



International Environmental  
Law Research Centre

# **Community, Farmers' and Breeders' Rights in Africa**

## **Towards a Legal Framework for Sui Generis Legislation**

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## I. INTRODUCTION

Member countries of the World Trade Organization (WTO) must modify their intellectual property rights systems to conform with the organization's Trade-Related Intellectual Property Rights (TRIPS) Agreement. Signatories to this agreement are required to provide minimal levels of Intellectual Property Rights (IPR) protection of living forms used in agriculture.

With a few exceptions, the Agreement makes patents available for any technological invention.<sup>1</sup> Countries can protect plant varieties through patents and/or an effective *sui generis* system.<sup>2</sup> Many developing countries are reluctant to implement TRIPS provisions without reservations. A major conceptual argument against IPR regimes is that they are based on Western concepts of property rights and are therefore alien and impractical in the cultural, historical and institutional context of most developing countries.<sup>3</sup>

The concerns of developing countries undoubtedly shape the way these countries fulfil their obligations under TRIPS. For instance, in the field of agricultural technology, most developing countries are willing to take the road that leads to an effective *sui generis* system for the protection of plant varieties. This will surely make a big difference to globalization, the expansion of international trade and competition.

TRIPS negotiations were underway when the Convention on Biological Diversity (CBD) was ratified and effected, in December 1993. The CBD requires parties to ensure IPR regimes are supportive of, and do not conflict with, its own objectives.<sup>4</sup> However it also stresses the need to recognize and protect IPRs.<sup>5</sup> It set the basis for protecting community, farmers' and breeders' rights. The CBD says that states have sovereign rights over their natural resources.<sup>6</sup>

This paper analyses international and Kenyan legal frameworks for the protection of biodiversity and plant varieties. It looks at TRIPS and the CBD in terms of their coverage, synergies and recent developments. The paper seeks to identify cross-cutting issues and trends pertinent to the protection and enforcement of community, farmers' and breeders' rights through *sui generis* systems. It argues that laws protecting biodiversity in general and plant varieties in particular are steeped in favour of individual property rights not suited to protecting those of the community. Developing countries, particularly in Africa, should seize the opportunity given to them by TRIPS to devise a *sui generis* system to protect their plant varieties.

## II. PROPERTY RIGHTS AND BIODIVERSITY

### General considerations

Through property, benefits or income can be claimed. Through property rights, those claims are protected from other users by institutionalized regimes.<sup>7</sup> Property rights refer to rights, relationships, responsibilities and duties.<sup>8</sup> They constitute a social relationship which defines the property holder with respect to something of value.<sup>9</sup> There are different kinds of property rights for which different rationales are given.

The existence of property rights depends on a limited supply of resources for which different users compete. In this situation, the law reacts by assigning property rights to regulate previously unregulated access to resources.<sup>10</sup>

## Real and Intellectual Property Rights

Real property comprises tangible commodities that can be exclusively possessed and clearly delineated.<sup>11</sup> Land, and the rights that go with it, exemplifies this kind of real property. Historically, land ownership has conferred upon the owner a wide range of property rights.<sup>12</sup> Land is important in biodiversity conservation because it is home to diverse species and ecosystems. Consequently, land tenure arrangements are crucial for the interaction between biodiversity conservation and the holding of property rights.

Intellectual property deals with informational services ‘which are intangible and amorphous ... not readily susceptible to either possession or delineation’.<sup>13</sup> While real property is relatively scarce and therefore expensive to capture and protect, intellectual property becomes valuable when shortages are created. This is achieved by limiting the capacity of non-owners to capture it. This genus of rights also distinguishes between the treatment given to human creations and that given to nature’s creations.<sup>14</sup>

IPRs can be divided into the following categories: copyright, trademarks, trade secrets, industrial designs, geographical indications and patents. Copyright protects ideas expressed in a creative and tangible way. Trademarks protect symbols, words and marks used to distinguish goods and services in the market.<sup>15</sup> A distinctive feature of IPR protection is its role in performing a public good by protecting the time, effort and money spent by one person on a creative design, from another person who wants to copy it.<sup>16</sup> Another distinctive feature of IPR regimes is their time limit, also known as the ‘sunset clause’.<sup>17</sup> This clause limits the duration for which property rights can be held. Expiry of the clause makes the intellectual property available to the public.

## Ascribing value

Evaluating property rights over biodiversity resources has proved a complicated and controversial task because of conflicting interests and value judgement systems. Biodiversity is both a public and a private good.<sup>18</sup> In the majority of cases, the ecosystem services derived from biodiversity are consumed before they get to the market place. The result is that these services are undervalued in the public domain, while private rights that are transacted in the market place are overvalued.<sup>19</sup>

An anthropocentric, utilitarian view of biodiversity tends to emphasize potential economic returns. In this view, raw materials only acquire significance once they have reached the market place and can be assigned a monetary value. Thus the value of a forest is broadly limited to the value of the timber than can be harvested. All other products without a known market value are disregarded. This overlooks the economic benefits to be gained from the forest, such as firewood, recreation and hunting, as well as environmental services such as preventing the siltation of downstream areas.<sup>20</sup>

Despite the recognized usefulness of raw germ-plasm, assigning it a value presents insurmountable difficulties because of the low probability of samples yielding commercial returns. Extracting germ-plasm is different to extracting timber because only a small part of the whole is taken while the rest is left on the ground.<sup>21</sup> This reflects the market’s inability to ascribe value to products that may be useful to mankind but are not currently commercially exchanged.<sup>22</sup>

The market’s dominance precludes the search for non-market methods of valuing products.<sup>23</sup> However, the market’s failure to ascribe value to a product does not mean that product is valueless. Instead, it points to the need for other kinds of valuation outside the marketplace. There are also social concerns relevant to biodiversity conservation that are not commodified.<sup>24</sup>

### III. PROPERTY RIGHTS ON PLANT VARIETIES

The main types of property rights applicable to plant varieties are patents, plant breeders' rights, sovereign rights and community rights.

#### Intellectual Property Rights

##### *Patents*

Patents are granted to new, non-obvious and useful inventions. They are not granted to discoveries. In applying for a patent the applicant must write a description of both the invention and how it was created. Recently, patents on biological materials have become prominent due to their increased use by individuals and the private sector. The United States has been at the forefront of legal developments in this area and was the first country to allow the patenting of life forms.

##### *Plant Breeders' Rights (PBR)*

Plant Breeders' Rights (PBRs) constitute one particular kind of IPR applicable to plant varieties. For a plant variety to be eligible for PBR protection, it must be clearly distinguishable from other protected varieties. It must also be homogeneous, uniform and stable. PBR regimes were first developed in the context of the International Union for the Protection of New Plant Varieties (UPOV Convention) as an alternative to fully-fledged patent rights, while at the same time stimulating plant breeding activities in the private sector. In effect, PBRs are akin to weakened patents.

