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Beyond Rhetoric: State Sovereignty, Common Concern, and the Inapplicability of the Common Heritage Concept to Plant Genetic Resources

IKECHI MGBEOJI*

Abstract

Until the emergence of the Convention on Biological Diversity in 1992 and the FAO Treaty on Plant Genetic Resources in 2001, opinion had hardened in some quarters that the principle of a common heritage of mankind regulated international transfer of plant genetic resources. By a historical analysis of customary international law in the colonial age and the recent pedigree of the principle of common heritage, this article points out the fallacies in such arguments and contends that plants have always been subject to various national jurisdictions. It has to be conceded, however, that contemporary developments in the field of international law relating to plant genetic resources foretell the emergence of a regime of multilateral relationships governing access to plant genetic resources. If it is to depart from its unfortunate history, such a regime of multilateral co-operation would have to pay serious regard to the issue of equitable access to and sustainable use of plant genetic resources.

Key words

common heritage of mankind; North–South relations; plant genetic resources; sovereignty; sustainable development

Although the Westphalian character of international law confers on states sovereign jurisdiction over their respective territories, it is a truism in terms of the geography and distribution of plants for use as food that no single state has ever been wholly self-sufficient for its food needs. All the states of the world are interdependent as regards plant life forms. As a consequence of the irreplaceable and multiple roles, value, and functions of plants, there has always been an inescapable measure of international interaction and co-operation over plants and derivatives from plants. However, a critical analysis of the directional flow and methods of transfer of plants from one state or region to another reveals an asymmetrical and inequitable regime. Crudely speaking, although most plant resources for use as food originate

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from the so-called Third World, the irony is that such resources tend to be moved from the poor, industrializing parts of the world to the richer, industrialized part. It is in the light of this asymmetry that complex and rhetorical debates have often surrounded the question of legal ownership of plants, particularly in the era prior to the emergence of the Convention on Biological Diversity (CBD), and the UN Food and Agriculture Organization (FAO) Treaty on Plant Genetic Resources for Food and Agriculture.¹

Debates, or rather controversies, on the legal status of plants in the era following on the European colonization of the Americas, Africa, parts of Asia, and elsewhere have reflected the problematic North–South divide and the perception of inequality of access to economic resources.² With particular reference to plant genetic resources, there is considerable evidence to support the observation that the transfer of plant germ plasm and products has been in the direction of the ‘developed’ world from the ‘developing’³ world. More importantly, there is a general impression held by the ‘developing world’ and concerned scholars, activists, and sympathizers in the ‘developed world’ that the ‘developing world’ has little or nothing to show for the interaction or ‘exchange’ between both ‘worlds’. In other words, the relationship between the ‘North’⁴ and the ‘South’⁵ in matters relating to

1. Convention on Biological Diversity, entered into force on 19 Dec. 1993, reprinted in (1992) 31 ILM 813.
2. I am aware of the complexities and challenges faced by modern scholars in articulating, theorizing, and deploying the distinctions and gross disparities existing between the so-called ‘North’ and its besieged counterpart, the ‘South’. For an interesting analysis of this issue see K. Mickelson, ‘Rhetoric and Rage: Third World Voices in International Legal Discourse’ (1997) 16 *Wisconsin International Law Journal* 353. See also notes 4 and 5, *infra*.
3. As other scholars of international law, particularly those of the Third World Approaches to International Law (TWAIL) such as Makau Wa Mutua, Obiora Okafor, Anthony Anghie, and James Gathii, have rightly pointed out, the concept of ‘development’ or lack thereof is a value-laden term with implicit hierarchies of cultures and civilizations. Within this logic, history and civilization is construed as linear and unidirectional, with Western civilization at the vanguard pointing the way for ‘lesser’ ‘underdeveloped’ peoples and cultures to follow. See M. Wa Mutua, ‘Savages, Victims, and Saviours: The Metaphor of Human Rights’ (2001) 42 *Harvard International Law Journal* 201; D. Slater, ‘Contesting Occidental Visions of the Global: The Geopolitics of Theory and North–South Relations’ (1994) (Dec.) *Beyond Law* 97; I. Mgbefji, ‘Patents and Plant-Resources-Related Knowledge: Towards a Regime of Communal Patents for Plant-Resources Related Knowledge’, in N. Islam *et al.* (eds.), *Environmental Law in Developing Countries: Selected Issues* (2002), at 81.
4. The term ‘North’ refers to the countries of North America and Europe, New Zealand, Japan, and Australia. They are also called the ‘rich’ or the ‘advantaged’ countries of the world. For the purposes of convenience, they may further be categorized as members of the Organization for Economic Co-operation and Development (OECD) which has 24 member countries, namely Australia, Austria, Belgium, Canada, Denmark, Finland, France, Germany, Greece, Iceland, Ireland, Italy, Japan, Luxembourg, the Netherlands, Norway, Portugal, Spain, Sweden, Switzerland, Turkey, the United Kingdom, and the United States. See *OECD in Figures: Statistics on the Member Countries, 1988 edition: Supplement to the OECD Observer No. 152* (1988), at 4–5; H. Weidner, ‘The United States and North–South Technology Transfer: Some Practical and Legal Obstacles’ (1982–3) 1–2 *Wisconsin International Law Journal*, 205; A. Sawyer, ‘Marginalization of Africa and Human Development’ (1993) 5 *African Journal of International and Comparative Law* 176. I am aware of the crudeness of this distinction. There are nuances to the North–South paradigm. There is a ‘North’ in the ‘South’ as exemplified by privileged and ‘Westernized’ elites of the ‘Third World’.
5. The term ‘South’ refers to the countries of Africa, Asia (excluding Japan), Latin America, and Oceania. They are also called the ‘developing countries’, ‘less-developed’, or the ‘third world’, countries of the world. Considering the similar experiences of indigenous minorities of North America, Australia, and Europe, it cannot be denied that there is a ‘South’ in the North. See M. Watkins, ‘North–South Relations’ (1975) 5 *Alternatives: Perspectives on Society and Environment* 33. For an excellent analysis of the nature of the economic and cultural divide between North and South, see N. Adams, *Worlds Apart: The North–South Divide and the International System* (1993); G. Lundestad, *East, West, North and South: Major Developments In International Politics 1945–1986* (1988). It should be noted that, as a concept, ‘the third world is far from a homogenous

the exchange of plant germ plasm has been largely characterized by many Third World scholars and their sympathizers as unequal, unfair, and skewed in favour of the industrialized 'North'. As I have argued elsewhere,⁶ the methods of transfer and 'exchange' of plant life forms between the North and the South reveal the appropriative function of the dominant cultural paradigm and its subordination of non-Western scientific frameworks or cultures to Eurocentric empiricism and epistemology.

