

BOOK REVIEW

GLOBAL BIOPIRACY: PATENTS, PLANTS, AND INDIGENOUS KNOWLEDGE, by Ikechi Mgbeoji, Vancouver: UBC Press, 2005, 311 pp.¹

Since Pat Mooney published *Seeds of the Earth: A Private or Public Resource?*² some 25 years ago, there has been robust debate on the socio-political, legal, and economic ramifications of dealings in plant genetic resources—especially in the ever-charged context of North-South relations.³ Generally speaking, the global North is rich in financial capital and industrial technology but impoverished in genetic resources, whereas the global South is rich in genetic resources but economically weak.⁴ In the colonial, post-colonial, and extant phases of North-South relations, arguments concerning the ownership/proprietary status of Southern plant genetic resources have been continually re-framed from diverse perspectives. However, not until recent advancements in biotechnology took place did appropriately dedicated discourse regarding the unequal distribution of the benefits of genetic resources and associated local knowledge—as well as its implications for Southern communities—get under way. More specifically, interest in the management and exploitation of global genetic resources has increased largely as a consequence of changes in intellectual property jurisprudence at both national and international levels—changes that have seen an aggressive extension of private rights of ownership over life forms and juridical degradation of indigenous or non-western epistemology. This trend has been framed in different ways, but today it is commonly referred to as ‘biopiracy’, a term credited to Canada’s renowned civil society activist Pat Mooney.⁵

¹ Ikechi Mgbeoji, *Global Biopiracy: Patents, Plants, and Indigenous Knowledge* (Vancouver: UBC Press, 2005).

² P.R. Mooney, *Seeds of the Earth: A Private or Public Resource?* (Ottawa: Inter Pares, 1979); see also Cary Fowler & Pat Mooney, *Shattering: Food, Politics and the Loss of Genetic Diversity* (Tucson: University of Arizona Press, 1990).

³ However, compare Londa Schiebinger, *Plants and Empire: Colonial Bioprospecting in the Atlantic World* (Cambridge, Mass.: Harvard University Press, 2004).

⁴ See Jim Chen, “Biodiversity and Biotechnology: A Misunderstood Relation” [2005] Mich. St. L. Rev. 51 at 53.

⁵ According to the Action Group on Erosion, Technology and Concentration (formerly the Rural Advancement Foundation International) led by Mooney, biopiracy refers “to the uncompensated commercial use of biological resources or associated TK [traditional knowledge] from developing countries, as well as the patenting by corporations of claimed

Given the term's origin in civil society circles, it has often been used to challenge the legitimacy of conventional intellectual property jurisprudence. However, because 'biopiracy' embodies a trans-disciplinary phenomenon, early writings on the subject did not necessarily have a deep legal grounding,⁶ and those opposed to the concept have tended to dismiss it as rhetoric lacking in intellectual depth.⁷ Until now, there has been virtually no significant and dedicated legal literature on the subject of biopiracy. This is a gap that Ikechi Mgbeoji's *Global Biopiracy*⁸ seems to fill. This meticulously researched book is perhaps the first major attempt in international law to grapple with the juridical framework for discourse on biopiracy.

Mgbeoji identifies biopiracy as not only a legal phenomenon, but also "the process of appropriation of indigenous peoples knowledge". This process takes place "within a social structure of inbuilt primordial prejudices and biases against non-Western cultures and non-Western epistemological frameworks"⁹ in ways that deny the intellectual contributions of Third World peoples. The book's principal thesis is that capital interests in the industrialized world employ "two distinct but mutually re-enforcing strategies"¹⁰ to perpetuate biopiracy: institutional/juridical mechanisms, and a gendered and racist construct of indigenous epistemology. This phenomenon, Mgbeoji argues, has dire implications for plant genetic diversity, global food security, and the individual and collective human rights of indigenous and local communities.

