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ARTICLE

Intellectual Property Rights and the Conservation of Plant Biodiversity as a Common Concern of Humankind

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Abstract
This article makes the case for the obligation to conserve plant biodiversity to be classified as a common concern of humankind, to justify and indeed prescribe limitations on private intellectual property rights over plants and related processes. Within the biodiversity regime, the notion of 'common concern of humankind' subjects the permanent sovereignty of states over natural resources to the interests of humanity. It shifts the obligations of states from managing their own plant biodiversity towards conserving it on behalf of humankind. In contrast, TRIPS requires states to protect private intellectual property rights with little discretion to adequately balance them with public interests. This creates a dichotomy. This article argues that rather than mobilizing state sovereignty as rhetoric to distract from addressing common concerns of humankind, it should be constructed as a concept capable of facilitating these very concerns.

Keywords: Common Concern of Humankind, Convention on Biological Diversity, TRIPS, Intellectual Property Rights, Plant Biological Resources, State Sovereignty

1. INTRODUCTION

This article argues that intellectual property rights over plants and related processes are incompatible with the obligations of states to protect plant biodiversity as a 'common concern of humankind', and should therefore be recalibrated.

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Plant biodiversity[1] is crucial to ensure food security[2] and is 'critical to our own health and survival'.[3] In light of the alarming rates of plant biodiversity loss, this public interest was affirmed in the 1992 Convention on Biological Diversity (CBD),[4] which declared the conservation of all components of biological diversity a 'common concern of humankind' (CCH).[5] Although plant biodiversity partly occurs *within* state territories, it de facto functions like a global commons, similar to atmospheric resources, since the biosphere interconnects ecosystems and overrides national boundaries. Recognizing this special legal status, the CBD also reaffirms the permanent sovereignty of states over their natural resources,[6] including plant biological resources.[7] The CCH qualifies this permanent sovereignty over natural resources (hereinafter 'permanent sovereignty') and predetermines a management aim to be pursued by states, in the interest of humankind. The interplay of both concepts determines the state obligations under the almost universally ratified CBD. For plant biological resources such a combination has resulted in a legal status that is 'distinctively different' from other concepts traditionally governing natural resources.[8]

Whereas the CBD aims to sustain the rich diversity of life on this planet,[9] intellectual property rights (IPRs) promote the privatization of plant biodiversity. They do so through the allocation of temporary rights over the use of plants and associated properties or processes as a monetary incentive to protect them. This controversial approach gives rise to numerous ethical and moral questions concerning the commodification of life forms.[10] The 1994 Agreement on Trade-Related Aspects of Intellectual Property Rights (TRIPS)[11] sets out minimum standards of intellectual property protection

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1 In accordance with the definition of biological diversity in Art. 2 CBD (n. 4 below), plant biodiversity refers to the variability among plants – including those from terrestrial, marine, and other aquatic sources – and the ecological complexes of which they are part. It includes diversity within species, between species and of ecosystems.

2 Preamble, Nagoya Protocol on Access to Biological Resources and the Fair and Equitable Sharing of Benefits Arising from their Utilization to the Convention on Biological Diversity, Nagoya (Japan), 29 Oct. 2010, not yet in force, available at: http://www.cbd.int/abs/text; A. Toledo & B. Burlingame, 'Biodiversity and Nutrition: A Common Path toward Global Food Security and Sustainable Development' (2006) 19 *Journal of Food Composition and Analysis*, pp. 477–83, at 478.

3 J.P. Gibson & T.R. Gibson, *Plant Biodiversity* (Chelsea House, 2007), at p. viii.

4 Rio de Janeiro (Brazil), 5 June 1992, in force 29 Dec. 1993, available at: http://www.cbd.int/convention/text.

5 Ibid., Preamble.

6 Ibid.

7 CBD, Art. 2 defines biological resources as including 'genetic resources, organisms or parts thereof, populations, or any other biotic component of ecosystems with actual or potential use or value for humanity'.

8 P. Birnie, A. Boyle & C. Redgwell, *International Law and the Environment* (Oxford University Press, 2009), at p. 129.

9 CBD, Art. 1.

10 See, e.g., V. Shiva, *Monocultures of the Mind: Perspectives on Biodiversity and Biotechnology* (Palgrave Macmillan, 1993); D.A. Posey, 'Commodification of the Sacred through Intellectual Property Rights' (2002) 83 *Journal of Ethnopharmacology*, pp. 3–12; N. Hettinger, 'Patenting Life: Biotechnology, Intellectual Property, and Environmental Ethics' (1995) 22 *Boston College Environmental Affairs Law Review*, pp. 267–305; E. Marden, 'The Neem Tree Patent: International Conflict over the Commodification of Life' (1999) 22(2) *Boston College International and Comparative Law Review*, pp. 279–95.

11 Marrakesh (Morocco), 15 Apr. 1994, in force 1 Jan. 1995, available at: http://www.wto.org/english/docs_e/legal_e/27-trips.pdf.

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for all World Trade Organization (WTO) Member States and has fully integrated IPRs into international trade law and WTO competencies. This development pushes the management of plant biodiversity further into the private domain, despite the CBD pulling it onto the public international level. The TRIPS approach has been heavily criticized,[12] including an early public outcry during the so-called 'seed wars' of the 1980s,[13] and has led to resistance by countries rich in plant biodiversity and traditional knowledge.[14] As Helfer summarized, it triggered an explosion of attention on intellectual property law and fostered a growing belief that TRIPS was 'a coerced agreement that should be resisted rather than embraced'.[15]

This fierce opposition is indicative of the important global public interests involved. This article examines how the notion of common concern of humankind in the biodiversity regime impacts on the neighbouring regime of IPRs, as well as the relationship between the two defining treaties, the CBD and TRIPS. The problems faced by states in simultaneously implementing both agreements have been analyzed on numerous occasions.[16] Yet, what has been largely neglected is the question of how the notion of CCH influences the relationship between both treaty regimes and thereby impacts on the legitimacy of intellectual property rights over plants and related processes. This question forms the focus of the present article. In light of the fact that multiple legal regimes are involved in plant biodiversity management and forum shifting occurs for negotiations on IPRs,[17] focusing on commonly agreed concerns arguably becomes all the more important.

In seeking to fill this lacuna, Section 2 sets out the obligations of States Parties to the CBD by discussing the interplay of the CCH concept and the principle of permanent sovereignty. This highlights the legal significance of the notion of CCH. Section 3 contrasts this with state obligations under TRIPS, demonstrating how WTO Member States are effectively obliged to provide for the privatization of plants and related processes. Despite the idea to restrict IPRs based on an overriding public interest being expressly included in TRIPS, WTO Member States are granted little discretion in striking a balance between public and private interests. Section 4 examines how the

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12 See S. Picciotto, 'Private Rights v Public Interests in the TRIPS Agreement' (2003) 97 *Proceedings of the Annual Meeting of the American Society of International Law*, pp. 167–72, at 167; V. Shiva, *Protect or Plunder? Understanding Intellectual Property Rights* (Zed Books, 2001); see also P. Drahos, 'An Alternative Framework for the Global Regulation of Intellectual Property Rights' (2005) 21(4) *Journal Für Entwicklungspolitik*, pp. 44–68, suggesting an alternative system of IPR protection.

13 K. Aoki, *Seed Wars: Controversies and Cases on Plant Genetic Resources and Intellectual Property* (Carolina Academic Press, 2008).

14 See, e.g., S. Biswas, 'India Hits Back in "Bio-piracy" Battle', *BBC News*, Delhi, 7 Dec. 2005, available at: http://news.bbc.co.uk/2/hi/south_asia/4506382.stm.

15 L.R. Helfer, 'Regime Shifting: The TRIPs Agreement and New Dynamics of International Intellectual Property Lawmaking' (2004) 29 *The Yale Journal of International Law*, pp. 1–83, at 24.

16 See, e.g., C. Lawson, 'Patents and Plant Breeder's Rights over Plant Biological Resources for Food and Agriculture' (2004) 32 *Federal Law Review*, pp. 107–40, at 119–25; Aoki, n. 13 above, at pp. 91–2; I. Walden, 'Intellectual Property Rights and Biodiversity', in M. Bowman & C. Redgwell (eds.), *International Law and the Conservation of Biological Diversity* (Kluwer Law International, 1996), pp. 171–90, at 178–9; UNCTAD-ICTSD, *Resource Book on TRIPS and Development* (Cambridge University Press, 2005), at pp. 397–8 and 403–4.