This article examines the correctness of the prevalent notion that plants are part of the common heritage of mankind and thus an integral element of the global commons freely available to all mankind. A critical assessment of this common notion is necessary partly because in the course of the 'exchange' or transfer of plant germ plasm from the 'developing world' to the 'developed world', there has been an assumption of the existence of a legal concept or principle of common heritage in respect of plants. In other words, there seems to be a generally shared view, albeit erroneous, that prior to the emergence of the CBD in 1992 and the FAO Treaty in 2001, which respectively categorized plant resources as subject to domestic and national jurisdiction, plant life forms occurring within state boundaries belonged to all peoples of the world as part of the common heritage. It is the purpose of this article to demonstrate the fallacy and incorrectness of such notions, particularly as they occur in relevant literature on the ownership and control of plant genetic resources. The article also seeks to shed some light on contemporary developments in the field of international law relating to access to plant genetic resources.

My analysis proceeds in two stages. In stage one, I examine the historical and legal foundations, and the circumstances and contexts in which plant germ plasm was moved from the tropics to the colonies. This particular epoch is located within the imperial and colonial era, when many parts of the Third World were subjected to formal colonialism and imperialism. In the second stage of my analysis, I demonstrate the recent pedigree of the common heritage concept and, hence, the improbability of such a concept constituting the legal basis for the transfer of plant germ plasm from the 'developing world' to the 'developed world' in the colonial era. In sum, I argue that the concept of common heritage neither justified the colonial appropriation of plants nor constituted a legal basis for international transactions relating to plant genetic resources. Indeed, it is further argued in this article that the concept of common heritage is inapplicable to plant genetic resources in contemporary international law.

group. There are no strict criteria for qualifying as a developing country . . . In the United Nations they form the Group of 77, although the group at present consists of more than 130 states.' See I. Seidl-Hohenveldern, *International Economic Law* (1989), at 4; W. Langley, 'The Third World: Towards a Definition', (1981) 2 *Boston College Third World Law Journal* 1.

6. I. Mgbeoji, 'Patents and Traditional Knowledge of the Uses of Plants: Is a Communal Patent Regime Part of the Solution to the Scourge of Bio-piracy?' (2001) 9 *Indiana Journal of Global Legal Studies* 163.

I. THE COLUMBIAN EXCHANGE AND STATE SOVEREIGNTY OVER PLANTS

For purposes of historical convenience rather than exactness, the origins of state ‘transfer’ of plants may be traced to the ‘Columbian Exchange’ of 1492, during Christopher Columbus’s forays into the Americas with some plant germ plasm. It is already known that the Columbian Exchange, as it were, changed the face of the earth, in terms of both the spread and distribution of human populations and the realignment of global geopolitical power. For the narrower purposes of this analysis, it is significant that Columbus returned to Europe with maize in 1493, and in 1494 went back to the Americas with wheat, olives, chickpeas, onions, radishes, sugar cane, and citrus fruits (for scurvy) to support a European colony.⁷

Subsequent voyages by other European explorers and settlers added potatoes to the diet of Europe, resulting in a phenomenal increase in European population.⁸ Furthermore, the introduction of new plant resources into European diet and agriculture and the settlement of Europeans in the Americas fundamentally reconfigured global economic and political equations. As Jack Kloppenburg observes:

[M]aize and potatoes had a profound impact on European diets. These crops produce more calories per unit of land than any other staple but cassava [another New World crop that spread quickly through tropical Africa]. As such, they were accepted, though often reluctantly, by peasantries increasingly pressed by enclosures and landlords, and by a growing urban proletariat.⁹

Since Columbus’s sporadic and disorganized transfer of plants from the ‘New World’ to the ‘Old World’ and from parts of the New World to other parts of the same New World, the critical importance of ‘exotic’ plant germ plasm has never been lost on the political leaders of Europe, the Americas, and subsequently Australasia. Indeed, in Europe a worldwide network devoted to the collection of germ plasm from the colonial outposts of the North in the South was quickly put in place, hence the origin of the botanical gardens, particularly in the British Empire.¹⁰ These institutions routinely collected the world’s plant resources, of which a decisive majority was tropical or subtropical in origin. Given that most of these tropical and subtropical territories and peoples were under European colonial rule, the asymmetrical transfer of germ plasm from the colony to the mother country was more or less perceived as ‘an internal affair’ of the colonial empires. In juridical and political terms, the colonial powers construed their tropical territories as part of the empire or of the larger metropolis. For example, germ plasm from British colonies in Asia and Africa was routinely transferred not only to the Royal Botanic

7. J. Kloppenburg, *First The Seed – The Political Economy of Plant Biotechnology, 1492–2000* (1988), at 155.

8. The population nearly doubled in the space of one century (1750–1850).

9. Kloppenburg, *Supra* note 7. The Irish and, indeed, practically the entire British working class relied on potatoes for subsistence.

10. The imperial botanic gardens were found in Australia, Africa, the Caribbean, India – virtually all corners of the globe. See L. Brockway, *Science and Colonial Expansion: The Role of the British Botanic Gardens* (1979).

Gardens in London but to other parts of the British empire as if the latter were a single juridical entity, if not *de jure*, at least *de facto*. Thus the transfer of plant germ plasm was not conducted under the notion that plants constituted a free good and a resource for all peoples of the world. Rather, the prevailing theory was that a colonial outpost was merely one of several other projections of an imperial and large state.

Under the colonial regime, scientists, breeders, and collectors, particularly from the colonizing world, collected and transferred a huge quantity and diversity of economically useful or rare plant life forms to botanic gardens, gene banks, research institutions, and breeding programmes which were scattered across the various outposts of the colonial empires. In the absence of the earlier imposition of legal restrictions on this 'intra-state' transfer of germ plasm, the unfounded notion thus emerged, especially among latter-day environmental activists,¹¹ non-governmental organizations, and some writers that plant genetic resources, even in the post-colonial era, constitute a part of the common heritage.¹² This general notion is fallacious and unfounded. A sober analysis of state practice and other evidences of international law in the colonial and post-colonial eras clearly shows that there has never been a regime of common heritage as applied to plant genetic resources. As the subsequent stage of this analysis argues, the common heritage concept is too new and circumscribed in its ambit to be the legal basis or justification of the colonial transfer of plant germ plasm in the era spanning 1492–1992.

