

# ELR

## NEWS & ANALYSIS

### DIALOGUES

Copyright © 2002 Environmental Law Institute®, Washington, DC. reprinted with permission from ELR®, <http://www.eli.org>, 1-800-433-5120. The Global South as the Key to Biodiversity and Biotechnology—A Reply to Professor Chen

by Srividhya Ragavan

This Dialogue seeks to respond to Prof. Jim Chen's recent Article in the *Environmental Law Reporter, Diversity and Deadlock: Transcending Conventional Wisdom on the Relationship Between Biological Diversity and Intellectual Property*.<sup>1</sup> In that Article, Professor Chen highlights the role of the Convention on Biological Diversity (CBD)<sup>2</sup> in protecting biodiversity. This Dialogue argues that the CBD is an inherently ineffective mechanism to protect biodiversity. It disagrees with Professor Chen's argument that the CBD provides for access to technology and wealth transferred to the global South from the global North.<sup>3</sup> In his Article, Professor Chen concludes that contrary to the "fear" of the North, the CBD promotes trade and facilitates the acquisition of technology by developing countries from the developed world.<sup>4</sup> This Dialogue highlights the gaps in the CBD and challenges its capacity to conserve biodiversity. It demonstrates that in practice the CBD actually precludes the flow of benefits to the South. The CBD works in tandem with the other international treaties, particularly the annex on Trade-Related Aspects of Intellectual Property Rights (TRIPS),<sup>5</sup> and the International Convention for the Protection of New Varieties of Plants (UPOV)<sup>6</sup> to facilitate proprietary protection over biotechnology. Contrary to Professor

Chen's conclusions,<sup>7</sup> TRIPS and the UPOV concern themselves with neither biopiracy nor the flow of technology to the South. This Dialogue concludes that while the active participation of the South is the key to protection of biodiversity and prevention of intellectual property piracy, these goals will be hard to come by unless there is fairness of treatment for the South in the various conventions.

#### The CBD and Global Equity

The insalubrious consequences of the depletion of diversity have brought into focus the need for international agreement on methods of preservation and conservation. The North and the South, conventionally at loggerheads on trade issues and on the role of intellectual property protection, converged on the need for measures to protect biodiversity. This relative break from disagreement propelled the creation of the CBD. The CBD was introduced at the United Nation's Conference on Environment and Development in 1992 and came into force on December 29, 1993.<sup>8</sup>

Article 3 of the CBD affirms the sovereign rights of states to exploit their resources "pursuant to their own environmental policies." The article adds that the sovereign should, by national legislation, provide for access to genetic resources. Moreover, such access has to be made in accordance with the provisions of the CBD. On a plain reading, the convention merely mandates access to genetic resources and leaves the operating mechanism of the access to the sovereign. However, what the CBD actually does is far from this. Though Article 15(1) mandates that access shall be subject to national legislation, Article 15(2) specifies that the national legislation shall not run counter to the objectives of the convention. Article 1 details that the objective of the convention is to allow "appropriate" access to genetic resources. Reading these articles together, it seems clear that the CBD provides access to genetic resources irrespective of national legislation. That the national legislation will grant access is the mandate of the CBD, narrowed only by a reference to the "appropriateness" of the access. Therefore, a sovereign cannot, under the CBD, refuse access to genetic resources on the basis that there is no national legislation or

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1. Jim Chen, *Diversity and Deadlock: Transcending Conventional Wisdom on the Relationship Between Biological Diversity and Intellectual Property*, 31 ELR 10625 (June 2001).
2. 31 I.L.M. 818 (1992) [hereinafter CBD].
3. Chen, *supra* note 1, at 10626.
4. *Id.*
5. Annex 1C to the General Agreement on Tariffs and Trade, Uruguay Round, World Trade Organization, *done at Marrakesh*, Apr. 15, 1994, 33 I.L.M. 1981 (1994), *reprinted in* WORLD TRADE ORGANIZATION, THE RESULTS OF THE URUGUAY ROUND OF MULTILATERAL TRADE NEGOTIATIONS 365 (1995) [hereinafter TRIPS].
6. International Convention for the Protection of New Varieties of Plants (as revised at Geneva on Mar. 19, 1991) (UPOV Publication No. 221(E)) [hereinafter UPOV].
7. Chen, *supra* note 1, at 10627.