17 Helfer, n. 15 above, at pp. 5–6; M. Wissen, 'Contested Terrains: Politics of Scale, the National State and Struggles for the Control over Nature' (2009) 16 *Review of International Political Economy*, pp. 883–906, at 897.

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CCH concept impacts on the relationship between the CBD and TRIPS, by rendering IPRs incompatible with the positive obligation of states to apply plant biodiversity-friendly policies on behalf of humankind. Lastly, Section 5 makes the case for the CCH of preserving plant biodiversity to justify limitations on private IPRs, with evidence being drawn from TRIPS, the CBD, and general international law.

The article concludes that the qualification of plant biodiversity conservation as a CCH has a significant impact on the CBD–TRIPS relationship. By obliging states to consider the interests of humankind, even when acting upon reciprocal treaty obligations, it renders IPRs over plants and related processes incompatible with the positive obligations of states to protect plant biodiversity on behalf of humanity as a whole. This warrants the constraint of IPRs over plants and related processes.

2. STATE OBLIGATIONS UNDER THE CONVENTION ON BIOLOGICAL DIVERSITY – CONSERVING PLANT BIODIVERSITY ON BEHALF OF HUMANKIND

State obligations under the CBD are shaped by two legal concepts: (i) permanent sovereignty over natural resources, and (ii) the obligation to conserve biodiversity, including plant biodiversity, as a CCH. Through reaffirming the sovereign right of states to exploit their own resources in Articles 3, 15 and the Preamble, the CBD at first glance leaves states free to manage and use plant biological resources within their jurisdiction pursuant to their own environmental policies. Yet, at the same time, the Preamble classifies the conservation of biodiversity as a CCH. This begs the questions of how both principles interact and, especially, what is the legal value of the notion of CCH.

2.1. *The Principle of Permanent Sovereignty over Natural Resources*

Permanent sovereignty over natural resources is a fundamental principle of international law[18] based on the sovereign equality of states. It has found expression in customary law[19] and in Principle 21 of the Stockholm Declaration,[20] which coupled it with the obligation to ensure that activities under a state's jurisdiction or control do not cause harm to the environment of other states or of areas beyond national jurisdiction. With the increase in global environmental concerns over the past decades, sovereign rights have been continuously confined in line with the realization that 'the traditional notion of [. . .] permanent sovereignty, does not reflect the reality of the biosphere as an

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18 P. Sands & J. Peel, *Principles of International Environmental Law* (Cambridge University Press, 2012), at p. 191.

19 International Court of Justice (ICJ), *Legality of the Threat or Use of Nuclear Weapons*, Advisory Opinion of 8 July 1996, *ICJ Reports* (1996), at para. 29, available at: http://www.icj-cij.org/docket/files/95/7495.pdf.

20 Declaration of the United Nations Conference on the Human Environment, Stockholm (Sweden), 16 June 1972, available at: http://www.unep.org/Documents.Multilingual/Default.asp?documentid=97&articleid=1503. See also Principle 2, Rio Declaration on Environment and Development, Rio de Janeiro (Brazil), 3–14 June 1992, available at: http://www.unep.org/Documents.Multilingual/Default.asp?documentid=78&articleid=1163.

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organism which is oblivious to borders created by man'.[21] Similarly, developments in human rights law, the law of the sea, international economic law, and environmental law have led to states being increasingly accountable for their resource management.[22] This necessitates a redefinition of the principle of permanent sovereignty over natural resources to include further state responsibilities.[23]

Despite the inclusion of an exact copy of Principle 21 in its Article 3, the CBD itself reflects the above trend to confine state sovereignty for the good of humanity. It does so by specifically prescribing certain conservation policies in Articles 6 to 10 and by establishing an access and benefit sharing system.[24] Most importantly, though, the CBD qualifies sovereign rights over plant biological resources through the notion of CCH.

2.2. *The Influence of the Common Concern of Humankind Concept*

The CCH concept is included in the CBD's Preamble and could thus be regarded as having limited value in qualifying the substantive right of states' permanent sovereignty. However, Article 31 of the 1969 Vienna Convention on the Law of Treaties (VCLT),[25] reflecting customary law,[26] prescribes that a treaty is to be interpreted in its 'context', including its Preamble, and 'in the light of its object and purpose'. Applying such treaty interpretation methods, the CCH concept is argued to place an important limitation on sovereign rights by shaping both the context of the CBD as well as its object and purpose as set out below. As a result, whilst plant biological resources as such remain subject to permanent sovereignty, their management does not.

Object and Purpose

In defining the object and purpose of the CBD, two aspects are important. Firstly, the 'conservation of biological diversity' is an objective of the Convention, expressly stated in Article 1. Secondly, as highlighted by the International Court of Justice (ICJ) in both the *Asylum Case*[27] and the *Case concerning Rights of Nationals of the United States of America in Morocco*,[28] the Preamble is particularly relevant in establishing a treaty's

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21 W. Scholtz, 'Custodial Sovereignty: Reconciling Sovereignty and Global Environmental Challenges amongst the Vestiges of Colonialism' (2008) 55(3) *Netherlands International Law Review*, pp. 323–41, at 340.

22 N. Schrijver, *Sovereignty over Natural Resources: Balancing Rights and Duties* (Cambridge University Press, 2008), at p. xvii.

23 See, e.g., Birnie et al., n. 8 above, at p. 192.

24 CBD, Arts. 15–19.

25 Vienna Convention on the Law of Treaties, Vienna (Austria), 23 May 1969, in force 27 Jan. 1980, available at: http://untreaty.un.org/ilc/texts/instruments/english/conventions/1_1_1969.pdf.

26 ICJ, *Territorial Dispute (Libyan Arab Jamahiriya* v. *Chad)*, Judgment of 3 Feb. 1994, *ICJ Reports* (1994), at para. 41; ICJ, *Oil Platforms (Islamic Republic of Iran* v. *US),* Preliminary Objections, Judgment of 12 Dec. 1996, *ICJ Reports* (1996), at para. 23; ICJ, *Kasikili/Sedudu Islands (Botswana* v. *Namibia)*, Judgment of 13 Dec. 1999, *ICJ Reports* (1999), at para. 18.

27 ICJ, *Asylum Case (Colombia v. Peru)*, Judgment of 20 Nov. 1950, *ICJ Reports* (1950), at p. 282.

28 ICJ, *Case concerning Rights of Nationals of the United States of America in Morocco (France* v. *United States)*, Judgment of 27 Aug. 1952, *ICJ Reports* (1952), at p. 196.

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object and purpose.[29] By being included in the Preamble with the same wording as used in the treaty's objectives, the notion of CCH forms a crucial part of the object and purpose of the treaty. This, in turn, prevents Article 3, which confirms the sovereignty of states, to be interpreted strictly. As Fitzmaurice noted, an implication potentially read into a treaty may be 'regarded as specifically ruled out, because it would conflict with the express statement of the purposes of the Convention contained in its preamble'.[30] By classifying the object and purpose of conserving biodiversity as a CCH, states subject their resource management to the interests of humankind.

Context

The Preamble is 'an integral part of the treaty'[31] and, according to Article 31(2) VCLT, also shapes a treaty's context. The Preamble of the CBD affirms the importance of biodiversity for our very survival and classifies its conservation as a concern common to all of humankind. Only afterwards does it reaffirm states' sovereignty over their biological resources.[32] Yet the Preamble immediately subjects this to a responsibility on states 'for conserving their biological diversity and for using their biological resources in a sustainable manner', namely two of the treaty's objectives as laid down in Article 1. Thus, the context of the CBD is to stress the importance of conserving biodiversity, inter alia, because, as stated in the Preamble, it ensures 'life sustaining systems of the biosphere'. Such context precludes absolute sovereignty over natural resources, and instead stresses the obligation of states towards humankind, granting further weight to the CCH concept.