2. PLANT GENETIC RESOURCES AND THE COMMON HERITAGE CONCEPT IN THE POST-COLONIAL AGE

The concept of the common heritage of mankind (CHM)¹³ entered the lexicon of international law a few decades ago.¹⁴ Since then, there has been ambiguity in defining its true scope and meaning.¹⁵ Notwithstanding the uncertainties surrounding the meaning of its constitutive terms, one major factor

11. P. Mooney, *Seeds of the Earth: A Private Or Public Resource?* (1979).

12. J. Mugabe *et al.* (eds.), *Access to Genetic Resources – Strategies for Sharing Benefits* (1997), at 7.

13. C. Joyner, 'Legal Implications of the Concept of the Common Heritage of Mankind' (1986) 35 ICLQ 190; A. Kiss, 'Conserving the Common Heritage of Mankind', (1990) 59 *Revista Juridica de la Universidad de Puerto Rico* 773–7.

14. R. Wolfrun, 'The Principle of the Common Heritage of Mankind' (1983) 43 *Heidelberg Journal of International Law* 312; G. Danilenko, 'The Concept of Common Heritage of Mankind in International Law', (1988) 13 *Annals of Air and Space Law* 247–65. While some scholars attribute the origins of the common heritage concept to Arvid Pardo, Malta's ambassador to the United Nations, in 1967, others point to Aldo Cocca's statement some months earlier, at the deliberations for peaceful uses of outer space in 1967. It seems, however, that Pardo was the first to articulate the concept of common heritage of mankind as a potential principle of international law. In any event, the notion of CHM does not pre-date 1967 and as such, the concept is of very recent vintage. The implication is that it could not have governed transaction on plants prior to its debut.

15. For an examination of the confused state of thinking on the concept of CHM, see S. Gorove, 'The Concept of "Common Heritage of Mankind": A Political, Moral or Legal Innovation?', (1972) *San Diego Law Review* 390; L. F. E. Goldie, 'A Note on Some Diverse Meanings of the "Common Heritage of Mankind"' (1983) 10 *Syracuse Journal of International Law and Commerce* 69–112; M. White, 'The Common Heritage of Mankind: An Assessment', (1982) 14 *Case Western Reserve Journal of International Law* 509–42; E. Tenenbaum, 'A World Park in Antarctica: The Common Heritage of Mankind', (1990) 10 *Virginia Environmental Law Journal* 109–36; A. Blaser, 'The Common Heritage in its Infinite Variety: Space Law and the Moon in the 1990s', (1990) 5 *Journal of Law and Technology* 79–99.

remains constant: that is, the narrowness of the scope of the concept. Common heritage¹⁶ has only attained juridical mention within the ambit of claims of communal rights on areas or resources which lie outside the limits of state jurisdictional authority: a sort of *res communis humanitatis*.¹⁷ In other words, it is a term and concept applied to the so-called global commons.¹⁸ These include the ocean floor,¹⁹ outer space,²⁰ the Moon²¹ and Antarctica.²²

It is thus apparent that the notion of common heritage is the very opposite of principles of international law governing access to or control or dominion over assets or properties, particularly natural resources which fall within the jurisdiction of a recognized state. In effect, sovereignty and jurisdiction over a territory is an indefeasible aspect and character of statehood, and whatever natural resources fall within the boundaries of a state are subject to the amplitude and magnitude of state jurisdiction.²³ This is a well-known principle of international law and need not detain us here.²⁴ It is equally beyond debate that international law is founded on the theory of the formal equality of states. Consequently, states constitute the central plank on which the complex edifice of international law, international institutions, and transnational relations are built.

Ideologically, the notion of common heritage is a political and rhetorical tool of convenience used by both the industrialized and the industrializing worlds whenever it suits their respective interests. Assertions of the applicability or lack thereof of the principle of common heritage to any resource by either the North or the South should be critically examined before being accepted as a correct expression of the law. For example, the concept of common heritage was a counterpart of

16. A. Cocca, 'Mankind as the New Legal Subject: A New Juridical Dimension Recognized by the United Nations', (1971) *Proceedings of the 13th Colloquium on the Law of Outer Space* 211. The notion of 'mankind' as a full-fledged legal entity has not yet come into juridical existence.
17. There are, however, some differences between common heritage and the notion of *res communis humanitatis*. For further analysis of this issue, see M. Shaw, *International Law* (1986), 276; C. Bin, 'The Legal Regime of Airspace and Outer Space: The Boundary Problem, Functionalism Versus Spatialism: The Major Premises' (1980) 5 *Annals of Air and Space Law* 323; J. Logue, 'Could the Common Heritage Fund Proposal Break the Deadlock in the UN Conference of the Law of the Sea?' (1983) 2-3 *International Property Investment Journal* 283-357. Attempts to extend the concept of common heritage to the vexed issue of transfer of technology have, however, failed. See 'The Draft International Code of Conduct on the Transfer of Technology of May 6, 1980', (1978) 17 *ILM* 462.
18. I. Brownlie, *Principles of Public International Law* (1972), at 258-86.
19. J. Dyke and C. Yuen, 'Common Heritage v. Freedom of the Seas: Which Governs the Seabed?', (1982) 19 *San Diego Law Review* 493; E. Reiley, 'The Common Heritage of Mankind: Ocean Floor Use' (1985) 5 (March) *California Lawyer* 15; M. Harry, 'The Deep Seabed: The Common Heritage of Mankind or Arena for Unilateral Exploitation?', (1992) 40 *Naval Law Review* 207-28.
20. L. Tennen, 'Outer Space: A Preserve for All Humankind' (1979) 1 *Houston Journal of International Law* 145; N. Mateesco-Matte, 'The Common Heritage of Mankind and Outer Space: Toward a New International Order for Survival', (1987) 12 *Annals of Air and Space Law* 313-36; B. Hoffstadt, 'Moving the Heavens: Lunar Mining and the Common Heritage of Mankind in the Moon Treaty', (1994) 42 *UCLA Law Review* 575.
21. C. Christol, 'The Common Heritage of Mankind Provision in the 1979 Agreement Governing the Activities of States on the Moon and Other Celestial Bodies', (1980) 14 *International Lawyer* 429.
22. C. Joyner, 'Antarctica and the Law of the Sea: Rethinking the Current Legal Dilemmas', (1981) *San Diego Law Review* 415; M. Kyriak, 'The Future of the Antarctic Treaty System: An Examination and Evaluation of the "Common Heritage" and "World Park" Proposals for an Alternative Antarctic Regime', (1992) 7 *Auckland University Law Review* 105-26; E. Tenenbaum, 'A World Park in Antarctica: The Common Heritage of Mankind', (1990) 10 *Virginia Environmental Law Journal* 109-36.
23. J. Crawford, *The Creation of States at International Law* (1979); *Rainbow Warrior Incident* (1985) *ILR* 74.
24. R. Jennings and A. Watts (eds.), *Oppenheim's International Law*, 1 (1992), at 563-80.

