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Cultivating Farmers' Rights: Reconciling Food Security, Indigenous Agriculture, and TRIPS

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Cultivating Farmers' Rights: Reconciling Food Security, Indigenous Agriculture, and TRIPS

ABSTRACT

This Note discusses strategies for cultivating Farmers' Rights internationally. The rise of international treaties awarding intellectual property rights in plant genetic resources to plant breeders brought with it an erosion of agricultural biodiversity as well indigenous farmer lifestyles. Farmers' Rights emerged in recognition of the role of traditional farmers play in conserving, creating, and promoting genetic diversity in the food supply and of the importance of maintaining traditional agriculture practices. This Note argues that Farmers' Rights can be realized internationally through concerted effort. The Note proposes that Farmers' Rights could be realized if national governments create laws and infrastructure that promote Farmers' Rights while the international community works to change international intellectual property law.

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I. INTRODUCTION

The United States government began supporting seed breeding programs as early as the late nineteenth century.¹ The goal of these programs was to encourage private companies to create new plant varieties and to take the responsibility of developing new plant varieties out of the hands of farmers.² However, because plants can be grown from seed from the previous year and farmers can resell seed in competition with the original breeder, private industry lobbied for a way to protect plant varieties.³ This lobbying led to the international development of intellectual property protections of plant varieties that could be saved, replanted, and sold.⁴

In 1961, the International Convention for the Protection of New Varieties of Plants (UPOV)⁵ was signed to create an international

1. ANTHONY J. STENSON & TIM S. GRAY, *THE POLITICS OF GENETIC RESOURCE CONTROL* 9 (1999).

2. *Id.*

3. *Id.* at 10.

4. *Id.*

5. International Convention for the Protection of New Varieties of Plants, Dec. 2, 1961, 33 U.S.T. 2703, 815 U.N.T.S. 89 (revised in 1972, 1978, and 1991) [hereinafter

intellectual property scheme to protect plant breeders' rights. UPOV defines a "breeder" as a person who "bred, or discovered and developed, a variety."⁶ UPOV allows breeders to develop patents over new, distinct, stable, and uniform plant varieties, and to exclude others from access to those varieties.⁷ More recently the World Trade Organization's Agreement on Trade-Related Aspects of Intellectual Property (TRIPS) created even more expansive intellectual property protection for plant genetic resources.⁸

A tension exists between plant breeders' intellectual property rights, which adhere to a developed conception of property ownership, and the practices of local subsistence farmers, who often own plant varieties communally and produce food for their own subsistence. Intellectual property regimes tend to threaten traditional farmers' ability to save and replant seeds, as well as to exchange seeds with other members of the community.⁹ In addition, subsistence farmers preserve and create new genetic diversity in the food supply through this process of saving, replanting, and exchanging seeds.¹⁰ Intellectual property regimes erode the ability of the world to respond to changing food security needs using diverse plant genetic resources by discouraging these traditional farming activities.¹¹

The concept of "Farmers' Rights" developed in response to the expansion of intellectual property rights in plant varieties.¹² Article 9 of the 2001 International Treaty on Plant Genetic Resources for Food and Agriculture (ITPGR) explicitly recognizes these rights.¹³ This treaty aims to promote genetic diversity in the food supply by creating a commons in which countries can exchange their diverse

UPOV]. "UPOV" is the acronym for the Convention's French name: L'Union internationale pour la protection des obtentions végétales.

6. *Id.* at art. 1(iv).

7. *Id.* at art. 5.

8. Agreement on Trade-Related Aspects of Intellectual Property Rights, April 14, 1994, 1869 U.N.T.S. 299, available at http://www.wto.org/english/docs_e/legal_e/27-trips.pdf [hereinafter TRIPS].

9. Enrico E. Bertacchini, *Coase, Pigou and the Potato: Whither Farmers' Rights?*, 68 *ECOLOGICAL ECON.* 183, 189 (2008), available at http://www.sciencedirect.com/science?_ob=ArticleURL&_udi=B6VDY-4S2VG08-2&_user=86629&_rdoc=1&_fmt=&_orig=search&_sort=d&_docanchor=&view=c&_searchStrId=1015715563&_rerunOrigin=google&_acct=C000006878&_version=1&_urlVersion=0&_userid=86629&md5=7efc7cca872cb2a788c6f405268e04b4.

10. BIODIVERSITY IN AGROECOSYSTEMS 218 (Wanda W. Collins & Calvin O. Qualset, eds., 1998).

11. *See infra* Part III.B.3.

12. KEITH AOKI, *SEED WARS* 76–77 (2008); REGINE ANDERSON, *GOVERNING AGROBIODIVERSITY* 348 (2008).

13. International Treaty on Plant Genetic Resources for Food and Agriculture Annex I, Nov. 3, 2001, S. Treaty Doc. No. 110-19, available at <http://www.fao.org/AG/cgrfa/itpgr.htm> [hereinafter ITPGR]; GERALD MOORE & WITOLD TYMOWSKI, *EXPLANATORY GUIDE TO THE INTERNATIONAL TREATY OF PLANT GENETIC RESOURCES FOR FOOD AND AGRICULTURE* 67–78 (2005).

plant genetic resources.¹⁴ Recognizing that traditional farmers are necessary to conserving, creating, and promoting genetic diversity in the food supply, the treaty calls on national governments to take measures to encourage farmers to continue to conserve and improve plant varieties.¹⁵

This Note explores the evolution of Farmers' Rights and the possibility of enforcing the concept on an international level. Part II explores the origin of international intellectual property regimes in plant varieties and two international agreements that extend intellectual property protection to plant breeders: UPOV and TRIPS. Part III assesses the concept of Farmers' Rights. It explores the effects of international intellectual property rights on agriculture, in terms of both the possible diminishing of genetic diversity within agriculture and the food supply and the marginalization of traditional agriculture practices. The Part also addresses Farmers' Rights in three international agreements—UPOV, the Convention on Biological Diversity (CBD), and the ITPGR—and explains the successes and failures of these treaties to breathe life into the Farmers' Rights concept. Part IV addresses a theoretical framework for protecting Farmers' Rights and gives two examples of how countries have incorporated Farmers' Rights into national legislation. The final Part proposes a strategy for the meaningful cultivation of Farmers' Rights in the face of the constraints imposed by international intellectual property rights regimes. The Note proposes both a national approach and an international strategy for promoting Farmers' Rights. First, individual states must take action to promote Farmers' Rights through national legislation. In addition to national action, states must embrace an international strategy to adapt TRIPS to the demands of Farmers' Rights.

II. INTELLECTUAL PROPERTY RIGHTS IN PLANT GENETIC RESOURCES

Intellectual property rights (IPRs) did not apply to plants until the twentieth century.¹⁶ Plant genetic resources (PGR)¹⁷ for food and agriculture were considered part of the "common heritage of mankind,"¹⁸ and, as such, were not subject to individual ownership.¹⁹

14. MOORE & TYMOWSKI, *supra* note 13, at 73.

15. *Id.* at 68.

16. Craig Borowiak, *Farmers' Rights: Intellectual Property Regimes and the Struggle over Seeds*, 32 POL. & SOC'Y 511, 514 (2004), available at <http://pas.sagepub.com/cgi/content/abstract/32/4/511>.

17. Plant genetic resources for food and agriculture (PGRFA) are "the genetic resources or material of actual or potential value for food and agriculture that are contained in plants." MOORE & TYMOWSKI, *supra* note 13, at 2.

18. STENSON & GRAY, *supra* note 1.

Indeed, some argue that subjecting organic material to IPRs leads to the “devaluation of life.”²⁰ In any case, assigning IPRs to this new domain constituted an intrinsic shift in the way the world approached what could be owned.²¹ Extending IPRs to PGR effectively takes PGR out of nature, turning it into a commodity that can be owned.²² For most of history, farmers not only planted and harvested, but also bred and improved, their own crops.²³ Farmers saved seeds from plants with desirable characteristics,²⁴ leading over time to the production of plant varieties adapted to local conditions.²⁵ As a “common heritage” good, PGR was freely exchanged within and between farming communities as individual growers sought to improve the PGR they depended on for their own subsistence.²⁶

A. *The Rise of Intellectual Property Rights in Plant Genetic Resources*

The commercialization of the crop breeding and improvement processes set the stage for the development of IPRs in PGR.²⁷ Farmers themselves gladly ceded plant breeding responsibility to independent seed producers for the convenience of buying seed from dealers²⁸ because creating new plant varieties required a lot of work. It can take up to ten years and a good deal of labor to create a new plant variety.²⁹ Plants must be bred and cross-bred over several seasons in order to produce a new plant variety with a desirable characteristic, such as drought tolerance,³⁰ and as many as fifty parental lines may be used to create one new variety of plant.³¹

Despite farmers' enthusiasm with purchasing, rather than producing, new PGR, plants did not lend themselves to commercialization due to the fact that they are a self-reproducing

19. Klaus Bosselmann, *Plants and Politics: The International Legal Regime Concerning Biotechnology and Biodiversity*, 7 COLO. J. INT'L L. & POL'Y 111, 121-22 (1996); C.S. Srinivasan, *Exploring the Feasibility of Farmers' Rights*, 21 DEV. POL'Y REV. 419, 420 (2003).

20. STENSON & GRAY, *supra* note 1, at 32.

21. See Geoff Tansey, *Food, Farming and Global Rules*, in THE FUTURE CONTROL OF FOOD: A GUIDE TO INTERNATIONAL NEGOTIATIONS AND RULES ON INTELLECTUAL PROPERTY, BIODIVERSITY AND FOOD SECURITY 3, 11-13 (Geoff Tansey & Tasmin Rajotte eds., 2008) (explaining intellectual property rights).

