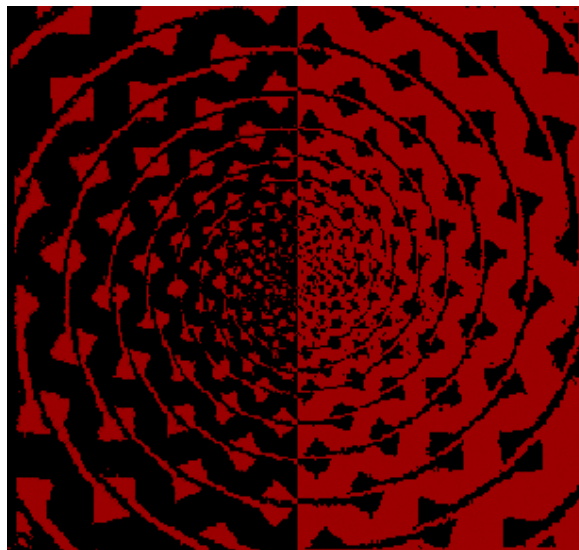

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Biodiversity Conservation and Protection of Traditional Knowledge.

by Noah Zerbe (CPDR)

Whatever the historical period, whatever the mode of production, plants and their products have been the necessary components of the material base on which the complex structures of human societies have been raised.

—Jack Kloppenburg, *First the Seed* (1988)

1. Introduction

Human beings have historically depended on the natural world for their survival. For more than 10,000 years, plants have provided not just food for subsistence, but most of the raw materials to produce the goods which maintain and improve human life. While the twin processes of industrialization and urbanization have obfuscated our traditional dependence on natural production processes for survival—popularizing the belief in humanity’s mastery over its natural surroundings—modern society continues to rely extensively on the products of nature. In some fields, recent developments highlight this dependence more clearly than ever before. Perhaps nowhere is this tendency more dramatic than in biotechnology, where recent advances have sparked a renewal of interest in the local biodiversity and indigenous knowledge of the Third World.

Advances in biotechnology build both on the technical achievements of Northern scientists *and* the genetic diversity of Southern communities. The breeding of new seed lines in agriculture and the development of new pharmaceuticals in health care have traditionally depended on the availability of genetically diverse populations. The emergence of modern biotechnological methods, which allow the transfer of genetic material across species barriers, has only increased the potential value of biodiversity. Approximately one-quarter of all currently available prescription drugs are derived from plants, and more than half are developed from natural compounds. Yet less than one percent of all plants have been tested for medicinal properties (Bryant, 2002: np). Many scientists believe that cures for a wide-range of conditions could be found in the genetic diversity of tropical and semi-tropical plants. Research on the rosy periwinkle (*Catharanthus roseus*) plant, for example, once native to Madagascar but no longer found *in situ* because of deforestation, led to the development of extremely effective treatments for childhood leukemia and Hodgkin's disease.¹ Scientists hope that similar "miracle drugs" may yet be found in the unexplored biodiversity of the South.

Biological diversity is equally important for agricultural research and production. The development of new crop varieties depends on the availability of a sufficiently diverse gene pool. Modern agricultural production, however, is predicated on genetic uniformity.² Indeed, in reflecting on the impact of hybrid maize, Henry Wallace³ lamented,

"It seems to me that the whole tendency in modern, commercial hybrid breeding is to narrow the source of germplasm...It has been one of the tragedies accompanying the superior power of modern hybrids that so many of the old-fashioned strains have been dropped completely. Who knows which of these so-called inferior sorts may have had just one block of superior genes to contribute at some critical future juncture when the environment may have changed" (Wallace, 1956: 17).

¹ Vinblastine, developed from Madagascar's rosy periwinkle plant by Eli Lilly to treat Hodgkin's disease, boasts a 90 percent success rate. Vincristine, also developed by Eli Lilly from the same plant, is 60 percent effective in the treatment of some types of leukaemia. Collectively, the two drugs have generated annual sales of approximately US \$200 million (of which an estimated 88 percent is profit) since their introduction in the 1960s. Critics point out that none of the revenues has been shared with Madagascar (Farnsworth, 1988: 95; Stone, 1992; RAFI, 1999 and 2000).

² Paula Bramel, a plant breeder at ICRISAT Zimbabwe, for example, argues "Plant breeding and genetic diversity are incompatible. Diversity is reduced at every stage of the breeding process" (Bramel, 2001: np).

³ It is particularly telling that such observations should come from Henry Wallace, who, as founder and president of Pioneer Hi-Bred, was responsible (in part) for the development of hybrid maize, and as Secretary of Agriculture, helped to aggressively promote such hybrid crops in the United States and abroad. See Culver and Hyde (2000) for a more detailed discussion.

As Wallace indicates, the maintenance of genetically diverse populations of plant varieties is essential for continued development of improved seed lines. New cultivars developed for higher nutritional content, improved stress tolerance or higher yields depend on the identification and isolation of those traits in one variety and the successful introduction the same traits, either through conventional breeding or new biotechnological techniques, into new varieties.

As genetic resources have assumed increasing scientific and (especially) commercial value, debates over access to and ownership of biodiversity have intensified. Indeed, as the raw materials necessary to realize the promises of the “biotech revolution,” control over genetic resources is increasingly contested. Traditional knowledge, historically dismissed as ‘uninformed’ or ‘unscientific,’ has simultaneously attracted increased attention, as academic and corporate researchers increasingly rely on the knowledge of local communities about the genetic diversity under their stewardship.

The new interest in plant and animal genomes (and the tensions generated by the increased attention) is reflected in the key international instruments governing the debate: the FAO’s International Undertaking (IU) on Plant Genetic Resources, the Trade Related Intellectual Property Rights (TRIPs) Agreement and the Convention on Biological Diversity (CBD). In the context of international governance, the concepts of farmers’ rights and community rights have been particularly contested, as the Third World attempts to develop alternative intellectual property regimes that balance the private rights of the innovator with the public rights of the community. Regional approaches have proven particularly popular, and countries in Latin America, Africa, South East Asia and the South Pacific have collectively attempted to draft legislation to deal with the emerging issues and debates surrounding biodiversity and biotechnology.⁴ The OAU’s African Model Legislation⁵ is perhaps the most ambitious of these efforts. It seeks to develop a comprehensive regional framework governing all aspects of biodiversity management, intellectual property rights and protection of indigenous knowledge.

The purpose of this paper is to explore the regional response in Africa to the challenges posed by the increasing economic importance of biodiversity. I begin by

⁴ With the adoption of Decision 391 in 1996, the Andean Community (Bolivia, Columbia, Ecuador, Peru and Venezuela) was the first regional organization to adopt legislation governing access and benefit sharing. Since then, the Association of Southeast Asian Nations (ASEAN), the South Pacific Regional Environmental Program (SPREP) and the Organization of African Unity (OAU) have undertaken similar efforts (Diaz, 2000).

⁵ The formal title of the Model Legislation is the OAU Model Law for the Recognition and Protection of the Rights of Local Communities, Farmers and Breeders, and for the Regulation of Access to Biological Resources. In this paper I use the terms “Model Legislation” and “Model Law” interchangeably to refer to the document.

examining the three international agreements that provide the context within which (or perhaps against which) the Africa Model Legislation was adopted. I then briefly explore the key components of the Model Law itself. My intention here, however, is not necessarily to provide a comprehensive review of the instrument—that has been accomplished elsewhere.⁶ Rather, I seek to understand the process by which the Model Legislation—as an alternative to the system of intellectual property rights and benefit sharing envisioned by the TRIPs and CBD Agreements—was articulated. How do the assumptions and worldviews on which the Model Legislation is constructed differ from those of TRIPs and CBD? Whose interests were represented and whose were excluded from the legislation? And what are the implications of the Model Legislation for the construction of other regional and alternative regimes for promoting breeders’ rights, community rights and farmers’ rights?

2. The International Context: From Common Heritage to National Sovereignty

The adoption of the Convention on Biological Diversity in 1992 and the Trade Related Intellectual Property Rights Agreement in 1994 marked a fundamental shift in the nature of the international governance of biodiversity. Historically, biodiversity had been viewed as *res communis*,⁷ the common heritage of all humanity. Under the common heritage doctrine,⁸ codified by the Food and Agriculture Organization’s International Undertaking on Plant Genetic Resources (1983 and 1989), and embodied most clearly in the work of the Consultative Group on International Agricultural Research (CGIAR), plant genetic resources constituted “a heritage of mankind to be preserved, and to be freely available for use, for the benefit of present and future generations” (FAO, 1983: np). In principle, rights over plant genetic resources were held in common and could not be appropriated by individuals. Indeed, the 1983 FAO resolution, applicable traditional farmers’ varieties, wild species and improved varieties developed by plant breeders, held that cultivars should be made available to anyone without restriction. This agreement was based in the recognition by the FAO that, while the

⁶ See, for example, Ekpere (2000; 2002a; 2002b).