The main motivation behind PBRs is profit. They are designed to attract the private sector into plant breeding activities. More specifically, PBRs seek to provide a stimulus for the research and development of new plant varieties and to reward the creativity of successful plant breeders. They have, for instance, been the main catalyst in the development of the seed industry. At the same time, they are designed to allow other plant breeders to use the protected plant for their own breeding activities and research, as long as they do not sell it. PBR regimes allow new varieties derived from such breeding activities to be marketed.

PBRs suffer from the same conceptual problems that plague IPRs generally. By recognizing only the last link in a long chain of biological processes, PBRs ignore the contribution made by local knowledge to plant breeding, which has provided much of the genetic stock used in crop improvements. PBRs also have the potential to contribute to the erosion of diversity within agricultural systems, by introducing uniform, high-yielding varieties.

##### *Farmers' Rights (FR)*

The concept of Farmers' Rights (FRs) was introduced after it was realized that the established IPR regime did not recognize farmers as innovators and consequently disqualified them from holding IPRs. This had led to the inequitable distribution of benefits between the providers of germ-plasm and the providers of technology. Plant breeders generated returns through PBRs or other IPRs, but there was no system of compensation or incentives for farmers.

The idea behind the introduction of FRs was thus to ensure the equitable sharing of benefits arising from genetic resources, and to give farmers incentives to preserve their genetic resources and share them with others. More specifically, FRs aimed to ensure that the need for conservation was globally recognized and that sufficient funds were made available for this purpose. FRs also aimed to assist farmers in all regions of the world, especially those in regions of diverse plant genetic resources, to protect and conserve their resources. They also aimed to allow farmers, their communities and countries to participate fully in the benefits of agrobiodiversity.

While in principle developed countries agree that farmers' activities deserve recognition, they are generally opposed to a new regime of FRs. They would rather have the rights of farmers subsumed under existing IPR regimes. The parameters of FRs are still being debated and are yet to be defined. There are differing views on the nature and holders of these rights. The FAO initially defined FRs as rights arising from the past, present and future contributions of farmers in conserving, improving and making plant genetic resources available. The rights are vested in the international community as trustee for present and future generations of farmers for the purpose of ensuring they receive full benefits and incentives to continue contributing.

As a legal term, FRs would need to be defined as a form of IPR. These rights would cover, for example, the products of farmer selection and breeding. The Commission on Genetic Resources for Food and Agriculture on the Status of Negotiations for the Revision of the International Undertaking on Plant Genetic Resources for Food and Agriculture, in harmony with the Convention on Biological Diversity, while calling for the international recognition of FRs, has indicated that individual governments must ultimately bear the responsibility of protecting and promoting these rights. The Commission specifically recommends inclusion of such rights as the right to use, exchange and market farm-saved seeds; protection of traditional knowledge; benefit-sharing; and participation in decision-making.<sup>25</sup> To allow farmers to contribute effectively to the decision-making process, farmers' rights ought to include the right to information.<sup>26</sup>

## **Sovereign rights**

A state's sovereignty over its natural resources has been reaffirmed in many multi-lateral agreements, international declarations and resolutions. Permanent sovereignty over natural resources – a facet of state sovereignty – refers to the right to exploit and develop natural resources, including plant varieties, according to each state's own policies. It constitutes the basic principle for allocating rights and responsibilities in international law.

## **Community rights**

Common property resources are those resources not controlled by a single entity. Access to these resources is limited to members of an identifiable community. There are set rules on how the resources are to be managed. Each user has a separate entitlement to the common property, and no single user has the right to abuse or dispose of it. Any dealing on the property is subject to approval by the community. Users of common property are subject to rules and restrictions embedded in cultural or religious customs. Common property resources provide a basis for non-monetary and non-market economic relations. The users do not usually perceive themselves as resource owners but consider themselves merely as being in possession of their habitat.

## **Common heritage of humankind**

Traditionally, information and materials have been freely exchanged among breeders. This is recognized in the FAO's International Undertaking on Plant Genetic Resources for Food and Agriculture (IUPGRFA), which states that plant genetic resources are a common heritage of humankind. This implies that biological resources and the products derived from them are freely available to all.

## **Communities**

The trend in which the discussion of common property rights has been subsumed by open access has led to community rights being ignored. In the context of biodiversity, traditional knowledge about preserving and enhancing biodiversity has not been taken into consideration. This is due to the fact that raw germ-plasm is not given a high commercial value because it does not qualify for IPR protection.

When dealing with communities, the main concerns are what can be protected and how strong that protection is. Article 8 (j) of the CBD calls for the protection of the knowledge, innovations and practices of indigenous communities. In this context a *sui generis* system of legislation would recognize the unique status of local communities and their contribution to the conservation of biodiversity, the sustainable use of genetic resources and fair and equitable benefit-sharing. Given a liberal interpretation, Article 8 (j) could be used to give effect to land rights and even the political autonomy of indigenous communities.<sup>27</sup>

Defining community is a complex task, due partly to diversity within and among communities. For example, the relationship between a community and its environment and the dependence of the one upon the other is determined by the circumstances of each community and its surroundings. Hence it is difficult to apply a single approach to all communities.

The jurisprudence on property rights is also limited in this regard. Under common law, from which most Commonwealth countries borrow heavily, property rights are primarily linked to individuals.<sup>28</sup> The practice of many colonial authorities in Africa was to remove rights to resources from communities, and vest them in individuals. Consequently, it is often very difficult to trace the origin of certain resources to communal owners. A good example is the case of staple crops in Africa, which have been selected, bred and exchanged throughout the continent for centuries.

It is noteworthy that, despite the emphasis on individual rights, the assumption that community rights have fallen into desuetude has not prevailed. Indeed, Article 8 (j) of the CBD emphasizes the role of indigenous and local communities in managing biodiversity.

The protection of property rights over genetic resources is enshrined in the Universal Declaration of Human Rights (UDHR) of 1948. Article 27 of the Declaration states:

- (i) Everyone has the right freely to participate in the cultural life of the community, to enjoy the arts and to share in scientific advancement and its benefits.
- (ii) Everyone has the right to the protection of the moral and material interests resulting from any scientific, literary or artistic production of which he is the author.

Traditional resource rights have been conceived of and constructed in recognition of the inextricable link between cultural and biological diversity.<sup>29</sup> The big question now is who should be vested with property rights over traditional resources. Two readily identifiable entities are individuals and the State. Recently, communities have received increasing support from scholars to be identified as entities deserving traditional resource rights.<sup>30</sup>

Community rights are now vigorously promoted through human rights. The right to development is seen as the synthesis of all human rights.<sup>31</sup> It is, however, possible to tease out the need for property rights over knowledge and innovation from the specific language of the Convention. Some feel that asserting property rights over genetic resources is predatory. However, in places where communities are easily identifiable, and their resources highly localized, community rights systems would face few problems.