the doomed movement by the 'developing world' for a new international economic order (NIEO). In the movement for a new international economic order, the common heritage concept was thus primarily designed to deny the technologically advanced group of states of the North the legal right to exploit and lay claims of rights of ownership over the last frontiers of the world, such as the international seabed and Antarctica.²⁵

Conversely, the industrialized states which have largely rejected the notion of common heritage as a general principle of international law, particularly with respect to the South's claim for a new international economic order, have been quite enthusiastic in proclaiming that the common heritage concept applies to plant genetic resources which are found mostly in the South. Needless to add, the North's argument is borne out of group self-interest. As Kloppenburg further explains:

[C]ommon heritage and the norm of free exchange of plant germ plasm have greatly benefited the advanced capitalist nations, which not only have the greatest need for and capacity to collect exotic plant materials but also have a superior scientific capacity to use them.²⁶

Yet again, when the industrializing states believed that their agricultural outputs could be dramatically improved by adopting the intensive methods of farming developed by the industrialized states and by appropriating the so-called high yield varieties (HYVs) created by the industrialized states from germ plasm originally collected from the industrializing states, the former enthusiastically declared all plant life forms (including the high yield varieties) to be a common heritage.

Naturally, the industrialized states rejected this characterization of genetically modified high yield varieties as common heritage. Henry Vogel has articulated and analyzed North–South polemics and posturing on the applicability of common heritage within the concept of the conflict between privatization of the benefits of plant resources and socialization of the costs of access to those resources. In his words:

[G]enetic resources are a prime example of privatization having more to do with power relationships in the contemporary world than with neo-classical economic science. Until quite recently, Northern industry has been able to privatize the benefits of biotechnologies that derive from genetic resources while at the same time, socializing the cost of access to those genetic resources. Genetic resources were free under the doctrine known as the 'common heritage of mankind'. Being on the opposite sides of the trade, Southern countries have long wanted to privatize genetic resources but socialize access to biotechnologies. Rather than arguing for a symmetrical reform and the privatization

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25. B. Larschan and B. Brennan, 'The Common Heritage of Mankind Principle in International Law', (1982–3) 21 *Columbia Journal of Transnational Law* 305; J. Frakes, 'The Common Heritage of Mankind Principle and the Deep Seabed, Outer Space, and Antarctica: Will Developed and Developing Nations Reach a Compromise?', (2003) 21 *Wisconsin International Law Journal* 409–34.
 26. Kloppenburg, *supra* note 7, at 167. See also J. Trotti, 'Compensation Versus Colonization: A Common Heritage Approach to the Use of Indigenous Medicine in Developing Western Pharmaceuticals', (2001) 56 *Food and Drug Law Journal* 367–82.

of profits and costs, both the North and the South would like asymmetrical reform: the privatization of just their profits and the socialization of just their costs. For the North this would mean that the South gives up its genetic resources but recognizes its intellectual property rights (IPRs); for the South this would mean that the North gives up its IPRs but recognizes a Southern claim on the use of its genetic resources. In the struggle for inefficiency and inequity, the North is winning.²⁷

Accordingly, the common heritage notion as espoused by both sides of the global economic and industrial divide has been more or less a barely disguised ideological tool in the politics of and struggle for control of plant genetic resources across the globe. Leaving ideology aside, the question remains whether in international law there is a settled principle of common heritage and, if so, whether such a principle governs the regime on plant resources where such resources are located within the boundaries of sovereign states.

In answering this question, particularly the second limb, reference must be had to the pertinent sources of international law, particularly the primary sources, namely treaties and customary international law.²⁸ On the first limb of the question posed above, it seems that notwithstanding the substantial confusion which has afflicted the concept of common heritage, five major characteristics may be said to delimit it under contemporary international law.²⁹

First, the area to which the concept of common heritage may apply must be free from appropriation of any kind and, hypothetically, must be managed by all states.³⁰ Second, under the proposed common heritage regime, it follows that all peoples would be expected to co-manage the common space in their capacity as representatives of mankind. In other words, there can be no supervening national interests wherever the concept of common heritage is deemed to be applicable. Third, whatever economic benefits accrue from this global management of a common space would vest in the global community. These are the necessary inferences to be drawn from the element or quality of the term 'common' as used in the notion of common heritage.

Fourth, the area of common global ownership must be a completely demilitarized zone where only peaceful activities are conducted.³¹ The final element concerns the

27. J. Vogel, 'An Economic Analysis of the Convention on Biological Diversity: The Rationale for a Cartel' (on file with the author). Persons interested in this article may reach Professor Vogel at henvogel@earthling.net.

28. Art. 38 of the Statute of the International Court of Justice. Concluded, at San Francisco, 26 June 1945, entered into force 24 Oct. 1945, 1976 YBUN 1052.

29. Most of these characteristics are derived from Pardo's thesis in his historic statement. See 'Declaration and Treaty Concerning the Reservation Exclusively for Peaceful Purposes of the Seabed and the Ocean Floor, Underlying the Seas Beyond the Limits of Present National Jurisdiction, and the Use of Their Resources in the Interests of Mankind', UN Doc. A/AC.105/C.2/SR (17 Aug. 1967). See also A. Pardo, *The Common Heritage: Selected Papers on Oceans and World Order 1967-1974* (1975); H. Rana, 'The Common Heritage of Mankind and the Final Frontier: A Revaluation of Values Constituting the International Legal Regime for Outer Space Activities' (1994) 26 *Rutgers Law Journal* 225-50.

30. For a comprehensive, albeit debatable, analysis of the concept of CHM in international law, see K. Baslar, *The Concept of the Common Heritage of Mankind in International Law* (1998).

31. *Ibid.*, at 83; D. Wolter, 'The Peaceful Purpose Standard of the Common Heritage of Mankind Principle in Outer Space Law', (1985) 9 *ASIL International Law Journal* 117-46; D. Shraga, 'The Common Heritage of Mankind: The Concept and Its Application', (1986) 15 *Annales D'Etudes Internationales* 45.

conduct of scientific activities in the area under the common heritage principle. Such research must be freely and openly permissible and the physical environment and ecology of the area in question must not be impaired. Even a cursory examination of these elements and an examination of their compatibility with the principles of state sovereignty clearly show the inapplicability of the notion of common heritage to plant life forms within the boundaries of states.