22. See *id.* at 18-23 (discussing the effects of IPRs on food and farming).

23. Graham Dutfield, *Turning Plant Varieties into Intellectual Property: The UPOV Convention*, in THE FUTURE CONTROL OF FOOD, *supra* note 21, at 27, 27.

24. *Id.*

25. *Id.*

26. Srinivasan, *supra* note 19, at 420.

27. *Id.* at 427-28; STENSON & GRAY, *supra* note 1, at 9.

28. Dutfield, *supra* note 23, at 30.

29. *Id.* at 28.

30. *Id.*

31. *Id.*

resource.³² With only a small number of seeds of an improved plant variety, the farmer has no more use for the breeder—the farmer can generate more seed simply by planting the improved variety and harvesting the crop. The biological fact that farmers only have to buy improved seeds once prevented the growth of a major plant breeding industry.³³

The development of hybridized corn, however, set the stage for a plant breeding industry.³⁴ After World War I, the United States government, through the Department of Agriculture, took the responsibility for developing new plant varieties out of the hands of farmers and began funding research for crop improvement.³⁵ Hybrid corn produces higher yields, but it only does so in the first generation.³⁶ Jack Kloppenburg observed that “hybridization is . . . a mechanism for circumventing the biological barrier that the seed had presented to the penetration of plant breeding and seed production by private enterprise.”³⁷ The genetic makeup of hybrid corn created de facto intellectual property protection for private plant breeders.³⁸ In response, the U.S. Congress passed the Plant Patent Act in 1930.³⁹ While the Act did not necessarily provide wide protection for plant breeders, it “established the principle that private plant breeders should have legal monopoly rights to the fruits of their investment.”⁴⁰

Plant breeders also succeeded in increasing the yields of wheat and rice, starting in the 1940s.⁴¹ During this so-called “Green Revolution,” philanthropic organizations in industrialized countries funded plant breeding programs to improve living conditions through greater crop yields and to prevent communism from taking root in the developing world.⁴² The industrialized world also sought access to genetic resources native to those developing countries to use in plant breeding.⁴³ At that time, no international IPR regimes governed PGR, so there was no prohibition against freely sharing plant genetic diversity.⁴⁴ This began the trend of transferring PGR from developing to developed countries for use in creating new plant

32. Srinivasan, *supra* note 19, at 420.

33. STENSON & GRAY, *supra* note 1.

34. *Id.*

35. Dutfield, *supra* note 23, at 30; STENSON & GRAY, *supra* note 1.

36. STENSON & GRAY, *supra* note 1, at 10.

37. Dutfield, *supra* note 23, at 30.

38. *Id.*

39. STENSON & GRAY, *supra* note 1, at 10–11.

40. *Id.* at 11.

41. *Id.* at 12; Keith E. Sealing, *Attack of the Balloon People: How America's Food Culture and Agricultural Policies Threaten the Food Security of the Poor, Farmers, and Indigenous Peoples of the World*, 40 VAND. J. TRANSNAT'L L. 1015, 1018 (2007).

42. STENSON & GRAY, *supra* note 1, at 11.

43. *Id.*

44. *Id.* at 12.

varieties, because the majority of the Earth's PGR is located in the developing world.⁴⁵

The plant breeding industry developed even more ambitious commercial aspirations in the 1950s,⁴⁶ at which point the seed industry began to globalize.⁴⁷ However, not all crops are subject to the de facto IPR protection that hybridization provides corn.⁴⁸ Important crops like wheat, rice, soybeans, cotton, barley, oats, and peanuts cannot be hybridized.⁴⁹ Because those plants are genetically stable and able to reproduce themselves, breeders cannot control continuing access to the plant varieties they have developed after they sell the first generation of seed.⁵⁰

As a result, IPRs in plant varieties emerged to give breeders a way to control the use and production of plant varieties that can be saved and replanted.⁵¹ Legal control over plant varieties allows companies to profit from their investments in plant breeding.⁵² Theoretically, IPRs motivate breeders to put time, money, and labor into breeding new plant varieties because IPRs guarantee that breeders will be compensated for their work.⁵³ With the assurance of an international intellectual property system that gives plant breeders control over use of their improved plant varieties, breeders will also be more willing to share those varieties internationally.⁵⁴

B. *International Intellectual Property Rights Regimes in Plant Genetic Resources*

International IPR regimes do not grant individuals international IPRs.⁵⁵ Rather, they impose obligations on States Parties to implement national IPR laws that conform to the treaty requirements.⁵⁶ Consequently, a company seeking protection for a plant variety cannot apply just once for an IPR at the international level. Instead, it must apply for an IPR in every country in which it

45. *Id.* at 12–13.

46. *Id.* at 13.

47. *Id.* at 14.

48. Dutfield, *supra* note 23, at 30.

49. *Id.* at 30; Borowiak, *supra* note 16, at 517.

50. Borowiak, *supra* note 16, at 517.

51. Dutfield, *supra* note 23, at 31.

52. *See id.* (explaining that, for economically valuable crops that do not lend themselves to hybridization, breeders need another means to control the use and production of their varieties).

53. LAURENCE R. HELFER, INTELLECTUAL PROPERTY RIGHTS IN PLANT VARIETIES: INTERNATIONAL LEGAL REGIMES AND POLICY OPTIONS FOR NATIONAL GOVERNMENTS 3 (2002), available at <http://www.fao.org/Legal/pub-e.htm>.

54. *Id.*

55. *Id.* at 4.

56. *Id.*

wants to market its product.⁵⁷ The result is a system where IPRs vary from jurisdiction to jurisdiction in, *inter alia*, scope and method of enforcement.⁵⁸

1. The International Convention for the Protection of New Varieties of Plants

Industrialized countries initiated the first international regime for plant variety protection in 1961 to protect private plant breeders in domestic and international markets⁵⁹ as well as to encourage agricultural development.⁶⁰ UPOV, amended in 1972, 1978, and 1991, created protections called “plant breeders’ rights” (PBRs).⁶¹ As of October 29, 2008, UPOV had sixty-six member states.⁶² States Parties to the treaty must create a *sui generis*⁶³ IPR regime that meets the unique needs of plant breeders and conforms to the treaty requirements.⁶⁴ Generally, PBRs give plant breeders the sole right to create, reproduce, commercialize, and sell protected plant varieties.⁶⁵

Plant breeders gain rights over their plant varieties that qualify for PBRs.⁶⁶ The 1991 UPOV Act defines “plant breeders” as those who bred or discovered and developed a variety.⁶⁷ A plant breeder has the exclusive right to authorize production or reproduction, conditioning for the purpose of propagation, offering for sale, selling or marketing, exporting, importing or stocking for any of those purposes, and propagating material of the protected variety.⁶⁸ The plant breeder also has the exclusive right to authorize the harvest of

57. *Id.*; Tansey, *supra* note 21, at 13.

58. HELFER, *supra* note 53, at 5.

59. UPOV, *supra* note 5; Bosselmann, *supra* note 19, at 123; HELFER, *supra* note 53, at 21.

60. Susette Biber-Klemm et. al, *The Current Law of Plant Genetic Resources and Traditional Knowledge*, in RIGHTS TO PLANT GENETIC RESOURCES AND TRADITIONAL KNOWLEDGE: BASIC ISSUES AND PERSPECTIVES 56, 81 (S. Biber-Klemm & T. Cottier eds., 2006).

61. Janice M. Strachan, *Plant Variety Protection in the USA*, in INTELLECTUAL PROPERTY RIGHTS IN AGRICULTURAL BIOTECHNOLOGY 73, 73 (F.H. Erbisch & K.M. Maredia eds., 2d ed. 2004).

62. Members of the International Union for the Protection of New Varieties of Plants, International Convention for the Protection of New Varieties of Plants, <http://www.upov.int/export/sites/upov/en/about/members/pdf/pub423.pdf> (last visited Jan. 4, 2010).

63. “Of its own kind or class; unique or peculiar. The term is used in intellectual property law to describe a regime designed to protect rights that fall outside the traditional patent, trademark, copyright, and trade-secret doctrines.” BLACK’S LAW DICTIONARY 1475 (8th ed. 2004).

64. HELFER, *supra* note 53, at 21.

65. Biber-Klemm, *supra* note 60, at 81.

66. Rosemary A. Wolson, *South Africa*, in INTELLECTUAL PROPERTY RIGHTS IN AGRICULTURAL BIOTECHNOLOGY, *supra* note 61, at 135, 145.

67. UPOV, *supra* note 5, art. 1.

68. *Id.* art. 14.1.

all or part of a plant when the grower acquires the propagating material without the breeder's permission, as well as the use of material harvested without the breeder's permission.⁶⁹

In addition, PBRs not only apply to the initial propagating material, but also to "essentially derived varieties," or varieties predominantly derived from the initial protected variety.⁷⁰ Essentially derived varieties must be distinguishable from the initial variety while retaining its essential characteristics.⁷¹ This provision aims to prevent breeders from acquiring a PBR in a plant variety after making only minor, superficial, or cosmetic changes to the initial variety.⁷² Plant breeders enjoy a wide scope of rights in plant varieties they breed or discover.