## The African context

In most African customary societies there are entities that have the same legal capacity as individual persons. These entities could be recognized by national legislation and vested with property rights. The following statement describes the nature of these groups:

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 levels of social organisation. 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 to allocate them among other members of community should this be necessary.<sup>32</sup>

There are several good reasons for vesting property rights in groups. The rights can be seen as a reward for a group's collective conservation efforts. Group property rights may also act as an incentive for greater levels of innovation and conservation.<sup>33</sup> The recognition and protection of community property rights also stems from basic human rights concerns and the right to fair compensation.

Community property rights are given in accordance with TRIPS<sup>34</sup> and the OAU Model Law on Community Rights.<sup>35</sup> The main risk is that because the property is owned by every member of the group, there is not the same incentive to conserve as for private property. However, it is arguable that market forces often operate to facilitate a balance in the competing interests.<sup>36</sup>

## **Benefit-sharing**

The CBD has three main objectives: the conservation of biodiversity, the sustainable use of genetic resources, and fair and equitable benefit-sharing. TRIPS is mainly concerned with trade liberalization.

### *Principles of co-operation*

The concerns here revolve around diverse objectives, overlapping actors and interests, and different power balances. Developing countries press for measures that ensure countries and communities where genetic resources are found gain a greater share of the benefits from their use. This is because most countries of origin of genetic resources are in the developing world. This emphasis may, however, be detrimental to developing countries with no rich biodiversity resources.

In recognition of national sovereignty over genetic resources, a national participatory framework should be emphasized. Those seeking access to national genetic resources should obtain the Prior Informed Consent (PIC) of the country where the resources are found. This requirement is designed to guard against exploitation and to ensure the fair and equitable sharing of the benefits derived from those resources. To prevent the resource being monopolized, the assertion of rights that are incompatible with community benefits could be prohibited.

Trade institutions and mechanisms are important, especially in the context of TRIPS. The trade and environment ministries of a country could lead communication on this front. The law could require IPR applicants to prove that they gained access to genetic material with the prior informed consent of relevant local authorities.<sup>37</sup>

It has been suggested that countries enact laws governing access to genetic resources.<sup>38</sup> Benefit-sharing, though generally accepted, lacks definition in key areas. These include the mechanisms of benefit-sharing, who should receive benefits, and what constitutes a benefit. Thus an agreed definition as well as a concrete operational content is required. Benefits can be a form of compensation, reward or recognition. Benefits may include royalties, lump sum fees, technology transfer and training, business ventures and development assistance (especially in the context of community rights).

Article 15 of the CBD on access to genetic resources focuses on mutually agreed terms. This is not practical in developing countries like Kenya where the resource holders lack the necessary bargaining power to ensure equitable benefit-sharing. Agenda 21, produced at the same time as the CBD, declares that states have the sovereign right to exploit their natural resources.<sup>39</sup> Thus states have the right and indeed the obligation to govern resources for their inhabitants subject to national legislation.

### *Benefit structuring*

Benefit-sharing is closely related to the issues of access and scope. Some argue that access to information and

breeding material arising from the open exchange of resources is adequate compensation. Others believe that this approach does not sufficiently take into account the inputs made by farming communities and plant breeders.

One option is to place the resources in trust with the government. Concerned groups could then make claims to the government. Another option is to create community funds or trusts, into which royalties could be channelled. Establishing registers would go a long way towards facilitating benefit-sharing mechanisms.

Alternatively, community group representatives could be used as custodians of resources.<sup>40</sup> Giving a community property rights over resources would provide an incentive for their conservation. Once this is done, national laws on property would apply. Conditions for scope and access could vary from one species to another.

Several African countries have started preparing legislation on access and benefit-sharing, including Kenya, Uganda and Nigeria. Kenya has prepared subsidiary legislation. This is essentially a gazette notice under the current Science and Technology Act. Uganda, with the assistance of the African Centre for Technology Studies, has prepared detailed regulations on access and benefit-sharing.

There are a number of innovative provisions in Uganda's draft regulations. Firstly, the draft contains specific provisions for technology transfer and building technological capabilities in areas such as biotechnology. Technology partnerships are seen as mechanisms for technology transfer. Secondly, access to genetic resources in Uganda is treated as a technological issue. This makes them subject to the National Council for Science and Technology. Under current draft regulations, the Council is vested with administrative and overall supervisory responsibilities for implementing the access and benefit-sharing requirements of the legislation.

There are, however, a number of limitations in Uganda's approach. First is the lack of convergence between the proposed regulations and the national biodiversity planning activities undertaken with a view to implementing Article 6 of the CBD. An effective regime on access and benefit-sharing should build upon a national biodiversity action plan and strategy.<sup>41</sup> Uganda is still preparing a strategy and action plan. The extent to which the proposed access and benefit-sharing regulations will conform to the broader national agenda to implement the Convention is not clear.

Eritrea has integrated access and benefit-sharing provisions into its broader regime on biological diversity.<sup>42</sup> The second draft of the Eritrean Proclamation on the Conservation of Biological Diversity contains specific provisions on access to genetic resources. Article 46 of Part 5 defines the scope of the regime. All genetic resources of all living organisms, except human beings, are covered by the legislation. Traditional knowledge associated with Eritrea's genetic resources is also to be regulated under the law. PIC is required under Articles 47, 48 and 49. The draft legislation notably gives traditional groups significant authority to regulate access to genetic resources on communal and private lands. Article 49 (b) of the second draft states:

Where access is sought to resources located on land used by pastoralists or other communities or groups with traditional interests in that land, the consent of the group or community to such access shall be required. The access permit terms, as provided in Article 50 (a) (9) of [the] Proclamation, shall include provisions for sharing benefits with the group or community.

Eritrea is expected to adopt the Proclamation this year and formulate specific regulations (required under Article 52 of the draft Proclamation) to implement the access and benefit-sharing provisions.

## **IV. INTERNATIONAL LEGAL FRAMEWORK**

The international legal framework alternates between two extremes, namely common heritage broadly defined and private rights narrowly defined. There have been a number of international agreements on these issues. There are those that emphasize common heritage principles, such as the ITPGRFA.<sup>43</sup> The others, such as the

UPOV Convention<sup>44</sup> and TRIPS,<sup>45</sup> have taken an obligatory stance and reflect the position of northern states. The CBD has attempted a compromise.

## **The Convention on Biological Diversity (CBD)**

The CBD seeks to promote the conservation of biodiversity, the sustainable use of its components, and the fair and equitable sharing of benefits, including access to genetic resources and transfer of technology. It also recognizes the sovereign rights states have over resources found in their territories, as well as private/individual rights over bio-technological innovations.

