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Current Status and Future Research Agenda on Benefit-Sharing in International Sustainable Development Law

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Abstract

This article addresses the benefit-sharing concept as a potential emerging principle in international sustainable development law. It reviews and studies how benefit sharing is treated in different international law regimens including the Convention on Biological Diversity and its Nagoya Protocol and other Rio Conventions, the International Treaty on Plant Genetic Resources for Food and Agriculture, Law of the Sea, selected regional agreements and ongoing international processes such as the negotiation of an international instrument for the conservation and sustainable use of biodiversity in areas beyond national jurisdiction (ABNJs). Finally some suggestions are provided for a future research agenda on this issue.

KEY WORDS: Access and Benefit-Sharing, Conservation and Sustainable Use of Biodiversity, Natural Resources, Nagoya Protocol, International Law, Convention on Biological Diversity, Nagoya Protocol, Associated Traditional Knowledge

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I. Benefit-Sharing for the Sustainable Management of Natural Resources for Development

A growing number of international legal materials refer to benefit-sharing with regard to natural resource use.[1] It has been conceptualized as "the concerted and dialogic process aimed at building partnerships in identifying and allocating economic, socio-cultural and environmental benefits among state and non-state actors, with an emphasis on the vulnerable."[2] It can be arguably considered, in its normative core, a general principle of international law: the manifestation of consensus among developed and developing countries.[3] Yet it likely cannot yet be described as a specific, established principle of international law, and even less as customary international law.[4] Its best-known elaboration in the context of natural resources law is in biodiversity law, specifically in relation to the use of genetic resources. Its origins also come from the field of human rights law, primarily the right to self-determination, the right to development, the right to enjoy the benefits of scientific progress and technology, and the rights of indigenous peoples and local communities.[5]

The link between benefit-sharing and sustainable development is made explicit in the preamble of the 2002 International Law Association (ILA) New Delhi Declaration of Principles of International Law Relating to Sustainable Development, which defines the objective of sustainable development as

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1) Elisa Morgera, *The Need for an International Legal Concept of Fair and Equitable Benefit Sharing*, 27(2) European Journal Of International Law 353, 353-383 (2016).

2) *Id.* at 382.

3) Elisa Morgera, *Fair and equitable benefit-sharing: history, normative content and status in international law*, Benelex Working Paper N. 12, Apr. 2017, at 10.

4) Morgera, *supra* note 1, at 383.

5) *Universal Declaration of Human Rights*, 10 Dec. 1948, UNGA Res. 217A (III), UN Doc. A/810 (1948); *Declaration on the Use of Scientific and Technological Progress in the Interests of Peace and for the Benefit of Mankind*, 10 Nov. 1975, UNGA Res. 3384 (XXX), UN Doc. A/10034; *Declaration on the Right to Development*, 4 Dec. 1986, UNGA Res. 41/128; Elisa Morgera, *Under the Radar: Fair and Equitable Benefit-Sharing and the Human Rights of Indigenous Peoples and Local Communities Related to Natural Resources*, Benelex Working Paper N. 10, Jan. 2017, at 2-44.

> a comprehensive and integrated approach to economic, social and political processes, which aims at the sustainable use of natural resources of the Earth and the protection of the environment on which nature and human life as well as social and economic development depend and which seeks to realize the right of all human beings to an adequate living standard on the basis of their active, free and meaningful participation in development and in the fair distribution of benefits resulting therefrom, with due regard to the needs and interests of future generations.[6)]

Principles 1.2 (sustainable management of natural resources for development), 2.1 (equity as central to sustainable development), 2.2 (right of present generations and obligation to future generations), and 2.3 (right to development) provide an added lens through which the principle of benefit-sharing can be assessed.[7)]

II. Contributions of International Law and Governance to Benefit-Sharing for the Sustainable Management of Natural Resources for Development

1. Principle of permanent sovereignty over natural resources

The principle that benefits from the use of natural resources should be shared is present in the earliest incarnations of the principle of permanent sovereignty over natural resources (PSNR), as first defined in the 1962 UN General Assembly (UNGA) Resolution on PSNR and that has evolved through normative resolutions originating from a variety of UN organs.[8)] The roots of the concept are linked to the strengthening of the (political and

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6) *ILA New Delhi Declaration of Principles of International Law Relating to Sustainable Development*, 2 April 2002, (2002) 2 International Environmental Agreements: Politics, Law and Economics 211 at 212. ("ILA Declaration")

7) *Ibid.*

8) Nico J. Schrijver, *Natural Resources, Permanent Sovereignty over*, R Wolfrum, Max Planck Encyclopedia of Public International Law (Oxford, UK: Oxford University Press, 2012) at para. 5.

economic) sovereignty of newly independent States and the right of self-determination of peoples under colonial occupation and in non-self-governing territories.[9] The principle has been advocated by developing countries to secure the benefits arising from the exploitation of natural resources for colonial peoples and as a legal shield protecting newly independent countries from infringements on their economic sovereignty.[10] It embodies the right of States and peoples to dispose freely of their natural resources and natural wealth, but exists as a qualified concept encompassing duties as well as rights.[11] In one of its quasi-law-creating effects, the 1962 Resolution vests permanent sovereignty in both peoples and States, and attributes to both the duty to exercise their sovereignty in the interest of national development and for the well-being of the people.[12] It also makes reference to other principles relevant to benefit-sharing that are now part of the canon of international law, namely, that the exploration, development, and disposition of natural resources and the foreign capital required for these purposes are in conformity with domestic laws on authorization, restriction, or prohibition of such activities;[13] that profits derived from the use of natural resources are shared in the proportions freely agreed upon by the investors and the recipient State;[14] and that international development cooperation must be aimed at the independent national development of developing countries, based on respect for sovereignty over their national wealth and resources.[15]

Yet the UN also concurrently expressed concern for the sustainable management of natural resources for development, recognizing "the extent to which the economic development of the developing countries may jeopardize their natural resources and flora and fauna, which in some cases may be irreplaceable if such development takes place without due attention

9) Nico J. Schrijver, *Fifty Years Permanent Sovereignty over Natural Resources: The 1962 UN Declaration as the Opinio Iuris Communis*, in Permanent Sovereignty over Natural Resources 16–17 (Marc Bungenberg & Stephan Hobe eds., 2015); Nico J. Schrijver, *supra* note 8, at para. 1.

10) Schrilver, *supra* note 8, ibid.

11) Schrilver, *supra* note 8, at para 2.

12) Schrijver, *supra* note 9, at 17; UNGA Res. 1803 (XVII) of 14 Dec. 1962 at para. 1.

13) Schrijver, *supra* note 9, at 17; UNGA Res. 1803, para. 2.

14) Schrijver, *supra* note 9, at 18; UNGA Res. 1803, para. 3.

15) Schrijver, *supra* note 9, at 18; UNGA Res. 1803, para. 8.

to their conservation and restoration,"[16] and recommending measures aiming at preserving, restoring, enriching, and making rational use of natural resources and increasing productivity; observing international treaties on the preservation of flora and fauna; and introducing effective domestic legislation aimed at eliminating the wasteful exploitation of flora and fauna.[17] Soon after the adoption of the 1962 Declaration, developing countries sought to build upon the principle as a means to foster their economic development and to redistribute wealth and power in their relations with the industrialized countries.[18] The 1966 PSNR Resolution makes this evident, as it recognizes the right of all countries, and developing countries in particular, to have a greater share in the advantages and profits derived from natural resources on an equitable basis, with due regard for the development needs and objectives of the peoples concerned and to mutually acceptable contractual practices.[19] The strength of the general principle is evident from its inclusion in the international human rights covenants on civil and political rights, and economic, social, and cultural rights, which were adopted concurrently. Both indicate that all peoples may freely dispose of their natural wealth and resources based upon the principle of mutual benefit.[20]

A leading scholar argues that benefit-sharing subsequently developed from developments in international law under the umbrella of the debate on a New International Economic Order (NIEO), which has left its legacy in the global sustainable development agenda.[21] According to the 1986 ILA Seoul Declaration, foundational principles of the NIEO include, among others, equity, solidarity, development assistance, the duty to co-operate for global development, permanent sovereignty over natural resources/

16) *Economic Development and the Conservation of Nature*, UNGA Res. 1831 (XVII) of 18 Dec. 1962, preamble.