⁷ Roman jurisprudence distinguished between *res nullius*, which included things that, because of their very nature, could not be considered property (e.g. light), and *res communis*, which were things that could be owned but were considered public or state property (e.g. state lands). For a more detailed analysis of this distinction, see Engle (2001).

⁸ The common heritage doctrine is hardly unique to plant genetic resources. Indeed, the concept is widely employed in international environmental law, particularly to areas outside national jurisdiction such as the seabed and the Antarctic. The doctrine is based on attempts to ensure the non-appropriation, conservation, and/or rational and equitable use of resources in the absence of national control (Kiss and Sheldon, 1991: 15-16).

vast majority of genetic resources were located in the developing world, the technology and expertise necessary to fully utilize the genetic diversity of the South was found almost exclusively in the developed countries of the North. The geographic separation of biodiversity and biotechnology necessitated the development of a regime capable of ensuring that both developed and developing countries could benefit from the other's endowment.

In practice, however, the common heritage doctrine proved difficult to enforce in the context of expanding commercial interest in seed. Although the IU established the *de jure* equality of farmers' and breeders' varieties, the *de facto* status afforded public biodiversity and private germplasm differed greatly. While the genetic diversity of the South continued to be governed by the common heritage doctrine, new cultivars developed by commercial plant breeders in the North were increasingly protected by industrial patents and/or strong plant breeders' rights under the International Union for the Protection of New Plant Varieties (UPOV). Developing countries, home to an estimated 90 percent of the earth's biodiversity, argued that it was unfair to treat their contribution to genetic diversity as common (and uncompensated) property while the seed lines developed by Western corporations were protected through breeders' rights and other forms of intellectual property. Demands by the less developed countries for free access to improved seed varieties under the common heritage doctrine were rebuked by corporations and Western governments, who contended that their investment in research and development of new seed lines merited reward. They believed that, unlike the raw biodiversity of the South, their research involved considerable time and financial risk. If forced to offer their proprietary seed lines freely to the developing world, there would be no incentive for innovation, and they would be unable to recover investment costs.⁹

The *de facto* distinction between farmers' and breeders' varieties, despite the assurance of *de jure* equality, encouraged the developing world to demand reconsideration of the International Undertaking. In an attempt to resolve the debate, the FAO adopted the "Agreed Interpretation of the International Undertaking" in 1989. The Interpretation attempted to balance the two sides of the debate, conceding that plant breeders' rights (such as those provided for under the UPOV convention) were not incompatible with the Undertaking, while

⁹ Pioneer Hi-Bred, a leading US seed producer, contended that "Some insist that since germplasm is a resource belonging to the public, such improved varieties would be supplied to farmers in the source country at little or no cost. This overlooks the fact that 'raw' germplasm only becomes valuable after considerable investment of time and money, both in adapting exotic germplasm for use by applied plant breeders and in incorporating the germplasm into varieties useful to farmers" (Pioneer Hi-Bred, 1984: 47). Pioneer's position is thus founded on the denial of the value of plant selection and breeding by farmers over thousands of years (Shiva, 1996).

simultaneously holding that “free access” did not mean access free of charge, and that access to plant genetic resources was part of a “reciprocal system” under which the benefits derived from the genetic material should be shared (FAO, 1989). The FAO’s Agreed Interpretation thus represented one of the earliest efforts to reconcile plant breeders’ and farmers’ rights.

However, by the time of the drafting of the Convention on Biological Diversity at the Earth Summit in 1992, the Food and Agriculture Organization had abandoned the principle of common heritage altogether. In its place, the FAO asserted that plant genetic resources should be governed according to the principle of national sovereignty (FAO, 1991). The FAO’s shift to sovereign control over biodiversity was confirmed in the CBD just one year later, when the common heritage doctrine was superseded by the notion “that the conservation of the biological diversity is the common concern of all mankind”¹⁰ (CBD, 1992: Preamble).

The discursive shift from “common heritage” to “common concern” echoed the assertion of sovereign rights over biodiversity¹¹ and was grounded practically in the realization of the potential value of genetic resources. Indeed, the push for national control over biodiversity was based on the perception by the South that the common heritage doctrine was unjust and resulted in a situation under which the developing world was forced to offer free and unconstrained access to their genetic resources while the products of the North developed from those resources were protected by strong intellectual property rights and rewarded with monopoly returns on investment. Indeed, according to one observer, the increasing importance of genetic resources in plant breeding programs made

¹⁰ While the International Undertaking and the Convention on Biological Diversity both deal with the question of access and ownership of biodiversity, they approach the question in fundamentally different ways. According to Rose (1994: 26), “The Convention emerges from a conservation ethic and is concerned with all biological resources, it places emphasis on controls on future foreign access to each State’s biological resources. However, the finance and technology benefits gained by PGR source countries under the Convention on Biological Diversity could be used for any purpose, such as logging, land clearance and mono-cropping. In contrast, the International Undertaking is based upon a regime of uncontrolled access, although it does introduce a notion of historic reward for such access, known as Farmers’ Rights. Assurances that extension of the rights of exclusive control over access to PGRs will promote their conservation and utilisation are still needed. While the International Undertaking is concerned solely with plant genetic resources and has an agricultural application orientation, it does provide that the rewards for access, i.e. the Fund established to meet Farmers’ Rights, will be directed towards global conservation of PGRs. The FAO Code of Conduct for Plant Germplasm Collecting and Transfer also makes some provision for these concerns but the evidence is not yet available to indicate whether either mechanism will be effective.”

¹¹ Common heritage differs from common concern in that the former implies a common right of access to and a common sharing of the benefits derived from a given resource, while the latter implies a common obligation towards a given issue, in this case, the protection and conservation of biodiversity (Guilmin and Casey-Lefkowitz, 1993: 47-48).

“the distinction between ‘elite’ commercial germplasm as private property and ‘primitive’ germplasm as common heritage [seem] less persuasive. Indeed, the distinction came to appear to many Third World observers as so much ideological slight of hand designed to maintain the subordinate position of the South in the global economy. Third World nations found their own genetic resources, albeit transformed by plant breeders, confronting them as commodities. This pattern has been seen as doubly inequitable because the commercial varieties purveyed by the seed trade have been developed out of germplasm initially obtained free from the Third World” (Kloppenburger, 1988: 171).

Echoing Kloppenburger’s position, Caillaux argues that, “When intellectual property rights are granted on new plant varieties which are later sold subject to such protection to developing countries, the countries supplying the genetic material begin to grasp the contradiction of the situation: on the one hand, the genetic resources are considered ‘mankind’s common heritage,’ but on the other hand, access to improved seeds, subject to rights of intellectual property protection, is restricted” (Caillaux, 1994: 12).

The much-celebrated potential of biotechnology only underscored this perception. Indeed, technological innovations in biotechnology were generating greater pressure among Northern scientists and corporations to secure access to biodiversity in the South. At the same time, the expansion of intellectual property rights afforded new biotechnological innovations and changes to the tax system in the United States were creating financial incentives for companies to develop and bring to market new biotech products (Zerbe, 2003b). Consequently, researchers increasingly sought to secure access to both the raw biodiversity of the South and the indigenous knowledge governing it, while governments and communities in the South were increasingly hesitant to share it. The common heritage doctrine had thus effectively collapsed.

In response to the growing economic importance of biodiversity, and as a result of the failure of the common heritage doctrine, benefit sharing became a central focus of negotiations for the Convention on Biological Diversity. In practice, the common heritage doctrine had already been abrogated because of debates over the unequal status of biodiversity and new plant varieties. The CBD, however, formally laid the principle to rest. Under the terms of the Convention, biological resources were now subject to national sovereignty, formally granting the controlling state the right to control access to biodiversity and to demand a share of any benefits

derived from its use. Indeed, the central goals of the Convention, namely conserving biodiversity, encouraging its sustainable use, and establishing a fair and equitable benefit sharing regime, all rest on the assertion of national control over biological diversity.¹²

The Convention outlines a number of general obligations of party states, including:

- a. The development of national strategies for the conservation and sustainable use¹³ of biological diversity (Article 6);
- b. The integration of the conservation and sustainable use of biodiversity in to sectoral and cross-sectoral programs and policies (Article 6);
- c. The identification and monitoring of components of its biodiversity important of its conservation and sustainable use (Article 7);
- d. The identification of activities likely to have a significant adverse impacts on the conservation of biodiversity (Article 7);
- e. The integration of considerations of the sustainable use and conservation of biodiversity into national decision making (Article 10);
- f. The introduction of the requirement of environmental impact assessment to proposed projects likely to adversely effect biodiversity (Article 14); and
- g. The adoption of economic, social and scientific measures necessary to ensure conservation of biodiversity (Article 11).

