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AGREEMENT ON MARINE BIODIVERSITY BEYOND NATIONAL JURISDICTION (BBNJ): INTERNATIONAL LEGAL REGIME FOR THE SUSTAINABLE USE OF MARINE GENETIC RESOURCES IN THE HIGH SEAS AND THE AREA

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ABSTRACT

As a participant of the construction of the marine legal system, the UN adopted the UN Convention on the Law of the Sea (UNCLOS) which, despite having provisions related to biodiversity, does not expressly address genetic resources. Thus, in 2018 the UN convened a conference to negotiate an agreement on the conservation and sustainable use of Marine Biodiversity of Areas Beyond National Jurisdiction (BBNJ). Based on the analysis of the UNCLOS provisions, which prohibit the modification of the principle of freedom of the high seas and the principle of the common heritage of humanity in the Area, we proposed a model of legal regime for the sustainable use of BBNJ to be adopted at the end of the current negotiations. We conclude that due to the provisions of the UNCLOS, it is not possible for marine genetic resources beyond national jurisdiction to be uniformly ruled by the agreement. Consequently, the genetic resources of the high seas should be transformed from res nullius into res communis,

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while those found in the Area, since they are already res *communis humanitatis*, should be submitted to the management of the International Seabed Authority.

Keywords: area; BBNJ; high seas; marine genetic resources; sustainable use.

ACORDO SOBRE BIODIVERSIDADE MARINHA PARA ALÉM DA JURISDIÇÃO NACIONAL (BBNJ): REGIME JURÍDICO INTERNACIONAL DE UTILIZAÇÃO SUSTENTÁVEL DOS RECURSOS GENÉTICOS MARINHOS DO ALTO MAR E DA ÁREA

RESUMO

A Organização das Nações Unidas participa da construção do sistema jurídico marinho. Em sua terceira conferência sobre o direito do mar, adotou-se a Convenção das Nações Unidas sobre o direito do mar (CNUDM) o que, tendo dispositivos relacionados com a biodiversidade marinha, não trata expressamente dos recursos genéticos. Diante disso, as Nações Unidas convocaram uma conferência para negociação de um acordo sobre conservação e utilização sustentável da biodiversidade marinha para além da jurisdição nacional (BBNJ), o que se iniciou em 2018. Partindo da análise de dispositivos da CNUDM, que vedam a modificação do princípio da liberdade em alto mar e o princípio do patrimônio comum da humanidade na Área, propomos um modelo de regime jurídico de utilização sustentável da BBNJ a ser adotado ao fim das atuais negociações. Concluímos que, em razão do disposto na CNUDM, não é possível que os recursos genéticos marinhos para além da jurisdição nacional sejam uniformemente regidos no acordo. Em consequência, os recursos genéticos do alto mar deveriam ser transformados de res nullius em res communis, enquanto aqueles encontrados na Área, por já serem res communis humanitatis, deveriam submetidos à gestão da Autoridade Internacional dos Fundos Marinhos.

Palavras-chave: *alto mar; área; BBNJ; recursos genéticos marinhos; utilização sustentável.*

INTRODUCTION

After Nazi fascism was defeated, the member states of the international society gathered to start a new international order, founded on the principles of good faith, transparency, cooperation, and peaceful settlement of disputes, in order to finally form an international community to achieve peace, guarantee security, and protect human dignity. As the "Second Thirty Years' War"[3] (LOSURDO, 2017, p. 266), over, countries sought to deepen the foundations of a league of nations, making it more solidary by conjoint action.

In the (re)construction of the international legal order, still in 1945, the UN Organization (UN) was constituted, which, at once, configured itself simultaneously as a protagonist subject and a privileged forum for negotiations among states. The importance of the role of the UN in the consecration of a new global international order has been demonstrated by a continuous and significant normative production. Shortly after the beginning of its activities, in 1948, the Universal Declaration of Human Rights was adopted by Resolution 217(III) of its General Assembly. It was conceived as the foundational instrument of the international human rights protection system. From then on, a broader system of international protection for human dignity gradually developed (O'REGAN, 2018), which was elevated to the teleo-axiological category of the post-positivist international order,

In recent decades, the UN has excelled not only in strengthening human rights, but in developing other normative dimensions. Because of its broad purpose and large membership, the international organization has had sufficient legitimacy to carry forward several negotiations on the right to socioeconomic development and the obligation to protect the environment.

In a context of decolonization and the consolidation of peoples' self-determination, the UN directly participated in the identification of the principle of national sovereignty over natural resources in a perspective of overcoming the underdevelopment of former colonies (TYAGI, 2015). The construction of a second dimension legal system occurred as a result of the Declaration on the Granting of Independence to Colonial Countries and Peoples, adopted in 1960 through General Assembly Resolution 1514 (XV).

3 The Second Thirty Years' War corresponds to the period from 1914 to 1945, when the two world armed conflicts occurred. It is an expression used by historians in reference to the [First] Thirty Years' War, which occurred between 1618 and 1648, which, after the celebration of the Treaties of Westphalia, consecrated a new European international order (DAILLIER; FORTEAU; PELLET, 2009, p. 61).

Regarding to the environmental dimension, the goal of every state to achieve adequate levels of economic development had to adapt to ecological urgencies. According to the notion of sustainable development, consolidated in 1987 with the publication of the Brundtland Report[4], national economic activity is now understood as lawful when international sustainability requirements are met. The results of the Stockholm (1972) and Rio de Janeiro (1992) conferences, both held under the auspices of the UN, are evidence of the importance of this organization for the validity of a three-dimensional international legal system, consisting of individual, social and environmental rights (SOARES, 2001).

As guarantors of the new international order, the UN also participates in the reorganization of the marine legal system. Relying on sparse rules of customary and conventional nature in force on the management and conservation of the ocean, the UN decided to convene a conference for the codification of marine custom and the creation of new marine legal regimes[5]. The ultimate purpose of the meeting, which took place in Geneva in 1958, was to adapt the law of the sea to the new challenges of the international community.