17) *Id.*, at 1(a),(c),(e).

18) Schrijver, *supra* 9, at 18.

19) *Permanent Sovereignty over Natural Resources*, 25 Nov. 1966, UNGA Res. 2158 (XXI), para. 5.

20) *International Covenant on Civil and Political Rights*, 16 Dec. 1966 (entered into force 23 Mar. 1976), 999 UNTS 171, Article 1(2); *International Covenant on Economic, Social and Cultural Rights*, 16 December 1966 (entered into force 3 Jan. 1976), 993 UNTS 3, Article 1(2).

21) Morgera, *supra* note 1, at 358.

economic activity/wealth, the right to development, substantive equality, and the right to benefit from science and technology.[22] After debates on a NIEO, benefit-sharing made an appearance in several subsequent human rights instruments, such as the 1986 Declaration on the Right to Development, which indicates that States have the duty to formulate appropriate national development policies that aim at the constant improvement of the well-being of the entire population and of all individuals, on the basis of their active, free, and meaningful participation in development and in the fair distribution of the benefits resulting therefrom.[23] In the most recent UN declarations, the focus on PSNR has shifted to a greater focus on international co-operation for sustainable development.[24] PSNR is now a source of international responsibilities requiring careful management and imposing accountability at the national and international levels, and taking into account international law on sustainable development and the rights of future generations.[25] This is pertinent to the discussion below, as the effective protection of biodiversity is possible only with international cooperation because many of the components of biodiversity, threats to biodiversity, and benefits therefrom have transboundary or global dimensions.[26]

2. Biological Resources under National Jurisdiction

The most widely recognized application of benefit-sharing associated with natural resources is found in international biodiversity law, which builds on the principle of PSNR in its primary instruments: the 1992 *Convention on Biological Diversity*[27] (CBD) and 2002 *Bonn Guidelines on Access*

22) *ILA Declaration on the Progressive Development of Principles of Public International Law relating to a New International Economic Order*, (1987) 54(2) Rivista di Studi Politici Internazionali 313.

23) *Declaration on the Right to Development*, Article 2(3).

24) Schrijver, *supra* note 8, at para. 16.

25) Schrijver, *supra* note 8, at para. 24.

26) *Report of the Special Rapporteur on the issue of human rights obligations relating to the enjoyment of a safe, clean, healthy and sustainable environment*, UN Doc. A/HRC/34/49 at para 36.

27) *Convention on Biological Diversity*, 5 June 1992 (in force 29 Dec. 1993), 31 ILM 822.

to Genetic Resources and Fair and Equitable Sharing of the Benefits Arising out of their Utilization,[28] and the 2010 *Nagoya Protocol on Access to Genetic Resources and the Fair and Equitable Sharing of Benefits Resulting from their Utilization* (Nagoya Protocol on Access and Benefit Sharing (ABS)). The objectives of the CBD are the conservation of biodiversity; the sustainable use of its components; and the fair and equitable sharing of the benefits arising out of the utilization of genetic resources (GRs), including by appropriate access to GRs, by appropriate transfer of relevant technologies, and by appropriate funding.[29] The conservation of genetic diversity is aimed at preserving the l genetic information of all living organisms, including wild as well as cultivated species.[30] Its operational scope applies to biodiversity in areas of national jurisdiction,[31] but the CBD also applies to "processes and activities, regardless of where their effects occur, carried out under [each Contracting Party's] jurisdiction or control, within the area of its national jurisdiction or beyond the limits of national jurisdiction,"[32] which arguably extends its scope to all biodiversity.[33]

It has been argued that the roots of ABS in the CBD can be traced to colonialism and efforts by colonial powers to gain control of trade over key commodities for their own benefit, and that part of the rationale behind benefit-sharing is to avoid the exploitation inherent in many forms of resource extraction with a North–South legacy, which has historically been associated with the unsustainable use of natural resources.[34] Appropriation

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28) *Bonn Guidelines on Access to Genetic Resources and Fair and Equitable Sharing of the Benefits Arising out of their Utilization*, 19 Apr. 2002, UN Doc. UNEP/CBD/COP/6/24.

29) *Convention on Biological Diversity*, Article 1.

30) Nele Matz-Lück, *Biological Diversity, International Protection*, R Wolfrum, Max Planck Encyclopedia of Public International Law (Oxford, UK: Oxford University Press, 2012) at para 1.

31) *Convention on Biological Diversity*, Article 4(a).

32) *Id.*, Article 4(b).

33) Matz-Lück, *supra* note 30, at para. 28.

34) Peter Stoett, *Wildlife Conservation: Institutional and Normative Considerations,* in International Law and Sustainable Development: Principles and Practice (Nico J Schrijver and Friedl Weiss, eds., Leiden, NL: Martinus Nijoff, 2004) at 514; Jorge Cabrera Medaglia, *Access and Benefit-Sharing: North–South Challenges in Implementing the Convention on Biological Diversity and Its Nagoya Protocol*, in International Environmental Law and the Global South 195, 192–213 (Shawkat Alam et al. eds., 2015).

from the 1980s onward was largely done through the use of intellectual property rights (IPRs) in the North. ABS was explicitly incorporated into the CBD because many biodiversity hotspots with significant potential are located in developing countries. The benefit-sharing scheme is firmly based on the concept of sustainable development, as States must aim to find an equitable balance between the interests of the countries of origin and those of States that have the technical and technological means to use GRs and develop and use technologies stemming therefrom.[35] The resulting approach allows States to control access by setting terms that allow them to profit from the potential value of their GRs and biodiversity, creating an incentive to conserve and sustainably use the resources.[36] ABS creates a new income opportunity for poor countries, which should place them in a better position to escape poverty.[37]

The objectives of the CBD establish a clear link between the conservation and sustainable use of biodiversity, and the sharing of benefits resulting from access. This linkage is affirmed in the objective of the Nagoya Protocol on ABS, which associates fair and equitable sharing of the benefits arising from the utilization of GRs with the conservation of biodiversity and the sustainable use of its components, and its encouragement of users and providers to direct benefits arising from the utilization of GRs toward the conservation of biodiversity and the sustainable use of its components.[38] The CBD is one of the only conventions to define the sustainable use of a resource, defining it as "the use of components of biodiversity in a way and at a rate that does not lead to its long-term decline, thereby maintaining its potential to meet the needs and aspirations of present and future generations."[39] To clarify this definition, it

35) Matz-Lück, *supra* note 30, at para. 35.

36) Medaglia, *supra* note 34, at 192.

37) Carmen Richerzhagen, Protecting Biological Diversity: The Effectiveness of Access and Benefit-Sharing Regimes 59, (London, UK: Routledge, 2010).

38) *Nagoya Protocol on Access to Genetic Resources and the Fair and Equitable Sharing of Benefits Resulting from their Utilization*, 29 October 2010 (in force 12 October 2014), UN Doc. UNEP/CBD/COP/10/27, Articles 1 & 9.

39) *Convention on Biological Diversity*, Article 2. The language of the provision is reminiscent of the definition of sustainable development of the Brundtland Commission.

also defines biodiversity[40] and biological resources[41] – which include genetic resources. Sustainable use focuses on the active management of biological resources, which provide an incentive for conservation by allowing for benefits from use that does not threaten a species or ecosystem.[42] By including genetic and ecosystem diversity in its definition of biodiversity, the CBD goes further than earlier treaties, which aim to protect enumerated species or areas from human threats and destruction or extinction.[43] At its core, the CBD makes it clear that biodiversity is not a shared global resource, but rather that States have sovereign rights over their own biological resources[44] and the sovereign right to exploit their own resources pursuant to their own environmental policies.[45] It is reinforced in Article 15, which, recognizing the sovereign rights of States over their natural resources, provides that national governments have the authority to determine access to GRs based on national legislation.[46] This was a fundamental shift in international law, as genetic resources were formerly perceived as the common heritage of humanity.[47] This shift is quite consequential, as most biological resources are found under the jurisdiction of States.[48]

Yet the CBD also places limitations on the exercise of PSNR in ways that favor the sustainable management of natural resources for development. It establishes general measures that States must undertake for the conservation and sustainable use of biodiversity, namely, the development

40) *Ibid.*, Article 2: "Biological diversity" means the variability among living organisms from all sources including, inter alia, terrestrial, marine and other aquatic ecosystems and the ecological complexes of which they are part; this includes diversity within species, between species and of ecosystems.