While the Convention has secured broad international consensus¹⁴ around its themes of conservation and sustainable use, contentious debate has arisen around the questions of community rights and benefit sharing. The concept of community rights is established in Article 8(j) of the Convention, which stipulates that,

“Subject to its national legislation, [Contracting Parties shall] 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

¹² Article 1 of the Convention outlines its objectives as “the conservation of biological diversity, the sustainable use of its components and the fair and equitable sharing of the benefits arising out of the utilization of genetic resources, including by appropriate access to genetic resources and by appropriate transfer of relevant technologies, taking into account all rights over those resources and to technologies, and by appropriate funding” (CBD, 1992: Article 1).

¹³ “Sustainable use” is defined in Article 2 of the CBD as “the use of components of biological diversity in a way and at a rate that does not lead to the long-term decline of biological diversity, thereby maintaining its potential to meet the needs and aspirations of present and future generations” (CBD, 1992: Article 2).

¹⁴ The level of international agreement around the main issues and themes of the CBD is dramatic. To date, 187 countries have signed the treaty, and 163 of these have ratified it (CBD, 1992).

and 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” (CBD, 1992: Article 8j).

Community rights are thus founded in the unique relationship between indigenous communities and their environment. Because of their long experience and close relationship with biodiversity, indigenous communities have specialized knowledge of local species. This knowledge warrants preservation and, if utilized in the development of commercial products, compensation.

Although not explicitly considered in the Convention text, the concept of farmers’ rights can be seen as a specific subset of community rights. As formulated by the FAO, farmers’ rights were understood as “arising from the past, present and future contribution of farmers in conserving, improving and making available plant genetic resources, particularly those in the centers of origin/diversity” (FAO, 1989: np). Under the FAO framework, farmers’ rights are derived from the dual role of the farmer as historical innovator and conservationist.¹⁵ As innovators, farmers are rewarded for their historical contribution to the maintenance and expansion of genetic diversity. For countless generations, farmers have selected cultivars for particular traits, bred and maintained them, and developed new varieties from old cultivars. The contribution of the farmer-cum-innovator provides the foundation upon which modern plant breeding efforts are built. Farmers’ rights are, from this perspective, a reward for the historical contribution of farmers to the genetic diversity available to breeders today.

Efforts to develop and expand benefit sharing regimes are also based on the vision of the farmer as conservationist. Where the monocultures associated with industrial agriculture have taken hold, farmers’ fields have lost their genetic diversity. However, where traditional varieties continue to be grown, farmers’ fields demonstrate a considerable degree of biological diversity. Indeed, genetic diversity remains one of the primary safeguards against pest and disease for farmers employing traditional cultivars and techniques. The farmer-cum-conservationist is thus rewarded for their role in ensuring the *in situ* preservation of local varieties. From this perspective, benefit sharing is not so much a reward for past efforts but a financial incentive to continue current conservation efforts.

¹⁵ Swaminathan (1998) makes a parallel argument when he distinguishes between farmer-cultivators and farmer-conservers. From his perspective, farmer-conservers practice *in situ* conservation, while farmer-cultivators are interested primarily in agricultural production.

The philosophical justifications for benefit sharing (as reward or incentive) under the Convention on Biological Diversity are operationalized through the extension of national sovereignty over genetic resources. Article 15 of the CBD outlines the general nature of benefit sharing regimes. It recognizes the sovereign right of states over biological resources in their territory, and establishes that access to those resources shall be granted only under mutually agreed upon terms, subject to the requirement of prior informed consent, and based on the sharing of the benefits derived from those resources. Articles 16-21 of the Convention outline the specific content of benefit sharing agreements.

The CBD's articulation of community rights and benefit sharing has been strongly criticized, particularly by the United States. The US has repeatedly argued that the text is riddled with "ambiguities and internal inconsistencies" (Goldman, 1994: 708) and has been particularly vehement in its opposition to the CBD's community rights and intellectual property articles.¹⁶ At the conclusion of negotiations in 1992, the United States refused to sign the CBD. According to William Reilly, Administrator of the US Environmental Protection Agency at the time, the United States would not accede to the treaty because of concerns which "are centered on this convention's ambiguity regarding the protection of intellectual property rights, inadequate funding mechanisms, and selective, negative characterization and regulation of biotechnology" (Reilly, 1992: np). Although Clinton signed the treaty in 1993 following the development of an interpretative statement addressing US concerns, the Senate refused to ratify the treaty, leaving the US alone among the G-7 countries and in the company of Andorra, Brunei Darussalam, Iraq and Thailand as the only countries that have not ratified the text.

3. The Privatization of Rewards: TRIPs and CBD

The conclusion of the TRIPs Agreement in 1994 added a new layer of complexity to the question of access and benefit sharing. Historically patents had been governed by national law. While the World Intellectual Property Organization (WIPO) coordinated divergent national legislations and mandated national treatment, the exact nature of the rights afforded under patent legislation, including requirements for securing a patent, restrictions on patents, and the rights and obligations of the patent holder, were specified by national jurisdiction. As a result, there was a great deal of disparity in terms of patent protections extended. While

¹⁶ The United States' opposition to the CBD centers on Articles 15, 16 and 19, as well as to the overall objectives of the Convention, but its most vigorous attacks have been against Article 16.5, which it interprets as permitting compulsory licensing.

the developed countries generally afford strong property protections, the developing world frequently afforded only circumscribed protections. National legislations were particularly varied in terms of exclusions from patentability, rights conferred, the use of compulsory licensing, and terms of protection. Protection in the developing world emphasized local working requirements to encourage local development.¹⁷

The possibility of divergent legislation based on specific national standards was greatly eroded under TRIPs, as the Agreement prescribes specific standards of intellectual property protection. The final agreement mandated member states to provide patents on all innovations, whether products or processes, in all fields of technology subject to the normal requirements of novelty, inventiveness and industrial applicability (GATT, 1994: Articles 27.1 and 33). The agreement permitted member states to preclude patents on certain innovations on the grounds of public morality or medical necessity, and to exclude plants, animals and microorganisms provided an alternative and effective form of *sui generis* protection was offered (GATT, 1994: Article 27.3b).

Under the terms of Article 27.3b, signatories to the TRIPs Agreement are required to establish some form of intellectual property protection for new plant varieties and to provide patents on micro-organisms. The *sui generis* option affords national governments some degree of autonomy in developing IP regimes suited for local conditions. The United States, for example, has expanded its industrial patent system to protect plants, while the European Union has adopted UPOV's system of plant breeders' rights. Many developing countries, however, are attempting to develop more ambitious *sui generis* initiatives.

The current WTO framework requires that any *sui generis* alternative meet certain general guidelines. They must, for example, ensure national treatment (e.g. citizens and non-citizens must receive the same consideration under the law), and they must abide by the most-favored nation principle (e.g. the benefits afforded nationals of one WTO-member country must be extended to the nationals of all WTO members). *Sui generis* regimes must also offer "effective" protection, meaning that

¹⁷ A survey by GRAIN (1998) found that, in general, patent protection in the developing world generally excluded agricultural and horticultural methods, diagnostics, medicines and other treatments for humans, animals and plants, food and food products, chemical processes and microorganisms. Patents were granted on processes and not products (to allow for development through imitation). Exclusions for reasons of national health and welfare and public morality were common. Further, local working requirements meant that importation would not satisfy patent requirements. After the adoption of TRIPs, however, many of the exceptions and limitations imposed by the developing world were prohibited as unfair trade practices.

protections offered must be enforced by the state and that a judicial framework for the review of IP disputes must exist.

Beyond the basic guidelines, however, considerable scope for variability exists, as key elements of a TRIPs-compliant *sui generis* regime remain poorly articulated. The concepts of “plant variety” and “micro-organism” are undefined, and the criteria and requirements for offering IP protection are not outlined. Further, tensions within the TRIPs Agreement itself offer the possibility of greater flexibility in the development of *sui generis* regimes. The exemptions afforded under Article 8 for matters of public health and nutrition have already been used to secure compulsory licensing of patented medicines in some developing countries.¹⁸ The exemptions afforded under Article 8 (to promote socio-economic and technical development) and Article 27.2 (to protect *ordre public*) provide a similar justification for expanding farmers’ and community rights under *sui generis* frameworks. But the scope of exemptions to TRIPs requirements under Articles 8 and 27 remain contested. While the Africa Group is pushing to expand the scope of such exemptions, the United States is seeking to radically restrict them. International debates have already emerged over the use of Article 8 to secure affordable AIDS medicines in Africa. By employing the exemptions afforded under the TRIPs framework (and, of course, by mobilizing popular opinion around the issue of access to essential medicines by the poor), African governments were able to successfully shift the frame of the debate around pharmaceutical patents from the (nearly) unchecked rights of the patent holder to a more balanced perspective which reconciles the rewards for innovation against the social and medical needs of Africans. In a similar way, the limited flexibility and internal tensions of the TRIPs Agreement could provide the legal foundation for *sui generis* legislation intended to protect the farmers’ and community rights discussed below.