8. CBD, *supra* note 2.

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that it is not “appropriate” access under the national legislation. The standard legal notion of resolving issues in favor of the sovereign has the danger of running counter to the CBD’s objective of access to genetic resources. Therefore, sovereignty is subject, by the CBD, to providing access to genetic resources by national legislation. The CBD not only dictates what the sovereign should do but also specifies how the sovereign should facilitate the same. It details the manner and mechanism through which “sovereign” rights can be asserted. This issue becomes more interesting when we understand the restrictions under Article 15 regarding the provision of technology.<sup>9</sup>

The element of “mutual consent” is enforced only when dealing with technology transfer between the powerful North and the poor South. Neither the technology transferring Article 15 nor the life transforming Article 16<sup>10</sup> (which deals with the rights to transfer of technology) impose any mandatory obligations on the North to ensure that access to technology is provided. The relative bargaining power of the parties makes it more difficult for the South to expect any real benefit from the CBD. In some cases, the developing countries or the holders of diversity are possibly not even aware of the extent of development that is prevalent in the North in order to bargain and negotiate a meaningful technology transfer agreement. The CBD does not detail the relevant factors relating to private benefit to either the community that provides access or to individual holders. Nor does it detail methods for ascertaining the costs to the community (or of individuals) of having to share such information. The benefits that the community would derive, if at all, from such sharing are unclear—particularly since the transfer of technology under Article 16 would be based on mutual consent. This is all the more glaring since there seems to be no such objective standards (the term “prior informed consent,” in Article 15(5), being undefined) for sharing genetic resources. The CBD no doubt envisions that the genetic resources of the world ought to be shared. But it has clearly failed to incorporate the reverse determination, which is a mandatory declaration to ensure compensation and rights over the indigenous material for its holders. Strangely, the CBD expects resources to be shared for the benefit of “mankind,” yet seems to expect that the most downtrodden societies of the world should provide the benefit.

Critics would point to the “fair and favorable terms” provided under Article 16. What amounts to a “fair and most favorable term” and a “preferential term”<sup>11</sup> in agreements has not been defined. The article simply assumes that “preferential terms” will be avoided because countries providing genetic material, “in particular those that are developing countries, . . . are provided access to and transfer of [proprietary] technology . . . on mutually agreed terms.”<sup>12</sup> However, in actuality, the extent of “preference” that a country is likely to enjoy will depend on its ability to bargain beneficial terms.

Interestingly, Article 1 of the CBD mentions fair and equitable sharing of the benefits arising out of the utilization of genetic resources, but the notion of the same has not been elaborated adequately anywhere in the CBD. The CBD meticulously discusses intellectual property rights over the technology to be shared on terms that are consistent with the rights.<sup>13</sup> But the CBD does not discuss similar rights for those sharing genetic resources. Notably, access to technology is incomplete unless accompanied by a proper intellectual property right and an agreement defining the contours of the technology, but access to the genetic resources is complete without any of these.

The next area of importance is Article 8(j). It emphasizes the requirement of “prior informed consent” before resources may be taken from the holders. Yet, as noted above, the CBD does not define the term. The kind of information and extent of information that must be given in order for consent to be “informed” is nowhere specified. What constitutes an adequate consent and the components of “prior informed consent” should be clarified. This will enable understanding of the potential of the resource sought to be shared, a prerequisite for a proper “mutual agreement.” The North argues that the degree of information to be imparted may vary, depending on the people who possess the knowledge and the material in question. However, the extent of knowledge capable of being withheld is very high. It varies depending on the intelligence and general awareness of the indigenous people involved, leaving tremendous scope for misuse and inequality in bargaining capacity and sophistication. Yet another interesting question that the CBD has not involved itself with relates to the right of the holders to refuse access to the resources. Can the sovereign power of the state or the CBD itself override such lack of consent? If one or both of these can override the absence of “prior informed consent,” the entire concept is a hoax, unworthy of even being deemed a mere “paper tiger.”

On the one hand, the CBD discusses mandatory sharing of information; on the other, it relies upon “prior informed consent.” It is unclear whether the requirement of having to share knowledge prevails over the need for consent by the indigenous people. Do the holders of such knowledge retain the “right to refuse” their consent to share resources after knowing the “full and fair” circumstances of the case? If not, such refusal could amount to a violation of the CBD, thus making “prior informed consent” subject to “mandatory sharing of the resources.”