The CBD represents the middle ground in the debate over property rights and biodiversity conservation. Negotiations leading to the Convention were carried out under the aegis of the United Nations Environmental Programme (UNEP). UNEP had been mandated by the United Nations General Assembly to work out a viable solution to the continued erosion of biodiversity world-wide. The International Union for the Conservation of Nature (IUCN) had carried out important studies that gave institutional backing to the globalization of this problem.<sup>46</sup>

The main concerns of the CBD were the conservation of biodiversity, the development of biotechnology, access to biodiversity and biotechnology, and international equity. The negotiators faced great challenges in trying to balance the interests of the key players.<sup>47</sup> The discussions leading to the conclusion of the CBD were characterized by major ideological differences between developing and developed countries on the question of IPRs, which almost threatened the outcome of the negotiations.<sup>48</sup>

While developed countries pushed for biodiversity to be viewed as a common heritage of mankind, exploited and conserved for the benefit of all, they were unwilling to share its benefits. Developing countries demanded that biotechnology, developed from exploitation of their genetic resources, be given to them free of charge. Some developed countries attempted to have IPR protection of biotechnology innovations dealt with exclusively under the GATT (General Agreement on Tariffs and Trade) negotiations, since the CBD was intended to conserve biodiversity.<sup>49</sup>

The CBD is consequently riddled with contradictions. It debunks the concept of common heritage, introducing a notion of common concern.<sup>50</sup> Common concern implies the recognition of the global importance of conserving biological diversity, but not the diminishment of a state's permanent sovereignty over natural resources.<sup>51</sup> It seeks to facilitate and promote global co-operation in biodiversity conservation, without forcing any one state to participate.<sup>52</sup> The central idea is for access to a resource to be shared equally. As with human rights, reference to common concern is an acknowledgement that a state's management of its environment and resources is a matter of common understanding.<sup>53</sup>

The CBD recognizes potentially conflicting rights. It recognizes, for instance, the need to ensure equitable allocation of ownership rights and IPRs over biotechnology. The provisions on technology transfer may thus conflict with existing IPR protection. The Convention does not say which rights should prevail in the event of a conflict.<sup>54</sup> It does not specifically address the rights of communities apart from a cursory mention of indigenous and local communities in one article.<sup>55</sup> The issue of farmers' rights is also left outstanding.<sup>56</sup>

## **Trade-Related Intellectual Property Rights (TRIPS) Agreement**

Other developments occurred in the latest round of negotiations on GATT.<sup>57</sup> GATT was originally conceived of as a mechanism to promote free trade. As international trade has grown, its mandate has widened to include services and IPRs.<sup>58</sup> The new World Trade Organization (WTO) now appears to be the chief multilateral institution addressing global uniformity of IRR standards. It seems to be taking over part of the role played by the World Intellectual Property Organization (WIPO), whose mandate is to harmonize international IPR standards.

The United States led an initiative among developed countries to introduce more stringent IPR protection in trade. This was due to complaints by American firms over counterfeiting and piracy, which made the protection of domestic biotechnology and other industries necessary.<sup>59</sup> The TRIPS Agreement was initially meant to deal with trade distortions, but later its scope was expanded to cover IPRs. Its main objective is to protect and enforce IPRs and to ensure that they contribute to the promotion of technological information and transfer.<sup>60</sup> The Agreement only takes into account environmental issues insofar as they relate to patents.

Patents are dealt with in Section 5 of Article 27. Member states are allowed to exclude from patent rights plants, animals and medical processes needed for the treatment of humans or animals.<sup>61</sup> Countries may also restrict the commercial exploitation of patentable innovations to protect public order or morality or to stop serious harm being done to the environment.<sup>62</sup> Governments retain the right to restrict research, development or use of technology in order to protect the environment.

The IPR protection set out by the TRIPS Agreement makes a significant contribution towards plant variety protection. For example, TRIPS requires countries to protect plant varieties through patents or an alternative *sui generis* system. Most countries have traditionally believed that patent protection should not be offered in this field as the satisfaction of basic food needs should not be commercialized. The ratification of TRIPS is forcing all developing countries to provide property rights on plant varieties. This is of immense significance to countries where the majority of workers are engaged in subsistence agriculture.

Under TRIPS, members may exclude the following from being patented:

plants and animals other than micro-organisms, and essentially biological processes for the production of plants or animals other than non-biological and microbiological processes. However, Members shall provide for the protection of plant varieties either by patents or by an effective *sui generis* system or by any combination thereof.<sup>63</sup>

There are a number of problems inherent in this Article. No parameters are given for the *sui generis* system. There is contention over what is meant by 'effective'. This definition is subject to the general principles of the TRIPS Agreement and may ultimately be determined by WTO provisions, especially those relating to the dispute panel. Governments from the South feel that the interpretation of an 'effective *sui generis* system' is none of the WTO's business, claiming that it is the responsibility of TRIPS alone.<sup>64</sup> The prevalent understanding of this Article is that a *sui generis* system must adhere only to the minimum provisions of TRIPS.

Under TRIPS therefore, a *sui generis* system of legislation would provide mechanisms for protecting new plant varieties. The protection need only be real and not necessarily the strongest possible. However, to be effective it must provide for the effective enforcement of IPRs. This could be done through a transparent judicial procedure and border control measures. It is also possible to enact a *sui generis* law for community rights and for plant varieties that takes into account farmers' rights but is nonetheless TRIPS-compliant.<sup>65</sup>

An effective *sui generis* regime must seek alternative mechanisms to protect the property rights of local communities. It should be substantively different from existing systems of property rights, such as UPOV or patents.<sup>66</sup> It should not provide a right to a monopoly, nor should it place great emphasis on commercialization. Its definition of property rights must cater for all concerned parties and be in harmony with other legal instruments.<sup>67</sup>

## **International Union for the Protection of New Plant Varieties (UPOV)**

The UPOV Convention was adopted in 1961. Until recently, its standards were developed among a small group of Organization of Economic Co-operation and Development (OECD) countries. Membership has increased significantly over the past few years. One new member is Kenya.

The Convention recognizes the rights of individual plant breeders who have developed or discovered new, distinct, uniform and stable plant varieties. It seeks to protect these varieties in the interests of plant breeders

and agricultural development. The 1978 and 1991 revisions set out the minimum scope for protection provided by states. Under the 1991 version, parties are free to protect plant varieties through PBRs, or through other types of IPRs, such as patents. States may grant the same plant more than one type of IPR. Breeders' rights are extended to cover all production and reproduction of their varieties. The exceptions to commodification include acts done privately and for non-commercial purposes, experiments, and breeding and exploitation of other varieties.

The successive revisions of the UPOV Convention have blurred the line between patents and PBRs, the latter being now almost similar to patents. Breeders are now granted exclusive rights to harvested materials. The distinction between the discovery and development of varieties has also been eliminated.