41) *Ibid.*, Article 2: "Biological resources" includes genetic resources, organisms or parts thereof, populations, or any other biotic component of ecosystems with actual or potential use or value for humanity.

42) Matz-Lück, *supra* note 30, at para. 20.

43) Matz-Lück, *supra* note 30, at para. 2.

44) *Convention on Biological Diversity*, Preamble.

45) *Id.*, Article 3.

46) *Id.*, Article 15. *The Nagoya Protocol on ABS* reaffirms the principle of sovereign rights over natural resources recalls Article 15 in its preamble.

47) Medaglia, *supra* note 34, at 192.

48) Matz-Lück, *supra* note 30, at para. 11.

of national strategies, plans, or programs (NBSAPs) for the conservation and sustainable use of biodiversity, or calls for States to adapt for this purpose existing strategies, plans, or programs, and for the integration of the conservation and sustainable use of biodiversity into relevant sectoral or cross-sectoral plans, programs, and policies.[49] Limitations on PSNR that apply specifically to GRs include Parties endeavoring to create conditions to facilitate access to GRs for environmentally sound uses by other Parties and not imposing restrictions that run counter to the objectives of this CBD; access based on mutually agreed terms (MAT) and subject to the prior informed consent (PIC) of the providing Party; and the taking of legislative, administrative, or policy measures with the aim of sharing in a fair and equitable way the results of research and development and the benefits arising from the commercial and other utilization of GRs with the Party providing the GRs upon MAT.[50]

With specific regard to the sustainable use of biological resources, Parties must integrate consideration of the conservation and sustainable use of biodiversity into national decision-making; adopt measures relating to the use of biological resources to avoid or minimize adverse impacts on biodiversity; protect and encourage customary use of biological resources in accordance with traditional cultural practices that are compatible with conservation or sustainable use requirements; support local populations to develop and implement remedial action in degraded areas where biodiversity has been reduced; and encourage cooperation between their governmental authorities and their private sectors in developing methods for sustainable use of biological resources.[51] The Addis Ababa Principles and Guidelines for the Sustainable Use of Biodiversity[52] elaborate on these obligations in the context of adaptive management, interdisciplinary research, minimizing waste and environmental impact and optimizing benefits from uses, the needs of ILC and fair and equitable sharing of benefits, and the internalization of costs of management and

49) *Convention on Biological Diversity*, Article 6.

50) *Id.*, Article 15.

51) *Id.*, Article 10(a) – (e).

52) *Addis Ababa Principles and Guidelines for the Sustainable Use of Biodiversity*, 27 February 2004, UN Doc. UNEP/CBD/COP/7/12, Annex II.

conservation.[53]

In less stringent terms, the CBD also provides for an additional form of benefit-sharing relating to the conservation and sustainable use of biodiversity in recognition of the value of the traditional knowledge, innovations, and practices (TKIPs) around biological resources of indigenous and local communities (ILC) embodying traditional lifestyles and the desirability of equitable sharing of benefits arising from the use of TKIPs.[54] These TKIPs can provide a lead to GRs with beneficial properties and can thus be linked to ABS. In consequence, the CBD requires each Party to, "as far as possible and as appropriate" and "subject to its national legislation," respect, preserve, and maintain the TKIPs of ILC embodying traditional lifestyles relevant for the conservation and sustainable use of biodiversity; promote their wider application with the approval and involvement of the holders of the TKIPs; and encourage the equitable sharing of the benefits arising therefrom.[55] The Nagoya Protocol on Access and Benefit-Sharing goes further and states that Parties shall take legislative, administrative, or policy measures, as appropriate, in order that the benefits arising from the utilization of TK associated with GRs are shared in a fair and equitable way with indigenous and local communities holding such knowledge.[56]

The Bonn Guidelines were adopted in order to clarify the benefit-sharing provisions found in the CBD in a voluntary manner. They first established the link between CBD Articles 8(j) (TKIPs), 10(c) (customary sustainable use), 15 (access to genetic resources), 16 (access to and transfer of technology), and 19 (handling of biotechnology and distribution of its benefits).[57] Importantly, they provide guidance on the content of benefit-sharing agreements to assist in the development of MATs that ensure fair and equitable benefit-sharing.[58] They indicate that MAT may cover the conditions, obligations, procedures, types, timing, distribution, and

53) *Id.*, Principles 4, 11, 12 and 13.

54) *Convention on Biological Diversity*, Preamble.

55) *Id.*, Article 8(j).

56) *Nagoya Protocol on Access and Benefit Sharing*, Article 5(5).

57) *Bonn Guidelines*, at 5, para. 1.

58) *Id.*, para. 41.

mechanisms of benefits to be shared, which will vary depending on what is regarded as fair and equitable in the circumstances.[59] Near-term, medium-term, and long-term benefits should be considered, including up-front payments, milestone payments, and royalties, with the benefit-sharing timeframe clearly stipulated. The balance among near-, medium-, and long-term benefits should be considered on a case-by-case basis.[60] Benefits should be shared fairly and equitably with all those who have been identified as having contributed to the resource management and scientific and/or commercial process. The latter may include governmental, non-governmental, or academic institutions, and indigenous and local communities, and be directed in order to promote conservation and sustainable use of biodiversity.[61] It is recommended that the mechanism for benefit-sharing vary depending upon the type of benefits, the specific conditions in the country, and the stakeholders involved, and be flexible as it should be determined by the partners involved and will vary on a case-by-case basis.[62] Mechanisms should include full cooperation in scientific research and technology development, as well as those that derive from commercial products including trust funds, joint ventures, and licenses with preferential terms.[63]

The Bonn Guidelines were buttressed by the adoption of the legally binding Nagoya Protocol on ABS, which provides a transparent legal framework for the effective implementation of the benefit-sharing obligations of the CBD, providing greater legal certainty for providers and users of genetic resources, and helping to ensure benefit-sharing when GRs leave the providing country.[64] By enhancing legal certainty and promoting benefit-sharing, it encourages the advancement of research on GRs, which creates incentives to conserve and sustainably use GRs, thereby enhancing the contribution of biodiversity to development and human well-being.[65]

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59) *Id.*, para. 45.

60) *Id.*, para. 47.

61) *Id.*, para. 48.

62) *Id.*, para. 49.

63) *Id.*, para. 50.

64) Medaglia, *supra* note 34, at 194-5.

65) Medaglia, *ibid.* at 195.

The Annex to the Nagoya Protocol demonstrates the potential breadth of benefit-sharing and indicates how it may contribute to sustainable natural resource management for development, which could be of relevance to interpreting benefit-sharing in a broader context.[66]

3. *International Treaty on Plant Genetic Resources for Food and Agriculture*

The 2001 FAO *International Treaty on Plant Genetic Resources for Food and Agriculture* (ITPGRFA) has as its objective "the conservation and sustainable use of plant genetic resources for food and agriculture [PGRFAs] and the fair and equitable sharing of the benefits arising out of their use, in harmony with the [CBD], for sustainable agriculture and food security."[67] This objective is based on PSNR, as it builds on the pre-existing status of genetic resources under the CBD. The preamble notes that, by exercising their sovereign rights over PGRFA, States can mutually benefit from creating an effective multilateral system (MLS) for facilitated access to a negotiated selection of resources and for the fair and equitable sharing of

66) Examples of Non-Monetary Benefits from the Annex to the Nagoya Protocol include: (a) Sharing of R&D results; (b) Collaboration, cooperation and contribution in scientific R&D programmes, particularly biotech research activities, where possible in the Party providing GR; (c) Participation in product development; (d) Collaboration, cooperation and contribution in education and training; (e) Admittance to ex situ facilities of GR and to databases; (f) Transfer to the provider of the GR of knowledge and technology under fair and most favourable terms, including on concessional and preferential terms where agreed, in particular, knowledge and technology that make use of GR, including biotechnology, or that are relevant to the conservation and sustainable utilization of biodiversity; (g) Strengthening capacities for technology transfer; (h) Institutional capacity-building; (i) Human and material resources to strengthen the capacities for the administration and enforcement of access regulations; (j) Training related to GR with the full participation of countries providing GR, and where possible, in such countries; (k) Access to scientific information relevant to conservation and sustainable use of biodiversity, including biological inventories and taxonomic studies; (l) Contributions to the local economy; (m) Research directed towards priority needs, such as health and food security, taking into account domestic uses of GR in the Party providing GR; (n) Institutional and professional relationships that can arise from an ABS agreement and subsequent collaborative activities; (o) Food and livelihood security benefits; (q) Joint ownership of relevant IPR.