The fact that a transfer of technology agreement can be violated after the genetic resource has actually been trans-

9. See Srividhya Ragavan, *Biodiversity—A North/South Issue—An Indian Perspective*, Presentation at the CASRIP High Technology Summit, Seattle, Wash. (June 24, 2000) (copy on file with author).

10. CBD, *supra* note 2, art. 16 (discussing rights to transfer of technology).

11. Article 16(2) of the CBD makes a distinction between “fair and favorable term” and a “preferential term” in agreements between contracting parties. There are no guidelines as to what these terms are or how they are construed to be so.

12. CBD, *supra* note 2, art. 16(3).

13. *Id.* art. 16(2).

14. See Srividhya Ragavan, *Protection of Traditional Knowledge*, 3 MINN. INTELL. PROP. REV. (forthcoming 2002) (copy on file with author).

15. The Ayahuasca is a brew also called the yage or yaje in Colombia. It has also been used in Brazil, Ecuador, and Peru. It is prepared from a plant called the vine *banisteriopsis caapi*. This traditional medicine has been used for millennia by the indigenous people of the Amazon to enter the sacred supernatural world, to heal, and for worship. The U.S. patent bearing No. 5752/1986 for this plant was issued almost a decade ago to Loren Miller of the International Plant Medicine Corporation. See International Cooperation for Development and Solidarity, *Position Paper on Bio Patenting and Threat to Food Security—A Christian and Development Perspective* (Feb. 2000), at <http://www.cidse.org/pubs.htm> (last visited July 5, 2001).

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ferred demonstrates another weakness of the CBD; that the CBD has failed to deal with similar breaches in the past demonstrates its impotence. The CBD does not have a mechanism to deal with circumstances in which the resources have been obtained by misrepresentation or by the communication of inadequate information.<sup>14</sup> Such instances range from the oft-repeated examples of Ayahusa,<sup>15</sup> the rosy periwinkle,<sup>16</sup> and the Solomon island case<sup>17</sup> to the biopiracy

claims that have recently emerged. Reports have revealed that the collection of research information, by extracting human blood, tissues, etc., in Third World countries has been either entirely devoid of consent or has involved inadequate consent.<sup>18</sup> Other reports include instances such as the case of Mexican beans,<sup>19</sup> the palawan plants of the Philippines,<sup>20</sup> and “brazzein.”<sup>21</sup> These reports have highlighted the reality of the inability of illiterate Third World villagers with little knowledge about modern medicine to give informed consent in a way comparable to a westerner.

The CBD does not display clarity on the future course of action if it is proved that the information was not acquired with “informed consent.” In any case, simply invalidating an information-transferring agreement for its breach—when the crux of the information has already been transferred—acts as neither a deterrent nor as a protective mechanism. As Professor Chen discusses, it is certainly true that the vigor in Article 1 contemplating “appropriate access of genetic resources to appropriate transfer of technology” disappears by the time we reach half way down to Rio to Article 16.<sup>22</sup>

In referencing “effective participation,” Article 19 addresses “especially developing countries,” much as the prodigal son of the house. These countries shall “take legislative, administrative[,] or policy measures, as appropriate, to provide for the effective participation in biotechnological research activities.” This clause has the potential to hamper research and development by the North.<sup>23</sup> Clause 2 then goes on to mandate access to the developing countries. Clause 2 details that states shall take “all practicable measures to promote and advance priority access on a fair and equitable basis . . . to the results and benefits arising from biotechnologies.” However, this will be on “mutually