Plant breeder's exemption refers to the right of the breeder to use protected varieties for research. Farmer's exemption accords farmers the liberty to save harvested seed from protected varieties for replanting. The 1991 UPOV version curtails a farmer's ability to store seed for replanting or utilize it for experimental purposes. Member states may, however, allow farmers to save seed for their own use.<sup>68</sup> The 1991 version came into force on 24 April 1998. A year later, it became the only option for countries wishing to become members.<sup>69</sup>

### **International Treaty on Plant Genetic Resources for Food and Agriculture (ITPGRFA)**

Negotiations over the free exchange of information and materials among breeders culminated in the adoption of the FAO Undertaking in 1983.<sup>70</sup> This instrument embodies the concept of common heritage that had been developed in the previous fifteen years in the context of the negotiations over the exploitation of deep seabed mineral resources.<sup>71</sup> These resources are all situated within the territory of states and are therefore subject to sovereign appropriation. There is thus a conflict between the principle of common heritage as applied to biodiversity resources and the principle of permanent sovereignty over natural resources. This contradiction has been partly addressed in different international instruments that recognize a state's permanent sovereignty is limited by its duty not to cause damage to another state's territory or to the global commons.<sup>72</sup> It is noteworthy that common heritage in this context covers both the flow of raw materials from source countries and elite varieties improved through biotechnology. Since then discussions towards a binding instrument have been going on under the aegis of the UNFAO. These discussions bore fruit in 2001 with the conclusion of the International Treaty on Plant Genetic Resources for Food and Agriculture (ITPGRFA).

The main objective of the ITPGRFA is to ensure that PGRs are explored, preserved, evaluated and made available for plant breeding and scientific purposes. It deals with PGRs of all species of economic and/or social interest, and refers particularly to food crops. The emphasis on the free availability of PGRs spelt out in the International Undertaking 1983 version proved to be unacceptable to some developed countries. The reason for this was that the Undertaking included within the ambit of free availability, not only traditional cultivars and wild species, but also varieties developed by scientists in the North. Broader acceptance of the Undertaking was only achieved after new resolutions were passed by the Conference of the FAO in 1989 and 1991. These resolutions affirmed the sovereign rights of countries over their PGRs and qualified the principle of free availability by recognizing plant breeders' rights and farmers' rights. The recognition of property rights also implied the right to compensation for access to PGRs and associated products.

Further revision of the Undertaking was prompted by the growing importance of PGRs at the international level. The coming-into-force of the CBD raised the need to harmonize the relevant provisions of the two regimes. The treaty provides for Farmers' Rights at Article 9 as follows:

- 9.1 The Parties recognise 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.
- 9.2 The Parties agree that the responsibility for realising 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 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 utilisation of plant genetic resources for food and agriculture;
- (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 and as appropriate.

The treaty also establishes a multilateral system of access and benefit sharing. The system should be “efficient, effective, and transparent...” and facilitate the sharing of benefits “on a complementary and mutually reinforcing basis...”<sup>73</sup>

## **V. THE CASE FOR SUI GENERIS LEGISLATION**

African countries have an opportunity to put in place an alternative system to patents. They should thus desist from adopting systems like UPOV that confer monopoly rights. There is now international recognition of farmers' rights which countries can incorporate into their domestic legislation.

### **Arguments against monopoly rights**

The patents system implies that all knowledge which is not patented is in the public domain and thus freely available. Knowledge which cannot be protected by patents because it is not state-of-the-art is denied legal protection. This gives the impression that the work of local farmers and communities is valueless.

In the case of Kenya, patents do not apportion benefits in a manner that fits the realities of the country's mainly subsistence and small scale agricultural sector. The granting of a patent implies that the patentee derives all the benefits associated with the invention. This is problematic because similar varieties may have been developed in different areas and because farmers cannot compete for patents with the private sector.

Further, the concentration of ownership fostered by monopoly rights and the attendant commercialization threaten food security at local and national levels.

Intellectual property is not known to foster conservation of biological diversity or promote its sustainable use. The introduction of patents in agriculture may have the potential to foster the development of higher-yielding varieties but this will be achieved at a significant environmental cost.

### **Arguments for an alternative plant variety protection system**

Article 27 (3) (b) of TRIPS opens the way for an alternative to monopoly rights for plant variety protection. UPOV does not constitute a suitable alternative for African countries because plant breeders' rights are, like patents, monopoly rights. UPOV was tailored to the needs of countries with highly-industrialized agricultural sectors.

African countries should devise a system that rewards the contribution of all stakeholders in plant variety protection. One option would be to recognize the rights of farmer breeders and the rights of commercial breeders.

The rights of farmer breeders should be defined so as to encompass both private and community rights. They should also recognize that commercialization is not the only incentive for innovation.

Finally, an alternative system should foster sustainability as required under other international instruments dealing with plant variety protection such as the CBD. It should, for instance, aim at maintaining all knowledge sources and thus provide a broader basis for the improvement and conservation of plant varieties.

## **VI. GUIDING PRINCIPLES ON FORMULATING SUI GENERIS POLICIES AND LEGISLATION**

### **Options for establishment process**

In the long term, comprehensive legislation must be drawn up with the approval of parliament. This will avoid the uncertainty over the scope and nature of rights that has hindered the implementation of the CBD and the ITPGRFA. In the short term, less comprehensive and more flexible laws may prove to be the better option.

Some elements of farmers' rights may be included as amendments in the review of existing laws. The current plant breeders' legislation, based as it is on the 1978 UPOV version is to some extent supportive of farmers' rights. The Kenya Industrial Property Act 2001 does not have provisions for protecting farmer and community rights and traditional knowledge systems. In its present form, the Act can be seen as a threat to national food security since it relegates domestic priorities to the periphery in favour of biotechnology-focused transnational corporations.<sup>74</sup>

Fair and equitable sharing of benefits should also be defined. There should be an understanding of the nature and extent of benefits; the types of resources for which the benefits have accrued and for whom. Fair and equitable sharing of benefits will cater for the coffers of government, private and public sector institutions, and local communities, to name just a few. Kenya's Seeds and Plant Varieties Act – the benefit-sharing mechanism currently available to plant breeders – appears to favour seed merchants.

Legal guarantees should include biodiversity collecting regulations. The critical elements of such legislation include user fees where appropriate and the equitable sharing of benefits.

### **Guidelines for formulating sui generis national policy and legislation**

IPR regimes are no longer a matter of domestic policy only. They must also be tailored to meet the goals of international trade and technology. *Sui generis* policies and legislation should provide effective mechanisms that will allow rights holders from WTO member countries to enforce their rights.

There are many complex issues involved in the formulation of *sui generis* national policies and legislation. Different institutions working in the field of genetic resources will have different objectives. In Kenya, for example, several government ministries have mandates affecting genetic resources. In order to devise coherent legislation, decision-makers should identify all issues of relevance to community rights, plant breeders' rights and farmers' rights so that they can devise an integrated policy response.