In order to qualify for a PBR, a plant variety must be new, distinct, uniform, and stable.⁷³ Whether a variety qualifies as new depends not on whether it formerly existed but instead on whether it was previously commercialized.⁷⁴ To be regarded as new, a plant variety cannot have been sold or marketed with the breeder's consent for a specified time period before the PBR application is filed.⁷⁵ The requisite time period varies for different kinds of plants.⁷⁶

A plant variety is distinct "if it is clearly distinguishable from any other variety whose existence is a matter of common knowledge at the time of the filing of the application."⁷⁷ Varieties whose existence is a matter of common knowledge can include varieties found in traditional farming communities.⁷⁸ Distinctness may require the breeder to demonstrate clear differences between varieties' qualitative and quantitative characteristics, such as leaf shape, stem length, and color.⁷⁹ This requirement is especially important when "determining the scope of a breeder's right in plants that are closely related but not identical to a protected variety."⁸⁰

The uniformity requirement demands that a plant variety be homogeneous.⁸¹ To qualify for a PBR, the variety must be "sufficiently uniform in its relevant characteristics."⁸² Impliedly, this means that a variety's relevant characteristics must not change when

69. *Id.* arts. 14.2–14.3.

70. *Id.* art. 14.5

71. *Id.*

72. Dutfield, *supra* note 23, at 37.

73. UPOV, *supra* note 5, art. 5.

74. Biber-Klemm, *supra* note 60, at 81.

75. UPOV, *supra* note 5, art. 6.

76. *Id.*

77. *Id.* art. 7.

78. Dutfield, *supra* note 23, at 35.

79. HELFER, *supra* note 53, at 13.

80. *Id.*

81. *Id.*

82. UPOV, *supra* note 5, art. 8.

it is propagated⁸³ and that a variety must be identifiable as distinct.⁸⁴ The requirement is more or less stringent depending on a plant's method of reproduction, since plants that fertilize themselves can be far more uniform than plants that cross-fertilize.⁸⁵

Finally, in order to qualify for a PBR under UPOV, a plant variety must be stable.⁸⁶ A variety is stable "if its relevant characteristics remain unchanged after repeated propagation . . ."⁸⁷ Generally, uniform varieties also tend to be stable,⁸⁸ as sufficient uniformity prevents significant genetic drift in varieties over time.⁸⁹

Article 15 of the 1991 UPOV Act contains a few exceptions for PBRs.⁹⁰ Breeders' rights do not apply to private or non-commercial acts, or acts done for experimental purposes.⁹¹ In addition, others can use protected varieties to breed new varieties without the initial breeder's authorization.⁹² This gives breeders the right to use a protected plant variety to create and market new varieties without the original breeder's permission, as long as the second variety is not considered "essentially derived."⁹³ In practice, this provision remains ambiguous because there has been no consensus as to the amount of genetic differentiation required between the initial and subsequent varieties, and, therefore, no consensus as to when a subsequent variety is considered essentially derived from the initial variety.⁹⁴

The 1991 UPOV Act made optional a previously mandatory "farmers' privilege" exception.⁹⁵ As long as a state protects the interests of the breeder, it may choose to enact legislation that restricts the PBRs by allowing farmers to use propagating material of a protected variety that farmers planted and harvested on their own farms.⁹⁶ Farmers can only use seed saved on the farm where it was harvested and cannot sell or exchange the seed.⁹⁷ The seed industry tends to dislike farmers' privilege since it exempts small farmers replanting seeds for their own use from repurchasing a successful plant variety year after year.⁹⁸ Critics contend that prohibiting farmers from exchanging seed with other farmers disrupts farming

83. Biber-Klemm, *supra* note 60, at 81.

84. HELFER, *supra* note 53, at 18.

85. Dutfield, *supra* note 23, at 35.

86. UPOV, *supra* note 5, art. 9.

87. *Id.*

88. HELFER, *supra* note 53, at 13.

89. Dutfield, *supra* note 23, at 35.

90. UPOV, *supra* note 5, art. 15.

91. *Id.*

92. *Id.*

93. Dutfield, *supra* note 23, at 37; HELFER, *supra* note 53, at 16.

94. HELFER *supra* note 53, at 16.

95. UPOV, *supra* note 5, art. 15; Biber-Klemm, *supra* note 60, at 82.

96. UPOV, *supra* note 5, art 15.2.

97. Dutfield, *supra* note 23, at 39.

98. *Id.*

practices in developing countries “where seeds are exchanged for purposes of crop and variety rotation.”⁹⁹ UPOV requires that PBRs only be granted for a limited period of time, after which the plant variety enters the public domain.¹⁰⁰

2. The Agreement on Trade-Related Aspects of Intellectual Property Rights

The end of the twentieth century brought even bigger changes to international intellectual property laws affecting PGR than UPOV did.¹⁰¹ Developed countries spearheaded the push for an agreement on IPRs during the Uruguay Round of negotiations that established the World Trade Organization (WTO).¹⁰² Developing countries generally opposed the creation of an international intellectual property treaty,¹⁰³ but the Uruguay Round of negotiations required countries to accept either all or none of the resulting agreements.¹⁰⁴ Consequently, many developing countries signed on to TRIPS in 1994, despite objecting to the inclusion of IPR protections in the trade agreement.¹⁰⁵ As of July 23, 2008, the WTO, and therefore TRIPS, had 153 members,¹⁰⁶ extending the reach of IPRs over PGR much further than under UPOV. Indeed, TRIPS “has done more to encourage the legal protection of plant varieties than any other international agreement.”¹⁰⁷

In general, TRIPS was enacted to create international minimum standards of protection across intellectual property categories, including, *inter alia*, patents, copyright, and trademarks.¹⁰⁸ TRIPS obligates countries to enact national laws that reflect at least the minimum intellectual property standards set out in the treaty.¹⁰⁹ Patent protection must last at least twenty years from the date the

99. HELFER, *supra* note 53, at 17.

100. UPOV, *supra* note 5, art. 19.

101. See Pedro Roffe, *Bringing Minimum Global Intellectual Property Standards into Agriculture: The Agreement on Trade-Related Aspects of Intellectual Property Rights (TRIPS)*, in *THE FUTURE CONTROL OF FOOD*, *supra* note 21, at 48, 48–49 (discussing the growth of international IP structure in the 20th century and its effect on international commerce); see *supra* Part II.B.1.

102. Roffe, *supra* note 101, at 50.

103. *Id.*

104. *Id.*

105. *Id.*

106. World Trade Organization, Members and Observers, http://www.wto.org/english/thewto_e/whatis_e/tif_e/org6_e.htm (last visited Jan. 4, 2010).

107. HELFER, *supra* note 53, at 19.

108. See Roffe, *supra* note 101, at 52 (listing the various disciplines for which TRIPS establishes minimum standards).

109. Chidi Oguamanam, *Regime Tension in the Intellectual Property Rights Arena: Farmers' Rights and Post-TRIPS Counter Regime Trends*, 29 *DALHOUSIE L.J.* 413, 425 (2006).

patent is filed.¹¹⁰ The agreement also expanded the scope of patentable subject matter, requiring that the minimum standards be available for products and processes.¹¹¹ Some argue that this means countries may not exclude certain sectors from patentability.¹¹² This reflects the developed world's approach to patents, which considers patents available for inventions, as long as "they are new, involve an inventive step and are capable of industrial application."¹¹³ Through this minimum standards framework, TRIPS obligates WTO member countries to establish a minimum level of IPR protection for PGR.¹¹⁴

Under TRIPS, as long as plant varieties are covered by *sui generis* protection, WTO members are not required to protect PGR with patents.¹¹⁵ Article 27.3(b) states that members may exclude from patentability "plants . . . and essentially biological processes for the production of plants . . ." ¹¹⁶ However, members must protect plant varieties with patents, a *sui generis* system, or some combination of the two.¹¹⁷ While the approach taken to protect plant varieties with IPRs will vary from country to country, TRIPS requires member countries to adopt some minimum level of plant variety protection.

TRIPS derives much of its power and effectiveness from its connection to the WTO. TRIPS is automatically binding on all WTO members as a consequence of WTO membership.¹¹⁸ Further, the WTO dispute resolution system gives the WTO agreements teeth because it provides meaningful enforcement through the threat of a suspension of trade concessions.¹¹⁹ Disputes arising out of the TRIPS agreement are heard in the WTO dispute resolution system.¹²⁰ The dispute system creates incentives for WTO members to pass national legislation that conforms to the treaty requirements.¹²¹ WTO members face the possibility of appearing before a dispute panel and being subjected to trade sanctions if they do not bring their national laws into conformance with the WTO agreements, including TRIPS.¹²²

110. Kevin W. McCabe, *The January 1999 Review of Article 27 of the TRIPs Agreement: Diverging Views of Developed and Developing Countries Toward the Patentability of Biotechnology*, 6 J. INTELL. PROP. L. 41, 44 (1998).

111. TRIPS, *supra* note 8, art. 27.1.

112. Roffe, *supra* note 101, at 55.

113. *Id.*

114. See Borowiak, *supra* note 16, at 512 (discussing a provision of TRIPS requiring all WTO signatories to extend property rights protection to plant varieties).

115. TRIPS, *supra* note 8, art. 27.3(b).

116. *Id.*

117. *Id.*

118. Oguamanam, *supra* note 109, at 425-26.

119. HELFER, *supra* note 53, at 20-21.

120. *Id.* at 21.