16. The rosy periwinkle, unique to the Madagascar, contains properties that can cure certain forms of cancer. Two anti-cancer drugs, Vincristine and Vinblastine, were developed from the plant. The patent for this drug is held by Eli Lilly, which earns an average of around \$100 million annually from sales of the drugs. The island and its people, on the other hand, gained virtually nothing. See DARRELL A. POSEY & GRAHAM DUTFIELD, *BEYOND INTELLECTUAL PROPERTY* (International Development Research Center, Canada 1996). The point of issue is that the islanders were not informed by the prospectors of the plant's potential.
17. The U.S. Secretary of Commerce filed a patent application in 1993 for the cell line extracted from a 26-year-old Guaymi woman. Similarly, the U.S. Patent and Trademarks Office (PTO) granted patents on the cells lines of a Hagahai man from Papua New Guinea. The patent was granted to the U.S. Department of Health and Human Services and the National Institutes of Health (NIH) in March 1994. There was a public outcry because the cell line was extracted without proper consent and the knowledge of the donor or his tribe. In late 1996, the NIH abandoned the patent. See POSEY & DUTFIELD, *supra* note 16. See generally Debra Harry et al., *Indigenous Peoples, Genes and Genetics: What People Should Know About Biocolonialism*, at <http://www.ipcb.org/publications.htm> (last visited July 5, 2001).
18. In China, genetic diversity research conducted by students of Harvard University, in collaboration with a number of pharmaceutical companies, has been at issue. News reports indicate that the rural “contributors” were lured under the guise of offering them a free medical checkup. The research is being conducted under conditions in which proper informed consent is likely not being obtained. See John Pomfret & Deborah Nelson, *In Rural China, A Genetic Mother Lode*, WASH. POST, Dec. 20, 2000, at A1. See also Sharon LaFraniere et al., *The Dilemma—Submit or Suffer*, WASH. POST, Dec. 19, 2000, at A1 (the case of an Estonian who traveled to the West with the information that there will be some test for vitamins is detailed here. He finds himself a subject of a detailed clinical trial and is forced to sign a contract in a language he does not understand and is not given a copy). See also Karen DeYoung & Deborah Nelson, *Firms Find Costa Rica Special Place for Trials*, WASH. POST, Dec. 21, 2000, at A1. See also Karen DeYoung & Deborah Nelson, *Latin America Is Ripe for Trials and Fraud*, WASH. POST, Dec. 21, 2000, at A1; *Phase II for Human Genome Research*, RAFI PUBLICATIONS—THE COMMUNIQUE (Feb. 21, 2000), available at <http://www.rafi.org> (last visited July 5, 2001). But see John Pomfret, *China Probe Clears Harvard's Genetic Research*, WASH. POST, June 20, 2001, at A24 (Chinese government has cleared the scientists of fraudulently taking research materials).
19. Using the selection techniques, uniform genes of commercial beans sold commonly in Mexico were studied. In 1999, a distinctive, uniform, and new variety of the same beans was developed by POD-NERS L.L.C., a small seed company in the United States. This bean, named the Enola bean, was granted a U.S. patent (No. 5,894,079) and a U.S. Plant Variety Protection Certificate (No. 9700027). See *Biopiracy*, RAFI's Sixth Annual Update, RAFI PUBLICATIONS—THE COMMUNIQUE, available at <http://www.rafi.org> (last visited July 5, 2001).
20. In the Palawan region of the Philippines, researchers at the University of Illinois at Chicago (UIC) have been involved in a project aimed at exploiting pharmacologically important diversity in the region. The UIC team is particularly interested in a plant, known as dichapalin gelonoides, which they believe possesses significant anti-cancer pharmaceutical properties. Several years ago, the Philippines enacted the Indigenous People's Act (1995), which mandates prior informed consent of the local people. The Rural Advancement Foundation International (RAFI) reports that no such information has been obtained from the people. See *Biopiracy*, *supra* note 19.
21. “Brazzein” is a sweet berry extracted from a West African plant, *pentadiplandra brazzeana*. Scientists from the University of Wisconsin “discovered” this berry in Gabon, where local people have known of and consumed the berries for many years. Despite being

the inspiration and origin for brazzein, neither Gabon nor its people will share the benefits. University of Wisconsin scientists won at least three U.S. patents (US 5,527,555, EP 684995, WO 9531547) on the brazzein protein between 1994-1998. They were the first to isolate, sequence, and synthesize the deoxyribonucleic acid (DNA) encoding for the production of *pentadiplandra brazzeana*'s sweet protein. See POSEY & DUTFIELD, *supra* note 16.

22. Chen, *supra* note 1, at 10638.
23. See Karen Anne Goldman, *Compensation for Use of Biological Resources Under the Convention on Biological Diversity: Compatibility of Conservation Measures and Competitiveness of the Biotechnology Industry*, 25 LAW & POL'Y INT'L BUS. 695, 714 (1994), where she states that the “Bush [A]dministration objected to Article 19 because it infringes ‘on freedom to develop new technologies’ by requiring open access to research activities. Such open access could effectively transfer technology at the expense of intellectual property protection of that technology.”
24. At the outset, the vesting of sovereign rights over the resources and the need for prior informed consent from the holders were contemplated to be the checking mechanisms. Similarly, Article 14(1) seeks to minimize the impact on the environment by the conduct of an environmental impact assessment. This clause also suggests the possibility of public participation. However, the loophole in the same subclause lies in the fact that the environmental impact study is not mandatory; it need only be conducted as “appropriate.” Likewise, Article 14(2) discusses “environmental consequences of its programs and policies that are likely to have significant adverse impacts on biological diversity.” But this check is left unbalanced by the clause that requires that environmental impact be merely “duly tak[en] into account.” The clause does not vest any mandatory obligations to tackle such impacts. Article 19(1) and (2) also embody a mandate requiring the participation of developing countries. But see Ajay K. Sharma, *The Global Loss of Biodiversity: A Perspective in the Context of the Controversy Over Intellectual Property Rights*, 4 U. BALT. INTELL. PROP. L.J. 1 (1995) (arguing that there is ambivalence in the language used in Article 19).