Nevertheless, we highlight a binding legal instrument dedicated exclusively to the preservation of the biological resources of the high seas that was signed well before the UN Stockholm conference on the human environment, which is directly related to the object of this work. The fact that the Convention on Fishing and Conservation of the Living Resources of the High Seas was adopted in 1958 shows that the law of the sea, for a long time, is not restricted to navigation issues, but is especially dedicated to the sustainable use of marine natural resources.

However, we also point out that after the failure of the second UN Conference on the Law of the Sea held in Geneva in 1960, when it still was not possible to unify the legal issues of the sea in a single international treaty (BEURIER, 2014c), it took a few years for the UN to convene its third conference, which began in 1973.

After years of complex negotiations (LEVY, 1980), the UN Convention on the Law of the Sea (UNCLOS) was adopted in 1982 in Montego Bay,

4 This report, entitled Our Common Future, was prepared by the UN World Commission on Environment and Development, chaired by Gro Harlem Brundtland.

5 The UN Convention on the Law of the Sea, concluded in Geneva in 1958, in addition to codifying the customs then in force, established new marine legal regimes, namely the contiguous zone regime and the continental shelf regime (YANAI, 2012).

and has been in force since 1994. With more than 160 parties, including the European Union, the UNCLOS has become the basis of contemporary law of the sea, being called by some scholars the "Constitution of the Seas" because of its importance (ZANELLA, 2017, p. 82). Among the various topics included in the UNCLOS, there are provisions on the sustainable use of marine biological resources, as the negotiations of this international treaty were influenced by the adoption, of the Stockholm Declaration on the Human Environment (ADEDE, 1995) the year before.

About the use of marine biodiversity theme, we identify two major normative axes: the right to fish and the right to "other legitimate uses"[6] of the sea's biological resources. Among these, those linked to biotechnological work based on genetic engineering knowledge stand out. Given the recent and vigorous development of the biotechnology sector, access to and preservation of marine genetic resources have become strategic issues for all states, as well as part of the agenda of several international negotiations (LEARY et al., 2009, p. 183).

More recently, the insufficiency of the UNCLOS to solve international disputes over the sustainable use of marine genetic resources was identified, and the UN General Assembly, on December 24, 2017, adopted Resolution 72/249, which called upon its members to negotiate a new legally binding international treaty, under the aegis of the UNCLOS, on the conservation and sustainable use of marine biological diversity beyond national jurisdiction (BBNJ) The negotiations began in 2018 and, because of the COVID-19 pandemic, should be concluded in 2021[7].

Based on the provisions of this resolution, a future agreement on BBNJ can only be adopted in accordance with the existing legal limits of the UNCLOS. After holding three sessions of the conference on BBNJ in 2018 and 2019 and writing the draft text of the agreement[8], we point out the impossibility of instituting a single legal regime for the genetic

6 Article 1st, 1, 4, of the UNCLOS.

7 In a letter written in English and sent on September 10, 2020 to the permanent representatives of the member states, members of the specialized agencies and parties of the UNCLOS, the chair of the UN conference on BBNJ ambassador Rena Lee, informs that the fourth and – in principle – last session of the negotiations will take place in 2021. Available from: https://www.un.org/bbnj/sites/www.un.org.bbnj/files/intersessional_work_-_bbnj_president_letter_to_delegations.pdf. Access on: Sept., 23, 2020.

8 Revised draft text of an agreement under the UN Convention on the Law of the Sea on the conservation and sustainable use of marine biological diversity of areas beyond national jurisdiction, written by the UN in November 27, 2019. Available from: https://www.un.org/bbnj/sites/www.un.org.bbnj/files/revised_draft_text_a.conf_.232.2020.11_advance_unedited_version.pdf.

resources of the high seas and the Area, and then indicate a systemically more appropriate solution to the problem of the international legal regime for the sustainable use of BBNJ.

To this end, we analyzed the UNCLOS provisions limiting negotiations of the agreement on BBNJ as compared to the provisions of the 1995 agreement to implement UNCLOS on the Conservation and Management of Straddling and Highly Migratory Fish Stocks and provisions of the international Antarctic legal system.

1 UNCLOS LIMITS FOR THE AGREEMENT ON BBNJ

All states have sovereignty to freely negotiate obligatory instruments with other subjects of international law. However, sovereignty for the creation of norms must be exercised in accordance with international law itself. The negotiating freedom of states is conditioned by respect for the limits existing in the legal order itself. In fact, the form and content of a new international legal device cannot be in disagreement with the general international legal system, which guarantees its validity. It is worth recalling that Section 2 of Part V of the Vienna Convention on the Law of Treaties, concluded in 1969, deals precisely with the nullity of international treaties in conflict with international law in force. Therefore, even before negotiations begin at a conference, states do not have absolute freedom to innovate, since the legal system as a whole must be coherent.

Regarding to the negotiations on the BBNJ Agreement, which have been under way since 2018, UN General Assembly Resolution 72/249 defined that such an instrument should be adopted under the aegis of the UNCLOS[9]. Therefore, this convention is a necessary parameter for building consensus around the agreement on BBNJ. Therefore, the future BBNJ Agreement, once adopted, must necessarily be in line with the legal system established in Montego Bay in 1982.

In order to understand the horizon for negotiations on BBNJ, we must look in the UNCLOS text for the provisions that deal with the possibility of amending, suspending and revoking its text. First of all, it is worth mentioning Article 311, 3, which states that:

9 It was not the first time this has happened. In 1994 and 1995, two agreements were adopted for the implementation of the UNCLOS: respectively, the Agreement on Part XI and the Agreement On The Conservation and Management of Straddling ond Highly Migratory Fish Stocks, whose conventional provisions are found in Part V dedicated to the exclusive economic zone. Thus, the Agreement on BBNJ is the third experience of the UN in adopting a UNCLOS Implementation treaty.