67) *International Treaty on Plant Genetic Resources for Food and Agriculture* 2001 (entered into force 29 June 2004), Article 1(1).

the benefits arising from their use. In this sense, the ITPGRFA "seeks to promote agricultural sustainability within a global system that recognizes the permanent sovereignty and exclusive control of States over PGRFAs within their own jurisdiction"[68] and lays the foundation for the establishment of an "equitable food and agricultural system for future generations, through a broader-based multilateral system of facilitated access and benefit sharing of PGRFA, open to and including various different stakeholders."[69]

Article 6 creates basic obligations relating to sustainable use of PGRFAs, namely, that Parties develop and maintain appropriate policy and legal measures that promote the sustainable use of PGRFAs. Article 10 establishes the MLS, stating that Parties exercise their sovereign rights to establish an MLS that is efficient, effective, and transparent, both to facilitate access to PGRFAs and to share, in a fair and equitable way, the benefits arising from the utilization of PGRFAs, on a complementary and mutually reinforcing basis.[70] Although the ITPGRFA applies to PGRFAs broadly, the MLS only covers access to the 64 food and forage crops listed in its Annex I, and strictly for the purposes of utilization and conservation for research, breeding, and training for food and agriculture (other uses are subject to the CBD/Nagoya Protocol). Unlike the bilateral approach promoted by the CBD, the PGRFAs are shared based on a standard material transfer agreement (SMTA) adopted by the Governing Body of the ITPGRFA,[71] which includes the benefit-sharing provisions found in Article 13. Facilitated access to PGRFAs, which are included in the MLS, is recognized as a major benefit of the MLS, and Parties agreed that benefits accruing therefrom shall be shared fairly and equitably through the following mechanisms: exchange of information, access to and transfer of technology, capacity-building, and the sharing of the benefits arising from

68) Mary E. Footer, *Our Agricultural Heritage and Sustainability*, in International Law and Sustainable Developments: Principles and Practice (Nico Schrijver and Friedl Weiss, eds., Leiden, NL: Martinus Nijhoff, 2004) at 436.

69) Footer, *supra* note 68, at 436.

70) *International Treaty on Plant Genetic Resources for Food and Agriculture* 2001 (entered into force 29 Jun. 2004), Article 10.1 & 10.2.

71) *Id.*, Article 12.4.

commercialization.[72] This section of the ITPGRFA "seeks to redress some of the more obvious asymmetries between gene rich developing countries of the South and the gene hungry countries of the North with its inclusion of provisions relating to the sharing of monetary and other benefits arising from commercialization."[73] Some significant challenges remain in operationalization of the MLS, especially in terms of increasing non-voluntary monetary contributions.[74]

The ITPGRFA Preamble also recognizes benefit-sharing as a fundamental aspect of Farmers' Rights, affirming that these are inherently based on "the past, present and future contributions of farmers in all regions of the world, particularly those in centres of origin and diversity, in conserving, improving and making available these [PGRFAs]" and

> that the rights recognized in this Treaty to save, use, exchange and sell farm-saved seed and other propagating material, and to participate in decision-making regarding, and in the fair and equitable sharing of the benefits arising from, the use of [PGRFAs], are fundamental to the realization of Farmers' Rights, as well as the promotion of Farmers' Rights at national and international levels.

In a manner similar to the protection of the TKIPs of ILC in the CBD, the ITPGRFA establishes that

> [i]n accordance with their needs and priorities, each Contracting Party should, as appropriate, and subject to its national legislation, take measures to protect and promote Farmers' Rights, including: protection of traditional knowledge relevant to plant genetic resources for food [PGRFAs], [and] the right to equitably participate in sharing benefits arising from the utilization of [PGRFAs].[75]

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72) *Id.*, Article 13.2.

73) Footer, *supra* note 68, at 449.

74) Franziska Wolff, *The Nagoya Protocol and the diffusion of economic instruments for ecosystem services in international environmental governance*, Global Governance of Genetic Resources: Access and benefit sharing after the Nagoya Protocol (Sebastian Oberthür and G. Kristin Rosendal, eds., Milton Park, UK: Routledge, 2014) at 141-2.

75) ITPGRFA, Article 9.2(a) & (b).

Unfortunately, much remains to be done in regards to the implementation of these rights.[76)]

4. Convention for the Conservation of the Biodiversity and the Protection of Wilderness Areas in Central America

The 1992 Convention for the Conservation of the Biodiversity and the Protection of Wilderness Areas in Central America[77)] contains several provisions relevant to benefit-sharing. First, its objective is to preserve the maximum possible biological, terrestrial, and coastal-marine diversity of the Central American region for the benefit of present and future generations.[78)] Second, it calls for the value of the contribution of the biological resources and the maintenance of biodiversity to economic and social development to be recognized and reflected in the economic and financial arrangements between the countries of the region, and between these and others that cooperate in their conservation and use.[79)] Third, it indicates that knowledge of biodiversity and the efficient management of protected areas should be encouraged in the region and that the benefits of R&D on bio-materials or the management of protected areas should be made available to society as a whole.[80)] Fourth , TKIPs developed by native groups in the region that contribute to the conservation and sustainable use of biological resources should be recognized and recovered.[81)] Fifth, it indicates that access to genetic material, substances, derivative products, related technology, and their conservation, is open, subject to the jurisdiction and control of the States through agreements mutually established with recognized organisms.[82)] Lastly, it promotes the elaboration of a national law for the conservation and sustainable use of the

76) See *ITPGRFA Governing Body Resolution 7/2017, Implementation of Article 9, Farmers Rights*

77) *Convention for the Conservation of the Biodiversity and the Protection of Wilderness Areas in Central America*, 5 June 1992 (in force 20 Dec 1994), IUCN TRE-001162.

78) *Id.*, Article 1.

79) *Id.,* Article 5.

80) *Id.,* Article 6.

81) *Id.,* Article 7.

82) *Id.,* Article 8.

components of biodiversity.[83] In 1998, the Central American Protocol on Access to Genetic and Biochemical Resources and Associated Traditional Knowledge was adopted to provide a basis for the harmonization of laws and standards related to access to genetic and biochemical resources.[84]

5. South African Development Community (SADC) Protocol on Forestry (Luanda Protocol)

The 2002 South African Development Community (SADC) Protocol on Forestry (Luanda Protocol) establishes that

> to achieve the objectives of this Protocol, State Parties shall co-operate by promoting respect for the rights of communities and facilitating their participation in forest policy development, planning, and management with particular attention to the need to protect traditional forest-related knowledge (TFRK) and to develop adequate mechanisms to ensure the equitable sharing of benefits derived from forest resources and traditional forest-related knowledge without prejudice to property rights.[85]

A core principle of the Protocol is that "State Parties shall recognise that communities are entitled to effective involvement in the sustainable management of forests and forest resources on which they depend and to share equitably in the benefits arising from their use."[86] More substantively, Parties must recognize, respect, and protect the rights of individuals and communities over their TFRK and their right to benefit from its

83) *Id.*, Article 16.

84) *Protocolo Centroamericano de Acceso a los Recursos Genéticos y Bioquímicos y al Conocimiento Tradicional Asociado*, Central American Commission on Environment and Development (not in force). See Jorge Cabrera Medaglia, *The Central American Regional Protocol on Access to Genetic and Biochemical Resources*, Trading in Knowledge : Development Perspectives on TRIPS, Trade and Sustainability (Christophe Bellmann et al., London, UK: Earthscan, 2003).