In Chapter 2, Mgbeoji puts biopiracy in historical perspective. He notes that, in contrast to the "blatant physical bravado of colonial pirates"¹¹ and

inventions based on such resources or knowledge": Graham Dutfield, "Bioprospecting: legitimate research or 'biopiracy'?", online: Science and Development Network <<http://www.scidev.net/dossiers/index.cfm?fuseaction=policybrief&policy=40§ion=171&dossier=8>>. See also Silvia Ribeiro, "TRIPs and the new faces of BIOPIRACY" (Lecture presented to the Heinrich Böll Foundation Summer School 2005, 6 September 2005), online: <http://www.glow-boell.de/media/de/txt_rubrik_5/SilviaRibeiro.pdf>. Mgbeoji defines biopiracy to include "the asymmetrical and unrequited movement of plants and TKUP [traditional knowledge of uses of plants] from the South to the North through the processes of international institutions and the patent system": *supra*, note 1 at 13.

⁶ See e.g. Vandana Shiva, *Biopiracy: The Plunder of Nature and Knowledge* (Boston: South End Press, 1997).

⁷ See Paul J. Heald, "Rhetoric of Biopiracy" (2003) 11 *Cardozo J. Int'l & Comp. L.* 519; see also Chen, *supra* note 4.

⁸ *Supra* note 1.

⁹ Mgbeoji, *supra* note 1 at 3.

¹⁰ *Ibid.* at 6.

¹¹ *Ibid.* at 13.

other direct forms of colonial claims to the resources of the colonized, modern processes of appropriation of plants and related indigenous knowledge of their uses are sophisticated, subtle, and legitimized by institutional, legal, and philosophical/ideological frameworks. One of the key legal/ideological platforms for biopiracy is the patent system. After describing the evolution of the patent system up to its extension to life forms, Mgbeoji proceeds to argue that the patent system, on both national and global levels, is vulnerable to judicial and political manipulation and consequently may be used to advance national state economic interests. The current initiative for a globalized patent regime does not address the failure of this system to accommodate the values and worldviews of non-Western societies. Thus, “the globalizing but inherently ‘ethnic’ [Eurocentric] status of a legal concept such as the patent regime may be characterized as ‘globalized localism.’”¹² Mgbeoji argues that this transition in the patent system and jurisprudence lies at the heart of biopiracy and the struggle for control of global biodiversity resources.

In Chapter 3, Mgbeoji addresses international law relating to the conservation and use of plants and indigenous knowledge and examines the implications of biopiracy for biological and cultural diversity. Consistent with the book’s characteristic depth of analysis, the discussion begins with an analysis of the value and functions of plants in light of their religio-cultural conceptions under both the Judeo-Christian/Western and indigenous/non-Western traditions. It also highlights the dominant environmental ethics and ideology of human-plant relations in those cultures. Typically, these relations are broadly expressed along either anthropomorphic and “biocentric”¹³ or non-anthropomorphic lines; the latter reflect the approach of many indigenous cultures in the South. Mgbeoji does not wholly endorse either approach. Instead, he adopts a balanced position on the matter, noting that “[t]he appropriation and extinction of plant life forms is a hydra-headed problem, and it would be simplistic to assume that a quick embrace of non-anthropocentric views on nature is the only path towards environmental justice and the promotion of plant and cultural diversity.”¹⁴ However, he rejects industrialization of plants when profit is the sole motive—an approach that he feels marginalizes cultural sensitivities and distorts the link between biodiversity and cultural diversity (which is considered critical to indigenous cultures and sustainable environment). He recommends the establishment of a

¹² Mgbeoji, *supra* note 1 at 38.

¹³ “[B]iocentrism,’ which views humanity as equal to all other forms of life, acknowledges the global morality of its competitive struggle for existence”: *ibid.* at 60 and note 83 thereto.

¹⁴ *Ibid.* at 60.

threshold for “determining which human interests and values inspire artificial mediation in plant species and genetic diversity.”¹⁵

Mgbeoji also argues that the industrialization of plant genetic resources is a result of an economic and philosophical ideology that conflates the exploitation of nature with development: “[T]he current ideology of development, which squeezes the last drop of sustenance from the earth, is the root of the loss of plant species.”¹⁶ Mgbeoji believes that this ideology is one basis for the culture of consumerism, which is sustained by an inequitable global economic regime that reinforces the South’s status as the supplier of raw materials for the consuming North—particularly in the contexts of agribusiness, bioprospecting, biopiracy, and, by implication, biotechnology. This focus on the economic and industrial value of plants exacts a serious toll on the ecosystem and biodiversity by promoting the neglect, and consequent extinction, of rare plant species; the free market, rather than natural selection, is the “divining rod for plant resources”.¹⁷ Indeed, for Mgbeoji, “the ‘wisdom’ of the free market ... is merely the institutionalization of cultural prejudices and a valorization of ignorance”,¹⁸ and these cultural prejudices have contributed to a process of global cultural harmonization that is undermining the linkage between cultural diversity and plant diversity.