> Two or more States Parties may conclude agreements modifying or suspending the operation of provisions of this Convention, applicable solely to the relations between them, provided that such agreements do not relate to a provision derogation from which is incompatible with the effective execution of the object and purpose of this Convention, and provided further that such agreements shall not affect the application of the basic principles embodied herein, and that the provisions of such agreements do not affect the enjoyment by other States Parties of their rights or the performance of their obligations under this Convention (BRASIL, 1990).

Therefore, the future agreement on BBNJ can neither entail derogation incompatible with the purpose and objective of the UNCLOS, nor affect the application of the fundamental principles set out therein. Regarding the BBNJ issue, which principles should be identified as limits to the agreement's validity? To answer this question, it is necessary to know the object of negotiation. Immediately, it is clear that it is a draft treaty on the conservation and sustainable use of marine biological diversity, beyond the spaces of national jurisdiction.

As far as biodiversity is concerned, even though there is no express mention of this term throughout the text of the UNCLOS, its object is foreseen there. Indeed, although it does not refer to biodiversity or biological diversity, it is based on the provisions of Article 2 of the Convention on Biological Diversity, which was also concluded under the auspices of the UN, in 1992. It defines biodiversity as the variability among living organisms, comprising marine ecosystems, ecological complexes, diversity within and between species, and of ecosystems. The UNCLOS provides the meaning of biodiversity when it refers to "living resources[10]," "marine life[11]," "living organisms[12]," and "species[13]." Therefore, it is possible to identify, in the UNCLOS, the existence of standards on marine biological diversity, "including fishing and other legitimate uses of the sea[14]," which includes scientific research and the use of marine genetic resources.

At a first glance, when dealing with marine biodiversity, fishery and genetic resources comprise this set. Although fishing activity is expressly mentioned in several articles of the UNCLOS, there is no definition of a fishery resource. This does not prevent, however, that various definitions are found in international legal instruments of cooperation on fisheries,

10 Preamble and Articles 1, 1, 4, 21, 1, (d), 56, 1, (a), 61, 62, 69, 70, 71, 73, 1, 117, 118, 119, 123, (a), 246, 5, a, 277, (a), 297, 3, (a), 297, 3, (b),(i), 297, 3, (b), ii, of the UNCLOS.

11 Articles 1, 1, 4, 194, 5, of the UNCLOS.

12 Article 77, 4, of the UNCLOS.

13 Articles 61-64, 67, 68, 77, 4, 119, 194, 5, 196, Annex I of the UNCLOS.

14 Article 1, 1, 4, of the UNCLOS.

which have been concluded in accordance with UNCLOS. In any case, despite the terminological difficulties[15], one can identify the differentiation between fish as commodity (fishery resource) and fish valued for their genetic properties (genetic resource) (LEARY, 2019). Therefore, when the capture of the living resource has the purpose of its insertion into the food production chain[16], such activity should be treated as fishing. If the capture has the purpose of insertion of the living resource in the productive dynamics typical of biomolecular engineering[17], we are facing genetic resources.

Due to the terminological difference between fishery and marine genetic resources, and recognizing the importance of the current international fisheries law, the negotiations of the BBNJ Agreement have expressly moved away from the fisheries issue, restricting themselves to the use of marine genetic resources[18]. Therefore, despite being a conference on biological diversity, its object tends to concentrate on its genetic dimension.

According to the UNCLOS, the most peripheral spaces of national jurisdiction are the continental shelf and the exclusive economic zone. The spaces outside jurisdiction are those that lie outside these two spaces of national jurisdiction, which are, respectively, the Area and the high seas. Even in the case of the Southern Ocean, i.e., the marine space located south of 60 degrees south latitude, the Antarctic Treaty, concluded in Washington in 1959, determines, in its article VI, that its provisions are without prejudice to the rights or the exercise of the rights of any state, in accordance with international law applicable to the high seas, within that Antarctic space. In any case, according to UNCLOS, there are only two marine spaces outside national jurisdiction: high seas and the Area. The future BBNJ Agreement should therefore be restricted to the use of the genetic resources of these two marine legal spaces.

2 MARINE GENETIC RESOURCES OF THE HIGH SEAS: "*RES NULLIUS*"

15 Although we recognize the terminological problem, it is not the aim of this research to address the conceptual differentiation between fishery resource and marine genetic resource.

16 After the consecration of the new global international order after the end of World War II, the number of international fisheries commissions has increased rapidly due to the efforts of the Food and Agriculture Organization of the UN (BEURIER, 2014a, p. 1319).

17 The development of biomolecular engineering has made it possible to use marine biological diversity not only for the discovery of transgenic organisms, but above all for the industrial production of cosmetics and medicines (BEURIER, 2014b, p. 1349)

18 Article 8, 2, (a), de Revised draft text of an agreement under the UN Convention on the Law of the Sea on the conservation and sustainable use of marine biological diversity of areas beyond national jurisdiction.

Regarding the high seas, article 86 of the UNCLOS states that they are "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." Thus, the BBNJ Agreement is intended to regulate the use of genetic resources naturally occurring in the water column beyond the national waters of the coastal state.

The internationalization of the high seas is recognized in article 89 of the UNCLOS, which states that "No State may validly purport to subject any part of the high seas to its sovereignty." This article, which deals with the illegitimacy of the exercise of sovereignty or sovereign rights by states in that space, guarantees its internationalization and allows the conclusion that the high seas is a maritime space outside national jurisdiction.

The principle of freedom of the high seas is consolidated in the international legal order since the 19th century (CHURCHILL; LOWE, 1999), and should consequently be treated as a fundamental principle of the UNCLOS, under the terms of its Article 311, 3. The freedom of the high seas means not only the impossibility of territorialization by states, but also the freedom to practice activities (TANAKA, 2015), which is directly related to the use of marine genetic resources.