The validity of those interpretations cannot be denied merely because they are based on the treaty's Preamble.[33] In fact, in the *Case concerning Rights of Nationals of the United States of America in Morocco*, the ICJ noted – in relation to a principle inserted in the Preamble of the 1906 General Act of the International Conference of Algeciras[34] – that '[...] it seems clear that the principle was intended to be of a binding character and not merely an empty phrase'.[35] Consequently, the CCH concept precludes a strict interpretation of permanent sovereignty, as the former shapes the treaty's context as well as its object and purpose.

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29 A. Aust, *Modern Treaty Law and Practice* (Cambridge University Press, 2007), at p. 426.

30 Sir G. Fitzmaurice, 'The Law and Procedure of the International Court of Justice 1951–4: Treaty Interpretation and Other Treaty Points' (1957) 33 *British Yearbook of International Law*, pp. 203–93, at 228.

31 Ibid., at p. 229.

32 L. Glowka, F. Burhenne-Guilmin & H. Synge, *A Guide to the Convention on Biological Diversity* (International Union for the Conservation of Nature, 1994), at p. 3.

33 Fitzmaurice, n. 30 above, at p. 229.

34 Signed 7 Apr. 1906, reprinted in (1907) 1(1) *The American Journal of International Law* (Supplement: Official Documents), pp. 47–78.

35 N. 28 above, at p. 184.

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2.3. *Obligation to Conserve Plant Biodiversity on Behalf of Humankind*

The presence of the CCH concept in the Preamble to the CBD shifts the position of States Parties towards assuming functions 'corresponding'[36] to the will of humankind. The CCH concept prescribes a management aim (conserving plant biodiversity) to be pursued by states in the interest of humankind. As Kiss highlights, this implies the need to strike a balance between the concern of the international community and state sovereignty:

> In principle, a proclamation that safeguarding the global environment or one of its components is a matter of common concern of humanity should mean that such components, due to their global importance and the consequences for all of their potential degradation or destruction, cannot be considered as solely under the exclusive and discretionary authority of states. Thus, states should be considered trustees charged with the protection and conservation of environmental components falling within their territory and jurisdiction. The situation is analogous to the law respecting fundamental rights and freedoms of individuals, which obliges states to ensure that all the persons within the limits of their jurisdiction enjoy such rights and liberties.[37]

This trusteeship dimension underlines one of the central differences between the CBD and TRIPS. The CBD, in common with most environmental or human rights agreements, has no reciprocity component. In contrast, TRIPS is based on reciprocal favourite treatment of WTO Member States, regardless of consequences for societies or humanity at large.[38] A breach of TRIPS can be met with retaliation, whereas a breach to conserve plant biodiversity by one state can hardly be met with the same action by another state. However, classifying plant biodiversity conservation as a CCH requires states to consider their obligations towards humankind when acting upon reciprocal treaty obligations.

Adding an external dimension, Scholtz suggests the fusion of permanent sovereignty and CCH establishes 'custodial sovereignty', implying that 'a state is the custodian of its global environmental resources and that other states have an expectation that the relevant state will protect these resources for the whole of humankind'.[39] This element of obligation is reflected in the fact that, in its current application, the CCH concept focuses on resources that are in need of restorative action. Thus, its focus lies on the 'equitable sharing of the burdens of cooperation and problem solving'.[40]

The precise parameters of the notion of CCH are yet to crystallize though the custodial, or trust, analogy reappears in the literature. Sand highlights that reaffirming

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36 A. Kiss & D. Shelton, *International Environmental Law* (Transactional Publishers, 2000), at p. 26.

37 A. Kiss, 'Economic Globalization and the Common Concern of Humanity', in A. Kiss, D. Shelton & K. Ishibashi (eds.), *Economic Globalization and Compliance with International Environmental Agreements* (Kluwer Law International, 2003), pp. 3–11, at 8.

38 Ibid., at p. 9.

39 Scholtz, n. 21 above, at pp. 336–7.

40 J. Brunnée, 'Common Areas, Common Heritage, Common Concern', in D. Bodansky, J. Brunnée & E. Hey (eds.), *The Oxford Handbook of International Environmental Law* (Oxford University Press, 2007), pp. 550–73, at 566. See also United Nations Environment Programme (UNEP), 'II Meeting of the Group of Legal Experts to Examine the Concept of the "Common Concern of Mankind" in Relation to Global Environmental Issues', Geneva (Switzerland), 20–22 Mar. 1991, para. 6, available at: http://www.juridicas.unam.mx/publica/librev/rev/iidh/cont/13/doc/doc29.pdf.

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permanent sovereignty over natural resources is not analogous to ownership.[41] Instead, in light of the CCH concept, he notes:

> the role of the nation state becomes more akin to a kind of *public trusteeship* [...]. The message is simple: The sovereign rights of nation states over certain environmental resources are not proprietary, but fiduciary.[42]

Sand suggests that where such a trustee relationship has been created through direct consent to a treaty regime, as is the case for plant biodiversity, the trusteeship obligations are compatible with state sovereignty, provided sovereignty is exercised in accordance with the interests of the beneficiaries and the terms of the trust.[43] In the present case, such interest is the conservation of plant biodiversity.

A similar treaty-based application of CCH can be found in the United Nations Framework Convention on Climate Change (UNFCCC).[44] More subject areas can be expected to follow. Indeed, Brown Weiss suggests freshwater resources should be recognized as a CCH,[45] whilst the Earth Charter expanded the scope by recognizing 'the global environment with its finite resources is a common concern of all peoples'.[46] It remains to be seen whether future applications of the concept could lead to, as Sand describes, a form of public trusteeship based on customary law.[47] Such a controversial option could extend the obligation to conserve plant biodiversity to all states.

2.4. *Potential Future Development of the Common Concern of Humankind Concept*

Repeated usage of the CCH concept in treaty regimes could clarify its legal ramifications and contribute to the development of a customary framework.[48] Moreover, its inherent focus on universal challenges makes the CCH concept prone to develop into an obligation *erga omnes*. Obligations of a state towards the international community as a whole, namely obligations *erga omnes,*[49] are especially concerned with environmental matters.[50] In fact, in his much quoted dissenting opinion in the ICJ Advisory Opinion on

41 P.H. Sand, 'Sovereignty Bounded: Public Trusteeship for Common Pool Resources?' (2004) 4(1) *Global Environmental Politics*, pp. 47–72.

42 Ibid., at p. 48.

43 Ibid., at p. 56.

44 Rio de Janeiro (Brazil), 4 June 1992, in force 21 Mar. 1994, Preamble, available at: http://unfccc.int.

45 E. Brown Weiss, 'The Coming Water Crisis: A Common Concern of Humankind' (2012) 1(1) *Transnational Environmental Law*, pp. 153–68.

46 Earth Charter (2000), Preamble, available at: http://www.earthcharterinaction.org/content/pages/Read-the-Charter.html. The Earth Charter is a voluntary declaration of fundamental ethical principles for building a just, sustainable and peaceful global society in the 21st century.

47 Sand, n. 41 above, at p. 56.

48 Brunnée, n. 40 above, at pp. 565–6; A.E. Boyle, 'International Law and the Protection of the Global Atmosphere: Concepts, Categories and Principles', in R. Churchill & D. Freestone (eds.), *International Law and Global Climate Change* (Graham and Trotman, 1991), pp. 7–21, at 13.

49 See ICJ, *Barcelona Traction, Light and Power Company (Belgium* v. *Spain)*, Judgment of 5 Feb. 1970, *ICJ Reports* (1970), at para. 33.

50 R.-J. Dupuy, 'Humanity and the Environment' (1991) 2 *Colorado Journal of International Law & Policy*, pp. 201–4, at 202.

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the *Legality of the Threat or Use of Nuclear Weapons*, Judge Weeramantry asserted that 'the environment, the common habitat of all Member States of the United Nations, cannot be damaged by any one or more members to the detriment of all others'.[51] The International Law Commission, too, has decided to focus on *erga omnes* obligations in the environmental context.[52] Anticipating further developments, Brunnée highlights that the notion of CCH 'identifies certain types of environmental degradation as of concern to all, which would appear to imply that obligations are owed *erga omnes*'.[53]

In the biodiversity context, recognizing an *erga omnes* and customary status of the obligation to conserve plant biodiversity on behalf of humankind could further affirm the absence of reciprocity in this obligation and increase its importance in competing with other treaty obligations, such as protecting private IPRs. Such developments are not unthinkable given the status of the CBD as one of the most widely accepted international agreements.

