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8

OPTIONS FOR THE IMPLEMENTATION OF FARMERS' RIGHTS AT THE NATIONAL LEVEL

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SOUTH CENTRE

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CONTENTS

LIST OF ABBREVIATIONS

CBD	Convention on Biological Diversity
GIFTS	Germplasm, Information, Funds, Technologies and Systems
IPRs	Intellectual Property Rights
PBR	Plant breeders' rights
PGR	Plant genetic resources
PGRFA	Plant genetic resources for food and agriculture
RAFI	Rural Advancement Foundation International
TRIPs	Trade-Related Aspects of Intellectual Property Rights
UPOV	International Union for the Protection of New Varieties of Plant

Organizations

ECOSOC	United Nations Economic and Social Council
FAO	Food and Agriculture Organization of the United Nations
SAARC	South Asian Association for Regional Cooperation
SADC	South African Development Community
UNESCO	United Nations Educational, Scientific and Culturural Organization
WTO	World Trade Organization

I. INTRODUCTION

Implementing "Farmers' Rights" has become an important issue in recent international debates on plant genetic resources. The "concept" has been referred to in several international instruments and is already incorporated in several draft national laws and regulations. The Contact Group established by the FAO Commission on Genetic Resources has recently agreed a possible text for their recognition in a revised International Undertaking on Plant Genetic Resources.

During more than a decade of discussions on issues relating to plant genetic resources, the concept of Farmers' Rights has been the basis for recognition of important contributions that traditional farmers have made and continue to make for the conservation and development of plant genetic resources. Though regarded by many as a vague, abstract concept, the available evidence on the important role of traditional farmers in conserving and improving such resources, has provided grounds for its growing acceptance, and for the definition of the possible components of those Rights.

The purpose of this paper is to present the main issues that need to be considered in order to implement Farmers' Rights at the national level.

- First, it considers the origin of the concept in the framework of the International Undertaking.

- Second, the paper describes how that concept has been incorporated in international instruments and national regulations.

- Third, it explores in some detail the rationale of Farmers' Rights.

- Fourth, the relationship between Farmers' Rights and Intellectual Property Rights (IPRs) is discussed.

- Fifth, different proposals for the implementation of such Rights are presented. The possible content of Farmers' Rights is discussed in the light of suggestions made duirng the negotiations for the revision of the International Undertaking.

- Sixth, the paper briefly reviews, on the basis of the draft agreed text on Article 15 of the International Undertaking, the various elements of Farmers' Rights, including the protection of traditional knowledge under a possible *sui generis* regime, benefit-sharing, the right of farmers to save, sell and exchange seed, as well as other promotional measures for Farmers` Rights.

II. ORIGIN OF THE CONCEPT

The origin of the concept of Farmers' Rights can be traced in the debates held within FAO on the asymmetry in the distribution of benefits between farmers as donors of germplasm, and the producers of commercial varieties that ultimately rely on such germplasm. The basic concept was that while a commercial variety could generate returns to the commercial breeder (notably on the basis of Plant Breeders' Rights (PBRs), "no system of compensation or incentives for the providers of germplasm" had been developed (Esquinas Alcazar, 1996, p. 4).

The concept of Farmers' Rights was incorporated in the International Undertaking. This Undertaking (adopted by the FAO Conference in 1983) is a non-binding instrument under which the States parties agreed to provide other parties adhering to the Undertaking[1] "free access" to the plant genetic resources within their territory.[2] The principle of "free access" in this context, however, did not necessarily mean "free of charge", as clarified by Article 5a of Resolution 4/89.

Under these provisions countries could not, in principle, prevent access to plant genetic resources residing in their territories, but they could certainly establish the conditions under which such access could take place. This point was later developed by the Convention on Biological Diversity, which made access (although not restricted to non-commercial purposes) conditional upon "mutually agreed terms" and the sharing of benefits obtained as a result of the access.

The establishment of such a system of free access under the International Undertaking provoked some concerns in developed countries regarding the situation of materials under private control, particularly those protected by PBRs (FAO, 1998, p. 271). The aim of the International Undertaking was not to prejudge the means of appropriation that countries (while exercising their sovereign rights) could establish in respect of plant genetic resources. Hence it was recognized that:

> *"Plant Breeders' Rights, as provided for under UPOV (International Union for the Protection of New Varieties of Plant) are not incompatible with the International Undertaking" (Article 1. of the Agreed Interpretation, FAO Resolution 4/89).*

[1] In accordance with article 5b of Resolution 4/89, the benefits to be derived from the Undertaking are "part of a reciprocal system, and should be limited to countries adhering to the International Convention".

[2] The Parties undertook "To allow access to samples of such resources, and to permit their export, where the resources have been requested for the purposes of scientific research, plant breeding or genetic resource conservation. The samples will be made available free of charge, on the basis of mutual exchange or on mutually agreed terms." (Article 5 of the International Undertaking). In addition, in accordance with Resolution 4/89, "A state may impose only such minimum restrictions on the free exchange of materials covered by Article 2.1(a) of the International Undertaking as are necessary for it to conform to its national and international obligations" (Article 2 of the Agreed Interpretation).

In recognizing the legitimacy of plant breeders' rights, a serious asymmetry became apparent, for while breeders were able to secure property rights over the varieties they created and the associated benefits, the value added by traditional farmers (who over time had persistently conserved and improved those materials later on used by breeders) received no recognition at all.

The concept of Farmers' Rights thus emerged as a means to "provide a counterbalance to intellectual property rights" (FAO, 1994a, para. 41). It was first introduced by FAO Resolution 4/89, unanimously approved by more than 160 countries, and was further defined by FAO Resolution 5/89 as:[3]

> *[R]ights arising from the past, present and future contribution of farmers in conserving, improving and making available Plant Genetic Resources, particularly those in the centres of origin/diversity. These rights are vested in the International Community, as trustees for present and future generations of farmers, for the purpose of ensuring full benefits of farmers and supporting the continuation of their contributions…."*

One of the objectives of Farmers' Rights, in accordance with the same Resolution, is to allow farmers, their communities, and countries in all regions, fully to participate in the benefits derived, at present and in the future, from the improved use of Plant Genetic Resources, through plant breeding and other scientific methods.