Regarding the appropriation of the natural resources of the high seas, we must see Article 87 of the UNCLOS, which expressly provides for the freedom of the high seas. It comprises, among others, the following freedoms for coastal and landlocked states: navigation, overflight, laying of submarine cables and pipelines, construction of artificial islands and other installations, fishing, and scientific research. Specifically on marine biodiversity, two kinds of freedoms stand out: the freedom to fish[19] and the freedom of scientific research[20]. Thus, all states may exercise these freedom rights without having counterpart obligations with the international community. In the UNCLOS, there is no compensation provision for the exploration, exploitation and research with biological resources of the high seas. There is free and open appropriation of the marine biodiversity found there naturally by national states. Once the biological resource of the high seas is captured, collected or accessed, the corresponding state owes nothing to the international community, which allows us to conclude that these biological resources are internationally *res nullius* (TOLEDO, 2019), i.e., fishing or genetic resources (BEURIER, 2014b) are appropriable by

19 Article 87, 1, (e) da UNCLOS.

20 Article 87, 1, (f) da UNCLOS.

whoever first reaches them (LE HARDY, 2002, p. 40).

The high seas are open to all states – including those whose territory is landlocked – and that the freedom of the high seas must be exercised in accordance with the provisions of the UNCLOS and "the other norms of international law"[21]. By opening the possibility for other international treaties to provide for the use of the high seas, it follows that the parties to the UNCLOS may agree on different legal conditions for the conduct of fishing, scientific research or the use of marine genetic resources, provided that this does not correspond to the inviability of the principle of freedom of the high seas.

This hermeneutic phenomenon is justified by the possibility that the wording of Article 87, 1, which guarantees the principle of freedom of the high seas –as it recognizes that there are several kinds of freedom, examples of which, "*inter alia*"[22], are indicated in its subitems – allows the identification of the free and unrestricted use of genetic resources in the high seas. The expression inter alia in this article would indicate that the principle of freedom of the high seas can be applied in situations other than those expressed in the paragraphs, i.e., the UNCLOS would not have exhausted the possibilities of free and open use of the high seas. Some examples are listed there, applying the same legal regime analogously to all other possible uses of the high seas. In this case, access to genetic resources would equate to the harvesting of fishery resources. By analogy, the right of free and unrestricted use by all states of the international community would be guaranteed not only with respect to fishery resources, but also with respect to genetic resources. Thus, the entire biological diversity of the high seas would be internationally *res nullius*[23]. All states would have the right to send their vessels to the high seas for the free conduct of fishing activity, scientific research and use of genetic resources, without any obligation to share benefits with other states in the international community.

The use of analogy in this case would cause insecurity[24] as the limits of action on the high seas are not clear. Regarding the use of marine

21 Article 87, 1, final part, of the UNCLOS.

22 Article 87, 1, da UNCLOS.

23 In a 2016 article on the international law of protection of marine biodiversity, it was rightly argued that the genetic resources of the high seas would be of free and gratuitous appropriation by states due to the provisions of Article 87 of the UNCLOS (TOLEDO, 2016, p. 53).

24 For example, this is the case of the freedom of military exercises on the high seas. While art. 88 of UNCLOS states that that internationalized maritime space is intended for peaceful purposes, it is generally considered that this provision does not prohibit war tests or navy maneuvers, even though art. 301 of UNCLOS prohibits military activities contrary to the UN Charter (TANAKA, 2015).

biodiversity, this interpretation favors the developed states as holders of technology, since they become more competitive when seeking biological resources. Since the genetic resources of the high seas are *res nullius*, the states that have greater technological capacity appropriate them more easily, concentrating all the benefits obtained from their use. Such concentration of benefits tends to make international socioeconomic inequalities even more dramatic, as "biotechnology's potential for economic gain has changed scientific research from a primarily academic exercise to an industrial and entrepreneurial one"[25] (GUNERATNE, 2013, p. 28, our translation).

In light of this, the ongoing negotiations on the BBNJ Agreement are a unique opportunity for developing states: the creation of norms aimed at building an international environment for more intense cooperation in order to universalize socioeconomic development. This requires sharing with all states the benefits obtained by few ones.

3 MARINE GENETIC RESOURCES IN THE HIGH SEAS: "*RES COMMUNIS*"

To what extent can states treat the sustainable use of the genetic resources of the high seas differently than they have done with fishery resources? To answer this, we return to the expression inter alia in Article 87, 1, of the UNCLOS, as it is necessary to recognize that despite being a principle of the UNCLOS, the freedom of the high seas is not absolute (TANAKA, 2015). On the contrary, under the terms of Article 87, 2, of the UNCLOS, such freedom can only be exercised individually by a state while respecting the interests and rights of all other states. Therefore, there is the concern of the states that are parties to the UNCLOS not to make the high seas a monopolistic space, due to the material disparities among countries. Thus, by means of the agreement on BBNJ, it is possible that the states, guaranteeing the freedom of the high seas, provide for a legal regime of greater competitive equilibrium. From this perspective, the expression *inter alia* turns to be understood as an opening for states to create, by means of an international treaty, different obligations in view of the equal and universal use of the high seas, consequently fulfilling the "principle of equal use" (MELLO, 2001, p. 40) of the high seas.

25 "The potential economic gains of biotechnology have transformed scientific research from a primally academic exercise into an industrial and entrepreneurial one."

As the use of genetic resources of the high seas is not expressly identified as freedom of fishing, any possibility of analogy is ruled out, instituting a specific legal regime for the sustainable use of BBNJ without compromising the fundamental principles of the UNCLOS. Would it then be possible to guarantee the principle of freedom of the high seas without genetic resources being *res nullius*?