In its present usage, however, the CCH concept is a treaty obligation binding all States Parties to conserve biodiversity on behalf of humankind. Importantly, this does not affect ownership of plant biological resources *per se*. Instead, it establishes a long-term goal for national resource management policies, namely plant biodiversity conservation. States are the primary actors charged with implementing the relevant management policies in the interest of mankind. Similarly, IPRs do not establish absolute ownership over plant varieties either, but may be understood as a way to manage plant biodiversity.

3. STATE OBLIGATIONS UNDER TRIPS – PROTECTING INTELLECTUAL PROPERTY RIGHTS

The CBD itself recognizes the need for 'adequate and effective protection of intellectual property rights'[54] whilst requiring states 'to ensure that such rights are supportive of and do not run counter to [the Convention's] objectives'.[55] Therein lies the challenge. States are charged with adequately balancing private IPRs with the public interest of conserving plant biodiversity. Such a balancing act requires a degree of discretion for states, which, whilst being in line with the objectives of IPRs, TRIPS has yet to apply.

51 ICJ, *Legality of the Threat or Use of Nuclear Weapons*, Advisory Opinion of 8 July 1996, Dissenting Opinion of Judge Weeramantry, *ICJ Reports* (1996), at p. 502, available at: http://www.icj-cij.org/docket/files/95/7521.pdf.

52 *Yearbook of the International Law Commission: Report of the Commission to the General Assembly on the Work of its Forty-Seventh Session, Vol. 2, Part 2* (United Nations, 1995), at p. 110.

53 J. Brunnée, 'International Environmental Law: Rising to the Challenge of Common Concern?' (2006) 100 *Proceedings of the Annual Meeting of the American Society of International Law*, pp. 307–10, at 307. See also Scholtz, n. 21 above, at p. 335.

54 CBD, Art. 16(2).

55 Ibid., Art. 16(5).

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3.1. *The Relevant Intellectual Property Rights*

Two types of IPR are relevant for this discussion: patents and plant variety rights. Neither of these confers absolute ownership. Instead, both establish a temporary right[56] to exclude unauthorized persons from, for example, 'making, using, offering for sale [or] selling' the protected variety.[57] Thus, IPRs can be seen as a form of plant biodiversity management, construed around rights similar in part to those accompanying ownership.

Patents create an intangible right in the idea involved in an invention. They can refer to specific plant varieties or to plant phenotypic or genotypic characteristics[58] and include, for instance, discovered information within genetic sequences or the *process* to isolate a particular trait of a plant.[59]

Plant variety rights, in contrast, are rights in tangible, organic material forming a new plant variety, and may be granted to the person who 'bred, or discovered and developed, a variety'.[60] The 1961 International Convention for the Protection of New Varieties of Plants (UPOV Convention)[61] established the International Union for the Protection of New Varieties of Plants (UPOV), which currently counts 70 members.[62] Its 1991 amendment includes a breeders' exemption, making a protected variety freely available for further breeding and research if this results in a genuinely new variety, as opposed to a variety essentially derived from the protected one.[63] Despite a growing membership of the UPOV, TRIPS has been at the centre of attention in the debate on IPRs over plants and related processes, not least because its ratification is compulsory for seeking membership of the WTO.

3.2. *Limited Discretion for WTO Member States*

TRIPS requires states to make patents available for 'inventions, whether products or processes, in all fields of technology, provided that they are new, involve an inventive step and are capable of industrial application'.[64] The agreement does provide for certain exceptions which, on the face of them, might seem to grant states sufficient power to exempt biological resources. However, there are several significant limitations.

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56 A minimum protection period of 20 years is usually required. See TRIPS, Art. 33. See also Art.19(2) of the 1991 Act of the International Convention for the Protection of New Varieties of Plants, Geneva (Switzerland), 19 Mar. 1991, in force 24 Apr. 1998 (Act of UPOV 1991), available at: http://www.upov.int/export/sites/upov/upovlex/en/conventions/1991/pdf/act1991.pdf.

57 TRIPS, Art. 28(1). See also Act of UPOV 1991, ibid., Art. 14.

58 C.M. Correa, 'Sovereign and Property Rights over Plant Genetic Resources' (1995) 12(4) *Agriculture and Human Values*, pp. 58–79, at 66.

59 G. Rose, 'International Regimes for the Conservation and Control of Plant Biological Resources', in M. Bowman & C. Redgwell, n. 16 above, pp. 145–70, at 166.

60 Act of UPOV 1991, n. 56 above, Art. 1(iv).

61 Paris (France), 2 Dec. 1961, in force 10 Aug. 1968, available at: http://www.upov.int/upovlex/en/upov_convention.html.

62 See website at: http://www.upov.int.

63 Act of UPOV 1991, n. 56 above, Art.15(1). For further analysis see UNCTAD-ICTSD, n. 16 above, at pp. 401–2.

64 TRIPS, Art. 27(1).

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The first exception is contained in Article 27(2) TRIPS, which declares that:

> Members may exclude from patentability inventions, the prevention within their territory of the commercial exploitation of which is necessary to protect *ordre public* or morality, including to protect human, animal or plant life or health or to avoid serious prejudice to the environment.

This provision applies only when the *commercial exploitation* of an invention is to be prevented. Thus, the aim is not to simplify widespread public access to a commercialized invention, but to prevent commercialization altogether based on grounds of *ordre public* or morality.[65] The provision expressly recognizes the importance of protecting the environment and plant life or health. However, the terms '*ordre public*' and 'morality' are vague and undefined.[66] Moreover, Article 27(2) only concerns the exclusion of particular inventions rather than categories, which are addressed in Article 27(3).[67] This is likely to require a case-by-case assessment if states apply the provision to limit patentability. Overall, these exceptions are unlikely to allow states to derogate from the spirit of the treaty, which gives full IPR protection over living organisms.[68]

More importantly, though, Article 27(3)(b) TRIPS provides for an exception from patentability for 'plants and animals other than micro-organisms, and essentially biological processes for the production of plants or animals other than non-biological and microbiological processes'. In other words, micro-organisms, as well as non-biological and microbiological processes, which form the 'cornerstone of the biotechnology industry',[69] should be protected by patents. Moreover, those matters covered by the exception – namely plants, animals, and essentially biological processes for the production of plants or animals – are not fully exempted from patent law. The provision merely lists them as exemptions that states '*may*' apply, thereby principally allowing the patentability of life forms, a highly morally contentious issue. In 1999, Kenya argued on behalf of the African Group that Article 27(3) TRIPS 'contravene[d] the basic tenets [of] patent laws', namely that 'substances and processes that exist in nature are a discovery and not an invention and thus are not patentable'.[70] Instead, it called for the States Parties to recognize that living organisms and their parts cannot be patented.[71]

Lastly, Article 27(3)(b) also explicitly regulates IPRs over plant varieties. TRIPS favours patents, yet provides for 'the protection of plant varieties either by patents or by an effective *sui generis* system or by any combination thereof'.[72] Such *sui generis*

65 UNCTAD-ICTSD, n. 16 above, at pp. 377–8.

66 C.M. Correa, *Intellectual Property Rights, the WTO, and Developing Countries: The TRIPS Agreement and Policy Options* (Zed Books, 2000), at p. 62.

67 UNCTAD-ICTSD, n. 16 above, at p. 377.

68 E. Louka, *Biodiversity & Human Rights: The International Rules for the Protection of Biodiversity* (Transnational Publishers, 2002), at p. 142.

69 A. Coban, 'Caught between State-Sovereign Rights and Property Rights: Regulating Biodiversity' (2004) 11(4) *Review of International Political Economy*, pp. 736–62, at 746.

70 WTO Council for Trade-Related Aspects of Intellectual Property Rights, *Review of the Provisions of Article 27.3(b) – Communication from Kenya on behalf of the African Group*, IP/C/W/163, 8 Nov. 1999, para. 10, available at: http://docsonline.wto.org/DDFDocuments/t/IP/C/W163.DOC.