In sum, the concept of Farmers' Rights was adopted with a view to realizing the objective of balancing the rights of traditional breeders and of plant breeders, while allowing the farmers to benefit, in some way, from the value that they have creatively contributed. Though the concept was only defined in a broad, imprecise manner, it recognized the role of farmers as custodians of biodiversity and helped to call attention to the need to preserve practices that are essential for a sustainable agriculture. The adoption of that concept fostered an intense debate on the ways to recognize and reward traditional farmers, not only to the current benefit of such farmers but in order to ensure the continuity of activities that are crucial for humanity at large.

[3] See Annex II.

III. REAFFIRMATION OF THE CONCEPT

Since the adoption of the concept of Farmers' Rights, considerable empirical evidence has highlighted the role of traditional farmers in relation to plant genetic resources.[4] The idea of recognizing Farmers' Rights transcended FAO and the International Undertaking and was also supported in other international fora.

This concept was reaffirmed in various contexts, namely:

- Chapter 14.60(a) of Agenda 21 (approved at the UN Conference on Environment and Development held in Rio de Janeiro in 1992), stated that the appropriate United Nations agencies and regional organizations should "strengthen the Global System on the Conservation and Sustainable Use of Plant Genetic Resources for Food and Agriculture (PGRFA) by ... taking further steps to realize Farmers' Rights".

- Resolution 3 of the Nairobi Conference for the Adoption of an Agreed Text of the Convention on Biological Diversity, identified the realization of Farmers' Rights as one of the "outstanding issues" for further negotiation.

- The Global Plan of Action for the Conservation and Sustainable Utilization of Plant Genetic Resources for Food and Agriculture, included the realization of Farmers' Rights at the national, regional and international level, as one of the long-term objectives of the Plan, in the context of *in situ* conservation (para. 32).[5]

- A June 1999 study by the Economic and Social Council (ECOSOC) on the Right to Food, submitted to the Commission on Human Rights, urged that Farmers' Rights be promoted as part of the "Right to Food", especially since "our future food supply and its sustainability may depend on such rights being established on a firm footing" (Commission on Human Rights, 1999).

The Convention on Biological Diversity (CBD) did not explicitly address the issue of Farmers' Rights. Nevertheless, according to article 8 of the CBD, each Contracting Party shall "as far as possible and as appropriate",

[4] See, for example, Glachant and Leveque, 1993; Louwaars and Marrewijk, 1996; Evenson, Gollin and Santaniello (Editors), 1998; Brush (Ed.), 2000.

[5] However, no firm and clear commitments were made at the Leipzig Conference (which adopted the Global Plan) with regard to the form of implementation of such rights (Berhan and Egzibher 1996).

> " … *subject to its national legislation, 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 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*".

This provision is programmatic in nature and requires to be implemented by the Contracting Parties through specific measures to be adopted at the national level. A Conference of these Parties has already convened to consider this issue,[6] but little progress has been made so far on the concrete ways to provide protection to traditional knowledge.[7]

Despite lack of a specific reference to the concept of Farmers' Rights, the CBD may be considered a relevant framework for the implementation of some components of such Rights, particularly with regard to the sharing of benefits and for funding (Articles 15.7 and 20). These benefits include access to, and transfer of, technology, which makes use of the genetic resources provided (Article 16.3); participation in biotechnological research using such genetic resources (Article 19.1); and priority access to the results and benefits arising from such biotechnological research (Article 19.2) (FAO, 1994a, para. 8).

Some proposals for national legislation have also reaffirmed the concept of Farmers' Rights. An example of the possible implementation of such Rights at the national level is offered by the draft law on plant varieties protection under consideration in India.[8] Farmers' Rights are not specifically defined.[9] However, Article 31 of the draft states that:

> *"Nothing contained in this Act shall affect the right of a farmer to save, use, exchange, share or sell his farm produce of a variety produced under this Act … provided that a farmer shall not be entitled for such right in case where the sale is for the purpose of reproduction under commercial marketing arrangements" (article 31).*[10]

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[6] See, for example, document UNPEP/CBD/COP/3/L.13, 13 November 1996. The Parties agreed to establish an *ad hoc* open-ended inter-sessional working group to address the implementation of Article 8 (j) and related provisions to be composed of Parties and observers including, in particular, representatives of indigenous peoples and local communities. The Working Group held its first Meeting in Seville, in March 2000.

[7] WIPO has also initiated studies on the matter, in the context of its "Program on Global Intellectual Property Issues". See The Crucible II Group, 2000, p. 72-85.

[8] Bill No. 123 of 1999.

[9] An earlier version of the bill defined Farmers' Rights as follows:

> "The farmers' rights for the purpose of this Act mean the rights arising from the past, present and expected future contributions of farmers in ensuring conservation, improvement and availability of plant genetic resources, particularly in the centres of origin or diversity through a continuous engagement in an on-farm evolution of variations within varieties. For their above said contributions, the farmers are entitled to full benefits and support in the continuation of their contribution" (article 22.ii).

[10] This text replaces a provision contained in previous drafts, according to which "Nothing shall affect the farmer's traditional rights to save, use, exchange, share and sell his farm produce of the protected variety

Another interesting feature of the proposed law is the establishment of a system of "benefit-sharing" based on "the extent and nature of the use of genetic materials" of the claimant in the development of the protected variety, and on the commercial value and demand in the market (article 26.5). The determined amount of benefit-sharing should be deposited by the breeder in a "National Gene Fund" (article 52),[11] which would also receive "a fee by way of royalty" to be paid annually by every breeder that the Central Government may impose for the retention of the registration under the Act. The Fund would cover, among other things, "the expenditure for supporting the conservation and sustainable use of genetic resources including *in situ* and *ex situ* collections". (article 52.2c)

Other proposals for the recognition of the rights of local, indigenous and farmers communities at the national level include the following (The Crucible II Group, 2000, p. 96-97):

- An "African Model Legislation for the Recognition and Protection of the Rights of Local Communities, Farmers and Breeders, and for the Regulation of Access of Genetic Resources" was developed by the Organization of African Unity's (OAU). Part V of the draft defines the concept and the scope of Farmers' Rights.

- The Zambian Government has drafted a plant variety protection law that seeks to protect the innovations of local communities and indigenous peoples, in keeping with its obligations under the CBD.

- In Thailand, a draft Plant Variety Protection Bill would combine recognition for the rights of plant breeders to their newly developed varieties with the protection of native varieties that have been conserved and developed by farmers and local communities.