85) *SADC Protocol on Forestry*, 3 October 2002 (in force 17 Jul. 2009), IUCN ID TRE-001361 at Article 3(2)(g). [Luanda Protocol]

86) *Ibid.*, Article 4(10).

utilization.[87] Parties may, in consultation with local people and communities, record, preserve, and protect TFRK; provide for equitable benefit-sharing from its utilization among those who hold it; and develop relevant standards, guidelines, and other mechanisms where appropriate.[88] Furthermore, Parties must adopt national policies and implement mechanisms to ensure that access to the forest GRs is subject to PIC and MATs and equitable benefit-sharing from their use.[89] They will also develop a regional approach and harmonized national legislation regulating access to, and the management, development, and use of, forest GRs and for equitable benefit-sharing.[90]

6. Relevance of the Rio Conventions

The 1992 United Nations Framework Convention on Climate Change (UNFCCC) recognizes the key role and importance in terrestrial ecosystems of sinks and reservoirs of greenhouse gases (GHGs) and the sovereign right of States to exploit their own resources pursuant to their own environmental and developmental policies.[91] Basic principles of the UNFCCC include the right to sustainable development and the need for cooperation to promote a supportive and open international economic system that would lead to sustainable economic growth and development in all Parties.[92] Parties commit to promoting sustainable management, and promote and cooperate in the conservation and enhancement, as appropriate, of sinks and reservoirs of all GHGs, including biomass and forests, as well as other terrestrial ecosystems.[93] The recent 2015 Paris Agreement to the UNFCCC

87) *Ibid.*, Article 16(1).

88) *Ibid.*, Article 16(2).

89) *Ibid.*, Article 17(1).

90) *Ibid.*, Article 17(2).

91) *UNFCCC*, Preamble.

92) *Ibid.*, Article 3(4) and (5)

93) *Ibid.*, Article 4. Article 1(7) defines a "Reservoir" as "a component or components of the climate system where a greenhouse gas or a precursor of a greenhouse gas is stored"; Article 1(8) defines a "Sink" as "any process, activity or mechanism which removes a greenhouse gas, an aerosol or a precursor of a greenhouse gas from the atmosphere." Biodiversity plays the role of both a reservoir and sink.

incorporates provisions that promote benefit-sharing for the sustainable management of biological resources for development. It states that Parties should take action to conserve and enhance, as appropriate, sinks and reservoirs of GHGs, including forests, and encourages Parties to take action to implement and support, including through results-based payments.[94)]

The 1994 *United Nations Convention to Combat Desertification in Those Countries Experiencing Serious Drought and/or Desertification, Particularly in Africa* (UNCCD) notes in its preamble that "desertification is caused by complex interactions among physical, biological, political, social, cultural and economic factors"; recognizes the sovereign right of States to exploit their own resources pursuant to their own environmental and developmental policies; and considers the contribution that combatting desertification can make to achieving the objectives of the UNFCCC, CBD, and other related environmental conventions.[95)] In order to achieve the objective of the UNCCD to combat desertification and mitigate the effects of drought in countries experiencing serious drought and/or desertification, long-term integrated strategies will need to be adopted that focus simultaneously on improved productivity of land and the rehabilitation, conservation, and sustainable management of land and water resources, leading to improved living conditions, in particular at the community level.[96)] In addition to their general obligations, developed Parties commit to "promot[ing] and facilitat[ing] access by affected country Parties, particularly affected developing country Parties, to appropriate technology, knowledge and know-how."[97)] Although much of the UNCCD addresses this issue, which

94) *Paris Agreement*, Article 5(1) and (2).

95) *UNCCD*, Preamble.

96) *UNCCD*, Article 2(1) and (2). Article 1(e) defines "Land" as "the terrestrial bio-productive system that comprises soil, vegetation, other biota, and the ecological and hydrological processes that operate within the system"; Article 1(f) indicates that "Land degradation" consists of the "reduction or loss, in arid, semi-arid and dry sub-humid areas, of the biological or economic productivity and complexity of rainfed cropland, irrigated cropland, or range, pasture, forest and woodlands resulting from land uses or from a process or combination of processes, including processes arising from human activities and habitation patterns, such as: (i) soil erosion caused by wind and/or water; (ii) deterioration of the physical, chemical and biological or economic properties of soil; and (iii) long-term loss of natural vegetation."

97) *UNCCD*, Article 6(e).

could be considered a mode of benefit-sharing, this brief will be restricted to benefit-sharing from the use of traditional knowledge, which contains language similar to the CBD.

In the context of scientific and technological cooperation, specifically, information collection analysis and exchange, UNCCD Parties shall "subject to their respective national legislation and/or policies, exchange information on local and traditional knowledge, ensuring adequate protection for it and providing appropriate return from the benefits derived from it, on an equitable basis and on [MATs], to the local populations concerned."[98] For R&D, Parties will support research activities that protect, integrate, enhance, and validate TKIPs, ensuring, subject to national law and/or policies, that owners of TKIPs will directly benefit on an equitable basis and on [MATs] from any commercial utilization or technological development derived from that knowledge.[99] In the context of transfer, acquisition, adaptation, and development of technology, the Parties shall, according to their respective capabilities, and subject to their respective national legislation and/or policies, protect, promote, and use, in particular, relevant traditional and local technology, knowledge, know-how, and practices, and undertake to ensure that such technology, knowledge, know-how, and practices are adequately protected and that local populations benefit directly, on an equitable basis and as mutually agreed, from any commercial utilization of them or from any technological development derived therefrom.[100]

7. Rights of Indigenous Peoples

The 1989 ILO *Convention 169: Concerning Indigenous and Tribal Peoples in Independent Countries* (ILO Convention 169) indicates that indigenous/tribal peoples also have the right to participate in the use, management, and conservation of natural resources pertaining to their lands and territories.[101]

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98) *UNCCD*, Article 16(e).

99) *UNCCD*, Article 17(1)(c).

100) *UNCCD*, Article 18(2)(b).

101) *Convention concerning Indigenous and Tribal Peoples in Independent Countries, 1989 (No. 169)*, 27 Jun. 1989 (in force 5 Sep. 1991), Article 15(1). [ILO Convention 169]

Where States retain ownership of rights to natural resources pertaining to indigenous/tribal lands and territories, they must establish or maintain consultation procedures to determine the level of prejudice to indigenous/tribal interests before undertaking or permitting programs for the exploration or exploitation of these resources, and, wherever possible, the peoples concerned will participate in the benefits of such activities and receive compensation for damages that they may sustain.[102] Article 15 does not determine the precise scope of benefit-sharing, allowing for different interpretations in domestic legal systems and considerable scope for discretion in its implementation.[103] Although the 2007 UN Declaration on the Rights of Indigenous Peoples (UNDRIP)[104] and 2016 Organization of American States (OAS) American Declaration on the Rights of Indigenous Peoples[105] also contain the right to participate in the management of natural resource use, and the right to redress, they do not mention the right to benefit from the use of natural resources where States retain ownership. Special Rapporteurs on the rights of indigenous peoples have gradually asserted that benefit-sharing is implicit in UNDRIP provisions on the right to natural resources.[106] The Nagoya Protocol on Access and Benefit Sharing does make explicit reference to the rights of indigenous peoples to benefit-sharing from their natural resources, stating that Parties shall take legislative, administrative, or policy measures, as appropriate, with the aim of ensuring that benefits arising from the utilization of GRs that are held by indigenous and local communities, in accordance with domestic legislation regarding the established rights of these indigenous and local communities over these GRs, are shared fairly and equitably with the communities concerned, based on MAT.[107]

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102) *ILO Convention* 169, *supra* note 101, Article 15(2).

103) Morgera, *supra* note 5, at p. 9.

104) *United Nations Declaration on the Rights of Indigenous Peoples*, 13 Sep. 2007, UN Doc. A/RES/61/295.

105) *American Declaration on the Rights of Indigenous Peoples*, 15 Jun. 2016, OAS Doc. AG/RES. 2888 (XLVI-O/16).