71 Ibid., para. 11.

72 TRIPS, Art. 27(3)(b).

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system is likely to include plant variety rights under the 1991 amendment of the UPOV Convention.[73] Consequently, TRIPS offers a choice of means, yet unambiguously requires its parties to protect plant varieties. TRIPS thus forces the recognition of IPRs in an area that was previously considered to be in the public domain. This shift is highly controversial, as is illustrated by the fact that the drafters only agreed to the provision on the condition of it being expressly subject to an early review. The review scheduled for 1999 resulted in a heated debate that is still ongoing. In fact, the 2001 Doha Declaration explicitly includes discussion on the 'relationship between the TRIPS Agreement and the Convention on Biological Diversity' in the review.[74] A decision on the review of Article 27(3)(b) TRIPS could hold the key to achieve greater flexibility for States Parties and to give effect to their obligations towards humankind.

3.3. *Weighing Public Interest: Theory* vs. *Practice*

Interestingly, it is the very objective of TRIPS that IPRs:

> should contribute to the promotion of technological innovation and to the transfer and dissemination of technology [. . .] *in a manner conducive to social and economic welfare*, and to a balance of rights and obligations.[75]

Thus, taking into account public interests and concerns is anything but alien to the TRIPS regime, at least in theory. In fact, enhancing public social welfare is the ultimate aim behind an instrumentalist philosophy of IPRs.[76] Nonetheless, in practice, WTO Member States have a very limited ability to balance public and private interests.

A central reason is that TRIPS lays down minimum standards of IPR protection that states are obliged to grant,[77] whilst narrowly defining the few exceptions that states *may* exercise in the public interest. This restricts the freedom of states to interpret TRIPS and distorts the reality that IPRs create an artificial scarcity through temporary monopoly rights granted by the state as an incentive to fuel innovations that are in the interest of the public.[78] The pronounced focus on private rights creates an imbalance in their favour and pushes states into being executors of private property protection laws with little leeway to take public interests into account.

The minimum protection standard has also legitimized the WTO dispute settlement bodies, as supranational entities, to make decisions over the balance struck by states between public and private interests. This disregards the legitimacy of such balance achieved through democratic decision-making procedures within states. Moreover, as Picciotto highlights, whilst some WTO rules recognize the need for flexibility in national

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73 See Correa, n. 58 above, at p. 70; Wissen, n. 17 above, at p. 895.

74 WTO Ministerial Declaration, Doha (Qatar), adopted 14 Nov. 2001, WT/MIN(01)/DEC/1, para. 19, available at: http://www.wto.org/english/thewto_e/minist_e/min01_e/mindecl_e.pdf.

75 TRIPS, Art. 7 (emphasis added).

76 L.R. Helfer, *Intellectual Property Rights in Plant Varieties: International Legal Regimes and Policy Options for National Governments* (Food and Agriculture Organization of the United Nations, 2004), at p. 2.

77 TRIPS, Art. 1(1).

78 See Picciotto, n. 12 above, at p. 171.

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judgment, TRIPS does not. The only standard of review against which the dispute settlement panels and the WTO Appellate Body assess national intellectual property measures is the 'least trade restrictive' standard of the WTO regime itself:[79]

> This is an important reason why trade considerations tend to dominate their decisions, so that they act virtually as a court of appeal in adjudicating public interest limits on national IPR regimes.[80]

Certainly, the dispute settlement panels will not accept conflicting state obligations under TRIPS and the CBD as a justification for non-compliance.[81]

An additional hurdle for public concerns to justify restrictions to IPRs is Article 34 TRIPS, which reverses the burden of proof in disputes over patented processes, requiring the defendant to prove that no existing patents have been infringed. This demonstrates the bargaining power of the TRIPS regime to derive from the WTO enforcement mechanism. The prospect of dispute settlement proceedings and potential trade sanctions can, in practice, influence the flexibility of states to interpret TRIPS provisions.

To improve the balance between public and private interests, Helfer proposes adopting the principle of the 'margin of appreciation' in WTO practice and jurisprudence.[82] This would 'grant states the leeway to experiment with different models of protection until an international consensus emerges'.[83] This would, indeed, be in line with the objectives of intellectual property law. If applied broadly, such standard could support states in meeting their obligation under the CBD, namely to ensure that IPRs do not run counter to the objective of conserving biodiversity on behalf of humankind.

At present, however, TRIPS confers little discretion upon its States Parties. Consequently, whilst the notion of public interest is, in principle and to varying extents, included in both treaties, the obligations of States Parties differ greatly under both regimes. Whilst TRIPS, in its current form, ultimately provides for the privatization of plant biodiversity with limited discretion for exceptions, the CBD recognizes the notion of CCH, which charges states with the protection of plant biodiversity on behalf of humankind. This obliges them to test every option to manage plant biodiversity against the aim of protecting it.

4. THE INFLUENCE OF COMMON CONCERN OF HUMANKIND ON THE CBD–TRIPS RELATIONSHIP

If granting private IPRs over plants and related processes was compatible with the overall aim to conserve plant biodiversity, the differing states obligations under both treaty regimes arguably would be less of a cause for concern. This requires a brief look at the extensive debate on this issue.

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[79] Ibid., at pp. 170–1.

[80] Ibid., at p. 171.

[81] Helfer, n. 15 above, at p. 76.

[82] L.R. Helfer, 'Adjudicating Copyright Claims under the TRIPs Agreement: The Case for a European Human Rights Analogy' (1998) 39(2) *Harvard International Law Journal*, pp. 357–441.

[83] Ibid., at p. 425.

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4.1. *Can Intellectual Property Rights Further the Protection of Plant Biodiversity?*

Scholars who argue affirmatively view TRIPS as promoting the technical innovation necessary to maintain plant biodiversity.[84] Similarly, they assert that IPRs create an economic incentive to preserve plant biodiversity and to compensate the host state and local custodians for use of their plant biological resources.[85] This is because, once faced with the prospect of economic gain, state authorities, biotechnology corporations and others have a direct interest in the preservation of what could be the basis for future IPRs.

This is counter-argued by scholars who highlight the possibility of IPRs being detrimental to trade in that they can allow IPR holders to temporarily stop the transfer of technology.[86] The reason is that IPRs are designed to 'create an incentive to generate new information, the distribution of which is in the public interest, [...] by restricting access to the information created'.[87] Based on this paradox, IPRs are sometimes said to be anti-innovative.[88] In the plant biodiversity context, this can mean that patenting specific traits in plant biological resources 'may limit further research and breeding, including in crops essential for food security'.[89] Similarly, a joint study by the United Nations Conference on Trade and Development (UNCTAD) and the International Centre for Trade and Sustainable Development (ICTSD) highlights the fear that IPRs may bar farmers from reusing saved seeds, which not only prevents them from producing further plant varieties, but also endangers their economic survival.[90]

IPRs are often argued to be detrimental to plant biodiversity because of their exclusive focus on plant biological resources of high commercial value. This is argued to have led to a decline in overall plant biodiversity.[91] The phenomenon has been particularly pronounced in the agricultural sector, where IPRs are said to 'heavily favour industrial monoculture agriculture based on proprietary seeds that may contain patented genetic traits'.[92] This follows from the monetary incentive of IPRs, namely to

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84 N.P. De Carvalho, *The TRIPS Regime of Patent Rights* (Kluwer Law International, 2010), at p. 332.

85 E.g., R.L. Margulies, 'Protecting Biodiversity: Recognizing International Intellectual Property Rights in Plant Biological Resources' (1992–93) 14 *Michigan Journal of International Law*, pp. 322–56, at 345–6; M.A. Gollin, 'Using Intellectual Property to Improve Environmental Protection' (1991) 4 *Harvard Journal of Law and Technology*, pp. 193–235, at 216–7.

86 P. Drahos, *The Injustice of Intellectual Property* (World-Information Organization, 2003), available at: http://world-information.org/wio/readme/992006691/1078414261.

87 W. van Caenegem, '"Philosophy of Intellectual Property" by Peter Drahos, Applied Legal Philosophy Series, Dartmouth, 1996, 257 Pages' (1996) 8 *Bond Law Review*, pp. 217–23, at 219.

88 See, e.g., S. Macdonald, 'Exploring the Hidden Costs of Patents', in P. Drahos & R. Mayne (eds.), *Global Intellectual Property Rights: Knowledge, Access and Development* (Palgrave Macmillan, 2002), pp. 13–39, at 34.