Although the concept of common heritage has enjoyed mention and recognition in some treaties, especially treaties dealing with the deep seabed,³² the Moon,³³ outer space and celestial bodies,³⁴ and the continent of Antarctica,³⁵ some scholars doubt whether the common heritage concept has become a generally accepted principle of international law. In other words, there seems to be a scholarly debate, perhaps semantic, whether recognition of the concept or notion of common heritage in treaty law is synonymous with the status of 'generally accepted principle of international law'.³⁶ Strict 'constructionists' or purists of international law would readily argue that common heritage is not yet a generally accepted principle of international law. On the face of it, there are some arguments which may be made for this rather doctrinaire, perhaps, sterile point of view.

Strictly speaking, for a concept to be considered as a generally accepted principle of international law, 'the content of the principle must be distinct enough so as to enable it to be part of the general corpus of international law'.³⁷ Given the problematic meanings of the constitutive words 'common', 'heritage' and 'mankind', it may therefore be doubted whether any coherent or logical clarification of the concept exists in international law. The word 'common', for example, refers to something which belongs to all. Expressly and impliedly, management of such entities or resource requires the consent and representative mandate of all who have property in the thing held in common. The term 'heritage' refers to property which has been inherited. It is impossible to conceive of the relevance of this term to plants, which may well be unknown to humanity, let alone capable of being passed on as a heritage. As already indicated, the term 'mankind' has not yet acquired any juridical meaning in international law. Accordingly, scholars such as Wolfrun, Gorove, and Joyner would seem to be on solid ground in their argument that the concept of

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32. For example, Part XI of the 1982 UNCLOS provides that 'the Area [i.e. the seabed and ocean floor beyond the limits of national jurisdiction] and its resources are the common heritage of mankind'. See Art. 137, United Nations Convention on the Law of the Sea (With Annex V), concluded at Montego Bay, 10 Dec. 1982, entered into force 16 Nov. 1994. UN Doc. A/CONF.62/122; reprinted in (1982) 21 ILM 1261; Declaration of Principles Governing the Sea-Bed and the Ocean Floor, and the Subsoil Thereof, Beyond the Limits of National Jurisdiction; adopted by the United Nations General Assembly, 17 Dec. 1970. UN Doc. A/RES/2749 (XXV), (1971) 10 ILM 220.
 33. Agreement Concerning the Activities of States on the Moon and Other Celestial Bodies, 5 Dec. 1979, (1979) 18 ILM 1434.
 34. Treaty on Principles Governing the Activities of States in the Exploration and Use of Outer Space, Including the Moon and Other Celestial Bodies, 610 UNTS 205.
 35. Antarctic Treaty, concluded in Washington, DC, 1 Dec. 1959, entered into force 23 June 1961, reprinted in 40 UNTS 71.
 36. See, e.g., Joyner, *supra* note 13, at 198.
 37. Wolfrun, *supra* note 14, at 333. For an authoritative and fresh insight into the vexed question of precision of custom in international law, see the seminal work of A. D'Amato, *The Concept of Custom in International Law* (1971).

common heritage is afflicted with internal inconsistency if not anarchy. However, these arguments are not wholly watertight and may be countered.

First, it is a matter of common knowledge and experience among international lawyers that there are principles of international law which, although not known for their clarity, are nonetheless generally accepted as principles of international law. In other words, conceptual clarity is not a condition precedent to the emergence of any legal concept as 'a generally accepted principle' of international law. Ready examples of concepts include the principles of sustainable development and precaution. In short, although conceptual clarity is a virtue and a desirable value in the evolution of legal norms, absence of conceptual clarity is not necessarily fatal to the status and characterization of a concept or principle of law as a 'generally accepted principle of international law'. After all, in the development of international law, vague terms and phrases often ripen into coherent and clearer concepts and principles of law.

Second, it would seem that the crucial factor in determining general acceptance of principles of international law is that the resultant state practice from allegiance to and compliance with that concept (regardless of the clarity of the concept itself), in this case, common heritage, must be demonstrably evident and accompanied with the requisite *opinio juris*³⁸ by states and compliant entities. A corollary to this requirement is that the custom of acceptance of that concept or principle, in this case, the common heritage concept, must be widespread. Here, it has to be conceded that the common heritage concept stands on a shaky ground.

It is remarkable that, apart from the UN Convention on the Law of the Sea (UNCLOS) treaty, treaties which recognize the common heritage concept as a principle of international law have witnessed the lowest numbers of ratifications. This phenomenon is particularly significant in the context of the global implications of the common heritage concept. For example, the Moon treaty has only the barest number of ratifications for its becoming effective – five. Apart from this miserably poor number of ratifications, none of the five states parties to the Moon treaty, namely Austria, Chile, the Netherlands, the Philippines, and Uruguay – is a space-faring state. When this fact is juxtaposed with the universal significance of the Moon and the ubiquitous nature of the usefulness of celestial bodies and space in daily life (satellite television, telephony, weather forecasting, and so on) the low number of ratifications by states of those treaties which promote the common heritage concept leaves it in a weak position in its claim to be considered as a 'generally accepted principle of international law'. The inescapable conclusion is that while the concept of common heritage is a principle of international law, whether it is 'a generally accepted principle' is open to debate.

Assuming, especially in relation to UNCLOS, that the CHM concept is a generally accepted principle of international law, the second limb of the question – whether the 'principle' of common heritage is applicable to plant resources – deserves further examination. In resolving this issue, it is equally useful to pay due regard to the sources and evidences of international law, the principles of state sovereignty, and

38. Joyner, *supra* note 13, at 198. Professor Joyner thus concludes that CHM is at best a philosophical notion with the potential of emerging and crystallizing as a legal norm.

the way in which these principles apply to plant life forms. As already noted, Article 38 of the Statute of the International Court of Justice details the general sources and evidences of international law.

First, even if the concept of common heritage has been considered to be a generally accepted principle of international law prior to the CBD, no international treaty or convention characterized or designated plants as part of the common heritage of mankind. Indeed, it is striking that unlike other 'emergent' or 'fledgling' concepts and principles in international law, particularly on the environment, there is not a single declaration or resolution by the UN General Assembly which refers to plants located within a state's jurisdiction as constituting part of the common heritage of mankind.³⁹ Even the recently adopted FAO International Treaty On Plant Genetic Resources for Food and Agriculture reiterates that plants are part of national sovereignty of states. Article 10 thereof provides:

[I]n their relationships with other States, the Contracting Parties recognize the sovereign rights of States over their own plant genetic resources for food and agriculture, including that the authority to determine access to those resources rests with national governments and is subject to national legislation.