121. *Id.*

122. Oguamanam, *supra* note 109, at 426.

The WTO also imposes some of its basic trade principles on international intellectual property law through the TRIPS agreement.¹²³ The first is national treatment, which requires all countries to treat foreign IPR holders no less favorably than they treat national IPR holders.¹²⁴ The second is most-favored nation treatment, which requires countries to treat all foreigners equally concerning IPR protection.¹²⁵ Any WTO member that gives another country, whether part of the WTO or not, any IPR advantage must do the same for all WTO members.¹²⁶ The TRIPS agreement was the first intellectual property treaty in which this principle appeared.¹²⁷

The result of TRIPS is a strict intellectual property regime that includes plant varieties and is backed by a rigorous enforcement mechanism. While WTO member countries can choose among intellectual property strategies to protect plant varieties,¹²⁸ they may not choose to exclude plant varieties from IPR protection without facing trade sanctions from the WTO dispute resolution body.¹²⁹ The requirement to provide IPR protection for plant varieties forces countries that object to creating property rights in living things because they consider it unethical or undesirable to extend IPR protection in areas where they previously had not.¹³⁰ There is also a concern in developing countries that IPR protection will deplete biodiversity and interrupt the way subsistence farmers have traditionally produced food.¹³¹

III. FARMERS' RIGHTS

The concept of Farmers' Rights arose to reaffirm traditional agricultural practices in the face of increasing international intellectual property protection for plant varieties. The concept is not well-defined but tends to refer to the

rights arising from the past, present and future contributions of farmers in conserving, improving, and making available plant genetic resources, particularly those in the centers of origin/diversity. These

123. See Roffe, *supra* note 101, at 52 (stating a main feature of the TRIPS Agreement is "full incorporation of IP into the international GATT-style trading system.").

124. *Id.* at 52–53.

125. *Id.* at 52–54.

126. *Id.* at 54.

127. *Id.* at 53.

128. TRIPS, *supra* note 8, art. 27.3(b).

129. Oguamanam, *supra* note 109, at 426.

130. See Roffe, *supra* note 101, at 59–62 (discussing the reluctance of developing nations, particularly African nations, to patenting life forms and the ways in which this reluctance shaped the TRIPS Agreement).

131. *Id.* at 63.

rights are vested in the International Community, as trustee for present and future generations of farmers, for the purpose of ensuring full benefits to all farmers, and supporting the continuation of their contributions¹³²

The concept was conceived more as a political response to IPRs in plant varieties than as the creation of a legal right.¹³³ The concept demands that the international community recognize the service traditional farmers perform by continuously conserving and improving plant varieties over time,¹³⁴ a service that UPOV and TRIPs serve to erode.¹³⁵

A. *The Effect of International Intellectual Property Rights on Agriculture*

1. Agro-Biodiversity

The term “agro-biodiversity” refers to biological or genetic diversity within agriculture.¹³⁶ The United Nations Food and Agriculture Organization (FAO) defines agro-biodiversity as “the variety and variability of animals, plants and micro-organisms which are necessary to sustain key functions of the agro-ecosystem, its structure and processes for, and in support of, food production and food security.”¹³⁷ Diversity encompasses “the diversity of species (plants and animals . . .), the diversity within species, and the diversity of ecosystems”¹³⁸

Food security depends on a variety of factors, including agro-biodiversity. According to the FAO, food security results when people “at all times, have physical and economic access to sufficient, safe and

132. MOORE & TYMOWSKI, *supra* note 13, at 67 (quoting Farmers’ Rights, FAO Res. 5/89, FAO Conference 25th Sess. (Nov. 29, 1989) [hereinafter FAO Res. 5/89]).

133. See Michael Halewood & Kent Nnadozie, *Giving Priority to the Commons: The International Treaty on Plant Genetic Resources for Food and Agriculture*, in THE FUTURE CONTROL OF FOOD, *supra* note 21, at 115, 130 (discussing limitations on recognition of farmers’ rights including lack of international policy or fund for remuneration and the undefined nature and scope of rights at the national level).

134. Susette Biber-Klemm et al., *New Collective Policies*, in RIGHTS TO PLANT GENETIC RESOURCES AND TRADITIONAL KNOWLEDGE: BASIC ISSUES AND PERSPECTIVES 283, 284 (Susette Biber-Klemm & Thomas Cottier eds., 2006) .

135. See Chidi Oguamanam, *Agro-Biodiversity and Food Security: Biotechnology and Traditional Agricultural Practices at the Periphery of International Intellectual Property Regime Complex*, 2007 MICH. ST. L. REV. 215, 244–46 (2007) (describing increased restrictions on indigenous agricultural practices, such as seed-saving, as international agreements evolved in favor of the interests of developed nations and transnational agribusiness).

136. *Id.* at 220.

137. International Technical Workshop, Dec. 2–4, 1998, *Sustaining Agricultural Biodiversity and Agro-Ecosystem Functions*, available at www.cbd.int/doc/case-studies/agr/cs-agr-1998-12-rpt.pdf.

138. Bosselmann, *supra* note 19, at 112.

nutritious food to meet their dietary needs and food preferences for an active and healthy life.”¹³⁹ Arguably, the most effective way for a group to ensure its food security is to have control over the production of its own food.¹⁴⁰ Diverse PGR is used in plant breeding programs to develop new plant varieties.¹⁴¹ The continuous development of new varieties ensures genetic diversity in the food supply and enables communities to achieve food security. Genetic diversity both within and among species improves agricultural production and allows agricultural systems to react and recover from changes in the environment, ensuring that communities can produce their own food.¹⁴²

The ability to develop new plant varieties is especially important in the face of unforeseen changes in environmental conditions.¹⁴³ Changing environmental conditions affect which plants may be grown in different parts of the world. In order to adapt plant resources to changing conditions, farmers need access to a variety of genetic resources so that plants can be bred to grow in new conditions.¹⁴⁴ Diversity in plant resources will help farmers respond to the future threats climate change may pose to agriculture. In addition, genetic diversity helps crops resist pests,¹⁴⁵ and genetic diversity among plant species and the interactions of those species help maintain “soil fertility, water quality, and climate regulation.”¹⁴⁶ Indigenous and local farmers are especially dependent on the positive consequences of agro-biodiversity because they often rely entirely on their immediate environment to meet their daily food needs.¹⁴⁷

The Irish potato famine of 1845 to 1848 is an example of the catastrophic consequences that can result from a lack of genetic diversity in the food supply.¹⁴⁸ During the 1840s, ninety percent of the calories Irish peasants consumed consisted of potatoes. This is an example of a failure of inter-species diversity in the food supply. Ireland also suffered from a lack of intra-species diversity because all Irish potatoes derived from a few hundred plants brought to Ireland

139. U.N. Food & Agric. Org., *Report of the World Food Summit*, ¶ 1 (Nov. 13–17, 1996), available at <http://www.fao.org/docrep/003/w3613e/w3613e00.HTM>.

140. Oguamanam, *supra* note 135, at 232.

141. See Cary Fowler, *Protecting Farmer Innovation: The Convention on Biological Diversity and the Question of Origin*, 41 JURIMETRICS J. 477, 479 (2001) (describing the influence of human beings on plant genetic resources for millennia).

142. Food & Agric. Org. of the U.N., *Agricultural Biodiversity in FAO* (2008), available at <ftp://ftp.fao.org/docrep/fao/010/i0112e/i0112e.pdf> [hereinafter UNFAO].

143. *Id.*

144. *Id.*

145. *Id.*

146. *Id.*

147. *Id.*

148. BEN WISNER ET AL., *AT RISK: NATURAL HAZARDS, PEOPLE'S VULNERABILITY AND DISASTERS* 178 (2d. ed. 2004).

from the Andean region.¹⁴⁹ The lack of inter- and intra-species diversity made the human and potato populations especially vulnerable to the blight that affected the potato crops.¹⁵⁰ The population was unable to resort to another food source and the homogenous genetic strain of the potatoes was unable to resist the blight. The famine killed at least 1.5 million people and caused at least as many to emigrate from Ireland.¹⁵¹

Preserving genetic diversity in the Irish potato supply and in the food supply generally would have helped prevent the disastrous outbreak of disease in the potatoes and its catastrophic consequences for the human population.¹⁵² Genetic diversity in Irish potatoes could also have given “farmers and scientists the resources with which to respond to emerging disease and pest problems.”¹⁵³ In order to save the European potato supply, Europeans had to travel to the potato’s center of origin in South America and find a variety of potato with natural resistance to the blight.¹⁵⁴ The example of the potato famine illustrates the importance of encouraging the maintenance of genetically diverse plants in various parts of the world, especially in their centers of origin,¹⁵⁵ in order to grow healthy crops year after year.¹⁵⁶

2. Indigenous Farmers

Indigenous farmers play a crucial role in creating and maintaining the genetic diversity in crops that is so important to the global food supply.¹⁵⁷ “Traditional” farmers choose certain plants with “randomly occurring mutations in nature” and refine them to “generate a countless number of . . . traditional farmer-developed crop varieties.”¹⁵⁸ Indigenous farmers also have unique knowledge about the varieties of plants they grow, as well as the wild plants and

149. *Id.*

150. *Id.*

151. *Id.* at 180.

152. See MOORE & TYMOWSKI, *supra* note 13, at 4 (“Disasters such as the Irish potato famine in the 1840s . . . are themselves evidence of the need for increased genetic diversity crops.”).

153. Douglas Gollin & Melinda Smale, *Valuing Genetic Diversity: Crop Plants and Agroecosystems*, in BIODIVERSITY IN AGROECOSYSTEMS, *supra* note 10, at 237, 245.