As Article 89 of the UNCLOS provides for, the high seas are per se not subject to claims of sovereignty by states. This conventional device makes the high seas something that at this point is not to be confused with the natural resources of the high seas, a common good or *res communis* (ZANELLA, 2017). In fact, as it is not possible for a state to appropriate the high seas and turn them into national territory, it follows that the whole of the high seas is *res communis*. As states cannot turn the high seas into a territorial space or national jurisdiction, its internationalization is guaranteed and the right of free navigation is consolidated.

Since the existence of *res communis* on the high seas is possible as a means of vessel traffic, the genetic resources of the high seas – unlike the fishing resources of the high seas, whose free use is guaranteed in the UNCLOS[26] – may also be legally treated as *res communis*. It is sufficient for the BBNJ Agreement to stipulate that not only the high seas, but also their genetic resources are not subject to appropriation. This conventional solution would be modelled on UNCLOS article 137, 1 which, dealing with another internationalized marine space, determines that no state, natural person or legal entity may appropriate "any part of the Area or its resources."

Following the model adopted for the Area in UNCLOS, the agreement on BBNJ should expressly provide that no state may claim or exercise sovereignty or sovereign rights over the genetic resources of the high seas, nor may any state, individual or legal entity appropriate any part of these resources[27]. If it were the intention of states to confirm the *res nullius* nature of genetic resources of the high seas, it would suffice to provide in the BBNJ Agreement the right to freedom of appropriation without obligation

26 The fishery resources of the high seas are considered free of charge because Article 87, 1, e, combined with Articles 116-120 of the UNCLOS does not provide for any kind of compensation for free access to such biological resources. However, nothing in the UNCLOS text prevents such trade-offs from being instituted by fisheries agreements. In that case, what is *res nullius* becomes *res communis.*

27 Article 9, 3 of the revised draft text of an agreement under the UN Convention on the Law of the Sea, about the conservation and sustainable use of marine biological diversity of areas beyond national jurisdiction.

of compensation[28].

Once the future BBNJ Agreement expressly establishes the impossibility of appropriation of genetic resources by states, natural or legal persons, and consolidates their character of *res communis*, the principle of freedom of the high seas would remain applicable. This principle is absolutely reconcilable with the existence of common goods, as shown in article 89 of the UNCLOS, which prohibits states from submitting any part of the high seas to their sovereignty.

Thus, being it *res communis* by provision of the BBNJ Agreement and keeping the principle of freedom of the high seas applicable, it would be possible to foresee benefit sharing obligations for the use of genetic resources of the high seas. Such resources would be free to use, but no longer free of charge. On the contrary, bioprospecting states would be obliged to compensate other states for the use of a common good, giving material perspectives of development to other states. In fact, with reference to Article 137, 2, of the UNCLOS, the agreement on BBNJ should determine that states, which use genetic resources of the high seas, would be obliged to share the benefits – in particular biotechnology – with the entire international community.

Although the BBNJ Agreement refers to Article 137 of the UNCLOS, it cannot abrogate the principle of freedom of the high seas, due to the aforementioned Article 311.3 of the UNCLOS. For this reason, we consider as forbidden for states to adopt for the genetic resources of the high seas the regime of the common heritage of humanity or *res communis humanitatis,* because, in the law of the sea, such a regime presumes the control and management centralized in a quasi-sovereign entity, which exercises a power of "supervenience" (BEIRÃO, 2018), as is the case of the International Seabed Authority (Authority) in relation to the resources of the Area[29].

As it is not possible to transform the genetic resources of the high seas into the common heritage of humanity through the agreement on BBNJ without compromising a fundamental principle of the UNCLOS, we propose the adoption of a legal regime similar to the one adopted in Antarctica. The international Antarctic legal system is an excellent parameter for the BBNJ Agreement since, with regard to scientific research, there

28 This is precisely what is foreseen in the UNCLOS with regard to the utilization of the fishery resources of the high seas.

29 Article 137, 2, of the UNCLOS.

is the internationalization of Antarctica as a whole[30], and the freedom of scientific research[31] is guaranteed through international cooperation[32]. In this process, the role of the Commission for the Conservation of Antarctic Marine Living Resources[33] (Commission) stands out and benefit sharing obligations are established[34]. Indeed, the Antarctic legal system, founded on cooperation (FERREIRA, 2009) of all members of the community through the Commission, which guarantees free access to Antarctic biological resources to each of the states, but sets environmental and scientific counterparts for the benefit of all (FRANCO; TOLEDO, 2018). The sharing of benefits from the exploitation of Antarctic biological resources is an important objective of the Antarctic legal system, which can occur especially through the transfer of technology for scientific research (PUIG-MARCÓ, 2014).

The fact that the future BBNJ Agreement provides for genetic resources of the high seas to be freely accessible, but subject to benefit sharing[35], would imply the strengthening of international cooperation links, a good example of which is provided by the Commission. As these biological resources are freely available but not free of charge, the BBNJ Agreement must necessarily reinforce the obligation of international cooperation.

4 COOPERATION ON THE HIGH SEAS: CONSERVATION, BENEFIT SHARING IN USING MARINE GENETIC RESOURCES AND COMBATING BIOPIRACY

Regarding international cooperation for the conservation and management of the living resources of the high seas, article 118 of the UNCLOS states that:

> [...] States whose nationals exploit identical living resources, or different 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, cooperate to establish subregional or regional fisheries organizations to this end (BRASIL, 1990).

30 Article IV, 2, of the Antarctic Treaty.

31 Article II of the Antarctic Treaty.

32 Article 6 of the Madrid Protocol to the Antarctic Treaty.

33 Article IX of the Convention on the Conservation of Antarctic Marine Living Resources.

34 Article III, 1, (c) of the Antarctic Treaty.

35 Article 7 of: Revised draft text of an agreement under the UN Convention on the Law of the Sea, about conservation and sustainable use of marine biological diversity of areas beyond national jurisdiction.