The most significant international legal regime for addressing the problem of the loss of plant species is the *Convention on Biological Diversity*.¹⁹ The *CBD* not only rejects the ‘common heritage of mankind’ approach to plant resources, but also reasserts the sovereign rights of states over genetic resources and provides for access by needy states to plant genetic resources. Mgbeoji states that “[u]nder modern international law on plant life forms, responsibility for conservation of plants seeks a balance between state sovereignty, international co-existence, and cooperation.”²⁰ The *CBD* achieves this balance, but perhaps its boldest initiative lies in according prominence to indigenous knowledge by emphasizing its importance in the conservation of global genetic and cultural diversity. This approach is in direct contrast to “the gendered and racist approach of early science to the phenomenon of development”, which “has been a factor in the creation of a system that has

¹⁵ Mgbeoji, *supra* note 1 at 63.

¹⁶ *Ibid.* at 67.

¹⁷ *Ibid.* at 73.

¹⁸ *Ibid.*

¹⁹ *United Nations Conference on Environment and Development: Convention on Biological Diversity*, 4 June 1993, Can. T.S. 1993 No. 24, 31 I.L.M. 818, online: [Convention on Biological Diversity <http://www.biodiv.org/convention/articles.asp>](http://www.biodiv.org/convention/articles.asp) [*CBD*].

²⁰ Mgbeoji, *supra* note 1 at 79.

practically turned itself into an impediment to the sustenance and survival of plant life forms and, by implication, of human life itself.”²¹

Chapter 4 constitutes the heart of the book. Here, Mgbeoji addresses the appropriative aspects of biopiracy. He identifies and discusses in compelling fashion three key, mutually re-enforcing factors in the systemic perpetuation of biopiracy. The first factor takes the nature of what Mgbeoji characterizes as a socio-cultural “war” against indigenous knowledge forms or epistemic frameworks outside the Western scientific paradigm. This war involves the cultural and gendered degradation and undermining of the intellectual contribution of non-Western peoples—indigenous farmers, particularly women, among them—to the improvement of plants and knowledge of their uses. The second factor is institutional. The implicated institutions are the International Agricultural Research Centres²² (IARCs) through which powerful Northern states “relocat[ed] ... the Third World’s plant genetic resources without adequate compensation, or even a token recognition of indigenous intellectual contributions towards the improvement of those resources”²³ In a detailed, well-researched discussion on IARCs, Mgbeoji characterizes this trend as “probably the most egregious act of biopiracy in international relations.”²⁴ The third factor, which Mgbeoji sarcastically describes as the “most ‘apparently legitimate’ factor central to biopiracy”,²⁵ is the patenting of traditional knowledge of uses of plants. Furthering his argument that the patent regime is a malleable instrument that nations have used to advance their socio-economic self-interest, Mgbeoji engages in a thorough analysis of the development of the patent system, including the deliberate lowering of the patentability threshold to facilitate and legitimize the appropriation of plants and related local knowledge. One outstanding feature of this chapter is its exegetic dissection of key international legal instruments,²⁶ as well as the Food and Agricultural Organization, the

²¹ Mgbeoji, *supra* note 1 at 86.

²² For a list of the research centres, see online: Consultative Group on International Agricultural Research <<http://www.cgiar.org/centers/index.html>>.

²³ *Ibid.* at 88.

²⁴ *Ibid.*

²⁵ *Ibid.*

²⁶ Some of these include the *CBD* (*supra* note 19); the *Agreement on Trade-Related Aspects of Intellectual Property Rights*, being Annex 1C to the *Marrakesh Agreement Establishing the World Trade Organization*, 15 April 1994, 1869 U.N.T.S. 299, 33 I.L.M. 1197 [*TRIPS Agreement*]; the International Union for the Protection of New Varieties of Plants, online: UPOV <<http://www.upov.int>>; and the *International Treaty on Plant Genetic Resources for Food and Agriculture*, 3 November 2001, online: Food and Agriculture Organization of the United Nations <<http://ftp.fao.org/ag/cgrfa/it/ITPGRRe.pdf>>.