106) Morgera, *supra* note 5, at p. 11.

107) *Nagoya Protocol on ABS*, Article 5(2).

8. Law of the Sea

As deep-seabed resource exploitation is now becoming a possibility, it is important to discuss the 1982 *United Nations Convention on the Law of the Sea* (UNCLOS).[108] Firstly, UNCLOS contains benefit-sharing provisions relating to the non-living resources of the extended continental shelf, and these provisions are indirectly linked to the principle of the common heritage of humankind (CHH).[109] The provisions obligate coastal States to "make payments or contributions in kind in respect of the exploitation of the non-living resources of the continental shelf" beyond 200 nm, which are to be made through the International Seabed Authority (ISA). The ISA will then distribute these payments/contributions to Parties, on the basis of equitable sharing criteria, taking into account the interests and needs of developing States, particularly least-developed/land-locked Parties.[110] The ILA Committee on the Legal Issues of the Outer Continental Shelf proposes that it is up to the coastal State to determine the form, method, and timing of benefit-sharing.[111] The criteria for payments and contributions are to be developed by the Council, the executive organ of the ISA, in the form of rules, regulations, and procedures for recommendation to the Assembly of the ISA.[112] The Assembly has the power to consider and approve, upon the recommendation of the Council, such rules, regulations, and procedures, taking into particular consideration the interests and needs of developing States and peoples who have not attained full independence or other self-governing status.[113]

Secondly, UNCLOS indicates that the Area and its resources are the

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108) *United Nations Convention on the Law of the Sea*, 10 Dec. 1982 (entered into force 16 Nov. 1994), 1833 UNTS 3. [UNCLOS]

109) See *Report on Article 82 of the 1982 UN Convention on Law of the Sea,* ILA Rio de Janeiro Conference (2008), Committee on the Outer Continental Shelf. [ILA Report on Article 82 of UNCLOS]

110) *UNCLOS*, *supra* note 108, Article 82.4.

111) *Ibid.*, *supra* note 109.

112) *UNCLOS*, *supra* note 108, Article 162(2)(o)(i).

113) *UNCLOS*, *supra* note 108, Article 160(f)(i).

CHH.[114] Sovereignty or sovereign rights cannot be claimed or exercised over any part of the Area or its resources, nor can a State or person appropriate any part thereof.[115] All rights over resources in the Area are vested in humankind as a whole, and the ISA acts on its behalf, establishing rules, regulations, and procedures whereby minerals recovered from the Area can be alienated.[116] Activities in the Area will be carried out for the benefit of humankind as a whole, taking into particular consideration the interests and needs of developing States and of peoples who have not attained full independence or other self-governing status.[117] The ISA is responsible for providing for the equitable sharing of financial and other economic benefits derived from activities in the Area through an appropriate mechanism, on a non-discriminatory basis, in accordance with the rules, regulations, and procedures thereto proposed by the Council, and taking into particular consideration the interests and needs of the developing States and peoples who have not attained full independence or other self-governing status.[118] This mandate is consequential at present in the context of the development of draft Regulations on Exploitation of Mineral Resources in the Area, especially the discussions on how to operationalize the principle of the CHH, and the creation of a payment mechanism that delivers a fair and equitable return to the CHH, balances commercial interests, and supports technological development and change, which is one of the most challenging aspects in negotiations.[119]

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114) *UNCLOS*, *supra* note 108, Article 136. The Area is the seabed beyond national jurisdiction.

115) *UNCLOS*, *supra* note 108, Article 137(1). Article 133 defines "resources" as all solid, liquid or gaseous mineral resources in situ in the Area at or beneath the seabed, including polymetallic nodules, and that resources recovered from the Area are referred to as "minerals".

116) *UNCLOS*, *supra* note 108, Article 137(2).

117) *UNCLOS*, *supra* note 108, Article 140(1).

118) *UNCLOS*, *supra* note 108, Article 160(f)(i).

119) *Briefing note to the Council on the submissions to the draft regulations on exploitation of mineral resources in the Area*, Advance Text, 21 Feb. 2018, UN Doc. ISBA/24/C/CRP.1 at para. 17 and Annex II, para. 2.

9. Celestial Bodies

With the exploitation of the natural resources of celestial bodies about to become feasible, it is also relevant to examine the 1979 *Agreement Governing the Activities of States on the Moon and Other Celestial Bodies*[120] (Moon Agreement) despite its limited number of ratifications, as it was adopted by the UNGA by consensus and provides the best available option for the harmonious development of space mineral resources.[121] The underlying *Treaty on Principles Governing the Activities of States in the Exploration and Use of Outer Space, Including the Moon and Other Celestial Bodies*[122] (Outer Space Treaty) has a much broader membership and establishes principles in common with the Moon Agreement, including that the exploration and use of outer space be carried out for the benefit and in the interest of all countries, irrespective of their degree of economic or scientific development, and be the province of all mankind, and that outer space, including the Moon and other celestial bodies, is not subject to national appropriation by claim of sovereignty, by means of use or occupation, or by any other means.[123] The Moon Agreement elaborates on these common principles, noting that due regard shall be paid to the interests of present and future generations, as well as to the need to promote higher standards of living and conditions of economic and social progress and development.[124] When exploitation of the moon's natural resources is about to become feasible, Parties will undertake to establish an international

120) *Agreement Governing the Activities of States on the Moon and Other Celestial Bodies*, 5 Dec. 1979 (entry into force 11 Jul. 1984), 1363 UNTS 3 [Moon Agreement]; See also *Declaration on International Cooperation in the Exploration and Use of Outer Space for the Benefit and in the Interest of all States, Taking into Particular Account the Needs of Developing Countries*, UN Doc. A/RES/51/122.

121) René Lefeber, *Relaunching the Moon Agreement*, 41(1) Air and Space Law (2016).

122) *Treaty on Principles Governing the Activities of States in the Exploration and Use of Outer Space, Including the Moon and Other Celestial Bodies*, 27 Jan. 1967 (entry into force 10 Oct. 1967), 610 UNTS 205. [Outer Space Treaty]. 107 Parties as of 1 Jan. 2018.

123) *Outer Space Treaty*, *supra* note 122, Article 1; *Moon Agreement*, *supra* note 120, Article 4(1).

124) *Moon Agreement*, *supra* note 120, Article 4(1).

regime governing exploitation.[125] The main purposes of the new regime would include the orderly and safe development of the natural resources of the moon, the rational management of those resources, and an equitable sharing by all Parties in the benefits derived from those resources, whereby the interests and needs of the developing countries, as well as the efforts of those countries that have contributed either directly or indirectly to the exploration of the moon, shall be given special consideration.[126] Importantly, the provisions of the agreement relating to the moon also apply to other celestial bodies within the solar system, unless specific legal norms enter into force on those specific bodies.[127] This provision would, therefore, apply by default to other planets, their moons, comets, and asteroids.[128]

Potential Aspects of a General Principle of Benefit-Sharing in Sustainable Natural Resource Management

- A specific principle deriving from equity as a general principle of international law to balance competing rights and interests, and integrate ideas of justice into a relationship regulated by international law.
- Promotes both substantive and procedural equity and fairness, and intergenerational equity.
- May be filled with content by establishing a linkage with different international law sub-systems.
- Link to human rights, especially the right to development, right to science, and indigenous rights.
- Applies to relationships between States, within States, and between generations.
- Common heritage of humankind presently implements the principle in areas beyond national jurisdiction.

125) *Moon Agreement*, *supra* note 120, Article 11(5).

126) *Moon Agreement*, *supra* note 120, Article 11(7)(a) and (d).

127) *Moon Agreement*, *supra* note 120, Article 1

128) See Ian A. Crawford, *The long-term scientific benefits of a space economy*, 37(2) Space Policy 58 for the relevance of cosmic resources for a space-based economy and Susanne Barton & Hannah Recht, *The Massive Prize Luring Miners to the Stars*, 8 Mar. 2018, online: https://www.bloomberg.com/graphics/2018-asteroid-mining/for the potential value of such resources.