89 UNCTAD-ICTSD, n. 16 above, at p. 410. See also Correa, n. 58 above, at p. 72.

90 UNCTAD-ICTSD, ibid., at p. 410.

91 M. Ritchie, K. Dawkins & M. Vallianatos, 'Intellectual Property Rights and Biodiversity: The Industrialization of Natural Resources and Traditional Knowledge' (1995–96) 11 *St John's Journal of Legal Commentary*, pp. 431–53, at 446.

92 K. Aoki & K. Luvai, 'Reclaiming "Common Heritage" Treatment in the International Plant Genetic Resources Regime Complex' (2007) *Michigan State Law Review*, pp. 35–70, at 36. See also Ritchie, Dawkins & Vallianatos, ibid., at p. 446.

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generate financial profits by temporarily holding a monopoly over the commercialization of a protected invention. As Correa argues, 'it is in the logic of monopoly to charge as high a price as the market can bear, with the purpose of maximizing profits'.[93] This focus on financial profits from monocultures is further exacerbated by the majority of private rights over plants and related processes being held by a few corporations in the seed industry. De Janvry, adviser for the World Development Report 2000–01, points out that in 1999, 67 per cent of the patents on a certain type of herbicide tolerant crop were held by the largest six corporations in the industry.[94] Of those patents, 75 per cent were obtained through acquisitions of subsidiary biotechnology and seed companies.[95] The Commission on Intellectual Property Rights highlights that such speed of concentration in the sector raises 'serious competition issues' resulting in 'considerable dangers to food security',[96] causing some to define the globalization of IPRs as 'part of a familiar colonial phenomenon'.[97] Lastly, Shiva argues that IPRs can also lead to increased use of herbicides required for genetically modified plant biological resources, which can further harm plant biodiversity.[98]

What can be concluded from this ongoing debate is that there is, at the very least, a potential for IPRs to have detrimental effects on the preservation of plant biodiversity. In fact, the CBD itself recognizes this potentially harmful nature of IPRs by expressly requiring states to ensure that IPRs do not 'run counter' to the objectives of the Convention.[99]

4.2. *Inconsistent State Obligations under Both Treaty Regimes*

The discussion above has shown that privatization through IPRs has, at the very least, potentially detrimental effects on plant biodiversity. This is where the CCH concept becomes relevant. Instead of states balancing the risks and benefits of IPRs over their own resources, the notion of CCH obliges them to act on behalf of humankind. The fundamental concern that has been agreed on is the aim of protecting global biodiversity. This consideration tips the balance in favour of environmental protection as a public interest, as opposed to private IPRs.

What is more, the above-mentioned concerns about IPRs cannot be dismissed merely because of remaining uncertainties over the effects of IPRs on plant biodiversity levels. As States Parties to the CBD have agreed:

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93 Correa, n. 66 above, at p. 36.

94 AstraZeneca, Aventis, Dow, DuPont, Monsanto, and Novartis. See De Janvry et al., *Technological Change in Agriculture and Poverty Reduction: Concept Paper for the WDR on Poverty and Development 2000/2001* (World Bank, 2000), at p. 6, available at: http://siteresources.worldbank.org/INTPOVERTY/Resources/WDR/Background/dejanvry.pdf.

95 Ibid.

96 Commission on Intellectual Property Rights, 'Integrating Intellectual Property Rights and Development Policy', Sept. 2002, at p. 65, available at: http://www.iprcommission.org/graphic/documents/final_report.htm.

97 Drahos, n. 86 above.

98 V. Shiva, 'Monocultures, Monopolies, Myths and the Masculinization of Agriculture' (1999) 42(2) *Development*, pp. 35–8, at 36.

99 CBD, Art. 16(5).

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> Where there is a threat of significant reduction or loss of biological diversity, lack of full scientific certainty should not be used as a reason for postponing measures to avoid or minimize such a threat.[100]

This essence of the precautionary principle[101] requires States Parties to refrain from potentially harmful measures to manage plant biodiversity even in the absence of full certainty over the effects of such measures.

Going a step further, the Court of Justice of the European Union (CJEU) has extended the application of the precautionary principle within EU law to cases of scientifically unquantifiable risk.[102] In the *Waddenzee* case, the CJEU stated that reliance on the precautionary principle is warranted 'if it cannot be excluded on the basis of objective information' that the proposed activity will have 'significant effects' on the environmental concern at hand.[103] Applying such an interpretation to the present scenario in which IPRs have, at the very least potentially, significant adverse effects on plant biodiversity, it can be argued that states are required to refrain from such management options. Unless objective guarantees exist which prove that IPRs will not adversely affect plant biodiversity, states must operate on the assumption that they may, and therefore implement precautionary action. This is especially relevant given the long-term and disastrous implications of destructive measures to manage plant biodiversity. Similar restrictions on trade, justified by public concerns over risks to human health or the environment, have been accepted for trade in hazardous wastes, endangered species, and ozone depleting substances.[104]

To sum up, the CBD unequivocally requires states to preserve plant biodiversity, and to scrutinize any management option against this aim. In contrast, TRIPS effectively requires the protection of IPRs over plants and related processes, without providing states with adequate discretion to balance private interests with concerns common to humanity. Given that there is, at the very least, a potential for IPRs to significantly jeopardize plant biodiversity levels, the precautionary principle stipulates that we must 'avoid or minimize such a threat'.[105] This can be considered sufficient to render IPRs incompatible with the positive obligation of states to apply plant biodiversity-friendly policies.

In revisiting the trust analogy, it can be highlighted that the economic aim of a trust is to balance current use with long-term conservation. In line with the principle of sustainable development,[106] this requires safeguards to ensure the participation of the beneficiaries, here humankind.[107] In the current scenario, however, not only do

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100 CBD, Preamble.

101 Rio Declaration, n. 20 above, Principle 15.

102 E.R. Stokes, 'Liberalising the Threshold of Precaution: Cockle Fishing, the Habitats Directive, and Evidence of a New Understanding of "Scientific Uncertainty"' (2005) 7(3) *Environmental Law Review*, pp. 206–14, at 213.

103 ECJ, Case C-127/02 *Landelijke Vereniging tot Behoud van de Waddenzee and Nederlandse Vereniging tot Bescherming van Vogels* v. *Staatssecretaris van Landbouw, Natuurbeheer en Visserij* (*Waddenzee* case) [2004] ECR I-7405, at para. 44.

104 Kiss, n. 37 above, at p. 10.

105 CBD, Preamble.

106 See, e.g., United Nations General Assembly, 'The Future We Want', A/66/288, 11 Sept. 2012, para. 13, available at: http://www.un.org/ga/search/view_doc.asp?symbol=A/RES/66/288&Lang=E.

107 Sand, n. 41 above, at p. 56.

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the beneficiaries have limited powers to enforce the trust, but it can be argued that states, in passing on control over plant biological resources to private entities without taking into account the effects on the conservation of the corpus of the trust, would effectively discharge themselves of their task, entrusted to them by the international community.

4.3. *Potentially Harmonizing Provision – Article 30 TRIPS*

The asserted dichotomy in the obligations of states may be mitigated to some extent by an effective application of Article 30 TRIPS. Despite parties being obliged to protect IPRs, and Article 28 TRIPS listing a whole range of rights to be granted to patent holders, states have some discretion to exempt certain rights from being enjoyed by the patentee. Article 30 grants states freedom in establishing such exemptions, and merely lists substantive conditions to be fulfilled for their admissibility. Exceptions must be 'limited', and neither 'unreasonably conflict with a normal exploitation of the patent', nor 'unreasonably prejudice the legitimate interests of the patent owner, taking account of the legitimate interests of third parties'.[108]

A relevant example of such an exception is the free use of patented inventions for research and experimental purposes, 'one of the most widely adopted Article 30-type exceptions in national patent laws'.[109] In the *Canada – Pharmaceutical Patents* case, the WTO Panel states that both scientists and society have a legitimate interest in having access to patented inventions during the term of the patent, since disclosure of the invention to the public is an obligation under patent law.[110] Indeed, several countries have embedded such exceptions in their domestic laws[111] and it could limit the arguably harmful effects of patents on plant biodiversity which flow from a prohibition of further research on patented crops, as stated above. Moreover, it creates the possibility to operationalize Article 16(5) CBD, which requires states to coordinate both treaty regimes to ensure that IPRs 'are supportive of and do not run counter' to the objectives of the CBD. These objectives, of course, include the conservation of biodiversity, which the Preamble classifies as a CCH. Nonetheless, whilst Article 30 TRIPS provides welcome opportunities, parties are not obliged to apply any exceptions. Moreover, the listed conditions are cumulative and failure to comply with any of them 'results in the Article 30 exception being disallowed'.[112]

Additionally, Article 31 TRIPS provides for other uses of patented subject matter without authorization from the patent holder, through compulsory licensing or government use. However, such exceptions are temporary[113] and require the patent

108 TRIPS, Art. 30.

109 *Canada – Patent Protection of Pharmaceutical Products*, Report of the WTO Panel of 17 Mar. 2000, WTO Doc. WT/DS114/R, at para. 7.69.