154. MOORE & TYMOWSKI, *supra* note 13, at 4.

155. “Centre of Origin” refers to “a geographical area where a plant species, either domesticated or wild, first developed its distinctive properties.” International Treaty on Plant Genetic Resources for Food and Agriculture art. 2, Nov. 3, 2001, reprinted in MOORE & TYMOWSKI, *supra* note 13, at 198.

156. Robert E. Rhoades & Virginia D. Nazarea, *Local Management of Biodiversity in Traditional Agroecosystems*, in BIODIVERSITY IN AGROECOSYSTEMS, *supra* note 10, at 215, 218.

157. *Id.* at 218.

158. Oguamanam, *supra* note 135, at 228.

ecosystems and around them.¹⁵⁹ The farmers' role is important in conserving and creating biodiversity, and in creating the genetic material that serves as building blocks for industrially created plant varieties and pharmaceuticals.¹⁶⁰ In fact, most agricultural crops could not survive without steady human intervention.¹⁶¹ Responding to constantly changing environmental conditions requires innovation in food and agriculture.¹⁶² Such innovation can best be accomplished by "draw[ing] on a rich biodiversity, a biodiversity that depends on fragile variables such as . . . local farming systems."¹⁶³

3. Intellectual Property Rights and Agriculture

IPRs in plant varieties may threaten the ability of the food supply to react to changing environmental conditions because IPRs create a number of consequences, including a loss of biodiversity and traditional agricultural practices. Granting IPRs in plant varieties encourages developed countries to develop products that can be protected by IPRs and sold in commercial markets.¹⁶⁴ Farmer-bred varieties are often precluded from patentability, since those varieties are rarely uniform enough to qualify for IPRs.¹⁶⁵ As a result, some argue that not only do traditional farmers not have the same incentives to innovate plant varieties that agricultural firms in the developed world have because they cannot apply for patents over their varieties, but they also do not have incentives to maintain their traditional agricultural practices or to conserve biodiversity.¹⁶⁶

Developed country biotechnology firms use the genetic diversity created by indigenous farmers to create new IPR-protected plant varieties. The flow of genetic resources from the developing to the developed world tends to go uncompensated, whereas the developed world's sale of engineered crop varieties to the developing world does

159. UNFAO, *supra* note 142.

160. STENSON & GRAY, *supra* note 1, at 76–77.

161. Halewood & Nnadozie, *supra* note 133, at 117–18.

162. See Geoff Tansey, *Global Rules, Local Needs*, in *THE FUTURE CONTROL OF FOOD*, *supra* note 21, at 212, 216 (discussing the need to "nourish and sustain the long-standing local innovation systems, such as varietal selection and soil fertility and risk management methods, of many farming communities, that are being ignored by the current approach and to recognize the knowledge, skills, and experience of local communities.").

163. *Id.*

164. *Id.* at 216–17.

165. See Bosselmann, *supra* note 19, at 132 (discussing the movement of germplasm from the South to the gene-poor North, and the ultimate sale of biotechnology back to the South by the North for large profits).

166. *Id.* at 120; Tansey, *supra* note 162, at 216.

not.¹⁶⁷ Agricultural biotechnology firms argue that their “advanced lines” deserve both IPRs and monetary compensation because of the intense labor required to produce them.¹⁶⁸ They maintain that the genetic resources they use to develop the advanced lines should be free of charge, disregarding the work traditional farmers put into less technology-intensive breeding practices.¹⁶⁹ Developed countries benefit from the efforts of farmers in developing nations without compensating them for their efforts, only to then patent their plant varieties and sell them back to the same farmers.

The push towards industrial agriculture and high-yielding plant varieties, especially after the Green Revolution, the increasing openness of the market, and the rise of IPRs in plant varieties, has led to the widespread loss of biodiversity in crops.¹⁷⁰ The pressure to increase agricultural exports creates a financial incentive for indigenous farmers to purchase the high-yield, genetically stable crop varieties manufactured in the developed world and to abandon their local varieties.¹⁷¹ Farmers need access to new biotechnology or they “risk[] being driven out of their markets by farmers employing the technologies.”¹⁷² This creates a dependence on the agro-technology being created in the developing world and subjected to IPRs.¹⁷³ As a result, farmers must abandon traditional agricultural practices, such as saving seed to plant the next year, because IPRs in the plant varieties make it illegal for them to maintain such practices.¹⁷⁴

IPRs and the globalization of the market encourage short-term profits over the long-term goals of sustainability and food security. Ideally, the Farmers’ Rights concept could be used to combat the lack of incentive in the marketplace for indigenous farmers to conserve and promote genetic diversity in the food supply and to continue acting as stewards of the land in using sustainable farming practices.

B. *Farmers’ Rights in International Agreements*

A number of international agreements developed in response to the increased use of IPRs in plant varieties.¹⁷⁵ IPRs give PGR value

167. Keith Aoki, *Malthus, Mendel, and Monsanto: Intellectual Property and the Law and Politics of Global Food Supply: An Introduction*, 19 J. ENVTL. L. & LITIG. 397, 413 (2004).

168. Bosselmann, *supra* note 19, at 133.

169. *Id.*

170. STENSON & GRAY, *supra* note 1, at 38.

171. Bosselmann, *supra* note 19, at 130; Oguamanam, *supra* note 135, at 237.

172. Aoki, *supra* note 167, at 414.

173. *Id.*

174. *Id.*

175. Kirit K. Patel, *Farmers’ Rights Over Plant Genetic Resources in the South: Challenges and Opportunities*, in PROPERTY RIGHTS IN AGRICULTURAL BIOTECHNOLOGY, *supra* note 61, at 95–96.

in the marketplace, but they do not deal with the “other side – conservation and traditional development.”¹⁷⁶ International agreements attempt to deal with this “other side” of the value of PGR. Farmers’ Rights appear in these agreements that attempt to respond to the consequences of IPRs in agriculture.

1. The International Undertaking on Plant Genetic Resources

The non-binding International Undertaking on Plant Genetic Resources (IU) had its genesis at an FAO Conference in 1983.¹⁷⁷ The IU was the first international agreement that dealt with PGR.¹⁷⁸ Its objective was to “ensure that plant genetic resources of economic and/or social interest, particularly for agriculture, w[ould] be explored, preserved, evaluated and made available for plant breeding and scientific purposes.”¹⁷⁹ The IU declares that PGR are part of the “heritage of mankind” and, as such, should be freely available.¹⁸⁰ Open access was to apply not only to farmer-cultivated and wild varieties but also to “special genetic stocks,” meaning plant breeders’ varieties.¹⁸¹ Developing countries intended to make all plant varieties freely available and to combat the restriction on access that IPRs create.¹⁸² The IU did not acknowledge the plant breeders’ rights enshrined in the UPOV Convention.¹⁸³

In 1989, the FAO adopted resolution 5/89, annexed to the original IU document, which presented the concept of Farmers’ Rights for the first time in an international agreement.¹⁸⁴ Resolution 5/89 recognized that most PGR are found in developing countries and that through the course of history “farmers have conserved, improved and made available plant genetic resources.”¹⁸⁵ The Resolution asserts that the contributions of farmers in developing countries have not been adequately acknowledged and that farmers should reap the benefits of their efforts to improve and preserve PGR.¹⁸⁶ The

176. Susan Bragdon et al., *Safeguarding Biodiversity: The Convention on Biological Diversity (CBD)*, in *THE FUTURE CONTROL OF FOOD*, *supra* note 21, at 82–83.

177. *Id.*

178. W. BRADNEE CHAMBERS, *INTERLINKAGES AND THE EFFECTIVENESS OF MULTILATERAL ENVIRONMENTAL AGREEMENTS* 161 (2008).

179. International Undertaking on Plant Genetic Resources, FAO Res. 8/83, art. 1, FAO Conference 22nd Sess. (Nov. 23, 1983), *available at* <ftp://ftp.fao.org/ag/cgrfa/iu/iutextE.pdf>.

180. *Id.*

181. *Id.* art. 2.

182. Bragdon et al., *supra* note 176, at 83.

183. Halewood & Nnadozie, *supra* note 133, at 120.

184. Patel, *supra* note 175, at 96.

185. FAO Res. 5/89, *supra* note 132.

186. Patel, *supra* note 175, at 96 (quoting FAO Res. 5/89, *supra* note 132).

Resolution recognizes the necessity of continuing to conserve and develop PGR in all parts of the world.¹⁸⁷

The Resolution also defines Farmers' Rights. It states that:

Farmers' Rights mean rights arising from the past, present and future contributions of farmers in conserving, improving, and making available plant genetic resources, particularly those in the centres of origin/diversity. These rights are vested in the International Community, as trustee for present and future generations of farmers, for the purpose of ensuring full benefits to farmers, and supporting the continuation of their contributions, as well as the attainment of the overall purposes of the International Undertaking.¹⁸⁸

The IU's goals in promoting the concept of Farmers' Rights included "ensur[ing] that the need for conservation [was] globally recognized" and that there would be global funding to promote that goal.¹⁸⁹ The IU also aimed to help all farmers in the world protect and conserve genetic resources and the environment, especially in regions that contain the centers of diversity of plant varieties.¹⁹⁰

IU Resolution 3/91 further interpreted the IU. The Resolution recognized countries' sovereignty over their PGR.¹⁹¹ It also supported creating a fund to implement Farmers' Rights. The International Fund would "support plant genetic conservation and utilization programmes, particularly, but not exclusively, in the developing countries."¹⁹² The Resolution declared that the international fund must be substantial and sustainable, and that a Commission on Plant Genetic Resources would oversee the fund.¹⁹³

While the IU recognized the Farmers' Rights concept for the first time in an international agreement, it did not give the concept much force. The IU does not do much more than recognize the role farmers play in developing and conserving biodiversity in agriculture.¹⁹⁴ It does not recognize any individual rights as part of the Farmers' Rights concept.¹⁹⁵ In fact, one would not be able to identify any particular farmer that held a right associated with Farmers' Rights.¹⁹⁶ The IU's intended International Fund for Plant Genetic Resources was not created to give money to individual farmers, but to

187. FAO Res. 5/89, *supra* note 132.

188. *Id.*

189. *Id.*

190. *Id.*

191. International Undertaking on Plant Genetic Resources, FAO Res. 3/91, FAO Conference 26th Sess. (Nov. 25, 1991), available at <ftp://ftp.fao.org/ag/cgrfa/Res/C3-91E.pdf>.