- The Plant Varieties Act of Bangladesh, drafted by the National Committee on Plant Genetic Resources, recognizes community rights and Farmers' Rights, and proposes the establishment of a fund to support communities in the conservation and development of plant varieties.

- Costa Rica's "Biodiversity Law" (May, 1998) recognizes and expressly protects the practices and innovations of indigenous peoples and local communities related to the use of biodiversity components, and their

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except sale for reproductive purpose under commercial marketing arrangements" (article 17).

[11] According to an earlier version of the law, the funds of a "National Community Gene Fund" would be utilized in trust for Indian farmers for collecting, evaluating, upgrading, conserving and utilizing genetic variability. One of the resources of the Fund would have been based on a percentage of the total sales of protected varieties. The law would have implemented, through this mechanism, the sharing of benefits in the gains accruing from the commercial exploitation of germplasm (Srinivasan, 1996, p.81).

> associated knowledge. The law obliges the competent authority to reject any request for recognition of intellectual or industrial rights for biodiversity components or knowledge that is already recognized by community rights.

In sum, the concept of Farmers' Rights has been recognized in various international instruments, including as a component of Human Rights. It also finds support in the CBD in the context of article 8(j), while it has also begun to receive recognition in national legislation.

IV. RATIONALE

Though there has been little academic work on the concept of Farmers' Rights,[12] the debate that took place within FAO and in other fora has helped to clarify the rationale for the recognition of such Rights. Such rationale seems to be grounded on three sets of considerations, relating to *equity*, the need to *ensure the conservation* of plant genetic resources for food and agriculture, and the establishment of barriers to IPRs that may restrict *farmers' practices* with respect to saving, selling and exchanging seeds. These considerations are briefly examined below.

IV.1 Equity

Conservation (*in situ*, including on farm, and *ex situ*), research and development, and the utilization of plant genetic resources, are components of a complex system in dynamic interaction. Such an interaction is based on market and non-market relationships among different types of agents with specific functions within a system that may be called the "Plant Genetic Resources System".[13] Agents in the plant genetic resources system include traditional farmers and indigenous communities, collectors and curators (conservation subsystem), research institutions (research and development subsystem) breeders and seed companies (commercial breeding/production subsystem), and farmers (agricultural use subsystem). Each of these groups perform different functions within a particular framework of customary and legal rules (ten Kate, Kerry and Laird, 1999, p. 132).[14] The dividing lines between these activities are not, however, always clear cut. Thus, traditional farmers undertake empirical research at the farm level not just on varieties but also on cultivation techniques.

Traditional farmers both conserve and use plant genetic resources (PGR). The value of plant genetic resources is preserved and enhanced by their utilization for planting, seed production and continuous selection of the best adapted farmers' varieties (landraces). Such farmers generally interact among themselves on the basis of barter or exchange across the fence, thus fostering the diffusion of their varieties and further development.

Collectors and curators collect and/or conserve and manage plant genetic resources, specifically with regard to their characterization, cataloguing, evaluation and pre-development. They interact with traditional farmers, research institutions, breeders

[12] See Girsberger, 1999.

[13] The following characterization of this system is substantially based on Correa, 2000.

[14] The following description of the "Plant Genetic Resources System" is based on Correa, 2.000, p.240.

and seed companies. In most cases, such an interaction is based on non-market transactions. Traditional farmers are not paid for the value they deliver: breeders and seed companies are not charged a price for the samples they obtain. Research institutions utilize plant genetic resources to undertake basic and applied research, including agro-biotechnology, and to enhance existing varieties and the availability of gene-pools. Interaction with other agents in the system (traditional farmers, curators, breeders) is generally on a non-market basis. However, a strong trend towards protection of research results and increased linkages with private companies are introducing market-based means of interaction.

Breeders utilize plant genetic resources in breeding programmes. They obtain materials and scientific information from the former groups, generally on a non-market basis, and produce new or improved varieties for sale in the market. Intellectual property rights, wherever available, strengthen their market position and their ability to recover development expenditures. Seed companies utilize "breeding" results to propagate and sell seeds. They operate entirely within the market. Plant genetic resources are one of the (intangible) inputs in seed production, though such resources are not attributed a particular value, except where protected by intellectual property rights.

Finally, farmers who utilize improved varieties are at the end of the research/production chain. They benefit from the work undertaken, whether remunerated or not, within other subsystems. Their relationship with seed suppliers is market-based. Farmers both use and produce seeds, which they can reuse freely or in the framework of the "farmer's privilege",[15] where applicable.

While, in sum, traditional farmers create economic value, the problem is that such value has no direct expression through market mechanisms. Some fragmented evidence on the economic benefits obtained by recipients of plant genetic resources is available and provides useful insights on their value (National Research Council, 1993; Evenson, Gollin, Santaniello, 1998). However, the economic value of diversity conserved by traditional farmers for agriculture is difficult to assess (Brush, 1994).

The value of farmers' varieties is not directly dependent on their current use in conventional breeding, since the gene flow from landraces to privately marketed cultivars of major crops is very modest (Wright, 1998, p. 229). Conventional breeding increasingly focuses on crosses among elite materials from the breeders own collections and advanced lines developed in public institutions. According to one study, materials from *ex situ* genebanks contributed three per cent of the germplasm used by breeders, and materials from *in situ* conservation areas a further one per cent (Swanson and Luxmoore, 1996).

Though it is expected that the demand for primitive materials may increase in the future (ten Kate, Kerry and Laird, 1999, p.141), it would be unrealistic to think that substantial value may be derived from current gene flows of landraces held in *in situ* conditions (Gollin, 1998, p. 236-238). As a result, any economic measure directly linked to such flows would grossly underestimate the global values generated by farmers' varieties over time. Farmers' Rights thus need to be considered, not only on the basis of

[15] This is an exception generally allowed under PBR regimes, which permits farmers to reuse, in their own exploitation, the seeds obtained from the utilization of protected varieties.

the added value that they may generate today, but also retroactively address farmers' past contributions (Wright, 1998, p. 229).

In sum, traditional farmers create economic value for others, but cannot themselves benefit from it. There is no market for the value they create, however, other agents in the "Plant Genetic Resources System" do benefit from the materials provided by traditional farmers, and obtain specific rights over the germplasm that incorporates what traditional farmers have developed in the past (FAO, 1994a, para. 41).