In the 1980s, local communities, NGOs and the private sector were instrumental in the conception of the ideas of conservation of biodiversity, sustainable use of genetic resources, and fair and equitable benefit-sharing. In recent times however, these groups have been noticeably absent from the debate. They must be allowed to

participate effectively in the formulation of national policies and legislation.

Specific and detailed information about whether to create individual or community rights, and whether to do so contractually or through a form of IPR, will have to be produced and disseminated. Notifying the public through announcements in the press or media may be the most appropriate approach. Special consideration needs to be paid to methods used to notify disadvantaged communities.

The Environmental Management and Co-ordination Act of 1999 establishes the National Environment Action Plan (NEAP) Committee. This committee, which includes representatives of public universities and research institutions; the NGO sector; and the business community, must draw up an action plan for approval by Kenya's National Assembly. The plan must contain strategies and measures to protect and manage natural resources, and as such provides an opportunity for the development of the *sui generis* national policy.

The National Environment Management Authority (NEMA) of Uganda, pursuant to the National Environment Statute 1995, has formulated draft regulations on the national environment. These deal with access to biological resources, genetic resources and benefit-sharing.<sup>75</sup> These draft regulations recognize both the rights of farmers and communities, and the importance of traditional knowledge systems.

Similarly, Kenya's National Environment Management Authority (NEMA) is mandated to promulgate regulations on access to genetic resources including guidelines on benefit-sharing.<sup>76</sup> This has laid the basis for passing guidelines on the future implementation of the CBD. Indeed the 1999 Draft Environmental Management and Co-ordination Access to Plant Genetic Material Regulations vests genetic resources in the government, which will keep them in trust for citizens.<sup>77</sup>

Several avenues must be explored to ensure disadvantaged communities get the benefits they are due. These include developing state recognition of individual and community rights. Codes of conduct that recognize individual and community rights must be drawn up, and other mechanisms applied, such as the corporate community model and international and regional model laws.<sup>78</sup> In India the avenues explored include the extension of patents to local communities, the development of biodiversity registers, and use of benefit-sharing mechanisms.<sup>79</sup>

## Core elements

The core elements of a *sui generis* national policy and legislation for plant varieties should include the following:

- Recognition and protection of the rights of local communities. Additional requirements such as allocating value for cultivation and use (to provide incentives for innovation in the interests of local needs such as food security) and declaration of origin (to help establish whether prior informed consent was obtained) may be set up.
- Recognition and protection of farmers' and community rights without the need for registration.
- Restriction of breeders' rights to exclude harvested crops.
- Limitation of the concept of an essentially derived variety.
- Enhancement of farmers' privilege e.g. to save seeds.
- Public interest broadly construed must prevail over plant breeders' rights.
- Enhancement of plant breeders' exceptions e.g. research.
- Provision for compulsory licencing.
- Full consideration of environmental and ethical concerns.
- Promotion of food and health security.

National law should assist not only in contributing to the sustainable management of biodiversity but also in giving and allocating property rights to local innovators as well as to all other actors in the seed and agriculture industry. Accordingly, the following measures are proposed:

## Community rights

The following may be considered:

- Definition of a community as a legal entity referring to a group of people having a long standing social organization and include indigenous people and local communities.
- Express as inalienable rights the rights of a community over its biological resources, innovations, practices, knowledge and technology (including the community's right to use and collectively benefit from those resources).
- Recognition of community intellectual rights without requiring registration.
- Ensuring customary laws and practices of communities are applicable to community rights.
- Making access to biological resources subject to prior informed consent of the community through an established procedure. Consent should not be unreasonably withheld.
- The right to use resources should be coupled with the corresponding duty towards the conservation and sustainable use of biological diversity.
- Prohibition of patenting so that the community holds ownership.
- Extension of the protection of utility models to local communities, to cover innovations that are new and industrially applicable but not novel.
- Permitting the existence of concurrent rights i.e. in a community a number of persons could each hold a right, or bundle of rights, expressing a specific range of functions.
- Vesting community rights in the State, which will keep them in trust for concerned communities.

## Farmers' Rights

The following should be considered:

- Farmers' rights should be expressly recognized and protected as the rights arising from the past, present and future contributions of farmers in conserving, improving and making available plant genetic resources.
- These rights must not require prior declaration or registration.
- As a legal term, these rights would be defined as a form of IPR. These rights would cover the products of farmer selection and breeding, and the traditional resources that contribute to the conservation, development and sustainable use of plant and animal genetic resources.
- Inclusion of rights such as the right to use, exchange and market farm-saved seeds; protection of traditional knowledge; benefit-sharing and participation in decision-making at the national level.
- Farmers' rights must include the right to information so that they can participate effectively in the decision-making process.
- Customary laws and practices of the concerned communities must be applied in the protection of farmers' rights.

## Breeders' Rights

The core elements of a *sui generis* national policy and legislation on plant varieties should include the following:

- Recognition and protection of the rights of local communities (e.g. their prior consent must be sought; there should be no creation of rights in favour of third parties in respect of local varieties; farmers' rights to produce and/or sell plants and propagating material of the protected variety on a non-commercial basis must be respected).
- Additional requirements such as value for cultivation and use (to provide incentives for innovations in the interests of local needs such as food security) and declaration of origin (to help estab-

lish whether prior informed consent was obtained) may be set up.

- Recognition and protection of farmers' and community rights without need for registration.
- Identifiability (and distinctness) of the new variety should be the only criteria of eligibility for recognition and protection. The requirements of uniformity and stability could be applied in a very flexible manner. This is in the interests of protection, compensation and conservation. Such a system would effectively cover the interests of both local communities and large-scale commercial breeders. However, the plant grouping may still have to be distinct.
- Restriction of breeders' rights to exclude harvested crops and limit the concept of an essentially derived variety;
- Provision of a framework of non-monopoly rights. This will be conducive to the development of both small- and large-scale industries.
- Provision for compulsory licencing or limitation on the number or type of varieties in the public interest. Public interest should be broadly construed to prevail over plant breeders' rights but ensure compensation and due process of the law through provisions for the effective enforcement of IPRs, for example through a transparent judicial procedure.
- Limiting the duration of plant variety protection for commercial breeders as much as possible to conform with the socio-economic context and circumstances of each country.
- Ensuring full consideration of environmental and ethical concerns, e.g. exclude protection of certain plant varieties in order to protect plant life or the environment.
- Prohibition of the patenting of plants, animals and traditional knowledge.
- Inclusion of bio-safety provisions e.g. ban protection of varieties injurious to biodiversity.
- Promotion of food and health security.

## Benefit-sharing

Benefit-sharing needs definition in key areas. These include the mechanisms of benefit-sharing, who should receive benefits, and what constitutes a benefit. Benefits can be a form of compensation, reward or recognition. Benefits may include royalties, lump sum fees, technology transfer and training, business ventures and development assistance (especially in the context of community rights).