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agreed” terms. Trust the bigger North to agree with the beggar South!

The CBD does, in theory, have a number of checks and balances<sup>24</sup>—but reality will tilt in the direction of those with a higher bargaining power. To its credit, the CBD has increased awareness of rights in the South, which in itself can pave the way toward mutual and beneficial negotiations. However, there is a need for increased commitment for biodiversity with a focus on the benefits to the southern holders of the biodiversity. That the United States refuses to sign this agreement indicates the lack of commitment of the leading industrialized nation to abide by even the few restrictions that the CBD would require. If this is the “plight” of the richest of the developed nations, one need not wonder about the commitment of the other so-called developed nations that are sitting with their collective foot in their mouth.

### TRIPping at Marrakesh

The treaty that becomes important to a fuller understanding of these issues is TRIPS.<sup>25</sup> TRIPS places intellectual property and trade issues at the forefront. Developing countries perceive that TRIPS is a “lose-all” situation for them, and a “win all or lose nothing” situation for most developed countries. The agenda envisaged under TRIPS has ruthless consequences on developing countries as well as on the least developed countries. Article 65(2) of TRIPS, when read with Article 65(4), bestows a maximum of 10 years delayed implementation for the least developed countries and states that are hampered politically, economically, technologically, and educationally.

Professor Chen argues that Article 27 gives members the right to deny patent protection under specified circumstances.<sup>26</sup> However, the article notes that such denial can be made only “provided that such exclusion is not made merely because the exploitation is prohibited by their law.” National legislation is inadequate under TRIPS to deny patent protection; a closer look seems to warrant the need for an international treaty or a convention addressing the extent to which patent protection may be denied.

Article 27(2) discusses exclusions on the grounds of “morality” and “*ordre public*.” There have been no decisions establishing the definition of “morality” and the “*ordre public*” requirement in the context of developing countries. The interpretation of these by the European Patent Convention (EPC),<sup>27</sup> which has objectives similar to TRIPS, may have some persuasive value.

The opposition division of the European patent office, in the case of *Howard Florey/Relaxin*,<sup>28</sup> held that the invention has to be “outrageous to the society in general”<sup>29</sup> to be considered against morality. The opposition division cautioned

that Article 53(a), which creates an exception to the general rule of patent protection in the case of “inventions, the publication or exploitation of which would be contrary to ‘*ordre public*’ or morality,” should only be used in what the division termed “rare and extreme circumstances.” Although this case was not appealed to the Technical Board of Appeals (TBA), it is likely that the narrow view of Article 53(a) will prevail should TBA examine a similar case.<sup>30</sup>

The TBA, in *Plant Genetic Systems v. Greenpeace, Ltd.*,<sup>31</sup> elaborated on the second half of Article 53(a) of the EPC. It ruled that the provision, which reads “provided that the exploitation shall not be deemed to be so contrary merely because it is prohibited by law or regulation in some or all contracting states,”<sup>32</sup> supports a very narrow construction of the exception to patent protection. “*Ordre public*,” the TBA detailed, covers protection of public security and the physical integrity of individuals as part of society. Within this notion, the TBA included breach of public peace or social order or serious prejudice to the environment. As for morality, the TBA inquired as to whether the invention would contradict conventionally accepted standards of conduct pertaining to European culture. The TBA rejected a survey taken among Swedish farmers and an opinion poll conducted in Switzerland, reasoning that “surveys and polls do not necessarily reflect ‘*ordre public*’ concerns or moral norms of the European culture.” It did not, however, discuss any alternate manner of how one comes to understand “concerns or norms of the European culture.” Accordingly, unless an invention seriously affects the general public or the environment, it will not fall within the exception. Should this approach be utilized in the TRIPS context, it would be only those very rare inventions that blatantly and uniformly shock cultures in the signatory states that fall within the exception to patent protection.