The development of the concept of Farmers' Rights may be regarded, in this context, as the result of *equity* considerations: there is a moral obligation to ensure that traditional farmers receive a fair share of the benefits arising from the use of plant genetic resources that they conserve and improve.

IV.2 Conservation

A second element underlying the rationale of Farmers' Rights relate to their possible role as an instrument to support the conservation of plant genetic resources for food and agriculture. Maintenance of biological diversity in farming systems generates value for the global community which is determined by the following components.

1. A "portfolio effect", namely, the static value of retaining a wide range of varieties and methods of production, which reduces the risk of variability of production;

2. A "quasi option value", based on the value of the future flow of expected information to be generated by the retained diversity;

3. An "exploration value", or the value of retaining the evolutionary process of varieties and the opportunity of discovering new traits and characteristics (Swanson, Pearce and Cervigni, 1994, p.26).

Farmers benefit from the availability of germplasm to face changes in the environment, diseases or pests ("quasi option" value). The "exploration value" may be of particular importance for biotechnology-based industries, which can exploit genes of particular agronomic interest. Consumers, finally, benefit from a reduced risk of variability in production ("portfolio value") and from better and more production. These values can not be appropriated by farmers, in the absence of a market mechanism or other specific instruments that put an obligation to pay on those receiving the benefits.

The economic value of plant genetic resources may also be analysed, in marginal terms, on the basis of the opportunity cost of the conversion of biodiversity to specialized production. While conserving landraces, traditional farmers are deprived of obtaining

higher productivity and income associated with the use of modern varieties. There is, therefore, a value determined by the differential in the average yield between the use of land in a traditional as opposed to a specialized form of production (Swanson, Pearce and Cervigni, 1994, p.25).

Farmers holding landraces, thus create an economic value but they are currently unable to appropriate it for the purposes of generating an income. There is a market failure that undervalues, or does not value at all, farmers' contributions. In economic terms, farmers generate externalities as providers of a "global public good".[16] The direct beneficiaries of the value created by the non-conversion of land from traditional to specialized use are those able to utilize downstream the germplasm so conserved. The existence of greater diversity also has a significant positive impact on the stability of food supply.

Farmers' Rights may be seen, in this context, as a means of ensuring that plant genetic resources for food and agriculture are conserved and continue to be made available (FAO, 1994a, para. 41).[17] However, the implementation of such Rights should not be regarded as a means of rendering the conservation conditioned on such rights but as a *general support* to the traditional farmers' activities (Esquinas Alcazar, 1996, p. 15). In other words, it may be difficult to hold that, in the absence of a prompt realization of Farmers' Rights, the traditional farmers will abruptly cease in their role as conservers of plant diversity, or that the intensity of such activities will be directly dependent, at least in the short term, on such realization.[18] But it may be affirmed that some part of farmers' biodiversity is lost every day and if no action is taken, in the long term such activities will be substantially weakened, putting at risk the survival of an essential component of the Plant Genetic Resources System.

This point may be illustrated by way of a comparison with IPRs. The conventional theory argues that in the absence of IPRs, there will be inadequate investment in research and development, since there will be no means to ensure the recovery of expenditures made. Thus, IPRs are regarded as a condition for an optimal investment in such activities. In contrast, the realization of Farmers' Rights, conceived as a non-exclusive mechanism, cannot be reasonably assumed to be indispensable for the continuation of conservation activities that are taking place as an integral part of existing agricultural systems in a large number of countries. These systems are not dependent, like IPRs, on the creation of extraordinary rents through exclusive market positions but, to the contrary, on an open system of exchange and circulation of materials.

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[16] The beneficiaries of the value created by traditional farmers include breeders and farmers of all countries, and not only of the country where the relevant landrace was developed, for in most cases those resources are found in several countries. Their distribution is not constrained by national boundaries (Fowler, 2000).

[17] This instrumental approach clearly excludes a concept of Farmers' Rights based solely on farmers' interests.

[18] This fact may help to explain why to date there has been no sense of "urgency" in the negotiation of a revised International Undertaking, and with regard to the realization of Farmers' Rights. See Petit et al, 2000.

In sum, the concept of Farmers' Rights may be justified as a useful tool to support *conservation* activities undertaken by traditional farmers. The realization of such Rights would aim to ensure the continuation of such activities, to the benefit of present and future generations.

IV.3 Preservation of farmers' practices

A third element underlying the concept of Farmers' Rights is the need to provide a counterbalance to intellectual property rights such as patents and PBRs, and thereby to avoid the creation of barriers against the farmers' use and improvement of plant genetic resources. The basic issue here is that the conservation and continuous development of farmers' varieties is dependent upon the possibility of saving and exchanging seeds, particularly within their communities.

Seed supply systems may be broadly grouped in three categories:

1. The "informal" system characterized by farmers engaged in seed-saving, in bartering with neighbours or farmers in different villages, and purchasing seeds from local grain stalls;

2. A "transitional" system in which some farmers specialize in the production of seeds for the local market;

3. The "commercial" system where seeds are provided by private companies and/or public and semi-public institutions.

The "informal" system is based on the use and continuous improvement of farmers' varieties. It operates on the basis of the diffusion of the best seeds available within a community, and on their movement, even over large distances "during migration or after disaster ... In these systems genetic material is valued highly, for example, as a gift, but it does not represent a monetary value (because it can be reproduced). It is unlikely that the spread of varieties has ever been restricted out of ownership considerations" (Louwaars, 1996, p. I-1).

The "commercial" system requires strict control over various cycles of production of genetic, physiological, physical and sanitary parameters. Considerable time and investment is devoted to obtaining "uniform" varieties, which normally requires the planting of a few generations before homogeneity can be described and claimed. Though the conventional breeding method is widely available; mature technology, the necessary investments and the time required for releasing new varieties, all constitute considerable barriers of entry, and are the basis of the demands for IPRs protection or other mechanisms that protect and reward such investments.

The diffusion of commercial varieties has generally evolved through different stages. It usually begins with improved varieties developed or adapted from plant

breeding, focusing on major crops in favourable areas. During the second stage, a wider range of varieties and hybrids are developed and commercialized, farmers' varieties being replaced with commercial seed. In a final stage, all or most seeds are developed and traded by specialized suppliers, mainly in the private sector.