110 Ibid.; TRIPS, Art. 29.

111 UNCTAD-ICTSD, n. 16 above, at pp. 443–4.

112 *Canada – Pharmaceutical Patents* case, n. 109 above, at para. 7.20.

113 TRIPS, Art. 31(c), (g).

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holder to be financially compensated.[114] This may mean that some states 'may have the will and the means, but not the funds' to act upon Article 31 TRIPS.[115]

As a result, states are still left to balance the interests of TRIPS with a common concern of humankind, bearing in mind the possibility of facing a WTO dispute settlement procedure in case of disagreement over an allowed exception to patentability or restrictions of the rights of patent holders. Both treaty regimes presuppose conflicting state obligations. Even the potentially harmonizing influence of Articles 30 and 31 TRIPS does not render IPRs fully supportive of conserving plant biodiversity. The accusations of IPRs potentially furthering monocultures[116] and resulting in increased usage of herbicides persist.[117] For IPRs to be a successful management option, states would need to ensure that the TRIPS regime fully supports the conservation of plant biodiversity. The resulting key question is whether biodiversity conservation being a CCH justifies restrictions on IPRs over plants and related processes, as a way to protect plant biodiversity.

5. THE PREVAILING OBLIGATION TO CONSERVE PLANT BIODIVERSITY ON BEHALF OF HUMANKIND

This article has demonstrated that classifying the conservation of biodiversity, including plant biodiversity, as a CCH results in states assuming fiduciary functions to conserve plant biodiversity on behalf of humanity as a whole. Given the potential risks of IPRs coupled with the obligation to apply a precautionary approach, this responsibility is incompatible with existing, insufficiently flexible, obligations under TRIPS. This article argues for the CCH to justify restrictions to private IPRs, based on both the CBD and TRIPS, as well as developments in general international law.

5.1. *Public Interest Dimension in TRIPS*

Despite the currently limited discretion of WTO Member States, the idea of excluding or restricting IPRs for the public good is anything but alien to the TRIPS regime. Those exceptions listed in Articles 27, 30 and 31 TRIPS are based on public interest, with plants, animals and related processes expressly mentioned as a contentious subject matter.[118] The Preamble, in fact, stresses the necessary balance between private rights and 'recognizing the underlying public policy objectives of national systems for the protection of intellectual property'. This shows, as the UNCTAD-ICTSD Study on TRIPS and development felicitously summarizes, that 'the objective of IPR laws is not to provide the maximum possible return to right holders, but to strike the proper balance of private and public interests'.[119] What is more, the very objectives of TRIPS expressly subject IPRs to public interests. Article 7 states:

114 TRIPS, Art. 31(h).
115 Ritchie, Dawkins & Vallianatos, n. 91 above, at p. 441.
116 Ibid., at p. 446; Aoki & Luvai, n. 92 above.
117 Shiva, n. 98 above.
118 TRIPS, Art. 27(3)(b).
119 UNCTAD-ICTSD, n. 16 above, at p. 11.

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> The protection and enforcement of intellectual property rights should contribute to the promotion of technological innovation and to the transfer and dissemination of technology, to the mutual advantage of producers and users of technological knowledge and in a manner conducive to social and economic welfare, and to a balance of rights and obligations.[120]

The reference to 'mutual advantages for producers and users' underlines that exceptions and limitations within the agreement should be given equal importance to the rights provided in TRIPS.[121] To this aim, both Articles 7 and 8 play an important role in the interpretation of the TRIPS provisions and may help to delineate the obligations of patent holders,[122] as well as to strike a balance between TRIPS and the CBD.[123] As Yu states, they 'can be used to strengthen other operative provisions that promote social and economic welfare or that help preserve the balance of the intellectual property system', including the limitations under Articles 27 and 31 TRIPS.[124]

Thus, the acknowledgement that IPRs can and, to some extent, need to be restricted for the public good is inherent in the TRIPS regime.[125] Similarly, within the biodiversity regime, the CCH concept limits permanent sovereignty in the interest of the global public. By extension, applying the notion of CCH to curtail IPRs for the benefit of humankind is arguably in accordance with the very objectives of TRIPS.

5.2. *Paramountcy of Protecting Plant Biodiversity*

The second argument can be found in the CBD itself. It explicitly addresses the relationship with intellectual property rights, requiring states to ensure that IPRs 'are supportive of and do not run counter' to the objectives of the CBD.[126] These objectives, of course, include the common concern for the 'conservation of biological diversity'.[127] It thereby subjects the usage of IPRs to states acting for the good of humankind as a whole.

Additionally, such obligation is strengthened in Article 22 CBD, even in cases where it might contradict provisions of other international agreements:

> The provisions of this Convention shall not affect the rights and obligations of any Contracting Party deriving from any existing international agreement, *except where the*

120 TRIPS, Art. 7.

121 P.K. Yu, 'The Objectives and Principles of the TRIPS Agreement', in C.M. Correa (ed.), *Research Handbook on the Protection of Intellectual Property under WTO Rules: Intellectual Property in the WTO, Volume I* (Edward Elgar Publishing, 2010), pp. 146–91, at 160.

122 Ibid., at p. 183.

123 Ibid., at p. 186; Helfer, n. 76 above, at p. 85.

124 Yu, n. 121 above, at pp. 181–2.

125 See also the extensive debate on restricting patents over pharmaceutical products for the public good, e.g.: M. Kennedy, 'When Will the Protocol Amending the TRIPS Agreement Enter into Force?' (2010) 13(2) *Journal of International Economic Law*, pp. 459–73; J.E. Gathii, 'How Necessity may Preclude State Responsibility for Compulsory Licensing under the TRIPS Agreement' (2006) 31 *North Carolina Journal of International Law and Commercial Regulation*, pp. 943–70; S.K. Verma, 'The Doha Declaration and Access to Medicines by Countries Without Manufacturing Capacity', in C.M. Correa, n. 121 above, pp. 623–72.

126 CBD, Art. 16(5).

127 CBD, Art. 1.

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> *exercise of those rights and obligations would cause a serious damage or threat to biological diversity.*[128]

With strong arguments for IPRs at the very least potentially furthering monocultures, such a management option may be regarded as posing a significant threat to plant biodiversity.[129] Adding the international legal obligation of applying a precautionary approach, as described above,[130] it can be argued that states have a well-founded commitment to conserve plant biodiversity in the interest of humankind, through means other than IPRs.

5.3. *Common Concerns of Humankind in General International Law*

The third reason why the CCH of protecting plant biodiversity justifies limitations on intellectual property rights relates to international law more generally. The diverging obligations of states imposed by the CBD and TRIPS are representative of the current transformation of international law. We can observe a trend of redefining sovereignty to correspond more with the reality that common challenges – such as the alarming loss of plant biodiversity – require responses on a global scale.[131] In Bowman's words, 'the traditional regime of resource exploitation, grounded primarily in the notion of national territorial sovereignty, requires to be replaced by more overtly collectivist approaches'.[132] Such transformational spirit is supported by ICJ Judge Weeramantry, who stresses that:

> international environmental law will need to proceed beyond weighing the rights and obligations of parties within a closed compartment of individual State self-interest, unrelated to the global concerns of humanity as a whole.[133]

Appreciating the gravity of the task, Stec relates the challenges in international environmental law to the 'kinds of concerns that have parallels in other major turning points in history, and which therefore do not so much point towards "progress" but rather a fundamental questioning of values and assumptions'.[134] Demonstrating the relationship between international environmental law and state sovereignty, he highlights that the Westphalian peace led states to develop competing systems to exploit the earth. In response, a 'law of humanity' developed to address two main spheres in which states had failed:

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128 CBD, Art. 22 (emphasis added).