If we define that the genetic resources of the high seas are *res communis* in the BBNJ Agreement, which would imply benefit sharing obligations with the international community, the cooperation obligation, foreseen in article 118 of the UNCLOS, becomes a *sine qua non* condition for internationally licit access. Based on this provision, which deals with living resources as a whole, states that have free access to marine genetic resources in the high seas must act together to ensure their conservation. This can be done either directly or by setting up organizations or mechanisms of international cooperation. Participation in international commissions on access to biological resources of the high seas is one way to fulfill the obligation of cooperation for conservation, which must always be fulfilled in good faith (CIJ, 2010, § 145), despite the lack of guidelines in the UNCLOS for verification of compliance (TANAKA, 2015)

Given the lack of guidelines, it becomes crucial to analyze the 1995 Agreement on the Conservation and Management of Straddling and Highly Migratory Fish Stocks. This agreement is an important reference for verifying compliance with the obligation to cooperate on the high seas. Since it is an international treaty that implemented the provisions of the UNCLOS, as the agreement on BBNJ is intended to be, its provisions fall within the scope of validity imposed by the marine legal system consolidated in Montego Bay.

According to Article 8, 1, of the Agreement on Straddling and Highly Migratory Fish Stocks, whose Article 118 of the UNCLOS deals with international cooperation for the conservation and management of biological resources, fishing states on the high seas shall cooperate directly or through appropriate sub-regional or regional fisheries organizations or mechanisms. Once this organization has been constituted or the management mechanism has been established, thereby fixing the access and benefit sharing regime, the states using the biological resources of the high seas must fulfill the duty of cooperation by becoming a member of that organization or part of its institutional mechanism[36].

To ensure the effectiveness of the system of international cooperation, the agreement on BBNJ, based on the provisions of Article 8, 4, of the Agreement on Straddling and Highly Migratory Fish Stocks should establish that only the member states of the constituted organization or parties to the institutional mechanism, or even those states that agree to comply

36 Article 8, 3, of the 1995 Agreement on the Conservation and Management of Straddling and Highly Migratory Fish Stocks.

with the measures of conservation and management of genetic resources of the high seas would be entitled to access them (HAZIN, 2018). Among such management measures are those dedicated to notification of use and benefit sharing.

To the extent that marine genetic resources of the high seas are treated as *res communis*, with the adoption of the agreement on BBNJ, international or decentralized management of their use and conservation is imposed, as is the case with Antarctic biological resources. Therefore, it becomes urgent that each flag state, in exercising its duties to control its vessels on the high seas[37], comply with generally accepted international regulations, procedures and practices, including the management and conservation measures established by the respective cooperating organization or mechanism.

Moreover, the obligation of international cooperation to be inserted in the BBNJ Agreement aims at what is intended by the Agreement on Straddling and Highly Migratory Fish Stocks: the reconciliation of the sovereign rights of coastal states over the genetic resources of their exclusive economic zone and the rights of freedom of sustainable use of genetic resources of the high seas through the adoption of an integral approach (MOLENAAR, 2011).

Since the same marine genetic resource can be found naturally both in the exclusive economic zone and in an adjacent sector of the high seas, coastal states and states using such resource in the high seas must cooperate directly, or through international organizations, or even mechanisms to take compatible measures to ensure the conservation and management of biological resources both in national spaces as and in spaces beyond national jurisdiction.

Cooperation is essential because genetic resources of the high seas may be physically close to the exclusive economic zone, where the coastal state has sovereign rights to explore, exploit, conserve, and manage the natural resources – including genetic resources – of the waters overlying the continental shelf[38]. The cooperation between coastal states and bioprospecting states creates a mechanism of cooperation that presupposes respect for the rights of all. According to Articles 21 and 22 of the Agreement on Straddling and Highly Migratory Fish Stocks, through this mechanism of cooperation, procedures for control of vessels on the high seas by states

37 Article 94, 5, of the UNCLOS.

38 Article 56, 1, (a) of the UNCLOS.

other than the flag state are instituted (MOLENAAR, 2011), i.e., a new mechanism to combat biopiracy[39] of genetic resources of the coastal state is constituted. The freedom to use genetic resources from the high seas cannot compromise the sovereign rights of coastal states over genetic resources found naturally in their exclusive economic zone.

Here is one more requirement for the establishment of both an international organization or mechanism for the sustainable use of marine genetic resources found in the exclusive economic zone and adjacent sectors of the high seas, and providing for extensive control on the high seas of vessels by states parties/international organizations in order to more effectively address the practice of biopiracy. It is necessary that the future BBNJ Agreement also provide for an obligation on all states parties to adopt, at the domestic level, the requirement to present a certificate of origin for genetic resources used by individuals or legal entities.

Thus, states of destination of the collected marine genetic resource should require the presentation of the certificate of origin of the material. The purpose of this measure is to require an express declaration by the interested parties of the exact place of access of the marine genetic resources[40] in order to facilitate the identification of the state holding the sovereign right of exploitation, which is entitled to part of the benefits from the use of such genetic resources.

The state of origin of the marine genetic resource has the sovereign right to authorize, by agreement, bioprospecting carried out in the territorial sea or exclusive economic zone. Therefore these agreements are strategic instruments by which states rich in marine biodiversity could achieve a level of development by allowing access to the vessels of states poor in marine biodiversity but rich in biotechnology, rewarding them fairly with benefit sharing. “However, such contracts are not always built by such ideal basis, camouflaging in truth, biopiracy practices and misappropriation of traditional knowledge.” (BRITO; BIZAWU, 2016, p. 2).

5 MARINE GENETIC RESOURCES OF THE AREA: “*RES COMMUNIS HUMANITATIS*”

Regarding the Area, another maritime space beyond national

39 Biopiracy is the transboundary transfer of biological resources without the consent of the state holding the sovereign right of exploration, exploitation, management, and conservation (TOLEDO, 2019).