Thus in developed countries seed is chiefly supplied commercially, mainly by the private sector, even if public institutions actively participate in the development of plant varieties. In developing countries, the informal system is the main channel for diffusing improved varieties: more than 80 per cent of crops cultivated in such countries are planted with seeds from the informal seed system.

In most developing countries, however, the commercial and informal systems coexist to a different extent, often in association with a transitional system of seed supply. Thus, in many such countries the commercial production and distribution of seeds is a marginal activity while the informal seed system is dominant. In Ethiopia, for instance, only 2 per cent of seed used by small farmers is commercially supplied, while overall, commercial seed constitutes only 5 per cent of the total seeds used. Newly established commercial systems in developing countries are seldom expected to supply more than 15 per cent of total seed requirements for the specified crops (Srivastava and Jaffee, 1993, p. 7-8).

The functioning of each seed supply system is dependent on a number of specific factors. Thus, the development of a commercial seed sector crucially depends on the existence of an adequate research infrastructure and distribution systems. Commercial breeders' income may be maximized when farmers are unable to save seed and reproduce a variety due to the characteristics of the seeds (such as in the case of hybrids), or due to local conditions (e.g. germination due to poor storage conditions) that do not provide the maintenance of minimum quality levels (Louwaars, 1996, p. I-1). The effective application of IPRs is generally regarded, as mentioned above, as an important element for encouraging investments in research and breeding.[19]

In the case of the informal system, farmers' practices of saving and exchanging seeds are essential for preserving the dynamics of the system. If such practices were restricted by IPRs or other barriers, the possibility of continuously improving farm varieties would be blocked, and the system as such may collapse. This is the reason why many views have been expressed stressing the need for defining Farmers' Rights to reflect the inalienable right of every farmer and farming community to save and exchange seed (The Crucible II Group, 2000, p.99).

In sum, given the coexistence of different systems of seed supply and the impact that IPRs may have on the preservation of the informal system, the recognition of Farmers' Rights can be justified as a means to *neutralize possible IPRs-based restrictions on farmers' practices* relating to planting back and exchanging seeds.

[19] See, however, Alston and Venner, who found that PBRs in the USA did not result in increasing commercial or experimental yields of wheat, but rather served as a "marketing tool" (Alston and Venner, 1999, p. 17).

V. FARMERS' RIGHTS VS. INTELLECTUAL PROPERTY RIGHTS (IPRS)

V.1 Relationship

The recognition of "Farmers Rights", as mentioned in earlier sections, is one of the possible ways to compensate traditional farmers for their contributions to agriculture. Though the content and scope of Farmers' Rights has not been yet fully defined, an important question is whether they can in some way be assimilated to or become, a new form of IPRs. Different views and options have been suggested on the relationship between these two categories of rights, including:[20]

1. There should be no relationship between Farmers' Rights and IPRs.

2. Farmers Rights' could be recognized in laws relating to plant breeders' rights.[21]

3. A *sui generis* regime on Farmers' Rights should be established separately from existing forms of IPRs.

4. The existing definitions under plant breeders' legislation should be extended to protect farmers' varieties.[22]

In any case, the prevailing opinion is that the recognition of Farmers' Rights would not be incompatible with the obligations of WTO Member countries under the TRIPs Agreement (Otten, 1996, p. 49), or with the International Union for the Protection of New Varieties of Plant (UPOV) Convention (Greengrass, 1996, p. 56)

The rationale for Farmers' Rights, as presented above, significantly differs from that for patents, copyrights and plant breeders' rights. Farmers' Rights "may not be in themselves, strictly speaking, an Intellectual Property Rights mechanism" (Esquinas Alcazar, 1996, p. 15), though they may be regarded as providing some counterbalance to "formal" IPRs, since the latter "compensate only for the latest innovation, without acknowledging that, in many cases, these innovations are only the last step in cumulative inventions carried out over many human generations, in different parts of the world" (Esquinas Alcazar 1996, p.4).

In modern economic theory the recognition of IPRs is grounded on the need to provide an incentive and reward for investments in inventive and creative activities. The

[20] See Mooney, 1996, p. 41-42.

[21] This approach has been proposed in some draft national laws on PBRs. See Section 2 above.

[22] See Leskien and Flitner, 1997.

granting of *exclusive* rights,[23] which is absent in the case of Farmers' Rights, is deemed necessary to compensate the title-holders for the risk and expenses involved in the inventive/creative process (Gutterman, 1997).

There are important differences between Farmers' Rights and IPRs. Such differences are fundamental, which go beyond the type of rights conferred, as summarized in Table 1.

Table 1
Farmers' Rights vs. IPRs

	Farmers' Rights	IPRs
Rights conferred	Compensation, Benefit-sharing	Exclusive rights
Titleholder	Farmer communities, States (?)	Physical-juridical persons
Subject matter	Not precisely defined	Inventions, creative works, plant varieties, signs, designs, etc.
Duration	Unlimited	Limited

Table 1 indicates that there are major differences between the two compared concepts, not only in terms of rights granted but, more basically, in relation to the titleholders (possibly farmer communities or the States, in the case of Farmers' Rights) and duration. Most importantly, Farmers' Rights are grounded on the contributions made by farmers over the years in plant breeding and conservation, but they are not restricted to or exercised over a particular subject matter. In contrast, IPRs can only be exercised in relation to subject matter which is defined as precisely as possible.

Some expressions of opinion have emphasized that Farmers' Rights should be linked to certain subject matter. Thus, according to the Rural Advancement Foundation International (RAFI), "Farmers' Rights encompass all aspects of plant genetic resources including Germplasm, Information, Funds, Technologies, and Systems (GIFTS) that are necessary to make any raw material a usable resource". The GIFTS would be ensured through a consistent international funding mechanism. In RAFI's view, nevertheless, funds would not be used to compensate individual farmers or indigenous people, but to reward meritorious work that encourages conservation and use primarily in developing countries (RAFI, 1994, p. 35).

[23] The recognition of a *ius excluendi* is one of the characteristic elements of IPRs (except for trade secrets).

V.2 Farmers' Rights as IPRs?

In accordance with a number of proposals, Farmers'Rights could be realized under an IPRs-type of mechanism. Under this approach, IPRs are regarded as an ethical imperative in recognition of the intellectual contributions of farmers, or as a tool useful to preserve biodiversity and prevent further erosion thereof. Within this line of thought, two main trends may be identified.