192. *Id.*

193. *Id.*

194. Biber-Klemm et al., *supra* note 134, at 285.

195. Gregory Rose, *International Law of Sustainable Agriculture in the 21st Century: The International Treaty on Plant Genetic Resources for Food and Agriculture*, 15 GEO. INT'L ENVTL. L. REV. 583, 604 (2003).

196. *Id.*

countries.¹⁹⁷ Instead of focusing on individual farmers, the intention of the IU was to help developing countries build their own agricultural biotechnology industries.¹⁹⁸ In the end, countries never donated funds to the International Fund, so the Fund never materialized.¹⁹⁹ While the IU itself was never particularly effective, it did influence the development of later international agreements.²⁰⁰

2. The Convention on Biological Diversity

The CBD arose as the world became increasingly aware of the value of PGR.²⁰¹ The treaty has three main goals: “the conservation of biological diversity, the sustainable use of its components and the fair and equitable sharing of benefits arising out of the utilization of genetic resources.”²⁰²

While the CBD does not explicitly mention Farmers’ Rights, it does recognize the importance of conserving biodiversity and compensating those who do so.²⁰³ Article 8(j) of the CBD requires Parties to

respect, preserve and maintain knowledge, innovations and practices of indigenous and local communities embodying traditional lifestyles relevant for the conservation and sustainable use of biological diversity, promote their wider application with the approval and involvement of the holders of such knowledge, innovations and practices and encourage the equitable sharing of the benefits arising from the utilization of such knowledge, innovations and practices.²⁰⁴

This is similar to the provision in IU Resolution 4/89 that specifically recognizes Farmers’ Rights.²⁰⁵

At the Nairobi Conference for the Adoption of an Agreed Text of the CBD, Resolution 3 “identified the realization of Farmers’ Rights as one of the ‘outstanding issues’ for further negotiation.”²⁰⁶ Scholars suggest that the CBD might create a system of financial compensation that pays farmers for the use of their PGR.²⁰⁷ Ideally, this system would distribute funds in a way that would incentivize and preserve the conservation of diverse PGR.²⁰⁸

197. Biber-Klemm et al., *supra* note 134, at 285.

198. *Id.*

199. *Id.*

200. *Id.*

201. Bragdon et al., *supra* note 176, at 82.

202. Convention on Biological Diversity, art. 1, Dec. 29, 1993, 1760 U.N.T.S. 79, available at <http://www.cbd.int/doc/legal/cbd-un-en.pdf>.

203. *Id.* art. 8(j).

204. *Id.*

205. Rose, *supra* note 195, at 610.

206. MOORE & TYMOWSKI, *supra* note 13, at 67.

207. Biber-Klemm et al., *supra* note 134, at 301.

208. *Id.* at 302.

3. The International Treaty on Plant Genetic Resources for Food and Agriculture
 - a. Structure and Goals

The ITPGR was adopted in 2001²⁰⁹ after seven years of negotiations²¹⁰ out of a desire to make the concepts of the IU legally binding.²¹¹ Along with the CBD, the ITPGR seeks to conserve and sustainably use PGR for food and agriculture.²¹² The negotiations proved difficult because of the challenge of harmonizing a variety of interests, including those of efficient access to PGR, countries' sovereignty over their PGR, and dealing with the concerns of farmers, breeders, and biotechnology firms.²¹³

The heart of the treaty is a multilateral system of access and benefit sharing for the PGR that are the most important to global food security.²¹⁴ Future food security depends on farmers' and breeders' easy and inexpensive access to PGR.²¹⁵ Because diseases and environmental conditions constantly evolve, plant breeding is a never-ending endeavor that constantly requires novel PGR.²¹⁶ Farmers and breeders must also have access to the technology and funding required to gain the most benefit from those genetic resources.²¹⁷ The multilateral system creates a "plant genetic resources commons to lower transaction costs for conservation, research, breeding and training."²¹⁸ This system provides people across the globe with easy and inexpensive access to the diverse PGR necessary for continuing global food security.

The ITPGR arose in reaction to the increasingly restricted access to PGR internationally as a result of IPRs and other commercial incentives for the use of PGR.²¹⁹ IPR protection has restricted the exchange of PGR globally,²²⁰ which is problematic because all countries in the world depend on each other for PGR.²²¹ No single country is self-sufficient in providing all the genetic resources from

209. MOORE & TYMOWSKI, *supra* note 13, at 1.

210. CHAMBERS, *supra* note 178, at 163

211. Patel, *supra* note 175, at 97.

212. MOORE & TYMOWSKI, *supra* note 13, at 1.

213. CHAMBERS, *supra* note 178, at 164.

214. *Id.* at 170–71.

215. MOORE & TYMOWSKI, *supra* note 13, at 1.

216. Fridtjof Nansen Institute [FNI], *Breakthrough for 'the South'? An Analysis of the Recognition of Farmers' Rights in the International Treaty on Plant Genetic Resources for Food and Agriculture*, at 1, FNI Rep 13/2004 (2004) (prepared by Svanhild-Isabelle Batta Bjørnstad).

217. MOORE & TYMOWSKI, *supra* note 13, at 1.

218. Halewood & Nnadozie, *supra* note 133, at 115.

219. *Id.*

220. MOORE & TYMOWSKI, *supra* note 13, at 10.

221. Halewood & Nnadozie, *supra* note 133, at 117.

which it builds its agricultural crops.²²² Ensuring the continued sharing of seeds across borders is essential to facing challenges presented by changing environmental conditions, pests, and diseases.²²³ Access is especially important for developing countries that may not have the financial or genetic resources necessary to form their own bilateral agreements for genetic resource exchanges.²²⁴

The ITPGR also asserts that responding to future food supply challenges requires maintaining caches of diverse PGR both in seed banks and farmers' fields.²²⁵ Negotiations identified the crops most important to food security and most depended on by a variety of countries.²²⁶ The ITPGR lists thirty-five of the world's major food crops to be shared in the multilateral system.²²⁷ Annex I to the ITPGR includes the plants necessary for global, regional and local food security around the world.²²⁸ It lists about forty crops, including oats, wheat, lentils, and rice, and twenty-nine forage species, such as lotus and other flowering plants, to be included in the multilateral system.²²⁹ The ITPGR applies standard terms to agreements to share the plant genetic resources that have been agreed to by all parties to the treaty.²³⁰ This carrying over of terms lowers the transaction costs of sharing resources by avoiding bilateral negotiations with new terms every time a country wants to access or share PGR.²³¹ This multilateral system should ensure facilitated access to PGR internationally.

b. Farmers' Rights in the ITPGR

The ITPGR is the first legally binding document to officially recognize Farmers' Rights.²³² Article 9 states:

9.1 The Contracting parties recognize the enormous contribution that the local and indigenous communities and farmers of all regions of the world, particularly those in the centres of origin and crop diversity, have made and will continue to make for the conservation and development of plant genetic resources which constitute the basis of food and agriculture production throughout the world.

222. See *id.* (asserting that the ITPGR is a reaction to IPRs over PGR).

223. *Id.* at 118–19.

224. MOORE & TYMOWSKI, *supra* note 13, at 10.

225. Halewood & Nnadozie, *supra* note 133, at 118.

226. MOORE & TYMOWSKI I, *supra* note 13 at 10.

227. ITPGR, *supra* note 13, at Annex I.

228. MOORE & TYMOWSKI, *supra* note 13, at 81.

229. ITPGR, *supra* note 13, at Annex I; MOORE & TYMOWSKI, *supra* note 13, at

82.

230. MOORE & TYMOWSKI, *supra* note 13, at 10.

231. *Id.*

232. Biber-Klemm et al., *supra* note 134, at 284.

9.2 The Contracting Parties agree that the responsibility for realizing Farmers' Rights, as they relate to plant genetic resources for food and agriculture, rests with national governments. In accordance with their needs and priorities, each Contracting Party should, as appropriate, and subject to its national legislation, take measures to protect and promote Farmers' Rights, including:

(a) protection of traditional knowledge relevant to plant genetic resources for food and agriculture;

(b) the right to equitably participate in sharing benefits arising from the utilization of plant genetic resources for food and agriculture; and

(c) the right to participate in making decisions, at the national level, on matters related to the conservation and sustainable use of plant genetic resources for food and agriculture.