The relationship between the FAO’s International Undertaking, the TRIPs Agreement, and the CBD is at the center of intense international debate and provides a further incentive for regional efforts to develop *sui generis* intellectual property systems.¹⁹ According to most developed countries, the TRIPs Agreement

¹⁸ TRIPs Article 8 provides that “Members may, in formulating or amending their laws and regulations, adopt measures necessary to protect public health and nutrition, and to promote the public interest in sectors of vital importance to their socio-economic and technical development, provided that such measures are consistent with the provisions of this Agreement.”

¹⁹ Although not considered here, the entry into force of the Cartagena Protocol on Biosafety on 11 September 2004 will further complicate international debates around biotechnology, biosafety and intellectual property. Adopted despite strong opposition by the United States, the Cartagena Protocol will permit countries to regulate (or prohibit) the release of genetically modified organisms to avoid potential harm—even where there is a lack of scientific certainty regarding the nature or extent of the potential dangers. The precautionary principle of the Cartagena Protocol is in direct opposition to the regulatory guidelines established under the WTO, which permit state regulation only where scientific evidence regarding potential dangers exist, and then only in proportion to the level of that risk.

and the CBD are not in conflict. Indeed, an analysis of the TRIPs-CBD interface by the European Union concluded that

“The CBD and the TRIPs Agreement do not conflict with each other from a legal perspective. They have different objectives and do not deal with the same subject matter. There is nothing in the provisions of either Agreement that would prevent a country from fulfilling its obligations under both. The CBD, for example, does not prohibit patents on inventions using genetic material. TRIPs does not prevent signatories to the CBD from exercising their right to regulate access to their genetic resources, to require prior informed consent or to share in the benefits arising from their use...Despite their difference in coverage, there is indeed considerable *interaction* between the rights referred to in the TRIPs Agreement and the subject matter of the CBD. There are a range of issues for which both Agreements do have implications such as biotechnology, plant varieties, environmental technology relating to conservation and sustainable use, information relating to conservation and sustainable use, traditional knowledge and benefit sharing. This leads the EC to the view that, with regard to their implementation, the TRIPs Agreement and the CBD should not undermine each other’s objectives. They should, accordingly, be implemented in a mutually supportive way” (EC Directorate General for Trade, 2002: 10).

Despite the assurances of the European Union, developing countries and NGOs continue to point to the inconsistencies and conflicting obligations embodied under the CBD and TRIPs Agreement. They argue that the system of intellectual property rights envisioned under TRIPs undermines the capacity of national governments to protect local communities and biodiversity, and weakens in particular the benefit sharing regime established under the CBD (See Table 1 below).

In essence, the Cartagena Protocol reverses the burden of proof from the regulator (to prove that a significant danger exists) to the regulatee (to prove that a particular product poses no real or significant threat).

Table 1
Summary of Areas of Conflict between TRIPs and CBD

Issue Area	TRIPs	CBD
Patentable subject matter	Circumscribes national sovereignty by mandating protection of biological and biotechnological innovations either through patents or <i>sui generis</i> protections.	Principle of national sovereignty implies discretion in the drafting of IPR legislation, including the right to prohibit protection on biological resources.
Benefit sharing	Strong private intellectual property rights with no corresponding rights for communities or farmers, and no mandated benefit sharing.	Benefit sharing mandated, with the exact terms to be negotiated between government and interested parties.
Protection of local knowledge	Narrow understanding of innovation associated only with commercial utility.	Recognizes importance of indigenous knowledge.
Role of the state	Role of the state to protect private intellectual property. No role in maintaining, promoting or protecting biodiversity.	Access to biodiversity governed by principle of prior informed consent, including consultation with local communities.

Source: Zerbe (2003a), Adapted from GRAIN (1998).

According to GRAIN (1998), the source of the inconsistencies between the CBD and TRIPs rests in the conflicting objectives of the two agreements. The fundamental goal of the TRIPs Agreement is the expansion and promotion of international trade through the establishment of global norms and standards which can be adjudicated and enforced.²⁰ The Convention on Biological Diversity, however, is essentially concerned with the question of environmental protection, dealing with the issue of intellectual property rights only tangentially.²¹ While the

²⁰ Interestingly, the inclusion of intellectual property rights in the World Trade Organization's discussions has not been criticized only by those who oppose the expansion of a strong IP regime in the developing world for reasons of social justice and equity. Some advocates of trade liberalization have also opposed the expansion of the WTO's mandate, fearing that the inclusion of intellectual property rights in the WTO—on the ostensible ground that they are “trade-related”—may open the door for the inclusion of other non-trade issues, such as labor rights and environmental standards.

²¹ Consideration of intellectual property issues under the CBD is limited to the question of technology transfer. Specifically, Article 16.2 of the CBD asserts that technology transfer shall be predicated on the “adequate and effective” protection of intellectual property rights.

CBD attempts to protect and encourage the conservation and sustainable use of biodiversity, the TRIPs Agreement establishes a regime of private property rights incompatible with the system of rights envisioned under the CBD. TRIPs does not recognize the historical contribution of farmers and communities in developing and maintaining biodiversity. Instead, it establishes a system of private property rights which necessarily precludes the assertion of national sovereignty over biodiversity and undermines the concept of community rights prescribed by the CBD and farmers rights outlined by the FAO's International Undertaking. The intellectual property rights regime envisioned under the TRIPs Agreement can only be extended where national sovereignty and community rights have effectively been superseded. Because the conflict between the two instruments is based on the founding principles (national sovereignty and benefit sharing versus private property rights), there are essential (and perhaps irreconcilable) contradictions between the two instruments.

Despite their conflicting objectives (trade expansion versus environmental conservation) and conflicting policy prescriptions (private, intellectual property rights versus benefit sharing), the TRIPs Agreement and the Convention on Biological Diversity both rest on similar understandings of the nature and source of property rights. Intellectual property rights under TRIPs are based on a liberal-utilitarian conceptualization of property according to which individual financial incentives are the primary motivation for innovation.²² Strong patent systems, it is argued, are necessary to encourage innovation, development and even technology transfer.²³ Although the CBD has as its goal the conservation of biodiversity, the benefit sharing mechanism it establishes to secure that objective is founded on a similar understanding of the role of private property (Boisvert and Caron, 2000; Zerbe, 2003a). Indeed, the CBD rests on the assumption that the efficient and sustainable use of biological diversity is best ensured through the establishment of private property rights over natural resources. Consequently, it adopts the same

²² The utilitarian motivation for intellectual property rights is, of course, not the only justification. Indeed, advocates of strong intellectual property rights often supplement utilitarian arguments with concepts of natural rights according to which an individual "owns" the deserts of their labor. These competing justifications are explored more fully in Zerbe (2003a and 2003b).

²³ In practice, however, the link between financial reward, strong intellectual property protections and innovation has been challenged in numerous empirical studies. In an analysis of reforms to Japanese patent laws, for example, Sakakibara and Branstetter (2001: 98) observe that "Japanese firms have adjusted the nature of their patenting, increasing the number of claims per patent, but we find no evidence of increase in innovative effort or innovative output that could be plausibly attributed to patent reform." Other studies in different economic sectors and countries arrive at similar conclusions (e.g. Jaffe, 1999; Hall and Ham, 1999). The link between technology transfer and strong intellectual property protections has also been challenged. See, for example, Brenner (1998), Helpman (1993), and Richardson and Gaisford (1996).

utilitarian understanding of property rights to secure the conservation of biodiversity as the TRIPs agreement does to secure expanded international trade.²⁴

There exists, in short, a complex and contradictory relationship between the TRIPs Agreement and the Convention on Biological Diversity which escapes the binary analysis presented in Table 1 (above). On the one hand, the two agreements deal with competing policy issues through conflicting policy prescriptions. On the other hand, TRIPs and CBD ultimately view the divergent issues through the same philosophical lens, namely, private property rights, held either individually (as in the case of the TRIPs Agreement) or in trust for indigenous communities (as in the case of the CBD). The limitations of the utilitarian justification for private (intellectual) property become particularly clear when one examines frameworks founded outside Western philosophical foundations. By taking as its starting point the community (rather than the individual which generally provides the ontological foundation for philosophical considerations of property in Western theories), the OAU Model Legislation provides an interesting counterpoint to the private IP regimes envisioned under TRIPs and the CBD. Let us now consider that alternative.