129 See Sections 4.1. and 4.2. above.

130 See Section 4.2. above.

131 See Sections 2.1. and 2.3. above. See A. Hertogen, 'Sovereignty as Decisional Independence over Domestic Affairs: The Dispute over Aviation in the EU Emissions Trading System' (2012) 1(2) *Transnational Environmental Law*, pp. 281–301.

132 M. Bowman, 'The Nature, Development and Philosophical Foundations of the Biodiversity Concept in International Law', in Bowman & Redgwell, n. 16 above, pp. 5–31, at 12.

133 ICJ, *Gabčikovo-Nagymaros Project (Hungary* v. *Slovakia),* Judgment of 25 Sept. 1997, Separate Opinion of Vice-President Weeramantry, *ICJ Reports* (1997), at p. 118, available at: http://www.icj-cij.org/docket/files/92/7383.pdf.

134 S. Stec, 'Humanitarian Limits to Sovereignty: Common Concern and Common Heritage Approaches to Natural Resources and Environment' (2010) 12(3) *International Community Law Review*, pp. 361–89, at 362.

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(i) upholding human dignity, and (ii) matters of common concern, which 'require a global, humanitarian response'.[135] Stec sees a certain degree of hierarchy between the law of humanity and the international law of states.[136] Indeed, ICJ Judge Bedjaoui observes that:

> the gradual substitution of an international law of co-operation for the traditional international law of co-existence. [...] a token of all these developments is the place which international law now accords to concepts such as obligations *erga omnes*, rules of *jus cogens*, or the common heritage of humankind.[137]

Such blurring of traditional distinctions between individual state interests and global civil societal concerns is mirrored in the increasing relevance of transnational environmental law. For states not only to act upon their self-interest but also to take global concerns into account can be argued to have 'become a fundamental aspect of international law'.[138]

The notion of CCH is a legal conceptualization of such primacy. The word 'common' is the international law equivalent to 'public order' in domestic law[139] and may indicate superiority of such concerns over individual state interests.[140] Understanding the conservation of plant biodiversity as part of such 'law of humanity' with superiority over individual (state) interests, it becomes clear that a proposed privatization of plants and related processes naturally sparks fierce public resistance. It also highlights the fact that state sovereignty should not be used as a barrier to adequately address matters of CCH. As Stec reminds us, the reason why the Westphalian order brought about the triumph of state sovereignty was that sovereignty 'was the modus for upholding humanitarian precepts relating to freedom of conscience and religion'.[141] State sovereignty was facilitated to serve humanitarian needs. By the same token, it now needs to be redefined to be able to adequately address common concerns of humankind.

Implementing such redefinition is, evidently, no easy process. A detailed analysis thereof is beyond the scope of this article. Yet one suggestion is to move towards global constitutional law and thereby subject state sovereignty to constitution-like principles and rules enshrining such CCH. As Kotzé stresses, this is difficult in the current system, which:

> amply reveal[s] state reticence and the limits of the current conception and role of national state sovereignty and, in particular, state sovereignty's intimate relationship with competing nation-state economic interests in the context of neoliberal globalization.[142]

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135 Ibid., at pp. 370–1.

136 Ibid., at p. 364.

137 ICJ, *Legality of the Threat or Use of Nuclear Weapons*, Advisory Opinion of 8 July 1996, Declaration of President Bedjaoui, *ICJ Reports* (1996), at p. 270, para. 13, available at: http://www.icj-cij.org/docket/files/95/7499.pdf.

138 Stec, n. 134 above, at p. 364.

139 E. Brown Weiss (ed.), *Environmental Change and International Law: New Challenges and Dimensions* (United Nations University Press, 1992), available at: http://library.northsouth.edu/Upload/Environmental.pdf.

140 UNEP, 'The Meeting of the Group of Legal Experts to Examine the Concept of the Common Concern of Humankind in Relation to Global Environmental Issues' (1990) 13 *Revista IIDH*, pp. 237–46, at 243–4, para.18.

141 Stec, n. 134 above, at p. 381.

142 L.J. Kotzé, 'Arguing Global Environmental Constitutionalism' (2012) 1(1) *Transnational Environmental Law*, pp. 199–233, at 223.

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Nonetheless, securing the implementation of such CCH through a redefinition of the state is a reciprocal process. Speaking about a developing 'functional role of states', Hey underlines that 'universal principles such as the principle of common concern [. . .] provide the basis for conceptualizing the functional role of states in terms of law, both vis-à-vis each other and individuals and groups'.[143] The latter 'manifests itself in the obligations that limit the discretion of states to treat the environment within their territory or jurisdiction as they see fit'[144] and ensures, in the current case, the conservation of plant biodiversity in the interest of humankind.

These international legal developments in redefining the role of states reinforce the substantial importance of the CCH concept asserted by this article. Linking this back to IPRs, it can be concluded that these developments strengthen the argument that the long-term obligation to conserve plant biodiversity as a CCH justifies, and indeed prescribes, limitations to private IPRs over plants and related processes.

If we accept that long-term considerations must govern our societies and economic markets, then reciprocity-based trade agreements could in theory correspond with our CCH of safeguarding plant biodiversity.[145] However, commentators such as Kiss have drawn attention to the underlying hierarchy:

> Whatever the approach may be, it is submitted that considerations based exclusively on short-term trade interests cannot prevail over the common concern of mankind or even constitute a part of it. It must be repeated and stressed that economic activities and especially trade are essential tools that must serve higher interests, those of humanity as a whole, where they result from the general acceptance of a global value system.[146]

Consequently, expressly declaring biodiversity conservation as a CCH, in an almost universally ratified agreement, subordinates reciprocity-based short-term interests to the common concerns of humanity. In sum, granting states discretion to exempt plants and related processes from IPRs is indeed in line with the general development to increasingly recognize and respect the concerns of the global public and adjust the role of states accordingly.

6. CONCLUSION

This article has demonstrated that the classification of biodiversity conservation as a 'common concern of humankind' significantly influences the relationship between the CBD and TRIPS. It obliges States Parties to the CBD to act on behalf of humankind and to commit to the common aim of preserving plant biodiversity, as reiterated at Rio+20.[147] This renders the risky management option of IPRs incompatible with the positive obligation to conserve plant biodiversity in the interest of humanity as

143 E. Hey, 'Global Environmental Law: Common Interests and the (Re)constitution of Public Space' (2009) 1 *Iustum Aequum Salutare*, pp. 41–57, at 48.

144 Ibid.

145 Kiss, n. 37 above, at p. 9.

146 Ibid.

147 'The Future We Want', n. 106 above, para. 198.

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a whole. The article has made the case for this CCH to justify, and in fact prescribe, limitations to private IPRs. Indeed, the very conceptual foundation of such private rights recognizes considerations of the public good as a valid restriction on IPRs. The fact that TRIPS already includes some limited exceptions based on public policy, and expressly subjects the controversial provision on plants and animals to early review, further strengthens this position. Moreover, the CBD expressly confirms the primacy of the obligation to protect biodiversity, including plant biodiversity, over other international legal obligations that would cause serious damage or threat to such biodiversity. Lastly, it corresponds with the general development in international law of redefining state sovereignty to correspond with challenges of global magnitude.

The biodiversity challenge needs a communal answer. The argument is conceptualized in the notion of common concern of humankind, which captures this concern of the global public, gives it a name, and thereby enables it to develop into a fully fledged legal principle in the future, possibly of customary and *erga omnes* nature.The notion of common concern of humankind, linked with the precautionary principle, arguably obliges states to pursue such communal ways and to dismiss management options that could pose a threat to plant biodiversity, including privatization through intellectual property rights. This conclusion, in turn, raises serious questions over the legitimacy of IPRs over plants and related processes.

The fact that this rift between both treaties concerns resources of such fundamental importance is both a blessing and a curse. The potential consequences of getting it wrong are devastating. Yet the importance of plant biodiversity conservation also raises hopes that the legal principle of state sovereignty will be applied in a manner supportive of the common concerns of humankind. After all, the aim is to achieve equitable and sustainable plant biodiversity management in order to ensure food security and preserve nothing less than 'life sustaining systems of the biosphere'.[148]

148 CBD, Preamble.

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