Fair and equitable sharing of benefits should also be defined. Prior informed consent and declaration of origin are critical instrument for the implementation of benefit-sharing mechanisms, and could also be used as additional protection requirements.

One option is to place the resources in trust with the government. Concerned groups could then make claims to the government. Another option is to create community funds or trusts, into which royalties could be channelled. Establishing registers would go a long way towards facilitating benefit-sharing mechanisms. Alternatively, community group representatives could be registered and used as custodians of these resources.

Specific descriptions should be provided of the manner in which benefit-sharing arrangements should be negotiated. Fair and equitable sharing of benefits should cater for the coffers of government, private and public sector institutions and local communities. Legal guarantees should include biodiversity collecting regulations. The critical elements of such legislation should include user fees where appropriate and provisions for the equitable sharing of benefits.

Contractual agreements should be developed for access to biological resources. In the context of joint research and development, technology transfer could be used as a form of benefit-sharing. Access and sharing of benefits should depend on various factors such as the nature of the objective (e.g. commerce or education/research). Commercial research agreements could be more rigorous.

## Institutional and administrative frameworks

*Sui generis* policies and legislation should provide for the establishment or designation of appropriate institu-

tions for their effective implementation. These institutions could include a national institute or other authority and a national trust fund (for distribution of benefits). A judicial or administrative enforcement structure should be set up.

Most countries' environment management authorities have formulated draft regulations on the national environment. These regulations contain the recognition and appreciation of farmers' and community rights and traditional knowledge systems. The authorities are mandated to promulgate regulations on access to genetic resources including guidelines on benefit-sharing.

National policy and legislation can go a long way towards achieving the objectives of conservation, development and equitable benefit-sharing. However, legislation alone may not be enough. There is also need to enhance capacity building in terms of research and training as well as institutional, legal, commercial, technological, informational and human capacity.

Above are some of the institutional and technical matters of particular concern to developing countries.<sup>80</sup> Community and farmers' rights must be recognized at the outset. Only then can different interests be balanced with the need for active participation of all players.

Countries may need to strengthen regional approaches to benefit from stronger negotiating positions. The East African Community (EAC) Treaty aims to promote a conducive operational environment for cooperation in areas of food security and natural resources. Under the terms of the Treaty, states are enjoined to facilitate and ensure public participation and civic involvement in decision-making both at the national level and at the community (regional) level.<sup>81</sup>

## VII. CONCLUSION

The international legal framework for the protection of plant varieties is tilted in favour of individual monopoly rights. This framework borrows heavily from Western notions of ownership. Countries in Africa have an opportunity to promulgate systems for the protection of plant varieties specifically suited to their local conditions. Such systems can be given a local flavour, by recognizing communities as holders of property in addition to individuals and states. The OAU Model Law provides a good basis for beginning to rethink legal systems for the protection of plant varieties. Countries such as Uganda and Namibia have used this model to craft plant variety legislation that is tailored to their domestic conditions and Kenya can do likewise.

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## Endnotes

- <sup>1</sup> Section 5, Article 27 (1).
- <sup>2</sup> In Section 5, Article 27 (3) (b), TRIPS does not define what an effective *sui generis* system constitutes and therefore leaves wide latitude for interpretation. Thus each country can pattern its national laws according to its particular circumstances and aspirations.
- <sup>3</sup> For a discussion of these views see for example, U. Lele, et. al. (eds), 1999; J. B. Ojwang, 1992.
- <sup>4</sup> Article 16 (5) of the CBD.
- <sup>5</sup> Ibid.
- <sup>6</sup> This marked a great change from the earlier conception of natural resources as the common heritage of mankind.
- <sup>7</sup> Daniel W. Bromley, 3, 1992.
- <sup>8</sup> See Donald A. Messerschmidt, et. al. (eds), 1993.
- <sup>9</sup> Bromley, op. cit.
- <sup>10</sup> Charles Biblowit, 1991.
- <sup>11</sup> It is also referred to as immovable property. See, for example, 'The Appropriation of Evolution's Values: An Institutional Analysis of Intellectual Property Regimes and Biodiversity Conservation', in Timothy Swanson (ed), 1995, p. 141.
- <sup>12</sup> It confers the right to extract minerals from the land, to use and abuse and dispose of the land as the property holder wills. See Robert E. Megarry, 1984.
- <sup>13</sup> Swanson, op. cit., p. 163.
- <sup>14</sup> Ian Walden, 'Preserving Biodiversity: The Role of Property Rights', in Timothy Swanson, op. cit., p. 176.
- <sup>15</sup> Tom G. Palmer, 1989.
- <sup>16</sup> William M. Landes and Richard A. Posner, 1989.
- <sup>17</sup> Ibid.
- <sup>18</sup> See Clarke Gibson, 1996.
- <sup>19</sup> See WRI/IUCN/UNEP, Global Biodiversity Strategy, 1992.
- <sup>20</sup> See, e.g., the 'Non-Legally Binding Authoritative Statement of Principles for a Global Consensus on the Management, Conservation and Sustainable Development of all Types of Forests', United Nations, Rio de Janeiro, 3-14 June, 1992. See also Weiss, 1989.
- <sup>21</sup> See, e.g., Jack R. Kloppenburg, Jr. and Daniel Lee Kleinman, 'Seeds of Controversy: National Property Versus Common Heritage', in Jack R. Kloppenburg, 1988.
- <sup>22</sup> See Margaret Jane Radin, 1996.
- <sup>23</sup> Ibid.
- <sup>24</sup> *Lujan vs. Defender of Wildlife*, 112 S. Ct. 2130, 1992. See also Lawrence H. Goulder and Donald Kennedy, 1996.
- <sup>25</sup> 'Report of the Chairman of the Commission on Genetic Resources for Food and Agriculture on the Status of Negotiations for the Revision of the International Undertaking on Plant Genetic Resources for Food and Agriculture, in Harmony with the Convention on Biological Diversity', FAO, 1999, pp. 4 and 11.
- <sup>26</sup> G. Utkarsh, 'An information system for operationalising farmers' rights in relation to the Plant