4. Development of the OAU Model Legislation

Given the complex and often contradictory relationship between the TRIPs Agreement and the Convention on Biological Diversity, the OAU's Model Legislation has often been presented as a *sui generis* system of property rights that addresses both the IP requirements of TRIPs and the benefit sharing regime established under the CBD.²⁵ Indeed, according to J.A. Ekpere, Executive Secretary of the OAU Scientific, Technical and Research Commission (STRC) at the time of the development of the Model Legislation, presents the Model Law in the following terms:

²⁴ Dedeurwaerdere (2003) demonstrates how reliance on financial incentives to secure biodiversity conservation can actually undermine the sustainable use of genetic resources by "crowding out" traditional practices based on reciprocity, cooperation and altruism.

²⁵ Although rhetorically justified in such terms, the OAU Model Law could more accurately be described as an alternative to the TRIPs Agreement rather than an attempt by member states to satisfy their TRIPs obligations. While it is generally TRIPs-compatible, it does not satisfy requirements for patents on micro-organisms but rejects patents on life altogether. The status of this challenge, justified philosophically in terms of public morality (an exemption permitted under TRIPs Article 27), reflects the internal contradictions of the TRIPs regime itself, while debates over the use of farmers' and community rights (established under the CBD) as a counterbalance to the rights of plant breeders highlight the tensions between the two agreements.

“Perhaps one of the most significant problems in [current international trade] discussions is the contradiction between the Convention on Biological Diversity which recognized the sovereign rights of states (and local communities) over their biological diversity and TRIPs which confers monopoly rights through IPRs. The definitional construct of [Article 27.3b] precludes recognition of technologies, innovations and practices of local communities and their collective ownership for common social good. The obvious implication is that the creativity of local communities as represented by indigenous peoples cannot be protected and rewarded. It is this anomaly inherent in the new concept of the world, in trade terms and the intellectual property rights system, that the OAU Model Legislation attempts to address” (Ekpere, 2000: 1-2).

The initial impetus for the development of the Model Law came from a recognition of the value of indigenous knowledge and a perception among OAU members that the system of intellectual property rights envisioned under the TRIPs regime was insufficient to protect it. Following the conclusion of the CBD negotiations, several high-profile incidents involving the uncompensated export of indigenous biodiversity, called biopiracy by its critics, attracted regional attention. While “biopiracy” was not yet on the political agenda, traditional healers were increasingly concerned with the practice. To address their concerns, the OAU’s Scientific, Technical and Research Commission (STRC) organized a Meeting of Experts and Symposium of Traditional African Medicine and Medicinal Plants in Kampala, Uganda in 1996. Although confined to the consideration of medicinal plants, the meeting marked the first recognition of the emerging problem of ownership, conservation, and utilization of plant genetic resources and indigenous knowledge in Africa.

Following the success of the Kampala meeting, a second workshop was scheduled to follow up on the key issues and themes under consideration by the STRC. Held in April 1997, the Nairobi workshop recommended that the OAU:

- a. Initiate and coordinate the development of a model law for the protection of indigenous knowledge and medicinal plants;
- b. Establish a working group of experts to harmonize national policies for the protection of medicinal plants and develop a common policy for their sustainable use;

- c. Assist member states in the development of appropriate legislation governing ownership, access, utilization and conservation of medicinal plants; and
- d. Encourage member states to study the implications of TRIPs on pharmaceutical production and the protection of medicinal plants and traditional knowledge (Mshana, *et. al.*, 1997).

The follow-up work undertaken pursuant to the Nairobi workshop by the STRC, however, did not take place in a vacuum. Indeed, three events converged with their work which rapidly accelerated the pace and expanded the scope of the STRC's program. First, the STRC discovered that the Environmental Protection Authority and the Institute of Biodiversity Conservation and Research in Ethiopia had been developing a system of community rights in collaboration with the Third World Network (Johnson, 1999: 7). By partnering with the Ethiopian institutions, the STRC was able to expand the scope of its undertaking beyond medicinal plants and herbs to cover all genetic resources. The collaboration between the STRC and Ethiopian authorities provided each with additional capacities to make the new project manageable. Further, the partnership had the added value of granting the new Model Law strong support and sponsorship within the OAU by the Ethiopian government.

At the same time, the question of intellectual property rights was becoming increasingly contentious within the World Trade Organization. The Third World countries in particular were more and more vocal in their opposition to TRIPs. Given the potentially wide impact of the TRIPs Agreement, influencing health care (through drug prices), agriculture (through seed), technology transfer and economic development more generally, many developing countries felt that the TRIPs Agreement, adopted as a package deal in the Uruguay Round without any real input from or consultation with them, was not in their interest. African governments and their trade representatives were, in the run up to the 1999 TRIPs review, working to develop a common African position on intellectual property rights, biodiversity and international trade (Ekpere, 2000: 4). The Africa Group's decision to reject patents on life and instead offer only limited intellectual property protections for new plant varieties was thus reflected in the STRC's work.²⁶

²⁶ With respect to the protection of intellectual property rights under the TRIPs regime, the common African position that emerged parallel to the development of the OAU Model Legislation encompassed three components. First, they called for a complete prohibition of patents on all micro-organisms, plants and animals. Second, they called for the harmonization of TRIPs, the CBD and the FAO's International Undertaking on Plant Genetic Resources. Third, they called for the establishment of a system to protect the holders of traditional indigenous knowledge and benefit sharing.

The establishment and development of the Africa Group's challenge to TRIPs (and the drafting of the OAU Model Legislation) coincided with the emergence of a global campaign around questions of biopiracy, biodiversity and intellectual property. An increasing number of non-governmental organizations, which viewed the question not merely as a strategy to secure the sustainable use of biodiversity but as an issue of social justice reflecting the fundamental unfairness of the global trade regime, were launching campaigns to promote benefit sharing and community rights. The Third World Network, which had been working on the development of a regional access and benefit sharing regime for Africa since the conclusion of the CBD in 1992, was thus joined by other progressive NGOs, including Action Aid, the Rural Foundation Advancement International (RAFI), and Genetic Resources International (GRAIN). The OAU Model Legislation, still very much a draft document, was held up as an example for other regional undertakings.

Given the strong international support, the interest of African governments and trade representatives in the text, and the assistance of the Ethiopian authorities, the STRC working group established in Nairobi in 1997 succeeded in developing three draft texts within one year: the Model Legislation on Community Rights and Access to Biological Resources, based on the Ethiopian system of community rights and access; the Declaration on Community Rights and Access to Biological Resources; and the Convention for the Protection, Conservation and Sustainable Use of African Biological Diversity, Genetic Resources and Related Knowledge. The documents dealt not just with the conservation and protection of medicinal plants but collectively addressed broader questions of plant genetic resources, farmers' and community rights. Because of the overlapping concern of the three documents, they were combined into one draft text under the title "OAU Model Law for the Recognition and Protection of the Rights of Local Communities, Farmers and Breeders, and for the Regulation of Access to Biological Resources."

The STRC's draft text was sponsored by the Government of Ethiopia and considered by the OAU at the Summit of Heads of State and Government in Ouagadougou, Burkina Faso, in June 1998. At the meeting, the ministers accepted the STRC's draft proposal as presented, but called for member states to initiate consultative meetings at the regional, national and sub-national levels to further expand and clarify the draft text.²⁷ Based on the proposed text, countries across

²⁷ The June 1999 regional meeting of experts from Eastern and Southern Africa, held in Lusaka, Zambia, was the most important of these. It served to clarify and expand the draft document particularly with respect to the question of compatibility with TRIPs, CBD and the FAO's International Undertaking. A meeting in Algiers, Algeria was hosted in June 2000 with the purpose of developing and updating the French version of the Model Legislation. At this workshop, the structure of the Legislation was reorganized and proposals regarding farmers' rights and benefit sharing were strengthened. These changes were also adopted into the English version of the Model Legislation, so

Africa could develop national access and benefit sharing regimes tailored to their local conditions.

The Ouagadougou summit was also significant because it highlighted the growing concern for the protection of indigenous knowledge and biodiversity on the Continent. Biodiversity and intellectual property rights were no longer specialist issues of concern only to a handful of lawyers and environmentalists. Rather, the questions at the heart of the Model Law were increasingly considered by a diverse cross-section of civil society in Africa: farmers groups, development and aid organizations, seed suppliers, health care advocates, and consumer rights organizations. Even trade, environment and agricultural ministries and the corporate sector were beginning to weigh in on the question. At the same time, African governments were developing the Africa Group common position for the TRIPs review process.

5. Scope of the Model Legislation

For the twenty-five countries involved in the development of the OAU Model Legislation, the initiative was more than simply an effort to articulate a *sui generis* framework for intellectual property protection that would satisfy the conflicting obligations embodied under the TRIPs and CBD regimes. For them, the scope of the project was much broader, namely

“to give reasoned attention to agricultural development (food crops and medicinal plants), indigenous knowledge systems, conservation and sustainable use of biological resources (natural forest products, fish, animals, micro organisms, etc.), community rights, equitable sharing of benefits and national sovereignty consistent with the provisions of the Convention on Biological Diversity” (Ekpere, 2000: 5).