40 Article 10, 2, (a) of: Revised draft text of an agreement under the UN Convention on the Law of the Sea on the conservation and sustainable use of marine biological diversity of areas beyond national jurisdiction.

jurisdiction, article 1, 1, of the UNCLOS establishes that it is the seabed and its subsoil beyond the limits of the continental shelf of coastal states. Complementing this definition, article 136 of the UNCLOS establishes that the Area is the common heritage of humanity.

When referring to the Area, it should be kept in mind that this legal-spatial regime, under the terms of Article 311, 3 combined with Article 311, 6 of the UNCLOS, has as its fundamentals the principle of the common heritage of humanity. This provision reinforces the general prohibition and specifically prohibits any subsequent modification or revocation of such principle. Therefore, states that negotiate the Agreement on BBNJ in New York must necessarily take into consideration the principle of the common heritage of humanity as a basis for constructing a regime of sustainable use of the marine genetic resources found therein.

The internationalization of the Area is recognized in Article 137, 1 of the UNCLOS, which affirms that no state may claim or exercise sovereignty or sovereign rights over any part of the Area or its resources. Furthermore, no state, person or entity may appropriate any part of the Area or its resources. It follows that not only the Area as a whole, but also its resources would be *res communis*. However, according to article 136 of the UNCLOS, they are not only *res communis*, but also *res communis humanitatis*.

Because of this, in the marine legal order (FRANCKX, 2010), a revolutionary element was introduced (WOLFRUM, 1983), which is the creation of the Authority as representative of humanity[41]. In effect, Article 137, 2, combined with Article 157, 1, of the UNCLOS provides that the Authority is the organization through which the state parties control activities in the Area, particularly with a view to managing the Area's resources, but that it acts on behalf of humanity.

The area's legal regime deviates significantly from that foreseen for the high seas. In fact, the high seas and the Area, despite being spaces outside national jurisdiction, have distinct legal regimes. If the Article 89 of the UNCLOS says that no state may appropriate any part of the high seas under its sovereignty without mentioning the resources; and if Article 137, 1 states that not only part of the Area, but also its resources may not be appropriated, there is no doubt that they have their own legal-spatial statutes. While the former is founded on the principle of freedom, based on the provisions of Article 87 of the UNCLOS, the latter is governed by

41 Regarding the benefit sharing and environmental conservation, there is an evident increasing need for the recognition of the international legal personality of humanity (REIS; BIZAWU, 2015, p. 29--65).

the principle of the common heritage of humanity. Both are not subject to modification or derogation by Article 311, 3 combined with Article 311, 6 of the UNCLOS.

Article 137, 2, of the UNCLOS establishes that all rights over the Area's resources belong to humanity. This prevents the Area from being treated in the light of the legal regime applied to the high seas (FITZMAURICE, 2002, p. 154). Therefore, unlike what happens on the high seas, the unilateral use of the Area is simply illicit, and the direct or indirect participation of the Authority is necessary, since "[...] the use of the seabed and its resources for the benefit of mankind as a whole with particular consideration for the interests and needs of developing countries [...]"(SCOVAZZI, 2007, p. 12).

The participation of the Authority is a basic element of the common heritage of humanity regime in the marine legal order. This element should be taken into consideration by states negotiating the agreement on BBNJ when setting the regime of use of the Area's marine genetic resources.

According to Article 133, (a) of the UNCLOS, the resources of the Area are any solid, liquid or gaseous mineral resources in situ, including polymetallic nodules. These resources surely are not genetic, however, there are not only mineral resources in the Area. Above all the biological resources – hydrothermal vents, abyssal or hadal fauna, bacteria – are becoming strategic for the international biotechnology industry. The area has one of the richest biodiversities on the planet[42], but its species are little known and there is consequently a high risk of ecosystem damage from unsustainable use.

Regarding the genetic resources of the Area, although they are not considered resources in the terms of the UNCLOS, there is no doubt that they are part of the common heritage of humanity. Even though there is no express provision about the genetic resources of the Area, since Articles 136 and 137, 1 of UNCLOS determine that, in addition to mineral resources, the Area as a whole is common heritage of humanity, we must conclude that there is something in the Area that, while not being a mineral resource, is still *res communis humanitatis*. Therefore, the assertion that the legal regime of the high seas is applicable to the sustainable use of the genetic resources of the Area is not supported[43]. In this sense, part of the doctrine holds that, in view of the absence of express provision in the UNCLOS, these resources should be treated as the genetic resources of the high seas

42 See *exempli gratia* Grassle (1991).

43 Toledo (2016).

are treated, i.e., as *res nullius* (BEURIER, 2014b). On the contrary, precisely because the area as a whole is the common heritage of humanity, the genetic resources found there naturally could never be treated as *res nullius*.

Thus, since 1994 in the Area – when the UNCLOS came into force – states have not been free to send their nationals and vessels to the Area to collect marine genetic resources, without the prior consent of the Authority and without guaranteeing compensation to humanity, given that these resources are *res communis humanitatis*.

6 MANAGEMENT OF THE AREA'S MARINE GENETIC RESOURCES BY THE INTERNATIONAL SEABED AUTHORITY

As common heritage of humanity, would the Authority have the competence to authorize and control the use of the genetic resources of the Area, requiring benefit sharing on behalf of humankind? The Authority's mandate is broader than might be imagined at first glance.

By virtue of the provisions of Article 145, (b) of the UNCLOS, the Authority must adopt appropriate rules, regulations and procedures to protect and conserve the natural resources – which includes genetic resources – of the Area, preventing damage to the flora and fauna of the marine environment (ARMAS-PFIRTER, 2018). In the face of this, the Authority not only deals with mineral resources, but also has the competence to adopt measures for the conservation of genetic resources.

Regarding scientific research in the Area, it must be carried out for the benefit of humanity as a whole[44]. Since this investigative activity may involve the collection of components of biodiversity, including genetic material (GLOWKA, 1996), it constitutes an important dimension of the use of genetic resources in the Area, in which the Authority participates directly. In fact, article 143, 2 of the UNCLOS establishes that it is the competence of the Authority to promote and encourage marine scientific research in the Area, coordinating and disseminating the results of the research carried out.