On the one hand, there are many proposals to extend the application of current modalities of intellectual property rights, or to amend existing laws and practices, in order to protect certain components of indigenous/traditional knowledge, including farmers' varieties. Such proposals include the following relevant considerations.

1. The application of geographical indications, copyright (protection of folklore) or other intellectual property rights (Correa, 1994).

2. Increasing the flexibility of the requirements for the protection of traditional plant varieties, by applying, for example, a broader concept of uniformity than that which is generally accepted under UPOV-like plant breeders' rights (Leskien and Flitner, 1997).

3. Introducing new requirements into existing laws, such as the obligation to declare in a patent application the origin of materials used to develop the invention so as to facilitate benefit-sharing (Correa, 1999, p. 20). [24]

Other proposals consider that the existing modalities of IPRs are inadequate to protect such knowledge, and call for the development of new forms of IPRs. A number of variants have been elaborated under this approach, which differ considerably with regard to objectives, scope and possible forms of implementation. In general, the aim of such proposals is the establishment of a comprehensive *sui generis* regime for indigenous and traditional communities' knowledge, covering knowledge on, *inter alia*, medicinal plants, materials useful for agriculture and cultivation practices (Dutfield, 1999).

It has also been held that Farmers' Rights should compensate for the use of (1) traditional PGRFA and their wild weed-like relatives,[25] and (2) where appropriate, the related know-how of informal plant breeders, and that they should also act as incentives for *in situ* and *ex situ* conservation and sustainable use of traditional PGRFA, their wild

[24] Non-compliance with such an obligation may lead to the invalidation of the patent granted. See, for example, Decision 390 of the Andean Group.

[25] Often local and indigenous communities regard themselves as custodians of these species as well, even in situations where they do not actively make use of or propagate them (R. Lettington's personal communication of 2 July 2000).

and weed-like relatives, and the related know-how. Farmers' Rights should also balance inadequacies and deficiencies of existing forms of intellectual property rights regarding the protection of these traditional plant varieties and related know-how. According to this view, "as a new form of legal claims, Farmers' Rights complement existing forms of intellectual property rights. They are not, however, intended to compete with, or replace, existing intellectual property rights" (Girsberger, 1999, p. 205).

Some authors have argued that in order to realize Farmers' Rights, they should be institutionalized as a form of IPRs. According to Greengrass, for instance, if Farmers' Rights were not conceived as IPRs, it would be "impossible to envisage how such a system could be enforced in practice" (Greengrass, 1996, p. 56).

Some developing countries have raised the issue of protection of indigenous and local peoples' rights over their collective knowledge in the context of a possible revision of Article 27.3(b) of the TRIPs Agreement[26]. Thus, Kenya, on behalf of the African Group, in preparation for the 1999 WTO Ministerial Conference submitted a proposal requiring that any *sui generis* law for plant variety protection should provide for the protection of the innovations of indigenous and local farming communities in developing countries, consistent with the Convention on Biological Diversity and the International Undertaking on Plant Genetic Resources. In addition, Peru, Bolivia, Colombia, Ecuador and Nicaragua requested the WTO to study and make recommendations on the most appropriate means of recognizing and protecting traditional knowledge, and to develop a multilateral legal framework "that will grant effective protection to the expressions and manifestations of traditional knowledge."

Proposals made by some developing countries in relation to the review of Article 27.3 (b), as well as the positions of some regional groups, are summarized in Table 2.

Table 2
Developing countries' proposals for the review of article 27.3(b) of the TRIPs Agreement

Countries / Organizations	**Patenting (life forms & biological processes)**	***Sui generis* (plant varieties)**
Kenya[27]	Need five-year extension of transition period Harmonize TRIPs with CBD	Need five-year extension of transition period Increase scope of 27.3(b) to include protection of indigenous knowledge and farmers' rights Harmonize TRIPs with CBD

[26] Article 27.3(b) -- which requires the protection of plant varieties under patents, an effective *sui generis* regime or a combination of both- is subject to an early review, which should have begun in 1999. No agreement has yet emerged in the Council of TRIPS about the objectives and scope of such a review.

[27] WT/GC/W/23 of 5 July 1999.

Countries / Organizations	**Patenting (life forms & biological processes)**	***Sui generis* (plant varieties)**
Venezuela[28]	In 2000, introduce mandatory system of IPR protection for traditional knowledge of indigenous and local communities, based on the need to recognize collective rights	
African Group[29]	Review should be extended + additional five year transition hereafter Review should clarify that plants, animals, microorganisms, their parts and natural processes cannot be patented	Review should be extended + additional five year transition after that *Sui generis* laws should allow for protection of community rights, continuation of farmers' practices and prevention of anti-competitive practices which threaten food sovereignty Harmonize TRIPs with CBD and IU of FAO
LDC Group[30]	There should be a formal clarification that naturally occurring plants and animals, as well as their parts (gene sequences), plus essentially biological processes, are not patentable. Incorporate provision that patents must not be granted without prior informed consent of country of origin Patents inconsistent with CBD Art 15 (access) should not be granted Need for extended transition period	*Sui generis* provisions must be flexible enough to suit each country's seed supply system Need for extended transition period
Jamaica, Sri Lanka, Tanzania, Uganda, Zambia[31]	No patenting of plants without prior informed consent of government and communities in country of origin	
SAARC[32]	There is a need to prevent piracy of traditional knowledge built around bio-diversity and to seek the harmonization of the TRIPs Agreement with the U.N. Convention on Biological Diversity so as to ensure appropriate returns to traditional communities.	

table continued on next page

[28] WT/GC/W/282 of 6 August 1999.

[29] WT/GC/W/302 of 6 August 1999.

[30] WT/GC/W/251 of 13 July 1999.

[31] http://www.foe.org/international/wto/govt.html of 2 September 1999.

[32] South Asia Association for Regional Cooperation (SAARC), WT/L/326 of 22 October 1999.