The Model Law was thus developed to serve multiple purposes. According to Part 1, “The main aim of this legislation shall be to ensure the conservation, evaluation and sustainable use of biological resources, including agricultural genetic resources, and knowledge and technologies in order to maintain and improve their diversity as a means of sustaining all life support systems” (OAU, 2000: Article 1).

that the two language drafts were again identical. Another regional meetings were held in Addis Ababa in November 1999 resulted in few substantive changes. A series of three regional workshops was organized by the Southern African Development Community (SADC) to adapt the Model Legislation to local conditions in the region.

But the Legislation goes on to outline a series of additional goals which move well beyond promoting the conservation and sustainable use of biodiversity. Indeed, the broader list of objectives of the OAU Model Law includes:

- a. Recognizing, protecting and supporting the rights of local communities and farmers over their biological resources, knowledge and technologies;
- b. Protecting the rights of plant breeders;
- c. Establishing a system of access to biological resources, community knowledge and technologies subject to the principle of prior informed consent of the national State and the local communities;
- d. Promoting fair and equitable benefit sharing;
- e. Ensuring the effective participation of local communities in decision making processes, and promoting the participation of women in particular...
- f. Promoting the conservation and sustainable utilization of biological resources;
- g. Promoting the supply of good quality seed and planting material to farmers; and
- h. Ensuring that biological resources are utilized in an effective and equitable manner in order to strengthen national food security (OAU, 2000: Article 1).

The OAU Model Legislation is thus not merely a benefit sharing agreement or a *sui generis* system of intellectual property protection. It is intended to assist member states in the development of *sui generis* IP systems that would move beyond TRIPs requirements without undermining the effectiveness of the CBD benefit sharing regime.²⁸ The scope of the Model Legislation is consequently broad, applying not just to *in situ* resources (like the CBD), but also to *ex situ* collections, derivatives from biological resources, community knowledge, innovations, technologies and practices, local and indigenous communities, and plant breeders (OAU, 2000: Article 2.1). The Model Law defines the scope of access to biological resources (Articles 3-15, the nature and scope of community rights (Articles 16-24), farmers' rights (Articles 24-27) and plant breeders' rights (Articles 28-56), and lays out the

²⁸ It should be noted, however, that while the plant breeder' rights regime envisioned under the OAU Model Law may satisfy TRIPs' requirements for the protection of new plant varieties, the rejection of patents on life violates the current draft of the TRIPs Agreement, which mandates that states provide patents on micro-organisms and microbiological processes (Article 27.3). The Africa Group is currently lobbying for a reformulation of Article 27 which would permit states to prohibit patents on life (c.f. Note 25 above and the discussion of the Africa Group position below).

institutional arrangements (Articles 57-66) and enabling provisions (Articles 67-68) necessary to realize its objectives.²⁹

The recognition of the central role of smallholder farmers in the provision of food security in Africa is one of the key underlying principles of the OAU Model Legislation. Across Africa, smallholder farmers rely extensively on informal exchange mechanisms to secure seed. Indeed, an estimated 60-70 percent of all seed used by smallholder farmers in Africa is saved on-farm, with 30-40 percent acquired from relatives, neighbors and other community sources. Overall, less than 10 percent of seed sown by small-scale farmers is obtained from the formal sector (Cromwell, 1996: 20). Informal, community-based seed networks thus constitute the primary source of seed for most farmers.³⁰ For such farmers, who account for the vast majority of food production on the continent, cultivation is predicated upon the availability of informal networks of seed exchange. Across Africa, food production (and thus food security) depends on the smooth functioning of informal seed networks.

By linking the issues of food security, intellectual property rights, and seed production and exchange, the OAU Model Legislation moves beyond the Convention on Biological Diversity and the International Undertaking in its recognition of the nature, scope and source of farmers' rights. While the IU recognizes farmers' rights primarily as a reward for historical service in the development and maintenance of biodiversity, and the CBD conceives of farmers' rights (again as a subset of community rights) as an incentive mechanism to encourage *in situ* conservation, the OAU Model Law articulates farmers' rights as a central component of food production and food security. While it does not deny the important role of smallholder farmers in the historical development and present maintenance of genetic diversity, the Model Legislation's provisions for farmers' rights are not founded on moral claims of reward or economic calls for incentives, but instead build on the material need for food security and the practical recognition of informal seed exchange in securing that objective. From this perspective, then, farmers' rights are articulated in the Model Law as a counterbalance to plant breeders' rights, which, if based on the strong industrial patent system of the United States or the UPOV system found in Europe, may undermine informal seed exchange networks and thus food security in Africa. The Model Legislation thus outlines the rights of farmers as including the right to:

²⁹ These aspects of the Model Legislation have been explored in greater detail elsewhere. See, for example, OAU (1999), Sieler and Dutfield (2001), Tewolde (2002), and Epkere (2001, 2000a and 2000b).

³⁰ Zerbe (2001) provides an overview of the importance of informal seed networks in Southern Africa, as well as an analysis of the impact of structural adjustment and TRIPs on such networks.

- a. The protection of their traditional knowledge relevant to plant and animal genetic resources;
- b. Obtain an equitable share of benefits arising from the use of such resources;
- c. Participate in decision making at the local and national level on matters related to the conservation and sustainable use of plant and animal genetic resources;
- d. Save, use, exchange and sell farm-saved seed/propagating material of farmers' varieties;
- e. Use a breeders' variety protected under this law to develop farmers' varieties; and
- f. Collectively save, use, multiply and process farm-saved seed of protected varieties (OAU, 2000: Article 26.1).

The broad rights extended to farmers to save, exchange and develop new varieties of seed are not, however, absolute. The Model Legislation specifically restricts farmers from producing or exchanging protected varieties on a commercial scale (Article 26.2). Interestingly, despite strong protests from various international intellectual property rights bodies and Western governments, the system of plant breeders' rights deployed under the Model Legislation is generally compatible with the UPOV 78 text. The nature, scope and duration of breeders' rights closely follows the UPOV convention. Until revised in 1991, the UPOV agreement permitted farmers to save seed produced on-farm, even when the saved variety was protected under a plant breeder's certificate. Further, the UPOV 78 text permitted plant breeders use protected varieties in the development of new varieties, and even allowed breeders to receive their own certificate for such new varieties. Both the farmer's exemption and the breeder's exemption were removed from the UPOV agreement in 1991. While such exemptions may now be superfluous for agricultural production in the developed world, they continue to represent an important component of farming practices and agricultural innovation across Africa. Their importance is reflected in the maintenance of limitations on the monopoly rights of breeders enshrined in the Model Law and ensured, until recently, even under the intellectual property systems of the developed world.

Following the Convention on Biological Diversity, the OAU Model Law also specifically recognizes the concept of community rights and the central role played by indigenous communities in the maintenance of local biodiversity (CBD, Article 8j; OAU, Article 16). Indeed, echoing the CBD, the OAU Model Legislation recognizes community rights over:

- a. Their biological resources;
- b. The right to benefit from the use such resources;
- c. Their innovations, knowledge and technologies acquired through generations;
- d. The right to collectively benefit from the utilization of their innovations, knowledge and technologies;
- e. Their rights to use their innovations, practices, knowledge and technologies in conservation and sustainable use of biodiversity; and
- f. The use of collective rights as legitimate custodians and users of their biological resources (OAU, 2000: Article 16).

While the CBD and the OAU texts extend a similar (but not identical) system of rights to indigenous communities, the source of those rights rests on fundamentally different foundations. The Convention on Biological Diversity is based on classical economic assumptions regarding the nature of conservation and the preferability of private property regimes to systems of common property. Thus the CBD outlines community rights as an incentive (market) mechanism to encourage the local preservation of biodiversity:

“Through the rights it promotes, the Convention explicitly favors a contractual bilateral market form of regulation to achieve its dual purpose of efficiency and equity in the management of biodiversity. The legal regime propounded is presented as the necessary prelude to the introduction of bilateral market-like contracts between the holders of biological resources (States, public organizations or indigenous communities) and their users (firms of the life industry). These contracts would allegedly enable the optimal use of genetic resources and contribute to ensure the fair and equitable sharing of the income derived from their sustainable use” (Boisvert and Caron, 2000: 2).

Unlike the CBD, however, the OAU Model Law is premised not on the expansion of private property rights (or more accurately on the privatization of community rights), but on the rejection of private property rights over communal resources. The Model Law thus challenges both the vision of “community” outlined in the CBD and the nature of property rights formulated under TRIPs (see Table 2 below).

