusks have been found in hydrothermal vent areas. Many of them are new to science. These communities, which do not depend on photosynthesis for their survival, rely instead on chemosynthesis—the ability of specially adapted micro-organisms to synthesize organic compounds from the hydrothermal fluid of the vents. The ability of some deep-seabed organisms to survive extreme temperatures (thermophiles and hyperthermofiles), high pressure (barophiles), and other extreme conditions (extremophiles) makes their genes of great interest to science and industry.

While prospects remain uncertain for commercial mining in the deep seabed falling under the innovative regime of ''the common heritage of mankind'' (the Area),[1] the exploitation of commercially valuable genetic resources may soon become a promising activity taking place beyond the limits of national jurisdiction. However, only a few states and private entities have access to the financial means and sophisticated technologies needed to reach the deep seabed.

But which international regime applies to genetic resources in areas beyond national jurisdiction? In fact, neither the UNCLOS nor the 1992 Convention on Biological Diversity (CBD) provides any specific legal framework in this regard.

In 2006 the subject of the international regime for the genetic resources in the deep seabed was discussed within 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 (the Working Group).[2] Opposing views were put forward by the states concerned. Some states took the position that the UNCLOS principle of the common

[*] Mr. Balton, Ms. Gjerde, and Mr. Lodge did not contribute remarks to the *Proceedings*.

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[1] *See* UNCLOS Part XI.

[2] The Working Group was established under UN General Assembly Resolution 60/30 (Nov. 29, 2005).

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heritage of mankind and the mandate of the International Seabed Authority should be extended to cover genetic resources as well. Other states relied on the UNCLOS principle of freedom of the high seas, which would imply a right of freedom of access to, and unrestricted exploitation of, deep-seabed genetic resources.

The Working Group held two other meetings, in 2008 and 2010. Again, the same differing views were expressed as regards the regime to be applied to marine genetic resources.

This profound disagreement on the international regime of genetic resources is somewhat unexpected. In fact, both positions operate from the same starting point, namely that the UNCLOS is ''the legal framework for all activities in the oceans and seas, including in respect of genetic resources beyond areas of national jurisdiction,'' as it is frequently repeated by states and confirmed in the resolutions on ''Oceans and the Law of the Sea'' that are adopted yearly by the UN General Assembly.

Why do two groups of states, starting from the same assumption—that the UNCLOS is the legal framework for all activities taking place in the sea—reach two completely opposite conclusions? A possible answer is that this assumption is not in fact as solid as it seems.

There is no doubt that the UNCLOS is a cornerstone in the field of codification of international law. It has been rightly termed a ''constitution for the oceans.'' Nevertheless, the UNCLOS, as any legal text, is linked to the time when it was negotiated and adopted (in this case, from 1973 to 1982). Being itself a product of time, the UNCLOS cannot stop the passing of time. While it provides a basis for the regulation of many matters, it would be illusory to believe that the UNCLOS is the end of legal regulation. The international law of the sea is subject to a process of natural evolution and progressive development which is linked to states' practice and involves also the UNCLOS. Due to limits of space, it is not possible for me to elaborate here on the instances where changes with respect to the original UNCLOS regime have been integrated into the UNCLOS itself (evolution by integration); where different interpretations of the relevant UNCLOS provisions are in principle admissible and state practice may be important in making one interpretation prevail (evolution by interpretation); where the UNCLOS does not provide any clearly defined regime and the relevant legal regime is to be inferred only from state practice (evolution in another context); and where, because the UNCLOS regime is clearly unsatisfactory (it happens very seldom, but it may happen), a new instrument of universal scope has been drafted to avoid the risk of undesirable consequences (evolution by further codification).

What follows from the fact that the UNCLOS is linked to the time when it has been negotiated comes near to a banality, but has also the great strength of banalities. As the UNCLOS cannot make miracles, so it cannot regulate those activities that its drafters did not intend to regulate—for the simple reason that they were not foreseeable in the period when the treaty was being negotiated. At that time, very little was known about the genetic qualities of deep-seabed organisms. For evident chronological reasons, the potential economic value of the units of heredity of these kinds of organisms was not considered by the UNCLOS negotiators. When dealing with the special regime of the Area and its resources, the UNCLOS drafters had only mineral resources in mind.

This is fully evident from the plain text of the UNCLOS. The term ''activities'' in the Area is defined as ''all activities of exploration for, and exploitation of the resources of the Area.''[3] Article 133(a) defines the ''resources'' of the Area as ''all solid, liquid or gaseous mineral resources *in-situ* in the Area at or beneath the sea-bed, including polymetallic

[3] Art. 1, para. 1.

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nodules.'' The UNCLOS regime of the common heritage of mankind does not include the non-mineral resources of the Area.

However, for the same chronological reasons, the regime of freedom of the high seas does not apply to genetic resources either. While including provisions for living and mineral resources in areas beyond national jurisdiction, the UNCLOS does not provide any specific regime for the exploitation of marine genetic resources. The terms ''genetic resources'' or ''bioprospecting'' do not appear anywhere in the UNCLOS. A legal gap exists in this regard. Sooner or later it should be filled (sooner rather than later) through a regime which, to be consistent, should encompass under the same legal framework the genetic resources of both the Area and the superjacent waters.