These cases highlight not only the inherent vagueness and the difficulty in implementing provisions relating to morality and “*ordre public*” but also the possibility of an extremely narrow construction. The Dispute Settlement Body (DSB)<sup>33</sup> is the authority under TRIPS vested with the duty to decide issues of interpretation of the treaty. In the TRIPS context, the entire argument on whether a certain invention affects “*ordre public*” and morality will rest on the DSB’s construction and perceptions of those undefined and ambiguous terms. Such subjective provisions cannot provide hope to developing countries that TRIPS will generate concessions from those who seek patent protection.

Similarly, Article 27(a) provides for the exclusion of “diagnostic, therapeutic[,] and surgical methods for the treatment of humans or animals.” Nowhere are any of these terms clarified. Article 27(b) excludes “plants, animals, and essentially biological processes for the production of plants

25. TRIPS, *supra* note 5.

26. Chen, *supra* note 1, at 10639.

27. Convention on the Grant of European Patent (European Patent Convention), Oct. 5, 1973, available at <http://www.european-patent-office.org/legal/epc/e/ma1.html> (last visited July 5, 2001) [hereinafter EPC].

28. *Howard Florey/Relaxin* (opposition by Fraktion der Grünen im Europäischen Parlament; Lannoye), 1995 E.P.O.R. 541.

29. *Id.* at 547.

30. See John Isacson, *European Patent Office Confirms the Patentability of Human Genes and Proteins* (undated), available at <http://www2.ari.net/foley/hum-gen.html> (last visited July 5, 2001).

31. Decision T 356/93, Technical Board of Appeal.

32. *Id.*

33. TRIPS, *supra* note 5, art. 64.

34. Article 27(b) is very similar to Article 53(b) of the EPC. The European TBA, in interpreting Article 53(b) of the EPC, which discusses “Exceptions to Patentability,” held that plant varieties were excluded from European patent protection mainly because protection was sought under the UPOV. See Decision T49/83 Technical Board of Appeal, *Ciba Geigy/Propagating Material*, July 26, 1983, O.J. EPO 1984. Elsewhere, in the *Novartis AG* case, the Enlarged Board of Appeal held that patents for new types of plants cannot be granted under Article 53(b), as to do so would be inconsistent with the UPOV. See Decision G 0001/98 Enlarged Board of Appeal, Dec. 20, 1999, *Novartis AG*.

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and animals” though members “shall protect plant varieties.” The subject matters excluded under Article 27(b) of TRIPS cover areas that are protected by the UPOV. The UPOV protects the whole plant, including the reproductive and vegetative propagating material, pursuant to Article 5(1).<sup>34</sup> In effect the choice of members to exclude matters falling under Article 27(b) will be limited to protecting the same subject matter under the UPOV.

The facility of compulsory licensing is detailed in Article 31 of TRIPS. Article 31(c) indicates that the scope and the duration of any such license shall be limited to the purpose for which it is authorized. Since the high cost of technology or a patented product cannot be a “purpose” for using Article 31,<sup>35</sup> access to technology will, for countries of the South, continue to be unreachable.

TRIPS and the CBD could have played a complementary role had TRIPS recognized some kind of property in traditional knowledge for the benefit of developing countries. Instead, read together, the CBD ensures that biodiversity is shared with the North and TRIPS serves to protect private proprietary interests in the genetic material so acquired.

### The UPOV—The Final Destination

The UPOV, a convention meant to protect commercial breeding,<sup>36</sup> establishes a right similar to patents on plants and gives it a fancy name of breeder’s rights. Article 14 of the convention describes the scope of rights of a breeder over the plants protected under Article 7. Clause (b) of Article 14 stipulates that the breeder may make additional conditions and limitations to authorize use of such plants. Article 15 sets out the exception for Article 14, and clarifies that acts done for private, commercial, and experimental purposes are not a violation of breeder’s rights.

Considering that hunger is the biggest challenge to mankind today, 20 years is a very long period to vest the right of selected food crops in an individual entity/breeder. Moreover, there is nothing in the UPOV that enables an uneducated, small-time farmer to become aware of when the 20-year period is over. Of course he can be ignored—a question of 1 life versus \$1 million. There is seemingly no incentive for preservation of biodiversity when the bioknowledge required for sustenance of diversity is locked up for years within the reach of a privileged few.