More significantly, all references to common heritage in treaties and declarations of the organs of the United Nations have consistently been in the context of the remaining, if any, frontiers on Earth, and celestial space and objects. None of the treaties that mention common heritage pertains to spaces traditionally under state sovereignty and jurisdiction, such as plants and plant habitats.

The absence of a treaty law basis for the purported applicability of the common heritage concept to plant life forms is not a remarkable omission or a coincidence. Since the emergence of the Westphalian paradigm of international law and relations, international law is state-centric and is founded on the control of each state over its own territories, subject to other principles of international law.⁴⁰ For example, early international law instruments such as the Montevideo Convention clearly emphasized the point, Article 8 providing that no state has the right to intervene in the internal or external affairs of another. Indeed, all aspects of international law, particularly customary international law and treaty law on state sovereignty, implicitly or expressly recognize the undoubted powers of states to regulate access to plant life forms within their respective jurisdictions.⁴¹ Contemporary international law instruments are similarly unequivocal in their assertion and reiteration of domestic state sovereignty and the inadmissibility of external interference in internal state

39. *South West Africa Cases* [1960] ICJ Rep. 6, at 323. See also Art. 10, FAO Treaty on Plants, adopted 3 Nov. 2001; available online at <fao.org/ag/cgrfa.IU.htm>, accessed on 24 Nov. 2001.

40. See for example the Charter of the United Nations, 1 UNTS 16, Vienna Convention on Diplomatic Relations and Optional Protocols, done at Vienna, 18 April 1961, reprinted in 500 UNTS 95–239; Declaration on Principles of International Law Concerning Friendly Relations Among States in Accordance with the Charter of the United Nations, GA Res. 2625 (XXV), Annex, 25 UN GAOR, Supp. (No. 28), UN Dec. A/5217 (1970), at 121; H. Hannum and R. Lillich, 'The Concept of Autonomy in International Law', (1980) 74 AJIL 858; 1933 Montevideo Convention on Rights and Duties of States, 26 Dec. 1933, 165 LNTS 19.

41. Jennings and Watts, *supra* note 24, at 563–80. See, e.g., International Convention for the Protection of Plants, 16 April 1929, reprinted in (1931–32) 126 LNTS 305.

affairs. Clearly, prior to the CBD or FAO Plant for Food Treaty of 2001, there has been no treaty-law support for the notion that plant germ plasm from the industrializing states, or elsewhere for that matter, is part of the global commons.

In the absence of treaty law support for common heritage on plants in the pre-1992 era, attention may be shifted to customary international law governing the transfer of plants during the same era, 1492–1992. Here again, the notion of a common heritage regime on plants finds no support. First, the concept of common heritage entered global discourse and law literature only in the late 1960s, compared with the Columbian age of colonial transfer of plant genetic resources across the globe and the transfer or appropriation of plant life forms through colonial instruments including ‘botanic gardens’ and ‘research’ institutions, which largely occurred during the colonial and immediate post-colonial era, starting in 1492 and extending till the late 1960s. Thus, assuming but not conceding the common heritage concept to be a principle of customary international law, such a recent principle could not have governed or regulated activities which took place hundreds of decades before it came into existence. Customary international law does not operate retroactively.

Furthermore, an examination of relevant state practice during the period in question, 1492–1960s, shows that indeed, the concept of common heritage has no roots or support in customary international law. That is to say, state practice or custom⁴² accompanied by evidence of *opinio juris* clearly shows that the notion of a common heritage of plant life forms is not part of customary international law during the period in question. A careful analysis of state practice shows that states have always sought to protect and sustain their monopoly of and hegemony over economically useful plants. Thus, even though states, particularly the gene-rich former colonies, were made to yield their plant life forms to their colonial masters as contributions to international agricultural ‘research’, such practices lacked the requisite elements of customary international law. This is so because the element of *opinio juris sive necessitatis*, which Anthony D’Amato in his classical disquisition has beautifully reformulated as the articulation of reciprocal international behaviour with legal consequences,⁴³ is conspicuously missing.

Here, the psychological element involved is the articulated expectation in state relations that a particular act or omission will have legal implications. It is a voluntary and volitional choice to be bound in law by a free act. In the absence of the element of articulated expectation of reciprocal and juridically significant behaviour, otherwise known as *opinio juris sive necessitatis*, the transfer of plant germ plasm from the South to the North through the instrumentalism of international ‘research centres’ or colonialist institutions lacks the legal sense of obligatoriness which is the essential characteristic of customary international law. As such, transfers of plant life forms under such circumstances do not amount to an expression of customary international law of common heritage on plant life forms.

42. M. Akehurst, ‘Custom as a Source of International Law’ (1974–5) 47 BYIL 12, at 36; D’Amato, *supra* note 37, at 75.

43. D’Amato, *supra* note 37, at 75. McDougal and his colleagues make the same point when he refers to it as ‘world constitutive prescription’. See M. McDougal, H. Lasswell, and M. Reisman, ‘The World Constitutive Process of Authoritative Decision’ (1967) 19 *Journal of Legal Education* 403.

In international law, repetition of the colonial practice, no matter how frequent, would not yield a legally binding obligation unless it could be shown that the practice was articulated and carried out in the belief that there was a legally binding obligation to do so.⁴⁴ This distinction is crucial, as it constitutes the divide between a mere social usage and a legally binding principle of customary international law.⁴⁵ Indeed, a close study and analysis of relevant state practice shows clearly that states have always sought to keep economically useful plants out of the reach of other states. This practice is particularly evident in the case of states with the requisite enforcement mechanisms for such an exclusionary policy or the ability to police their territorial borders and control the dissemination of their plant resources. Of course, the reproducibility of plants makes this objective difficult.

Notwithstanding this inherent problem with controlling the spread of plant resources, states have largely conducted themselves in a manner clearly supportive of the position that they had sovereignty over plants within their jurisdiction and were under no legal obligation to grant free access to such plant resources. For example, in the colonial era, economic and military powers such as France, the Netherlands, and the United Kingdom adopted elaborate and often stringent measures to 'keep useful [plant] materials out of competitors' hands'.⁴⁶

Examples of state control over plants are legion. The French were so determined to retain their monopoly on the indigo dye trade that the export of indigo seeds from French Antigua was made a capital offence.⁴⁷ Prior to the era of such treaties as the Convention on Biological Diversity, the government of Ethiopia (one of the rare African states to escape formal colonialism) embargoed the export of coffee germ plasm. Furthermore, it was always difficult to obtain black peppercorns from India, and Ecuador did not freely supply cocoa germ plasm to other cocoa-producing states. Peru and Bolivia once made trade in quinine (an extract from the bark of the cinchona tree native to those countries) a government monopoly. No state could at that time have seriously argued that such actions violated international law.