- Variety Protection Act', 1998.
- <sup>27</sup> S. H. Bragdon and D. R. Downes, 1998, p. 7.
- <sup>28</sup> It has been argued that despite the practical difficulties, the corporation provides a model for granting a community of people the legal standing of an individual. See, for example, M. H. Khalil, et. al., 1992, p. 43.
- <sup>29</sup> For more details see D. A. Posey and G. Dutfield, Ottawa, 1996, and G. Dutfield, London, 2000.
- <sup>30</sup> J. O. Odek, 1995, p. 260.
- <sup>31</sup> R. P. Claude and B. H. Weston, 1992, p. 174. The UN Commission on Human Rights has stimulated debate on the role of IPR as an engine for economic, cultural and social development, see WIPO, 1998.
- <sup>32</sup> H. W. O. Okoth-Ogendo, 1979, p. 153, quoted in A. Kiriro and C. Juma (eds), 1991, pp. 43-44.
- <sup>33</sup> For a discussion of the incentives theory see M. H. Khalil et. al., 1992, op. cit.; S. W. Lawry, 1990, pp. 403-422.
- <sup>34</sup> TRIPS does not prohibit the development of additional protection systems or subject matter. Article 8 of TRIPS allows measures to be taken to protect public health and nutrition, and to promote public interest in sectors of vital importance to socio-economic and technological development. The cumulative effect of this is to entitle member countries to enact a law recognizing community intellectual rights to safeguard their local knowledge systems as well as their informal innovations and thereby protect them from illegal exploitation.
- <sup>35</sup> 'OAU African 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'. Another international initiative to strengthen community rights is the 'Model Provisions for National Laws on the Protection of Expressions of Folklore Against Illicit Exploitation and other Prejudicial Actions', UNESCO/WIPO, Paris, 1985.
- <sup>36</sup> P. Kameri-Mbote and P. Cullet, 1999.
- <sup>37</sup> W. V. Reid, et. al. (eds), 1993.
- <sup>38</sup> See for example, J. O. Odek, op. cit., p. 252.
- <sup>39</sup> Chapter 15 (3) of Agenda 21.
- <sup>40</sup> J. O. Odek, op. cit.
- <sup>41</sup> J. Mugabe, et. al., 1996.
- <sup>42</sup> Eritrean Proclamation on the Conservation of Biological Diversity, second draft, Republic of Eritrea, 1998.
- <sup>43</sup> 'International Treaty on Plant Genetic Resources', FAO, 2001.
- <sup>44</sup> 'International Convention for the Protection of New Varieties of Plants', Paris, 2 December 1961.
- <sup>45</sup> 'Agreement on Trade-Related Aspects of Intellectual Property Rights', in 'General Agreement on Tariffs and Trade: Multilateral Trade Negotiations. Final Act Embodying the Results of the Uruguay Round of Trade Negotiations', Annex 1 (c), Marrakesh, April 15 1994.
- <sup>46</sup> D. A. Munro and M. W. Holdgate (eds), 1991.
- <sup>47</sup> See John H. Barton, 1992.
- <sup>48</sup> The debate on intellectual property rights and the transfer of technology from developed to developing countries first appeared in the 1960s and 1970s within the broad framework of proposals to establish a New International Economic Order, in which developing countries

sought to obtain a better balance between private and public interests.

- <sup>49</sup> These attempts were defeated leading to the Bush administration's refusal to sign the Convention. See, e.g., Karen Anne Goldman, 1994.
- <sup>50</sup> Paragraph 3 of the preamble of the Biodiversity Convention.
- <sup>51</sup> The compromise exemplified in the notion of common concern is also apparent in the 1992 Forest Statement. See also James P. Barber and Anna K. Dickson, 1995, p. 121.
- <sup>52</sup> Since the convention does not mandate exclusive multilateral co-operation, bilateral and regional agreements have been concluded. See, e.g., the establishment within the World Bank of the pilot programme to protect the Brazilian rain forest, between a small number of donor countries and Brazil.
- <sup>53</sup> Alan E. Boyle, pp. 111-127, 1993.
- <sup>54</sup> Sands, p. 748.
- <sup>55</sup> Article 8 (j) of the Biodiversity Convention, *op. cit.*
- <sup>56</sup> S. H. Bragdon and D. R. Downes, 1998.
- <sup>57</sup> The results of which appear in General Agreement on Tariffs and Trade, Marrakesh, 1994, *op. cit.*
- <sup>58</sup> *Ibid.*, Annex 1 (b).and Annex 1 (c).
- <sup>59</sup> See, e.g., Khalil, *op. cit.*
- <sup>60</sup> Article 7 of the TRIPS Agreement, *op. cit.*
- <sup>61</sup> Article 27 (3) of the TRIPS Agreement, *op. cit.*
- <sup>62</sup> Article 27 (2) of the TRIPS Agreement, *op. cit.*
- <sup>63</sup> Section 5, Article 27 (3) (b).
- <sup>64</sup> *Seedling*, June 1999, Vol. 16, No. 2, GRAIN, Barcelona, p. 4.
- <sup>65</sup> 'Third World Resurgence', Third World Network, Penang, Malaysia, Internet website at: [www.twinside.org.sg](http://www.twinside.org.sg)
- <sup>66</sup> However, the regime for the protection of plant breeders' rights under Article 27 (3) (b) of TRIPS will essentially establish IPRs, though in a unique manner.
- <sup>67</sup> *Ibid.*, pp. 10-12.
- <sup>68</sup> It is instructive to note that although articles under TRIPS refer to other agreements, Section 5, Article 27 (3) (b) does not refer to UPOV. It is not clear whether this omission means that UPOV is not an effective *sui generis* system, or was meant to give parties wider space for designing their regimes.
- <sup>69</sup> Commonwealth Secretariat, 'TRIPS, Biodiversity and Commonwealth Countries: Capacity-Building Priorities for the 1999 Review of TRIPS Article 27 (3) (b)', UK, p. 25.
- <sup>70</sup> FAO Undertaking, *op. cit.*
- <sup>71</sup> See Part 11 of the Law of the Sea Convention.
- <sup>72</sup> See Article 3 of the Biodiversity Convention and Principle 21 of the Declaration of the United Nations Conference on the Human Environment, 16 June 1972.
- <sup>73</sup> Article 10 of the Treaty.
- <sup>74</sup> G. Ndirangu, 2000, pp. 8-9.
- <sup>75</sup> 'Draft National Environment (Access to Biological Resources, Genetic Resources and Benefit Sharing) Regulations', National Environment Management Authority (NEMA), Kampala,

Uganda, 2000.

<sup>76</sup> See sections 7, 53 and 147 of the Environmental Management and Co-ordination Act, 1999.

<sup>77</sup> P. Cullet, forthcoming, p. 7.

<sup>78</sup> These points were made by participants in the 'Nairobi Experts' Workshop on Property Rights, Biotechnology and Genetic Resources', cited in M. H. Khalil, et. al., 1992, pp. 42-43, 56-58.

<sup>79</sup> G. Utkarsh, (date unknown) et. al.

<sup>80</sup> See J. Mugabe and J. Otieno-Odek, 1999; and J Otieno-Odek and P. Kameri-Mbote, 1999.

<sup>81</sup> See Article 15 of the EAC's 'Memorandum of Understanding on the Environment', through which the three East African Community Partner States commit themselves to enhancing the participatory role of civil society in the environmental management field. Cf. Articles 105-114 of the Treaty for the Establishment of the East African Community Bill, Kenya, 2000.