Countries / Organizations	**Patenting (life forms & biological processes)**	***Sui generis* (plant varieties)**
SADC[33]	The transitional period for implementation of 27.3(b) should be extended and the 2000 review should be delayed. The review of 27.3(b) should harmonize TRIPs with CBD. The exclusion of essentially biological processes from patentability should extend to microbiological processes.	The transitional period for implementation of 27.3(b) should be extended and the 2000 review should be delayed. The review of 27.3(b) should retain the *sui generis* option.
Group of 77[34]	Future negotiations must make operational the provisions relating to the transfer of technology, to the mutual advantage of producers and users of technological knowledge and seek mechanisms for a balanced protection of biological resources and disciplines to protect traditional knowledge	
Bolivia, Colombia, Ecuador, Nicaragua, and Perú[35]	The Seattle Ministerial Conference should adopt a mandate to: (a) carry out studies in order to make recommendations on the most appropriate means of recognizing and protecting traditional knowledge (TK) as the subject matter of IPR; (b) initiate negotiations with a view to establishing a multilateral legal framework that will grant effective protection to the expressions and manifestations of TK; (c) complete the legal framework envisaged in paragraph (b) above in time for it to be included as part of the results of the new round of trade negotiations.	

Source: GRAIN, 2000

The attempts to extending IPRs regimes to farmers' varieties (landraces) and the wild and weedy relatives of crops face serious conceptual and operational difficulties, since the value of such resources lies precisely in their *variability* and their continuing evolution (lack of stability over generations), which makes recognition and tracing very speculative.[36] In addition, if specific genetic traits were used to define the subject matter, it would be extremely difficult to identify the geographical area of origin, since they may occur *in situ* in more than one country, and be found in *ex situ* collections in or outside the country (FAO, 1994b, para. 38).

[33] Southern Africa Development Cooperation (SADC), WT/L/317 of 1 October 1999.

[34] WT/MIN(99)/3 of 2 November 1999.

[35] WT/GC/W/362 of 12 October 1999.

[36] The lack of stability of farmers´varieties would impose limitations on identifying landraces in a manner suitable for the enforcement of any system that is created (Greengrass, 1996, p.51).

Those who question a possible assimilation of Farmers' Rights to IPRs fear that an IPRs form of protection may undermine the free sharing of knowledge and resources among local communities and the world community; furthermore, IPRs could be incompatible with the collective nature of innovation at the community level (Berhan and Egziabher, 1996). Moreover, it has been noted that it would seem illogical to make Farmers' Rights part of the IPRs system because it is that very system that has created the problems that the concept of Farmers' Rights aims to solve.[37]

In sum, Farmers' Rights may be deemed to counterbalance IPRs but do not share the basic features of the latter, particularly the granting of exclusive rights. While, as discussed below, *one of the components* of Farmers' Rights could be the protection of traditional knowledge relating to farmers' varieties, Farmers' Rights cannot be assimilated to IPRs since their rationale, objectives and content essentially differ from those pertaining to IPRs.

[37] Personal communication by R. Lettington (2 July 2000).

VI. CONTENT OF FARMERS' RIGHTS: POSSIBLE MEASURES

Given the non-binding nature of the International Undertaking,[38] the concept of Farmers' Rights does not entail, in legal terms, a "right" and a related "obligation", but only the acceptance of the notion that such a right should be recognized and implemented. If Farmers' Rights were to become effective legal rights, there must exist an obligation imposed on all or some third parties. There is no right without a corresponding enforceable obligation (Kelsen, 1991).

Very different views have been expressed with respect to the content of the rights to be conferred, and on whom these rights should be conferred (national governments, the international community, or both), and by whom they should be realized. According to Riley (Riley, 1996, p.59) for instance, the realization of Farmers' Rights should mean the recognition of the rights to:

- save seeds;
- have access to "the latest technology";[39]
- receive information on and duplicate samples of the materials collected by third parties;
- receive public credit for having provided genetic resources;
- contribute to or facilitating the realization of public sector plant breeding and agricultural research objectives.

Various proposals made in the process of revision of the International Undertaking,[40] have identifed different kinds of rights/obligations that may constitute the basis of Farmers' Rights. Such proposals include the following possible measures.

[38] The current negotiations for the revision of the International Undertaking may conclude, however, with the adoption of a binding instrument, possibly a Protocol to the CBD.

[39] It may be noted, however, that it may be extremely difficult to satisfy this demand, and that traditional farmers generally do not need the latest technology.

[40] The following analysis, based on the proposals contained in the "Consolidated Negotiating Text", document CGRFA/IUND/CNT, aims to illustrate the type of measures proposed. They are described here *without* indicating the numerous square brackets that highlighted the differences among delegations on particular issues.

VI.1 By the international community

Assistance to governments

- Assistance by the international community, as a beneficiary of the PGR developed and conserved by farmers, should be given to national governments for the purpose of ensuring/encouraging equitable benefits to present and future generations of farmers and farming (and indigenous) communities.

Support of farmers

- By establishing an international fund and developing its operational mechanism: to ensure conservation and sustainable use of plant genetic resources, and traditional farmers' knowledge; to facilitate and ensure access to new technologies and equitable sharing of benefits derived from the products obtained through the use of plant genetic resources for the benefit of present and future generations of farmers; and to make appropriate efforts to mobilize adequate financial resources to support farmers activities to conserve and use sustainably plant genetic resources for food and agriculture;

- By ensuring that international aid programmes benefit farmers by furthering their activities to conserve and sustainably use plant genetic resources for food and agriculture.

Recognition of rights in knowledge

- By promoting the establishment of the development of an international *sui generis* system for the recognition, protection and compensation of knowledge, innovations and practices of farmers and traditional communities.

VI.2 By national governments

Assistance to farmers and promotional measures

- Adoption of appropriate measures reflecting national capacities and needs, which are non-discriminatory and non-trade-distorting, and which are necessary for Parties and/or farmers to continue to conserve, manage and improve plant genetic resources for food and agriculture.

- Assistance to farmers and (traditional) farming communities, especially in areas of origin/diversity of plant genetic resources, in contributing to the evolution, conservation, improvement, evaluation and sustainable use of plant genetic resources for food and agriculture, through the participation in and establishment or

strengthening of appropriate arrangements, and the participation of farmers and (traditional) farming communities therein such as:

(i) national (and regional) germplasm programmes;
(ii) initiatives that promote the use of, and research into, crops which are not widely used.

- Adoption of support measures for research, training and institutional capacity building activities at the local level, with the participation of the communities concerned, particularly focusing on women farmers, and measures for credit facilities and market provisions governing farmers' access to plant genetic resources for enhancing traditional genetic resources, development and the exchange systems through, *inter alia*, the removal of financial and market barriers against such systems, for conservation, development and sustainable use, and transfer of technology that protect, integrate, enhance and develop traditional farmers' knowledge, know-how and practices.