In order for a breeder to get protection for plants, the variety should be new<sup>37</sup> and clearly distinguishable.<sup>38</sup> If not, it is deemed to fall within the old variety, for which the original breeder retains the rights. The result is that breeding is only encouraged for the commodity markets, and not for the local economy.<sup>39</sup> The genetic uniformity was introduced as a checking mechanism to avoid granting broad patents. However, this criterion results in the loss of genetic diversity in agriculture.<sup>40</sup>

Realistically, the CBD mandates the sharing of the avail-

able resources. TRIPS ensures that the inventions from the genetic materials are patented and packed for exchange with money bags that the South does not have. The UPOV enables multinationals with financial potential to take the gene out and stick it in elsewhere and thus produce a “new, distinct” variety protected effectively under Article 7. Such a new “variety” will be monopolized for another 20 years by the developed nations. Even assuming that the “new variety” is not a mere juggling of genes, but rather a breakthrough in plant breeding with the potential to resist natural hazards of agriculture, it will still be unaffordable for use where it is most required—the South.

Amazingly, the UPOV and the CBD have conflicting provisions. The CBD vests “sovereign rights” over national biodiversity, while the UPOV grants the plant breeder with rights over several strains of crops.<sup>41</sup> The CBD highlights the need to protect the “intrinsic value of biodiversity” embedded in plants and natural resources. The UPOV protects the intrinsic values of the distinctiveness in the new variety from the old and existing variety. Both treaties relate to protection of certain information embedded in the genetic resources of plants. While the CBD advocates sharing of the information hitherto unknown to the world for the “common concern of human kind,” the UPOV vests monopoly rights on the plant breeders.

The UPOV will also conflict with the collective rights principle of Article 8(j) of the CBD. It does not provide for the sharing of benefits, unlike the CBD; the benefit sharing in the CBD enables free flow of information regarding medicinal genes in particular varieties of plants. A plant breeder who acquires such genetic information by virtue of the CBD can use that information to develop a “new” variety that can strengthen the medicinal strain. The UPOV will conflict with the CBD by facilitating the breeder to patent it for 20 years, thereby stifling the free flow; “farmers of the [S]outh end up paying royalties for their own germplasm which has been tampered with and repackaged in the [N]orth.”<sup>42</sup> Moreover, Article 8(j) specifically mandates a total of 170 contracting parties, to promote the wider application of the indigenous knowledge with the approval and involvement of the holders. The 37 members of the UPOV, by virtue of granting a patent over a “new” variety, specifically exclude such involvement. Interestingly, some of the 170 signatories of the CBD have also signed the UPOV.

### Conclusion

Biodiversity is as important in protecting the resources in the North as it is for the protection of life in the South. The efforts to save biodiversity cannot succeed unless they actively and fairly involve the South. The contribution of the South toward the protection of biodiversity necessitates benefits flowing from the treaties that mandate the South to

35. TRIPS, *supra* note 5, art. 31.

36. UPOV, *supra* note 6.

37. *Id.* art. 6.

38. *Id.* art. 7.

39. See Genetic Resources Action Int’l, *Ten Reasons Not to Join UPOV*, GLOBAL TRADE & BIODIVERSITY IN CONFLICT, May 1998, at 1, available at <http://www.grain.org/publications/gtbc/issue2.htm> (last visited July 5, 2001).

40. *Id.*

41. *Id.*

42. *Id.* See also Mark Hanning, *An Examination of the Possibility to Secure Intellectual Property Rights for Plant Genetic Resources Developed by Indigenous Peoples of the NAFTA States: Domestic Legislation Under the International Convention for Protection of New Plant Varieties*, 13 ARIZ. J. INT’L & COMP. L. 175 (1996), where the author concludes that, unfortunately, the UPOV fails to meet the needs of indigenous peoples and small farmers. “The UPOV offers no protection to Indigenous Peoples and their landraces when plant genetic resources are used by biotechnicians and breeders to develop high-yielding varieties.” *Id.* at 251.

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obligations. It is for the international bodies to decide the means for enabling the mechanisms for such benefits to flow. Otherwise, the prevailing situation of mistrust between the North and the South will continue. It will only in-

crease in distance between the two parties. At the end of the day, neither party will benefit. Importantly, both the blessed intellectual property rights and the bastardized biodiversity will be affected detrimentally.