However, not all of the UNCLOS should be left aside when envisaging a future regime for marine genetic resources beyond national jurisdiction. The scope of the regime of the Area is already broader than may be believed at first glance. Under the UNCLOS, the legal condition of the Area has an influence also on the regulation of activities that, although different from minerals and mining activities, are also located in that space. The regime of the Area already encompasses subjects which are more or less directly related to mining activities, such as marine scientific research (Article 143), the preservation of the marine environment (Article 145), and the protection of underwater cultural heritage (Article 149). As far as the first two subjects are concerned, it is difficult to draw a clear-cut distinction between what takes place on the seabed and what takes place in the superjacent waters.

While a specific regime for exploitation of genetic resources is lacking, the aim of sharing the benefits among all states can still be seen as a basic objective embodied in a treaty designed to ''contribute to the realization of a just and equitable international economic order which takes into account the interests and needs of mankind as a whole and, in particular the special interests and needs of developing countries, whether coastal or land-locked.''[4] Also in the field of genetic resources, the application of the principle of the freedom of the sea (i.e., the ''first-come-first-served'' approach) leads to inequitable and hardly acceptable consequences. New cooperative schemes, based on provisions on access and sharing of benefits, should be envisaged in a future agreement on genetic resources beyond the limits of national jurisdiction. This is also in full conformity with the principle of fair and equitable sharing of the benefits arising out of the use of genetic resources set forth by Article 1 of the CBD and, more recently, by Article 10 of the Protocol on Access to Genetic Resources and the Fair and Equitable Sharing of Benefits Arising from Their Utilization.[5]

Moreover, bioprospecting (what is currently understood as the search for commercially valuable genetic resources of the deep seabed) can already be considered as falling under the UNCLOS regime of marine scientific research. The UNCLOS does not provide any definition of ''marine scientific research.'' However, Article 246, which applies to the exclusive economic zone and the continental shelf, makes a distinction between two kinds of marine scientific research projects—those carried out ''to increase scientific knowledge of the marine environment for the benefit of all mankind'' (paragraph 3), and those ''of direct significance for the exploration and exploitation of natural resources, whether living or non-living'' (paragraph 5(a)).

This distinction supports the conclusion that, under UNCLOS logic, research activities of direct significance for the purpose of exploration and exploitation of genetic resources also

[4] UNCLOS preamble.

[5] Nagoya, 2010.

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fall under the general label of ''marine scientific research.'' Bioprospecting as well is consequently covered by Article 143, paragraph 1, of the UNCLOS, which sets forth the principle that ''marine scientific research in the Area shall be carried out exclusively for peaceful purposes and for the benefit of the mankind as a whole.'' This provision refers to any kind of marine scientific research and is not limited to research on mineral resources. Yet the reading of Article 143 in combination with Article 246 contradicts the assumption that there is an absolute freedom to carry out bioprospecting in the Area. States which are active in bioprospecting in this space are already bound to contribute to the benefit of mankind as a whole.

New prospects emerged at the 2011 meeting of the Working Group. A number of states, both developed and developing, proposed the commencement of a negotiation process towards a new implementation agreement of the UNCLOS that could fill the gaps in the present regime of conservation and sustainable use of marine biological diversity in areas beyond national jurisdiction. The Working Group recommended that

> a process be initiated by the General Assembly, with a view to ensuring that the legal framework for the conservation and sustainable use of marine biodiversity in areas beyond national jurisdiction effectively addresses those issues by identifying gaps and ways forward, including through the implementation of existing instruments and the possible development of a multilateral agreement under the United Nations Convention on the Law of the Sea.

In Resolution 67/78, the United Nations General Assembly recalled that in *The Future We Want* (the outcome document adopted by the UN Conference on Sustainable Development, held in Rio de Janeiro in 2012), states committed to address, on an urgent basis, building on the work of the Working Group and before the end of the sixty-ninth session of the General Assembly (to be held in 2014–2015), the issue of the conservation and sustainable use of marine biological diversity of areas beyond national jurisdiction, including by deciding upon the development of an international instrument under the United Nations Convention on the Law of the Sea.[6]

The proposal to draft a third UNCLOS implementation agreement is seen as a possible way to move forward, since the existing instruments cannot fill the present governance and regulatory gaps and cannot provide the required specific regime. A general consensus on this proposal has not yet been achieved and may not be easy to achieve in the short term, considering some thorny questions that wait to be addressed (for instance, the fact that the patent legislation of several states does not compel the applicant to disclose the origin of the genetic materials used).

In any case, rather than a discussion on theoretical questions of legal principles, what is needed for the time being is the consolidation of a general understanding on a number of ''commonalities'' that could become the key elements in the ''package'' for a future global regime for the conservation and sustainable use of marine biodiversity in areas beyond national jurisdiction. This package could include a network of marine protected areas, environmental impact assessments, and marine genetic resources, including access to and sharing of benefits from them, as well as capacity-building and technology transfer.

[6] Adopted Dec. 11, 2012.