III. Legal Obstacles Facing the Implementation of Benefit-Sharing for the Sustainable Management of Natural Resources for Development

Benefit-sharing is employed in international biodiversity law as a treaty objective, an international obligation, a right, or a mechanism, which makes its status difficult to determine, and its operationalization uneven.[129] It is also applied to relations that have different relevance under international law and are characterized by different *de facto* power asymmetries (inter-state sharing between developed/developing countries, intra-state sharing between States and communities/indigenous peoples, and between companies and communities). The provisions of international treaties relevant to benefit-sharing (e.g., CBD/Nagoya Protocol and ITPGRFA) have not been widely implemented in national law.

The Special Rapporteur on the issue of human rights obligations relating to the enjoyment of a safe, clean, healthy, and sustainable environment states that the "enormous problem is that [biodiversity agreements] have often not been effectively implemented and their goals have not been met."[130] This makes compliance with the rules of international law on benefit-sharing particularly hard to enforce. The Nagoya Protocol does create procedural obligations to support benefit-sharing, such as on monitoring the utilization of genetic resources and compliance (e.g., opportunities for recourse, access to justice, mutual recognition, and enforcement of foreign judgments), but the provisions are quite general and leave significant leeway to Parties, which may result in measures of limited effectiveness that perpetuate obstacles to benefit-sharing for the sustainable management of natural resources for development.

With regard to inter-State benefit-sharing, tensions between economic and non-economic benefits, and their immediate and global relevance, remain to be addressed. Non-monetary benefits such as technology transfer

129) Morgera, *supra* note 1, at 355.

130) *Report of the Special Rapporteur on the issue of human rights obligations relating to the enjoyment of a safe, clean, healthy and sustainable environment*, at para. 40.

and capacity building can be essential to enhance the ability of beneficiaries to share in long-term monetary benefits, but may also create dependency on external, ready-made solutions that may not fit particular circumstances or that may allow for the exertion of undue influence by donor countries.[131] Southern countries feel frustration due to the limited economic and non-economic benefits that have been derived to date from different bioprospecting projects and the application of ABS frameworks in general. It has also been difficult to find cost-effective legal solutions to cases of misappropriation of GRs and associated traditional knowledge within the framework of national ABS legislation or intellectual property law.[132]

The concept of CHH and its association with the NIEO agenda also poses legal obstacles. Benefit-sharing regimes have not yet been established for either the Area or the Moon, and the Chair of the ILA Space Law Committee stated that States "appear reluctant to engage in further binding obligations on the international arena when they do not know exactly what the balance sheet will be as technology continues to develop."[133] This is pertinent in the context of both the exploitation of deep-seabed resources and the resources of the moon.

IV. Future International Law Research on Benefit-Sharing for the Sustainable Management of Natural Resources for Development

The absence of instances in which fair and equitable benefit-sharing has been fully developed or made satisfactorily operational points to a significant research agenda. From a normative perspective, it is difficult to derive a common core with regard to its beneficiaries, for instance. Research is needed to determine the nature, extent, and implications of the

131) Morgera, *supra* note 1, at 369.

132) Medaglia, *supra* note 34, at 196.

133) *Answers from the Chair of the Space Law Committee of the International Law Association (ILA) to questions by the Chair of the Working Group of the LSC*, 22 April 2015, UN Doc. A/AC.105/C.2/2015/CRP.25 at 2. [Answers from the Chair of the Space Law Committee of the ILA]

principle, including the potential limitations and challenges of adapting the benefit sharing system in the private fiedl. Legal analyses of benefit-sharing remain to be systematically connected to ongoing theoretical discussions of different concepts of justice and possible trade-offs among them.[134)]

Recently, benefit-sharing has also become a recognized part of the emerging concept of markets or payments for ecosystem services (e.g., ABS in the CBD/Nagoya Protocol and ITPGRFA context, and the Clean Development Mechanism/REDD+ in the climate context),[135)] which begins to disassociate the concept from its original rationale as a non-market-based scheme aimed at development and equity. It is questionable whether economic instruments are the most effective or legitimate instruments for the international governance of biodiversity and ecosystem services, especially in the development context.[136)]

From a practical perspective, much remains to be ascertained as to when and why benefit-sharing achieves its stated fairness and equity purposes. Situations in which it does not, and rather contributes to consolidating power and information asymmetries, are well documented. Risks attached to different benefits and the costs and losses that may be associated with certain benefits have not been fully or systematically analyzed. The interaction between benefit-sharing and procedural rights (access to information, decision making, and justice) and legal empowerment approaches is also understudied. More empirical and inter-disciplinary research is needed to assess when and under which conditions benefit-sharing provides new perspectives and solutions that support the sustainable management of natural resources for development.[137)]

Another normative question concerns future generations. There are few discussions on the contribution of benefit-sharing to inter-generational equity, despite indications in international law (mostly as preambular text

134) Morgera, *supra* note 3.

135) See Franziska Wolff, *The Nagoya Protocol and the diffusion of economic instruments for ecosystem services in international environmental governance*, Global Governance of Genetic Resources: Access and benefit sharing after the Nagoya Protocol (Sebastian Oberthür and G. Kristin Rosendal, eds., Milton Park, UK: Routledge, 2014).

136) Wolff, *ibid*, at 153.

137) Morgera, *supra* note 3, at p. 12.

of treaties) that global benefits arising from benefit-sharing may be geared toward reaching a wider group than those actively or directly engaged in bioprospecting, natural resource management, environmental protection, or use of knowledge. It remains unclear to what extent global benefits may also extend to future generations, as the nature of the benefits is commonly defined with regard to the parties to the triggering activity. However, several immediate benefits shared among them are meant to preserve, restore, or enhance the conditions under which underlying global benefits (such as ecosystem services) are produced, which will benefit future generations by ensuring that development does not compromise the ability of future generations to meet their own needs.[138)]

Preliminary research has been carried out on the relationship between private international law and the Nagoya Protocol, which "creates a private international law of access and benefit-sharing."[139)] Future work may need to be carried out on compliance measures to enforce benefit-sharing agreements and the question of access to justice in user countries, especially in cases where access has taken place in violation of the laws, policies, or administrative measures of a provider country but no contractual terms have been established.[140)] This touches upon the extraterritorial application of the domestic law of the alleged country of origin, which is heavily contested in many cases.[141)] The question of recognition and enforcement of foreign judgments and arbitral awards may also come into play as the MATs may establish jurisdiction in a different jurisdiction than that where the user resides.[142)]

International law on benefit-sharing from natural resources in areas beyond national jurisdiction (ABNJs) is also under development. The Nagoya Protocol itself establishes that Parties will consider the need for,

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138) Morgera, *supra* note 3, at p. 11.

139) Claudio Chiarolla, *The Role of Private International Law under the Nagoya Protocol*, The 2010 Nagoya Protocol on Access and Benefit-Sharing in Perspective: Implications for International Law and Implementation Challenges 423 (Elisa Morgera et al. eds., Leiden, NL: Brill, 2013).

140) Refer to discussion on non-contractual disputes on ABS in Chiarolla, *supra* note 139, at 437-438.

141) Chiarolla, *supra* note 139, at 440.

142) Chiarolla, *supra* note 139, at 445.

and modalities of, a global multilateral benefit-sharing mechanism (GMBSM) to address fair and equitable benefit-sharing derived from the utilization of GRs and Associated Traditional Knowledge (ATK) that occurs in transboundary situations or for which it is not possible to grant or obtain PIC. The benefits shared by users through the GMBSM are to be used to support the global conservation and sustainable use of biodiversity, which will be controversial as benefits will not necessarily be aimed at developing countries despite their role in negotiating this provision.[143] Separate discussions on ABNJs are taking place through the UNGA, which adopted a resolution in late 2017 convening an Intergovernmental Conference to elaborate the text of an international legally binding instrument under the UNCLOS on the conservation and sustainable use of marine biological diversity of ABNJs, with a view to rapidly developing such an instrument.[144] The Conference will meet four times, with the last meeting in mid-2020.