Desperate and draconian measures were sometimes taken by states to maintain control over plants in their territories. For example, the Dutch, in order to maintain their global monopoly on the supply of nutmegs, destroyed all nutmeg and clove trees in the Moluccas except those on three islands where they located their plantations.⁴⁸ It was this tight control of the transfer of plant germ plasm in the period before the Convention on Biological Diversity treaty and in the colonial era that compelled some states to engage in audacious attempts to break the monopoly of other states on some plants of key economic importance. In some cases, some states sponsored or condoned criminal activities such as the smuggling of plants. In order

44. *Paquette Habana*, 175 US 677 (1900).

45. G. Tunkin, 'Remarks on the Juridical Nature of Customary Norms of International Law', (1961) 49 *California Law Review* 419; L. Kopelmanas, 'Custom as a Means of the Creation of International Law', (1937) 28 *BYIL* 127.

46. Kloppenburg, *supra* note 7, at 154; C. de Klemm, *Biological Diversity Conservation and the Law – Legal Mechanisms for Conserving Species and Ecosystems* (1993), at 56.

47. Kloppenburg, *supra* note 7, at 154.

48. *Ibid.*

to break the Brazil's iron grip on the supply of rubber (Brazil controlled 95 per cent of the global trade in rubber at the time), the British in 1876 encouraged and aided Henry Wickham in successfully smuggling out 70,000 rubber seeds in a boat which eventually reached British colonies in Asia. Wickham's bold escape with the rubber seeds literally sowed the seeds of the collapse of the Brazilian monopoly on rubber production.⁴⁹

It is evident from the above instances and analysis that the undoubted powers of states to regulate access to and the use of plant life forms within their domains has always been an inherent and intrinsic aspect of statehood. In addition, domestic legislation restraining or controlling access to forests, wildlife, parks, and trade in certain plant species has always been part of the exercise of state sovereignty over plant resources, even in the colonial age. Virtually all states in Europe and the Americas and other strong states fashioned on the Westphalian paradigm had domestic laws regulating various means of husbanding plant resources, such as farms, forests, parks, and so on. Such laws are so generally known as to obviate the need for citation here.⁵⁰

In addition, prior to the emergence of the notion of a common heritage of plants, most countries, if not all, had national quarantine laws regulating the importation of diseased or potentially diseased plant resources. Yet it has not been suggested that such legislative powers regarding plants were dependent or contingent on supranational permission or the pleasure of an external transnational authority, or even the so-called concept of common heritage. Such authority pre-dated the 1992 CBD and the 2001 FAO treaty. For example, pursuant to the power to regulate access to plant resources, the International Covenant for the Protection of Plants, signed in Rome on 16 April 1929,⁵¹ mandated the contracting states to 'establish relevant machineries for the regulation of the import and export of plants'.⁵²

States have always had as an inherent part of their status as sovereign entities the legal authority to regulate the inflow and outflow of plant life forms within their own domestic jurisdiction. In effect, the concept of state sovereignty over

49. K. Bosselman, 'Plants and Politics: The International Legal Regime Concerning Biotechnology and Biodiversity', (1995) 7 *Colorado Journal of International Environmental Law and Policy* 111. Brazil now manages with an insignificant 5 per cent share of the world rubber trade. The multi-billion-dollar rubber industry is today dominated by UK and US conglomerates, Dunlop and Firestone, with massive plantations in Liberia and Malaysia respectively.

50. Such laws include the Indian Wildlife (Protection) Act of 1972, the Papua New Guinea Fauna (Protection and Control) Act of 1976, and the Ugandan Forest Act and the Kenya Forest Act, both of 1942.

51. Art. 4 provides as follows:

The Contracting States undertake to enact all necessary measures both to prevent and combat plant diseases and pests and to supervise the importation of plants and parts of plants, in particular those consigned from countries not as yet possessing any official organization for the protection of plants. When Contracting States require that plants or parts of plants to be imported shall be accompanied by a health certificate issued by a competent official agent duly authorized by the exporting state, the Contracting States must conform to the provisions of the present Convention.

Art. 6 proceeds further by providing that 'each State retains the right to inspect and place in quarantine plants or parts of plants, or temporarily and exceptionally to prohibit their importation, even when the consignments are accompanied by a health certificate'.

52. *Ibid.*, Art. 4.

plant resources falls within the more extensive concept and principle of permanent sovereignty over natural resources (PSNR).⁵³ In the governance of the same subject matter, the concept of permanent sovereignty⁵⁴ and common heritage are thus mutually exclusive.⁵⁵

The conflict between the common heritage concept and the principle of permanent sovereignty over natural resources is best dramatized by the Amazon issue. The industrialized states have long argued that Brazil *should not* (this is clearly distinct from 'does not') have absolute sovereignty over the Amazon region.⁵⁶ Approximately three-fifths of the length of the Amazon river lies in Brazil. The Amazon region comprises some 42 per cent of Brazilian territory. It produces 50 per cent of the world's oxygen⁵⁷ and a substantial part of the world's fresh water and biodiversity.⁵⁸ Given its universal importance, it is very tempting to misconstrue the Amazon region as a common heritage of mankind.

However, the concern expressed by the industrialized states over Brazilian (mis)use of the Amazon region has never really impressed the Brazilians, who insist that 'we are masters of our destiny and will not permit any interference in our territory'.⁵⁹ Thus, concerns over Brazilian (mis)management⁶⁰ of the Amazon region would not entitle any state or a group of states to assert a right of individual or collective extra-territorial jurisdiction over Brazilian Amazonia. At best, other states or entities may express the requisite amount of 'concern' over the use or misuse of such resources occurring within the boundaries of sovereign states. By the same token, arguments by Third World countries that technological products protected by national intellectual property regimes constitute a part of the common heritage of mankind and are thus freely available to all peoples have been resisted by robust and unequivocal rebuttals by industrialized states.