Consultative Group on International Agricultural Research, and the IARCs—particularly their role in the global politics and economics of the struggle for control of Southern plant germplasm.²⁷

In an attempt to restrict intellectual property claims to plant genetic resources in the form in which they were received, the 2001 *International Treaty on Plant Genetic Resources for Food and Agriculture*²⁸ established a new multilateral system of access in Article 12(3)(d). However, as Mgbeoji notes, there are no “reasonable guarantees against appropriation and biopiracy of plant genetic resources held in trust by the FAO [Food and Agriculture Organization of the United Nations] or its agencies.”²⁹ He argues forcefully that Article 12(3)(d) is not the panacea for the protection of Third World plant genetic resources from exploitation by industrialized countries through their patent regimes.

In Chapter 5, Mgbeoji examines “the appropriative function of the interplay between patent systems of industrialized states and, in a limited capacity, PBRs [Plant Breeders’ Rights].”³⁰ In doing so, Mgbeoji focuses mainly on the U.S. patent regime because of that system’s influence on the evolution of an international patent framework—especially the juridical regime created by the *Agreement on Trade-Related Aspects of Intellectual Property Rights*.³¹ Mgbeoji’s analysis also incorporates discussions of case law on the patenting of life forms (notably the *Diamond v. Chakrabarty*³² decision and its aftermath). He walks the reader through the criteria for patentability and explains how each criterion (novelty, specification, inventive step/utility, and uniform reproducibility/industrial applicability) contributes to the phenomenon of biopiracy. He also examines how patents on plant genetic resources promote discovery over invention and explores the implications of the distortion and erosion of the product of nature exemption to patentability. Mgbeoji concludes that fundamental “changes in the concept of patentability owe much more to judicial assertiveness and the rise of corporate control of

²⁷ Mgbeoji describes the IARCs as a preemptory initiative by industrialized countries in the wake of dying empire to guarantee continued South-to-North funneling of genetic resources. On this premise, it is hardly a coincidence that patents on plant genetic resources took forefront shortly after the emergence of IARCs.

²⁸ *Supra* note 26.

²⁹ Mgbeoji, *supra* note 1 at 118.

³⁰ *Ibid.* at 119.

³¹ *Supra* note 26. For instance, he argues that “Article 27 of the TRIPs Agreement elevates US patent law into a set of global legal norms” (*ibid.*).

³² 44 U.S. 303 (1980).

the seed industry than they do to legislative boldness.”³³ In addition, he offers a detailed account of how the patent system has been re-engineered over the course of several decades to facilitate the appropriation of Southern plant germplasms, and thereby satisfy the economic interests of the industrialized Northern countries. Mgbeoji questions “why the United States and the member states of the WTO [World Trade Organization] should not have a simple global standard of absolute novelty rather than relying on the questionable and exploitative national and/or regional limitations regarding what constitutes novelty and prior art.”³⁴

The middle of this lengthy chapter is devoted to an analysis of such topics as the international law of state responsibility, the challenges posed by the phenomenon of biopiracy, and the emerging international legal framework for combating biopiracy. Mgbeoji notes that this latter framework can be determined from “jural responses contrived within the narrow ambits of the exceptions in Article 27 of the [*TRIPS Agreement*] and the relevant provisions of the CBD”,³⁵ as well as from soft law. Mgbeoji’s discussion of biopiracy within a public international law framework is cutting-edge scholarship. It presents a bold perspective on a phenomenon whose intellectual integrity is not only contested but, in extreme cases, dismissed as an expression of emotional outrage and nothing more. Mgbeoji surmises that since patents are property rights, international law on state responsibility over appropriation of tangible property would apply to biopiracy. Nonetheless, he notes that international law has yet to “[formulate] any reliable remedy for state or individual victims of biopiracy.”³⁶

In the concluding segment of this chapter, the author examines and critiques various strategies for tackling biopiracy, including the registration of traditional knowledge. He then elaborates upon his preferred approach to the problem: establishing a framework for modifying the patent system and an outline of a communal patent regime. While Mgbeoji notes that the modification process should involve the “institutionalization of indigenous or traditional intellectual property regimes at both national and transnational jurisdictions”,³⁷ he recognizes that Southern states’ lack of political clout would be an impediment to the establishment of a globally acceptable autochthonous intellectual property rights regime. However, Mgbeoji rejects the assertion that indigenous knowledge forms are not amenable to

³³ Mgbeoji, *supra* note 1 at 119.