Table 2
Areas of Conflict Between TRIPs, CBD and the OAU Model Law

Issue Area	TRIPs	CBD	OAU Model Law
Patent Requirements	Twenty-year patents or <i>sui generis</i> protection of all products and processes in all fields of innovation. Limited exemptions for <i>ordre public</i> (matters of public health or morality).	Contradictory prescriptions: Technology transfer subject to effective IP protection, but the principle of national sovereignty implies discretion in the drafting of legislation, including the right to prohibit protection of biological resources.	Recognizes plant breeders' rights, but balances them against the rights of farmers and communities. Specifically excludes patents on life.
Benefit Sharing	No mandated benefit sharing.	Benefit sharing mandated, with the exact terms to be negotiated between the national government and interested parties.	Benefit sharing mandated, with the exact terms to be negotiated between the national government, local communities and interested parties.
Protection of Local Knowledge	Narrow understanding of innovation associated only with commercial utility. No protection of local knowledge.	Recognizes the importance of indigenous knowledge, but the exact nature of protections afforded is left to the discretion of the national government.	Recognizes the importance of indigenous knowledge and outlines specific guidelines for its protection.
Protection of Farmers' and Community Rights	Outlines only private property rights. No provisions for farmers' or community rights.	Recognizes community rights as a fundamental component of efforts to preserve biodiversity. No specific recognition of farmers' rights.	Recognizes both farmers' and community rights as a counterbalance to the rights afforded plant breeders.
Role of the State	To protect private property.	To govern access to biodiversity subject to the principle of prior informed consent.	To govern access to biodiversity subject to the principle of prior informed consent and based on the participation of local communities and specific groups (e.g. women, farmers, healers, etc).

The central emphasis placed both on participatory decision making based on local consultation and the material emphasis on community rights in the OAU Model Legislation reflects the historical centrality of the community in African societies. While the transition to capitalism in Europe resulted in the privatization of economic (and in many cases social) organization,³¹ economic production in rural Africa remained firmly rooted in the social networks of the community:

“Access has always been specific to function, for example cultivation or grazing. Thus in any given community a number of persons could each hold a right, or bundle of rights, expressing a specific range of functions. In a typical case therefore a village could claim grazing rights over a parcel of land subject to the hunting rights of another, the transit rights of a third and the cultivation rights of a fourth. Each one of these categories carries with it varying degrees of social organization. For example while cultivation rights were generally allocated and controlled at the extended family level, grazing rights were a matter of much wider segment. The *raison d’être* of control was to guarantee these rights and allocate them among members of the community should this be necessary” (Okoth-Ogendo cited in Kiriro and Juma, 1991: 43-44).

Even where colonial policies undermined the traditional functions of the community, social networks continued to play a vital role in economic organization.³² Indeed, the mal-development of capitalism across Africa has only increased the importance of social ties within the community. Links between

³¹ Wood (1999) provides an excellent analysis of the transition to capitalism in England. She argues in particular that the development of capitalism was predicated on the reformulation of property rights in general and on the removal of limitations placed on the use and disposal of property by the community in particular. Thus, she observes that, “Peasants have since time immemorial employed various means of regulating land use in the interest of the village community. They have restricted certain practices and granted certain rights, not in order to enhance the wealth of landlords or states but in order to preserve the peasant community itself, perhaps to conserve the land or to distribute its fruits more equitably, and often to provide for the community’s less fortunate members. Even private ownership of property has been typically conditioned by such customary practices, giving non-owners certain use rights to property owned by someone else...From the standpoint of improving landlords and capitalist farmers, land had to be liberated from any such obstruction to their productive and profitable use of property. [In England] between the sixteenth and eighteenth centuries, there was growing pressure to extinguish customary rights that interfered with capitalist accumulation. This could mean various things: disputing communal rights to common lands by claiming exclusive private ownership; eliminating various use rights on private land; or challenging the customary tenures that gave many smallholders rights of possession without unambiguous legal title. In all these cases, traditional conceptions of property had to be replaced by new, capitalist conceptions of property—not only as “private” but as *exclusive*” (Wood, 1999: 82-83). By way of comparison, Comninel (1987) notes the limitations on such dispossession in France.

³² A full discussion of the historical role of community in Africa and the impact of colonialism falls outside the scope of this paper. Zerbe (2003b) provides an analysis of the impact of the institutionalization of private property over land in Zimbabwe.

extended family members working in the city and those living in the rural countryside remain vital survival mechanisms, as remittances from urban employment provide rural families with the money necessary to purchase farm inputs, while the family production of foodstuffs in the countryside supplements poor urban wages and provides an important (if informal) safety net for urban workers.

In such a context, it is hardly surprising that calls for the institutionalization of (almost) unchecked private property rights under the TRIPs Agreement, and even the more limited call for the privatization of community rights under the CBD, would be rebuked by the OAU. The regime of breeders rights established under TRIPs and UPOV 91 are based not on a system of informal checks and balances of African communities, but largely on Anglo-Saxon property law which vests private property rights exclusively with the individual. The ability of African countries to reconcile Western notions of individual intellectual property rights and African notions collective property based on community rights thus remains the focus of contention. Nevertheless, it is precisely this attempt to balance the (often conflicting) rights of communities, farmers and breeders that defines the Model Legislation.

6. Status of the Model Legislation

While the OAU Model Law represents perhaps the most comprehensive attempt to articulate a regime capable of addressing the conflicting demands of intellectual property and benefit sharing with respect to biodiversity, it has not yet been widely adopted across Africa. Although twenty-five African countries³³ have taken steps towards the adoption of legislation based on the Model Law, few countries have yet enacted the necessary legal framework (see Figure 1 below). Some, like Ethiopia, Gambia and Zambia, have legislation pending before parliament but face difficulties financing the establishment of the bureaucratic framework to support and enforce the legislation. Others, like Algeria, Botswana, Madagascar and Zimbabwe, are still undertaking the consultative process leading to the development of appropriate enacting legislation. Only Namibia has drafted and adopted the necessary legislation and been able to create the necessary supporting institutional regime based on the Model Law.

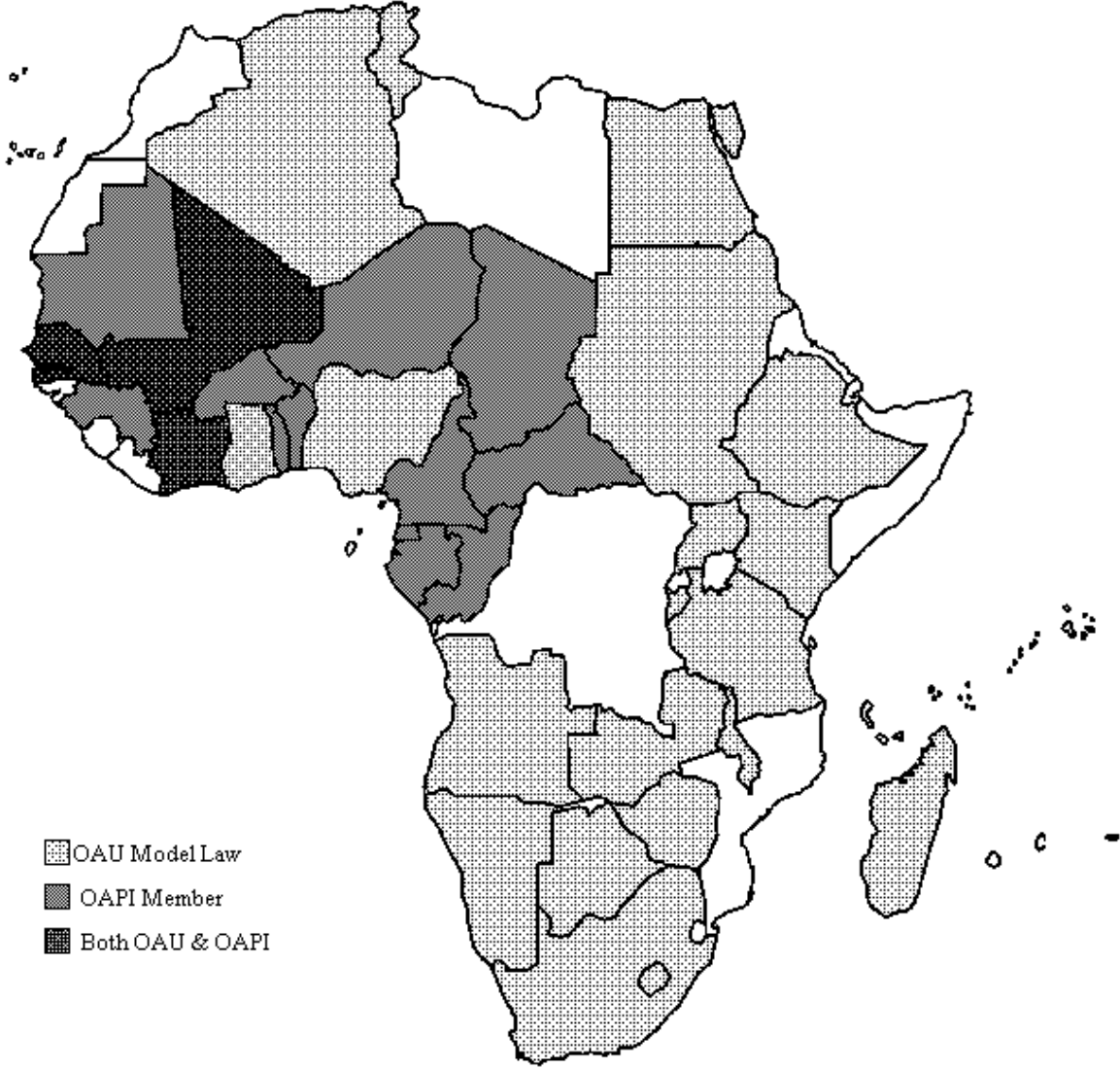
³³ The following countries have participated in the development of the OAU Model Law and/or have taken steps towards the adoption of the Model Legislation to local conditions: Algeria, Angola, Botswana, Burundi, Côte d'Ivoire, Egypt, Ethiopia, Gambia, Ghana, Kenya, Lesotho, Madagascar, Malawi, Mali, Mauritius, Namibia, Nigeria, Senegal, South Africa, Sudan, Tanzania, Tunisia, Uganda, Zambia and Zimbabwe (see Figure 1 below).