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53. PSNR emerged and developed after the end of the Second World War to affirm and assert the sovereignty of developing countries over their own natural resources. It seems to have matured from a 'fundamental principle of the New International Economic Order (NIEO) to the same status of *jus cogens* similar to the right of self-determination in the present international order'. Baslar, *supra* note 30, at 137.
 54. Permanent Sovereignty over Natural Resources, UN General Assembly Resolution 1803 (XVII); Principle 21 of the 1972 Stockholm Declaration, Art. 30 of the Charter of Economic Rights and Duties of States of 1974 (UNGAOR 3281, XXIV); Principle 2 of the 1992 Rio Declaration. For an excellent and exhaustive treatment of the subject, see N. Schrijver, *Permanent Sovereignty over Natural Resources: Balancing Rights and Duties* (1997). Some scholars have thus opined that the common heritage of mankind regime can only start at the point where it is agreed that the PSNR regime ends.
 55. N. Schrijver, 'Permanent Sovereignty over Natural Resources Versus the Common Heritage of Mankind: Complementary or Contradictory Principles of International Economic Law?' in E. M. G. Denters, P. Peters, and P. J. I. M. de Waart (eds.), *International Law and Development* (1988); S. Schwebel, *Justice in International Law* (1994), at 401.
 56. R. M. McCleary, 'The International Communities' Claim to Rights in Brazilian Amazonia' (1991) 39 *Political Studies* 691; J. Goldenberg and E. R. Durham, 'Amazonia and National Sovereignty' (1992) 2 *International Environmental Affairs* 22.
 57. Hence Cocca's argument that 'the oxygen produced by the Amazonian [sic] forest... should be declared common heritage of mankind'. See A. A. Cocca, 'The Common Heritage of Mankind: Doctrine and Principle of Space Law: An Overview', in 29th *Colloquium on the Law of Outer Space* (1986), 17, at 22.
 58. K. Zimmermann, 'The Deforestation of the Brazilian Amazon: Law, Politics, and International Cooperation', (1990) 21 *Inter-American Law Review* 513.
 59. McCleary, *supra* note 56, at 692.
 60. Internally, the 'development' of the Amazon region by the Brazilian government has literally destroyed the habitat of the native Indians. The governor of Roraima declared in 1975, 'an area as rich as this cannot afford the luxury of conserving half a dozen Indian tribes who are holding back the development of Brazil'. Baslar, *supra* note 30, at 185.

The extent to which states may allow such concerns to influence their management or control of such plant resources depends on myriad factors, such as the need for international co-operation, but no legal right may be exercised by other states in respect of those plant resources. However, no state is self-sufficient in matters of biological resources and, more importantly, issues of conservation, use, and commercialization of plant resources are often intrinsically international in character. Hence, international co-operation is virtually infeasible in relation to plant germ plasm.

Be that as it may, the common heritage concept is of recent vintage and states have always had the right, perhaps unexplored, to determine, regulate, and control access to plant life forms within their own jurisdiction. It is therefore incorrect to assert, as some scholars have done,⁶¹ that prior to the emergence of the Convention on Biological Diversity and the FAO Plant for Food Treaty, plant genetic resources were part of the common heritage of mankind.

However, it has to be conceded that any lingering doubts on the status of plant resources within the boundaries of sovereign states have been laid to rest by the provisions of both the Convention on Biological Diversity and the FAO Treaty on Plant Genetic Resources. Both international instruments have clearly reiterated the sovereignty of states over plant genetic resources occurring within the boundaries of their jurisdiction. For instance, the Preamble to the Convention on Biological Diversity unequivocally reaffirms 'that States have sovereign rights over their own biological resources'. Article 3 further provides:

States have, in accordance with the Charter of the United Nations and the principles of international law, the sovereign right to exploit their own resources pursuant to their own environmental policies, and the responsibility to ensure that activities within their jurisdiction or control do not cause damage to the environment of other States or of areas beyond the limits of national jurisdiction.

Further, Article 15 of the Convention, dealing with the sensitive issue of access to genetic resources, reiterates the principle of sovereign jurisdiction of states over plant genetic resources occurring within national boundaries. It thus provides that 'recognizing the sovereign rights of States over their natural resources, the authority to determine access to genetic resources rests with the national governments and is subject to national jurisdiction'.

The FAO Treaty on Plant Genetic Resources re-echoes the norms of state sovereignty over plant genetic resources. Article 10 provides that 'in their relationships with other States, the Contracting Parties recognize the sovereign rights of States over their own plant genetic resources for food and agriculture, including that the authority to determine access to those resources rests with national governments and is subject to national jurisdiction'.

Indeed, so pervasive is the norm of state sovereignty over plant genetic resources that further citation of international and regional instruments on the subject is

61. See, e.g., *supra*, note 11.

unnecessary. However, a notable dimension to this norm is that states have a responsibility under international law to ensure the sustainable use of such plant genetic resources. In other words, although state sovereignty over plant genetic resources reigns supreme, other states have a legitimate right of 'common concern' on how those resources are conserved and exploited. At the present stage of international law, the outlines of the elements of the emerging regime of common concern of mankind regarding plant genetic resources remain underdeveloped and fuzzy. It would seem that the task of the contemporary scholar of international law on plant genetic resources is to think through the maze of options on how to devise an equitable and sustainable regime of access to plant genetic resources.

3. CONCLUSION

This article has argued that plants have always remained subject to state control. If there were any juridical doubts on this issue, it is fair to say that the Convention on Biological Diversity and the FAO Treaty on Plant Genetic Resources have laid such doubts to rest. Accordingly, it is an error, or at least an overstatement, to argue or posit, as some commentators have done,⁶² that these international legal instruments created a 'new' regime of state sovereignty over plant life forms. The correct position is that both these instruments merely reaffirmed an inherent, pre-existing right of state jurisdiction over plant life forms. What has changed in recent times is the stridency and vociferousness with which states, the generich industrializing states, are reasserting their right of sovereignty over plants within their own jurisdiction. More importantly, contemporary normative thrusts on the management of such plant resources have helped to raise the issue of responsibility and duties of states as to how they manage and conserve such resources.

Given the self-interest of states in matters pertaining to food security and the industrial implications of plant genetic resources control,⁶³ it is to be expected that powerful states with huge interests in plant genetic resources would protest against the re-emerging doctrine of national sovereignty over them. However, a better response would rest in the articulation of fair and equitable regimes for the sharing of the burdens and benefits of plant genetic resources conservation and development.⁶⁴ This would be a far more constructive approach than unhelpful rhetoric on the ownership of such resources.⁶⁵

62. See, e.g. W. Lesser, *Sustainable Use of Genetic Resources Under the Convention on Biological Diversity: Exploring Access and Benefit Sharing Issues* (1997), at 99.

63. United States' Declaration Made at the United Nations Environment Programme for the Adoption of the Agreed Text of the Convention on Biological Diversity, issued 22 May 1992, (1993) 31 ILM 848.

64. D. Jenks, 'The Convention on Biological Diversity – An Efficient Framework for the Preservation of Life on Earth?' (1995) 15 *Northwestern Journal of International Law and Business* 636.

65. R. Panjabi, 'International Law and the Preservation of Species: An Analysis of the Convention on Biological Diversity Signed at the Rio Earth Summit in 1992', (1993) 11 *Dickinson Journal of International Law* 187, at 224.