³⁴ *Ibid.* at 133.

³⁵ *Ibid.* at 154.

³⁶ *Ibid.* at 151.

³⁷ *Ibid.* at 162.

conventional intellectual property rights. The author suggests that Southern states should begin to re-think their approach to intellectual property rights and to regard such rights the way industrialized countries have: as powerful means of advancing their interests. Mgbeoji argues that, to check biopiracy, the patent system can be modified to create a regime of defensive community patents on plants and traditional knowledge of their uses.

In his outline of a communal defensive patent system, Mgbeoji explains how such a framework would overcome hurdles like the legal personality of communities or the communal nature of inventions in traditional communities. Mgbeoji convincingly deconstructs the former, and to address the latter he proposes the incorporation of oral knowledge as prior art and the establishment of an international bureau for the certification of novelty of inventions. However, while Mgbeoji acknowledges that indigenous peoples and Southern states lack the political clout to press for entrenchment of autochthonous intellectual property rights, he does not consider that his proposed solution might encounter similar obstacles. Indeed, considered as a whole, Mgbeoji's proposal runs counter to substantive features of the conventional patent system. Besides, like the traditional knowledge registry, it is not clear how many defensive patents can be filed to ward off biopiracy. It is also not clear (though it can be presumed) that communal defensive patents would warrant the relaxation of patentability standards. Such a possibility is at odds with the book's opposition to and critique of the erosion/relaxation of patentability standards in the industrialized world. One conclusion that may be drawn from this about-face is that Mgbeoji prefers that the states of the South adopt a pragmatic approach in addressing biopiracy.

Because the conclusion of Chapter 5 and its accompanying recommendations would appear to be a natural place for the author to end the book, Chapter 6 hangs like an afterthought or, at best, an epilogue. The chapter is a collection of random reflections on the consequences of the phenomenon of biopiracy and possible actions against the trend. Mgbeoji describes biopiracy as having an adverse impact on a number of areas apart from cultural/genetic diversity, including food security, health, environmental integrity, and human rights. In addition, he reiterates the point that weak states of the South are unlikely to create a new global legal mechanism for the protection of their rich genetic resources and associated non-Western knowledge, and he recommends that Southern states take a regional approach to patents in a manner akin to the European Union patent regime; such an approach may help these states "modify the existing [patent] structure in order to reflect their particular concerns, priorities, and values."³⁸ When gene-rich countries act like a cartel under a regional and continental framework,

³⁸ Mgbeoji, *supra* note 1 at 195.

Mgbeoji submits, they are sure to succeed in “restricting access to plant genetic material by those states with notoriously prejudicial and appropriating patent systems.”³⁹

*Global Biopiracy*⁴⁰ exemplifies outstanding scholarship; it is well-researched and offers a balanced analysis of its subject matter. It is a seminal contribution to a subject that is quite controversial and evokes strong emotions in some circles. It helps to provide a public international legal foothold on a phenomenon that has, perhaps understandably, been treated as though it exists at the peripheries of the existing legal framework, if not entirely outside it. The depth of the research, including the diversity of its sources, helpful statistical information, and the author’s audacious immodesty in his analysis make this book an uncommon piece of work. Whether one is convinced of the reality of biopiracy, denies its existence, or holds the notion in contempt, *Global Biopiracy* provides much useful information. This book is a great resource for scholarship in a number of areas, including North-South relations, globalization, international institutions, public international law relating to intellectual property rights (especially patents), environmental law, political economics of global resource exploitation, food security studies, and indigenous knowledge. Like Mooney’s work mentioned above, *Global Biopiracy* has made room for a more vibrant future debate on its subject matter. It is a timely work that will significantly influence future scholarship and policy in a diverse number of areas.

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³⁹ Mgbeoji, *supra* note 1 at 196.

⁴⁰ *Supra* note 1.

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