In developing the necessary legal and institutional framework, African states face considerable challenges. In many countries, no legal framework for intellectual property rights over plant varieties existed before 1995. Indeed, only Kenya, South Africa and Zimbabwe offered IP protections for plant varieties before the conclusion of the TRIPs Agreement. Most African countries offered no such protections, and some, like Tanzania, actually prohibited protections for plant varieties. In adopting the Model Legislation, then, many African countries are not merely reforming existing institutions, but developing new institutions and legislation from scratch. They must establish not only the legal framework to protect community rights, but the entire set of institutions and laws for the protection of intellectual property, community and farmers' rights. And such institutions are being created under conditions where the necessary technical and financial capacity may be in short supply.

The problem of weak capacity was highlighted in the development of the OAU Model Legislation itself. At the November 1999 workshop in Addis Ababa, it was pointed out that the French translation of the Model Law was not well developed and did not correspond to the English draft in a number of important ways. Hindered by a lack of financial and technical capacity, the Organization of African Unity was not able to develop a suitable French translation until June 2000. By this time, the members of the Organisation Africaine de la Propriété Intellectuelle (OAPI) in Francophone Africa had been persuaded by UPOV to accede to the 1991 convention to meet their TRIPs obligations.³⁴ Revised in 1999 to satisfy the requirements of the TRIPs Agreement, the Bangui Agreement provides strong protection of new plant varieties through certificates based on the UPOV model. It makes no provisions for the farmers' and breeders' exemptions that were included under the UPOV 78 framework and the OAU Model Law. Further, it makes no provisions to establish a comprehensive access and benefit sharing regime to protect local biodiversity and indigenous knowledge.

³⁴ The members of OAPI and the Bangui Agreement are: Benin, Burkina Faso, Cameroon, the Central African Republic, Chad, Congo, Côte d'Ivoire, Equatorial Guinea, Gabon, Guinea, Guinea-Bissau, Mali, Mauritania, Niger, Senegal and Togo (see Figure 1 below).

Figure 1
Implementation of the OAU Model Law and the OAPI Framework in Africa



The slow development of the French draft of the Model Legislation created an opportunity for UPOV to pressure Francophone Africa to accede to the 91 treaty. But the African Model Law faces additional challenges from UPOV and WIPO, both of whom have raised questions regarding its legality and appropriateness. Indeed, at a review of the adoption process in Addis Ababa in June 2002, the Organization of African Unity solicited the participation of both UPOV and WIPO. The OAU hoped that UPOV and WIPO would be able to provide technical assistance to further develop and enact the proposals embodied in the Model Law. However, at the meeting both offered scathing criticisms of the Model Legislation. In its brief, WIPO argued that the OAU Model Legislations position calling for prohibitions on patents over lifeforms was a violation of TRIPs Article 27.3b, which specifically requires patents on micro-organisms. In responding to WIPO's criticisms, the Africa Group has argued that the requirements for patents on micro-organisms under the WTO framework is mitigated by the *ordre public* exemptions afforded under Article 27.2. Indeed, the Africa Group's negotiating proposal for the Doha Round contends that,

“Patents on life forms are unethical and the TRIPs Agreement should prohibit them, through modifying the requirement to provide patents on mirco-organisms and on non-biological and microbiological processes for the production of plants and animals. Such patents are contrary to the moral and cultural norms of many societies in Members of the WTO. They make the exemption in Article 27.2 for protecting *ordre public* and morality, which Members that consider patents on life forms to be contrary to the fabric of their society and culture, and to be immoral, and which they would otherwise invoke, meaningless in this regard” (Africa Group, 2003: 2).

The contradictions between the patent requirements outlined in Article 27.1 and the exemptions afforded under Article 27.2 are not merely a technical question to be ironed out by the TRIPs Council or WIPO. Rather, the Africa Group contends that the debate over patents on life is fundamentally a political and ethical issue to be resolved through negotiations and discussions both inside and outside the World Trade Organization. Their position has received popular support from a number of non-governmental organizations, including the Institute for Agricultural and Trade Policy, GRAIN, the Third World Network, ActionAid, and the South Centre.

WIPO further challenged the principle of community rights at the heart of the OAU Model Law. It argued that the protection of community rights was best secured not through the benefit sharing regime envisioned under the Model Law, but through

the use of patents by indigenous communities to protect their heritage. Further, echoing criticisms raised in bilateral negotiations by the United States, WIPO argued that the concept of community rights under the Model Legislation was insufficiently defined and operationalized, lacking the legal clarity of the patent system.

For its part, UPOV offered a revised draft of the OAU Model Law under which the majority of the text was rewritten to comply with the UPOV Convention. The arrogance of UPOV's position at the negotiations was noted by Tewolde Egziabher, head of Ethiopia's Environmental Protection Authority, who argued that UPOV and WIPO were not invited "to change the essence of the Model Law [but to participate in the furtherance of its development]...While we are grateful to UPOV and WIPO for their friendly gestures, we reaffirm our obligation to the decisions of the OAU...We would, therefore, appreciate support within the context of those decisions and recognition of the OAU's right to lead Africa, especially on emerging critical issues" (Tewolde in GRAIN, 2002: 5). The essential principles of the Legislation, including the concepts of community and farmers' rights, had already been approved at by the OAU Heads of State and Government in 1998, and were at the heart of the Convention on Biological Diversity.

7. Lessons from the Project

Debates over the OAU's Model Legislation are likely to continue for the foreseeable future, as the competing interests in the developed and developing world square off over the appropriate weight to be afforded the rights of plant breeders, farmers and local communities. However, while discussions continue, the process by which the Model Law was developed offers important insights into more general questions of governance. Whatever the final status of the Model Law itself, the process of its creation opened new social possibilities and positions unanticipated by either its advocates or opponents. Attempts by African governments, supported by international non-governmental organizations, to articulate an alternative framework for the protection of the rights of plant breeders, farmers and communities have built on indigenous conceptions of property and community which were historically excluded from consideration in international negotiating fora. In the process, non-state actors were mobilized in ways which expanded their role in international trade and environmental discussions. The close ties forged between African governments and domestic and international non-governmental organizations were critical in mobilizing the material and ideological capacity for drafting and instituting the Model Law. Although African

governments were always at the center of the process (operating primarily through the OAU's Scientific, Technical and Research Commission), NGOs like the Third World Network and GRAIN played a critical role in mobilizing international support for the legislation. At the same time, private actors in the corporate sector mobilized to oppose the legislation through international institutions like WIPO and UPOV.

The central role played by non-state actors in the development (and in opposition) of the Model Legislation raises questions regarding the capacity of negotiators to account for the full scope of questions raised in discussions, particularly with respect to questions of international trade. The process of developing the Model Law was largely retrospective, focusing on the historical importance of local seed exchange and the cultural specificity of Africa in the world (e.g. the role of communities). This is, at once, the strength and the weakness of the Model Law. While it affords the Model Legislation a great deal of legitimacy among African communities, it simultaneously undermines its applicability to areas outside the continent. Relying primarily on a system of benefit sharing or capacity building founded on historical references to the role of the communities in African life might undermine the capacity of African states to develop new, innovative responses to emerging issues.

The exact balance between the role of historical forces and the need to respond to emerging (and rapidly changing) policy contexts will, of course, play out in the local context of African countries. This suggests that there is a need for further research on the implementation of the Model Law in specific states, particularly to highlight how the historical and philosophical foundations of the Model Legislation are reconciled with the present material realities in the local context of adoption. Indeed, understanding the process by which the retrospective focus of the Model Law and the prospective positions of benefit sharing coexist and are made compatible in practice must be founded on specific case studies. This is the direction of future research on the Model Law.

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