9.3 Nothing in this Article shall be interpreted to limit any rights that farmers have to save, use, exchange and sell farm-saved seed/propagating material, subject to national law as appropriate.²³³

One of the goals of the ITPGR was to recognize Farmers' Rights more effectively than the IU did.²³⁴ However, during negotiations the parties wanted to include a provision that recognized Farmers' Rights, but the fact that there was little agreement as to what "Farmers' Rights" actually meant created an unexpected problem.²³⁵ The concept "had come to mean different things to different people."²³⁶ Different ideas about how to incorporate Farmers' Rights in the ITPGR included recognizing an IPR for materials that farmers created and limiting the extent to which IPRs could apply to PGR.²³⁷ Ultimately, Article 9.1 does not produce any legally binding effects²³⁸ but instead serves to recognize farmers' contributions and to provide background for the rights outlined in Article 9.2.²³⁹

Article 9.2 of the ITPGR leaves the task of implementing Farmers' Rights to national governments.²⁴⁰ The treaty encourages the creation of national legislation to serve as the vehicle for protecting farmers.²⁴¹ Article 9.2 identifies traditional knowledge, equitable participation in benefits from using PGR, and the right to have a role in making decisions on conservation and sustainable use of PGR as the central aspects of Farmers' Rights.²⁴² Generally, "traditional knowledge" in the context of the treaty "refers mainly to

233. ITPGR, *supra* note 13, art. 9.

234. MOORE & TYMOWSKI, *supra* note 13, at 67.

235. *Id.* at 68.

236. *Id.*

237. *Id.*

238. See ITPGR, *supra* note 13, art. 9.1 (recognizing contributions made by farmers to the conservation and development of PGR, rather than binding the Contracting Parties to any specific action).

239. MOORE & TYMOWSKI, *supra* note 13, at 72.

240. ITPGR, *supra* note 13, art. 9.2.

241. *Id.*

242. *Id.*

the knowledge used to develop, and is thus incorporated in, farmers' varieties ('landraces') and certain associated knowledge (e.g. specific cultivation practices)."²⁴³

National governments have significant discretion under the ITPGR. The treaty governing body will control equitable sharing of benefits of the multilateral system,²⁴⁴ but national governments then decide whether and how to distribute benefits in their countries.²⁴⁵ The countries will have significant discretion in how to include farmers in the national decision-making process.²⁴⁶ Because the treaty provisions are not specific, their implementation, and therefore the scope and content of Farmers' Rights, may vary considerably from country to country.²⁴⁷

Article 9.3 attempts to quell the controversy between those who want to further IPR protection for PGR and those who do not.²⁴⁸ Some feel that farmers should be able to "save, use, exchange and sell farm-saved seed/propagating material,"²⁴⁹ regardless of whether it is protected by IPRs.²⁵⁰ Others feel that without IPR protection there will be no incentive to produce new plant varieties.²⁵¹ This Note attempts to provide a compromise because "while [it] would not be a sufficient basis for claiming rights in relation to saving, using and exchanging seeds . . . it does not restrict the options that may be adopted by national governments in that regard." The difficulty with this "compromise" is the fact that most States Parties to the ITPGR are parties to the TRIPS agreement, which clearly does not allow saving, using, exchanging, and selling farm-saved seed that is covered by IPRs. As a result, Article 9.3 has no functional effect. Farmers may continue to save, use, exchange, and sell PGR that they were already legally allowed to save, use, exchange, and sell prior to adoption of the ITPGR – PGR not covered by IPRs.

C. *Protecting Farmers' Rights*

Because the ITPGR is the main instrument that recognizes and enumerates Farmers' Rights, it is the guiding document for implementing Farmers' Rights internationally. The ITPGR recognizes the contributions of local and indigenous communities to the development and preservation of plant varieties, and instructs

243. MOORE & TYMOWSKI, *supra* note 13, at 72.

244. *Id.* at 73.

245. *Id.* at 73–74.

246. *Id.* at 74.

247. *Id.* at 72.

248. *Id.* at 75.

249. ITPGR, *supra* note 13, art. 9.3.

250. MOORE & TYMOWSKI, *supra* note 13, at 75.

251. *Id.*

countries to protect Farmers' Rights, as they relate to PGR, through national legislation.²⁵² Under the international intellectual property system, plant varieties developed by farmers through the use of traditional knowledge are in the public domain unless farmers protect them with an IPR through either a patent or a *sui generis* system. However, plant genetic material is often communally owned and farmers tend not to exert exclusive rights over it. In addition, IPR laws "are designed to protect innovations in new and clearly distinguishable plant *varieties*, [and] often cannot accommodate contributions of individual farmers using more informal methods to select for better crops or sought-after plant *characteristics*."²⁵³ As a result, the defense of traditional knowledge and the rights of farmers often conflicts with the IPR system.²⁵⁴

Parties to the ITPGR make their own decisions through national legislation about how to protect PGR cultivated by local and indigenous communities. Regine Andersen suggests that there are two possible approaches to domestic implementation of Farmers' Rights.²⁵⁵ The first is the "ownership approach," which "refers to the right of farmers to be rewarded for genetic material obtained from their fields which is used in commercial varieties and/or protected with intellectual property rights."²⁵⁶ The intention behind the ownership approach is to create incentives for farmers to maintain genetic diversity in the food supply by sharing with them the benefits derived from the diverse genetic materials they create and sustain.²⁵⁷ Generally, this approach also attempts to prevent global actors from misappropriating traditional knowledge and resources developed by indigenous farmers, and to allow farmers to control the way in which those resources and knowledge are used.²⁵⁸ On the down side, this approach may create a "disincentive to share" because some farmers may hoard their resources in the anticipation of receiving benefits from them.²⁵⁹ In addition, because "the demand for farmers' varieties among commercial breeders is limited . . . relatively few farmers would benefit" from exclusive ownership of plant varieties.²⁶⁰

The second approach is the "stewardship approach," which "refers to the rights that farmers must be granted in order to enable

252. ITPGR, *supra* note 13, art. 9.2.

253. HELFER, *supra* note 53, at 9.

254. *Id.*

255. REGINE ANDERSEN, REALISING FARMERS' RIGHTS UNDER THE INTERNATIONAL TREATY FOR PLANT GENETIC RESOURCES FOR FOOD AND AGRICULTURE: SUMMARY OF FINDINGS FROM THE FARMERS' RIGHTS PROJECT, PHASE 1, at 4 (2006).

256. *Id.*

257. *Id.*

258. *Id.* at 9.

259. *Id.* at 4.

260. *Id.*

them to continue as stewards of agro-biodiversity.”²⁶¹ Under this approach the goal is to create a “legal space” that allows farmers to continue and be rewarded for their role as stewards of agro-biodiversity.²⁶² Ultimately, this approach seeks to prevent the extinction of both traditional knowledge and PGR.²⁶³ The stewardship approach offers advantages that the ownership approach does not: for example, it does not require figuring out who should be rewarded for their efforts in communities where plant varieties are shared communally.²⁶⁴ The stewardship approach is more likely than the ownership approach to lead to a meaningful realization of Farmers’ Rights. Indeed, if the goal of Farmers’ Rights “is to ensure continued maintenance of plant genetic resources for food and agriculture . . . it is vital to have the stewardship approach as the leading principle.”²⁶⁵

Legislation from India and Zambia illustrate two ITPGR States Parties’ methods of protecting Farmers’ Rights. Both countries adopted strategies that blend the ownership and stewardship approaches, but with different results. The Plant Breeder’s Rights Act of 2007 from Zambia establishes the plant breeder’s exclusive rights over plant varieties he bred, discovered, and developed.²⁶⁶ The Act only provides exclusive rights to the plant breeder within the commercial world, exempting the breeder’s rights when another party uses the protected plant variety for non-commercial purposes.²⁶⁷ The Act states that private, non-commercial, experimental use of a protected plant variety does not infringe on plant breeders’ rights and that protected plant varieties may be obtained “from a gene bank or plant genetic resource center.”²⁶⁸ This Act protects plant breeders against commercial exploitation of their plant varieties while simultaneously considering those varieties to be in the public domain, as long as they are being used for a non-commercial purpose. This allows the Zambian government to protect its farmers in the commercial sphere with an IPR that confers ownership, while allowing farmers to use PGR in a way that encourages stewardship in local communities.

India has taken a different approach. The Protection of Plant Varieties and Farmers’ Rights Bill of 2001 encourages the development of new plant varieties and protects farmers’ rights over

261. *Id.*

262. *Id.*

263. *Id.* at 9.

264. *Id.* at 4.

265. *Id.* at 9.

266. The Plant Breeder’s Rights Act of 2007, sec. 7, 18 L. Rep. of Zambia 239 (2007), available at <http://faolex.fao.org/docs/pdf/zam78315.pdf>.

267. *Id.* § 8(1)(a).

268. *Id.* §§ 8(1)(g), 8(3).

plant varieties they develop.²⁶⁹ The Bill allows a farmer who breeds, evolves, or develops a plant variety to register it in the Plant Varieties Registry.²⁷⁰ Breeders are then required to deposit a sample of genetic material of the registered variety in the National Gene Bank at their own expense.²⁷¹ The Bill establishes state ownership of all extant plant varieties²⁷² that breeders fail to register.²⁷³ Further, the Bill prohibits registration of plant varieties where “prevention of commercial exploitation of such variety is necessary to protect public order or public morality on human, animal and plant life and health.”²⁷⁴ These provisions effectively give the Indian government the ability to protect local farmers by allowing them to register plant varieties, by asserting IPRs over unregistered plant varieties, and by suspending IPRs over PGR deemed necessary to preserve national welfare. As a result, “necessary” and unregistered plant varieties may be protected by the stewardship of the state, while individual farmers can establish IPRs in plant varieties they personally develop.