Key topics under discussion are the conservation and sustainable use of marine biological diversity of ABNJs and marine GRs, including particular focus on the issue of benefit-sharing. The work of the Intergovernmental Conference builds on a Preparatory Committee, which issued a report of its discussions that indicates that further discussions are required on marine GRs and benefit-sharing related to whether the instrument should regulate access, the nature of the resources covered, the benefits shared, intellectual property rights, and monitoring utilization of marine GRs in ABNJs. Consensus exists on the following: the objective of contributing to the conservation and sustainable use of marine biological diversity in ABNJs, building the capacity of developing countries to access and use marine GRs in ABNJs, and that the principles and approaches guiding benefit-sharing could include benefits to current and future generations and promoting

143) Tomme Rosanne Young, *An International Cooperation Perspective on the Implementation of the Nagoya Protocol*, The 2010 Nagoya Protocol on Access and Benefit-Sharing in Perspective: Implications for International Law and Implementation Challenges 490 (Elisa Morgera et al. eds., Leiden, NL: Brill, 2013); See also Linda Wallbott, *Goals, strategies and success of the African Group in the negotiations of the Nagoya Protocol*, Global Governance of Genetic Resources: Access and benefit sharing after the Nagoya Protocol (Sebastian Oberthür and G. Kristin Rosendal, eds., Milton Park, UK: Routledge, 2014).

144) *Intergovernmental Conference on an international legally binding instrument under the United Nations Convention on the Law of the Sea on the conservation and sustainable use of marine biological diversity of areas beyond national jurisdiction*, 24 Dec. 2017, UNGA Res 72/249.

marine scientific research and R&D.[145]

Discussions at the World Intellectual Property Organization (WIPO) at the Intergovernmental Committee on Intellectual Property and Genetic Resources, Traditional Knowledge, and Folklore (IGC) have been ongoing since the establishment of the Committee in 2000. The IGC has held 35 meetings and is currently undertaking text-based negotiations with the aim of agreeing on a text/s of an international legal instrument/s, which will ensure the effective protection of traditional knowledge, traditional cultural expressions, and GRs. The goal of discussions in 2018–19 is to narrow existing gaps and achieve a common understanding on core issues, including definitions, beneficiaries, subject matter, objectives, scope of protection, and what subject matter is entitled to protection at an international level, including consideration of exceptions and limitations, and the relationship with the public domain.[146] The WIPO General Assembly will take stock of progress in 2019 to decide whether to convene a diplomatic conference and/or continue negotiations, based on the maturity of the text/s.[147] Supporting benefit-sharing from the use of GRs and ATK is a primary issue of contention between WIPO Members.

As the ISA moves toward adopting regulations under UNCLOS for mineral exploitation in the Area, it will be important to continue carrying out legal research on the appropriate mechanism for the non-discriminatory and equitable sharing of financial and other economic benefits derived from activities in the Area, which will require careful balancing of economic, social, and environmental dimensions.[148] It is important to continue reflecting on how the *Agreement Relating to the*

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145) *Report of the Preparatory Committee established by General Assembly resolution 69/292: Development of an international legally binding instrument under the United Nations Convention on the Law of the Sea on the conservation and sustainable use of marine biological diversity of areas beyond national jurisdiction*, 31 Jul. 2017, UN Doc. A/AC.287/2017/PC.4/2, pp. 10 and 17. [Report of the PrepCom]

146) *Decision on Matters Concerning the Intergovernmental Committee on Intellectual Property and Genetic Resources, Traditional Knowledge and Folklore*, 57th WIPO General Assembly, 11 Oct. 2017 at para. b. [Decision on Matters Concerning the IGC]

147) *Id.*, at para. e.

148) *International Seabed Authority's Contribution to the United Nations Secretary-General's Report pursuant to the United Nations General Assembly's Resolution* A/RES/69/245 (11 Feb. 2015).

Implementation of Part XI of the UN Convention on the Law of the Sea[149] (Agreement on Part XI) will influence the implementation of the CHH principle as exploitation begins in earnest, as it notes the "political and economic changes, including market oriented approaches, affecting the implementation of Part XI."[150] The Agreement on Part XI does not modify the CHH principle, but does affect the machinery by which it operates. The limits of the principle will become clearer when distribution begins, and evidence emerges on the distribution of benefits to developing states.[151]

The Chair of the ILA Space Law Committee asserts that the prevailing view today is to keep the Moon Agreement alive even though it only has 18 Parties and some States question its status as part of international law or consider it on the same level as the four other UN space treaties.[152] Parties to the Moon Agreement have noted several advantages to its measures on natural resource use in Article 11, noting that it is the only provision in the UN outer space treaties that foresees the possibility of exploiting resources in outer space, providing an obvious legal solution as humanity approaches the time where such exploitation becomes possible.[153] It does not propose a closed and complete mechanism, but rather leaves it to States to set up and implement a regime, responding to the status of CHH and other principles of outer space law. This would allow States to take into account the reality of political, legal, and technical facts; possibilities; and requirements. It is a proactive instrument for achieving a consensus between all nations, taking into account the interests of developing countries, and establishes a mutual commitment to seek a multilateral solution for the exploitation of Celestial Bodies' natural resources in accordance with the general principles of outer space law. Lastly, the Parties assert that it does not pre-exclude any

149) *Agreement Relating to the Implementation of Part XI of the UN Convention on the Law of the Sea*, 28 Jul. 1994 (in force 28 Jul. 1996), 33 ILM 1309. [Agreement on Part XI]

150) *Id.*, Preamble.

151) Edward Guntrip, *The Common Heritage of Mankind: An Adequate Regime for Managing the Deep Seabed?*, 4 Melbourne Journal of International Law, 376 (2003).

152) *Answers from the Chair of the Space Law Committee of the ILA*, *supra* note 133, at 7; *Joint Statement on the benefits of adherence to the Agreement Governing the Activities of States on the Moon and Other Celestial Bodies of 1979 by States Parties to that Agreement*, 2 Apr. 2008, UN Doc. A/AC.105/C.1/2008/CRP.11. [Joint Statement]

153) *Ibid,* at 5.

modality of exploitation, by public and/or by private entities, nor does it forbid commercial treatment, as long as it is compatible with the requirements of CHH. The time has arrived to establish a more precise legal meaning of this controversial provision and to reconcile conflicting views and interpretations.[154] Some scholars, including the Chair of the ILA Space Law Committee, have argued that this should take place through the amendment of the treaty itself.[155]

The above research agenda only covers a part of the negotiations taking place that are pertinent to the development of benefit-sharing in international law. Many discussions are also taking place in the realm of soft law development, for example, at the FAO.[156] However, in some of these negotiations and instruments there are different specific objectives and mechanisms to achieve them in every particular international law regimes, such as in intellectual property, environmental law, law of the sea and space law. Coordination and exchange of information are critical for a synergistic development and mutually supportive implementation of these processes and instruments. Given the many different fora where negotiation of benefit-sharing is taking place, future research will need to continue to monitor and take into consideration work across the multiplicity of institutions where the future of the concept is being formalized in rules of international law that could contribute to the sustainable use of natural resources for development. Much legal research remains to be done in this regard.

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154) *Answers from the Chair of the Space Law Committee of the ILA*, *supra* note 133 at 3 & 7. The *U.S. Commercial Space Launch Competitiveness Act* explicitly allows for private ownership of extracted space resources, while also not asserting sovereignty or jurisdiction over any celestial body. The Luxemburg Law on the exploration and use of space resources also allows for private appropriation, subject to Luxemburg's international law commitments. See also Virginie Blanchette-Séguin, *Reaching for the Moon: Mining in Outer Space*, 49 INTERNATIONAL LAW AND POLITICS 959.

155) *Answers from the Chair of the Space Law Committee of the ILA*, *supra* note 133.

156) Such as the *Voluntary Guidelines on the Responsible Governance of Tenure of Land, Fisheries and Forests in the Context of National Food Security*, UN Doc. CL 144/9 (C 2013/20); *Voluntary Guidelines for Securing Sustainable Small-scale Fisheries in the Context of Food Security and Poverty Eradication* (2014), UN Doc. TC-SSF/2014/2; and the work of the *FAO Commission on Genetic Resources for Food and Agriculture*, see: http://www.fao.org/nr/cgrfa/cgrfa-vision/en/.

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