Thus, states may carry out marine scientific research in the Area, provided that their programs are developed through the Authority or other international organizations, encouraging international cooperation with

44 Article 143, 1 of the UNCLOS.

other countries and with the Authority and ensuring the sharing of benefits with developing or technologically disadvantaged states[45].

Therefore, the UNCLOS assures the Authority the leading role in conservation and scientific research with marine genetic resources in the Area. Also, there is the fact that such resources are the common heritage of humanity. We advocate that the agreement on BBNJ simply reaffirm this expressly and provide for the Authority's competence to not only act in the conservation and scientific research of the genetic resources of the Area, but especially to manage the sustainable use of the genetic resources. Provided that this is recognized, the consent of the Authority to the exploration and exploitation of these resources will become necessary and will be given by means of a contract establishing the sharing of the benefits obtained with all humanity, especially the underdeveloped countries.

CONCLUSION

From the adoption in 2017 of Resolution 72/249, the UN General Assembly convened a conference for the conclusion of an agreement to implement the UNCLOS with regard to the conservation and sustainable use of BBNJ. Based on: the draft Agreement prepared by the international organization in 2019, after three negotiating sessions; having as a parameter the provisions of the Agreement on Straddling and Highly Migratory Fish Stocks and the international Antarctic legal system; and in order to contribute to the doctrinal debate on the agreement that should be adopted as of 2021; we conclude what follows.

The expression *biological diversity* included in the term BBNJ refers to marine genetic resources, excluding from the negotiation agenda at the UN any provision on fishing, in view of the validity of important instruments on the subject, such as the Agreement on Straddling and Highly Migratory Fish Stocks, for example.

Under the aegis of the UNCLOS, maritime spaces beyond national jurisdiction are only the high seas and the Area [46]. Despite being both internationalized spaces[47], they have distinct legal regimes. Thus, in the Area

45 Article 143, 3, of the UNCLOS.

46 Art. 137, 1 of the UNCLOS.

47 As we have seen, although the high seas are *res communis*, whose implications in favor of the international community are evident, we cannot consider them *res communis humanitatis*, in view of the specific character of this legal-spatial regime in the context of the law of the sea. The identification of the high seas as a kind of common heritage of humanity is part of the Phd dissertation entitled *Les grands enjeux contemporains du droit international des espaces maritimes et fluviaux et du droit de*

the principle of the common heritage of humanity prevails; and differently, in the high seas the principle of freedom prevails.

According to Article 311, 3, combined with Article 311, 6, both of the UNCLOS, the agreement on BBNJ, under negotiation, cannot affect the fundamental principles stated therein. Regarding internationalized maritime spaces, the principle of freedom on the high seas and the principle of the common heritage of humanity in the Area are fundamental principles.

According to articles 87 and 89 of the UNCLOS, no state may claim to submit any part of the high seas to its sovereignty, without referring to the appropriation of its natural resources. In the face of this, and given the freedom to fish in the high seas without obligations to share benefits with the international community, we conclude that the high seas is *res communis*, while its resources – including genetic resources – would be *res nullius*, i.e., of free and gratuitous appropriation by the nationals of the flag States.

However, the expression *inter alia*, inserted in article 87, 1, of the UNCLOS, gives room for other freedoms on the high seas to be expressly determined by a subsequent treaty, which also means other legitimate uses of the sea. An example of this is the use of genetic resources, which may be treated differently from the provisions of that article. Due to this openness and having the international Antarctic law as a parameter, the BBNJ Agreement should establish that no state, individual or legal entity could appropriate the genetic resources of the high seas without guaranteeing the sharing of benefits with the international community, therefore making them *res communis*. Thus, as in Antarctica, the decentralization of the control of access to genetic resources of the high seas is guaranteed, in harmony with the principle of freedom, but counterparts are imposed on flag states for the benefit of the international community.

Because of Article 118 of UNCLOS on international cooperation in the management and conservation of the biological resources of the high seas – including genetic resources – and in line with the irrevocable principle of the freedom of the high seas, states should institutionally organize themselves to regulate access to genetic resources of the high seas by their nationals. Regarding Article 8, 4 about the Agreement on Straddling and Highly Migratory Fish Stocks, the BBNJ Agreement should provide that only state parties or those committed to following international regulations would have access to genetic resources of the high seas, thus ensuring

l'environnement: de la conservation de la nature à la lutte contre la biopiraterie, by André de Paiva Toledo, but is not found in his more recent works.

benefit sharing with the international community.

In the framework of such international cooperation on the management and conservation of genetic resources of the high seas, the BBNJ Agreement should establish the obligation for all states to domestically certify the origin of marine genetic resources used by their nationals as a condition for their utilization. This control in the state of destination of the genetic resources enables greater efficiency in combating biopiracy by ensuring benefit sharing with the states of origin of the genetic resources or with the international community.

Article 137, 1 of the UNCLOS affirms that no state may claim or exercise sovereignty or sovereign rights over any part of the Area or its resources. The same conventional device determines that no state, natural person or legal entity may appropriate any part of the Area or its resources. We conclude that, unlike the high seas, both the Area and its resources would be *res communis*. However, by force of Article 136, the Area and its resources are not only *res communis,* but also *res communis humanitatis*. Genetic resources are not "resources" in the terms of Article 133 of the UNCLOS, but are components of the biodiversity of the Area, which is the common heritage of humanity.

According to Article 145, b, combined with Article 143, 3, both of the UNCLOS, the Authority is competent to regulate the conservation of the genetic resources of the Area, as well as to design the scientific research programs, ensuring benefit sharing with the international community. In the face of this, the agreement on BBNJ should expressly recognize the Authority's competence for the management of the Area's genetic resources.

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