IV. CULTIVATING FARMERS’ RIGHTS

Realizing Farmers’ Rights globally will not be an easy task—the ITPGR language describing Farmers’ Rights is ambiguous; powerful nations, like the United States, have signed, but not ratified, the ITPGR,²⁷⁵ and the WTO threatens nations that violate TRIPS with the possibility of dispute settlement proceedings. At the same time, the ultimate responsibility for implementing Farmers’ Rights lays with States Parties to the ITPGR. In the face of these challenges, it seems that the most promising possibility for realizing Farmers’ Rights internationally is to form an international body that encourages nations to take a stewardship approach to Farmers’ Rights, supports them in their endeavors, and agrees to defend nations that may violate TRIPS in the WTO dispute settlement system.

269. The Protection of Plant Varieties and Farmers’ Rights Bill, No. 53 of 2001, India Code (2001), available at http://www.grain.org/brl_files/india-pvp-2001-en.pdf.

270. *Id.* §§ 2(c), 14, 16.

271. *Id.* § 27.

272. *Id.* § 2(j) (The Bill defines “extant varieties” as “a variety available in India which is noticed under section 5 of the Seeds Act, 1966, a farmers’ variety, a variety about which there is common knowledge, or any other variety which is in the public domain.”).

273. *Id.* § 28(1).

274. *Id.* § 29(1).

275. See Food and Agriculture Organization of the United Nations Legal Office, ITPGFRA Signatures and Ratifications, <http://www.fao.org/Legal/treaties/033s-e.htm> (last visited Jan. 4, 2010) (listing France, the Netherlands, Portugal, and the United States as countries that have signed, but not ratified the treaty).

A. A National Approach

The ultimate responsibility for Farmers' Rights must come from individual states. India and Zambia provide two examples of states that have already taken significant legislative action in this area. The ITPGR leaves states to create their own methods of protecting Farmers' Rights and TRIPS leaves the choice of how to implement IPRs over PGR to member countries. As a result, nations are ultimately responsible for the way in which IPRs and Farmers' Rights interact domestically.

Nationally, a state can take preliminary actions towards realizing Farmers' Rights. Regine Andersen suggests a step-by-step approach national governments can take in order to realize Farmers' Rights.²⁷⁶ First, states must focus public attention on the significance of Farmers' Rights and enumerate their particular goals for realizing Farmers' Rights.²⁷⁷ States must create an infrastructure or bureaucracy to further these national goals.²⁷⁸ They must also scrutinize national legislation that may affect Farmers' Rights and change it to create a "legal space" in which Farmers' Rights can exist—a space that encourages and compensates farmers for stewardship.²⁷⁹ She also suggests creating a separate fund that would be managed by the national government, paid into through the ITPGR's multilateral system, and used to develop programs to allow "access to plant diversity, conservation measures, participatory breeding, strengthening of farmers' seed systems, enhanced utilization of plant varieties and market access."²⁸⁰

While countries are taking these actions on a national level, it is important to have an international body coordinating efforts to realize Farmers' Rights. The ITPGR Governing Body could easily fill this role.²⁸¹ The Governing Body could help countries draft legislation that supports Farmers' Rights. It could also facilitate communication between parties to the ITPGR to encourage them to share ideas and practical experience about implementing Farmers' Rights.²⁸² The Governing Body could also take responsibility for some of the funds acquired through the multilateral system of access and benefit sharing in order to assist countries in implementing their policies. During the Second Session of the Governing Body, two countries, Zambia and Norway, asked the Governing Body to assume

276. ANDERSEN, *supra* note 255, at 10.

277. *Id.*

278. *Id.*

279. *Id.*

280. *Id.*

281. *See id.* at 11 (discussing the proposed actions of the ITPGR governing body).

282. *Id.*

this role.²⁸³ Their submission urged the Governing Body to prioritize implementation of Article 9 of the ITPGR, encourage farmer participation in administration of the ITPGR, and ask parties to the ITPGR to submit reports on the status of Farmers' Rights in their countries, and more.²⁸⁴ The Governing Body now has an opportunity to coordinate an effort to implement Farmers' Rights.

B. *An International Strategy:*

Perhaps more importantly than coordinating national efforts, an international body could take on the role of coordinating international efforts to stand up to the WTO on the issue of Farmers' Rights. Currently, most individual states, especially developing nations, do not have the capacity to unilaterally change the implementation of TRIPS. However, if many developing countries coordinated their efforts and pursued unified goals with regard to Farmers' Rights by allowing, for example, farmers to save and replant IPR-protected seed for non-commercial purposes or by advocating for IPR protection for traditional knowledge, developing countries may be able to influence the WTO to change its policies or to make exceptions to TRIPS for Farmers' Rights.

This technique was successful in getting compulsory licenses for AIDS drugs under TRIPS. The conflict over AIDS drugs mirrored the one over PGR: developing countries wanted inexpensive access to medications, and developed countries wanted to protect IPRs over medications.²⁸⁵ TRIPS required that states extend patent protection to medications, which was an area that some states had previously excluded from patent protection, much like PGR.²⁸⁶ South Africa and Brazil allowed importation and manufacture of generic AIDS drugs, arguing that TRIPS allowed them to grant compulsory licenses to domestic producers in a time of emergency.²⁸⁷ In response, the United States "initiated WTO dispute resolution proceedings against Brazil," but eventually dropped the suit in the face of immense international pressure from the UN, NGOs, and developing countries.²⁸⁸

283. Input Paper, Norway and Zambia, Implementation of Article 9 of the FAO International Treaty on Plant Genetic Resources for Food and Agriculture: Farmers' Rights, U.N. Doc. IT/GB-2/07/Circ.1, at 2, 4 (Oct. 29, 2007), available at <http://ftp.fao.org/ag/agp/planttreaty/gb2/gb2c1e.pdf>.

284. *Id.* at 4.

285. JEFFREY L. DUNOFF ET AL., *INTERNATIONAL LAW: NORMS, ACTORS, PROCESS* 1045 (2d ed. 2006).

286. *Id.* at 1047.

287. Frederick M. Abbott, *The WTO Medicines Decision: World Pharmaceutical Trade and the Protection of Public Health*, 99 *Am. J. Int'l L.* 317, 319 (2005).

288. DUNOFF ET AL., *supra* note 285, at 1050.

The WTO started this debate during the Doha Round of negotiations. A coalition of developing countries “forcefully pressed for a WTO declaration that TRIPS allows governments freedom to pursue their public health objectives.”²⁸⁹ The United States initially objected to anything less than full patent protection for medicines but eventually dropped its objections and compromised with developing nations.²⁹⁰ The WTO member countries came to an agreement that TRIPS “does not and should not prevent Members from taking measures to protect public health” and declared that member states have the right to grant compulsory licenses to produce pharmaceuticals, as well as to decide when the licenses are necessary.²⁹¹

States that are stakeholders in promoting Farmers' Rights internationally should adopt strategies to adapt TRIPS to the demands of Farmers' Rights similar to those adopted by countries concerned with the AIDS epidemic. Unfortunately, this may prove difficult. The success in the AIDS drug dispute was due in large part to the high level of visibility and immediacy of the crisis. Indeed, the United Nations described the impact of the crisis as “no less destructive than that of warfare itself.”²⁹² Globally, massive public support came out strongly in favor of allowing the compulsory licensing, with governments, organizations and activists supporting the cause.²⁹³ Farmers' Rights, on the other hand, do not enjoy the same level of salience internationally. Protecting Farmers' Rights will not likely produce the same short-term benefits as resolution of the AIDS drugs issue. Furthermore, it is difficult to mobilize public support around an issue that does not have an obvious and immediate cost to human life.

Ideally, the tools used to resolve the AIDS drugs issue at the WTO could be used to foment support for Farmers' Rights, giving them legal force internationally. If stakeholders in favor of furthering protections for Farmers' Rights create global awareness of the importance and immediacy of the situation and gather grassroots, NGO, and state support for the issue, they could make effective changes to TRIPS implementation in future negotiations that could result in meaningful protections for Farmers' Rights and agro-

289. *Id.* at 1054.

290. *Id.*

291. World Trade Organization, Ministerial Declaration of 14 November 2001, WT/MIN(01)/DEC/2, 41 I.L.M. 755 (2002).

292. Lissett Ferreira, Comment, *Access to Affordable HIV/AIDS Drugs: The Human Rights Obligations of Multinational Pharmaceutical Corporations*, 71 *FORDHAM L. REV.* 1133, 1133 (quoting Press Release, United Nations, In Address to Security Council, Secretary-General Says Fight Against AIDS in Africa Immediate Priority in Global Effort Against Disease, at 2, U.N. Doc. SC/6780 (Jan. 6, 2000), available at <http://www.un.org/News/Press/docs/2000/20000106.sgsm7275.doc.html>).

293. *Id.* at 1152.

biodiversity. However, the national approach will likely prove more effective than the international strategy in realizing Farmers' Rights.

V. CONCLUSION

Clearly the adoption of the ITPGR was not sufficient to create meaningful realization of Farmers' Rights internationally. It is now the responsibility of individual states to vindicate the rights outlined in the ITPGR in the face of TRIPS by creating national policies that support the rights of farmers. Countries like India and Zambia lead the way in creating national legislation that supports farmers as stewards of PGR. An international body could assist other nations in doing the same. Finally, enforcing Farmers' Rights internationally can only occur if an international coalition, led by stakeholder nations, unites to increase awareness of the issue and to force institutional change in the WTO.

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