- Ensuring that international aid programmes benefit farmers by furthering their activities to conserve and sustainably use plant genetic resources for food and agriculture).

Recognition of rights in knowledge

- To promote legal protection systems (and/or other mechanisms) on the national level in order to render effective the rights of farmers and the fair and equitable sharing of the benefits arising out of the utilization of plant genetic resources for food and agriculture.

- To establish national systems, including *sui generis* systems, as appropriate, to ensure / promote the fair and equitable sharing of the benefits arising out of the utilization of plant genetic resources for food and agriculture.

- To ensure that the (individual and/or) collective knowledge and plant genetic resources for food and agriculture held and developed by farmers and local farming communities are protected and promoted by adopting and implementing appropriate legislation in the form of collective rights regimes that provide for the adequate protection of traditional or indigenous knowledge, innovations, materials and practices of and by farmers and farming / local communities and promote the equitable sharing of benefits arising from the utilization of their plant genetic resources for food and agriculture.

- To review, assess and, if appropriate, modify intellectual property rights systems, land tenure, and seed laws in order to ensure their harmony with Farmers' Rights.

Prior consent

- To ensure that the prior informed consent of the concerned farmers and local communities is obtained before the collection of plant resources is undertaken; adapt current variety registration systems so as to identify and record, as appropriate, varieties of plant genetic resources provided by farmers and farming communities; and require disclosure of the origin of plant genetic resources utilized in the development of commercial varieties.

VI.3 By national/international action

- To enhance the productivity/efficiency of farmers by promoting the integration of farmers' traditional knowledge, know-how and practices, with modern technologies, as appropriate.

- To promote national and international scientific and technological agricultural research that supports and enhances, as appropriate, farmer-based knowledge systems related to plant genetic resources for food and agriculture.

- To recognize and protect the traditional rights of farmers and their communities to use, exchange, share and market their seeds/landraces and other plant reproductive material including the right to reuse farm-saved seed.
- To encourage/recognize and ensure the rights of farmers in sharing the benefits arising from the direct use of plant genetic resources on a fair and equitable basis including, through the transfer of technology, participation in research, and access to the results of research and development, where appropriate, derived at present and in the future, from the improved use of plant genetic resources through plant breeding and other modern scientific methods, as well as from their commercial use.

- To promote/ensure the participation of their farmers and local farming communities in the reviewing and implementation of measures provided under the International Undertaking and the International Fund which may/shall include the initiation of flexible consultative processes to meet this aim and participation in the development and implementation of legislative measures on Farmers' Rights at national and international levels.

In sum, the proposals made during the revision of the International Undertaking indicate that Farmers' Rights may be realized through a variety of actions and measures at the national level. Possible options in this regard are further explored in the next Section.

VII. A CONSENSUS TEXT: IMPLEMENTING FARMERS' RIGHTS AT THE NATIONAL LEVEL

The "Contact Group" established by the Chairman of the FAO Commission on Genetic Resources For Food and Agriculture in order to advance negotiations on the revision of the International Undertaking, agreed, during the Eighth Regular Session of the Commission (3-7 April 1999, Rome) on a text for Article 15 on "Farmers' Rights". This text (see Annex I) stipulates that the responsibility for realizing Farmers' Rights rests with national governments, which should adopt, according to their needs and priorities, and subject to national laws, measures to protect traditional knowledge, benefit-sharing and to ensure the participation of farmers in decisions on PGRFA. The agreed text also clarifies that nothing in article 15 will be interpreted as restricting the rights of the farmers to conserve, use, exchange and sell propagating material held on their farms, in accordance with national legislation.

The proposed text has found broad support among FAO member countries, including developed and developing countries alike.[41] Several elements of the agreed text need to be highlighted. In doing so, it is useful to compare the agreed draft text with the concepts contained in the Annexes to the Undertaking adopted through FAO Resolutions 4/89 and 5/89 (see Annex II) which introduced the notion of Farmers' Rights.

First, the text recognizes the "enormous contribution" that has been made for the "conservation and development" of PGRFA, thus closely following point 3 of FAO Resolution 4/89. Second, while only "farmers" were mentioned in the Annexes to the International Undertaking, the agreed text alludes to "the local and indigenous communities *and* farmers", in line with the terminology of the CBD. This is a clear indicator of the growing recognition of the role played by such communities in the creation and preservation of knowledge of value for the society as a whole. Third, the agreed text states that the responsibility for realizing Farmers' Rights rests with national governments. This is a major difference compared with the original FAO text, which had emphasized the *global* nature of farmers' contributions and the primary role of the international community in realizing Farmers' Rights. FAO Resolutions 4/89 and 3/91 had established, in this regard, that Farmers' Rights would be implemented through an International Fund. However, the implementation has not yet materialized for the negotiators have apparently agreed not to insist on this idea.

It is clear in the agreed text that Farmers' Rights are to be established in accordance with "the needs and priorities" of each Party "as appropriate, and subject to its national

[41] See, for example, the Report of the Third Meeting of Commission I of the 30th Period of FAO Conference (Rome, 16 November 1999) and in particular the statements supporting the agreed text on Article 15 made by Turkey, Rep. of Korea, India and Finland (in the name of the European Community and its Member States), Algeria, Ethiopia, Norway, Republic of Congo and the United States, among others.

legislation". Governments *should* (and not "shall") take certain measures. This means that the implementation of the measures indicated in paragraphs (a) to (c) will be largely dependent upon each governments' judgement on what is appropriate in the light of its own priorities and consistent with its national law. The nature and scope of the said Rights is, therefore, likely to differ significantly among countries. Some countries may, given the flexibility offered by the agreed text, even opt not to implement this provision.

The measures to be established must aim to "protect and promote" Farmers' Rights, that is, there should be measures relating to the legal recognition of such Rights as well as to encourage that they achieve their intended goals. It is important to note that paragraphs (a) to (c) of draft article 15.2 are only *illustrative* of the measures that should be adopted, but they do not exhaust the list of modalities under which Farmers' Rights may be realized. The possible scope of such measures is examined below.

Finally, draft article 15.3, offered by the United States delegation as a compromise solution, apparently satisfied those who expected a positive recognition under the revised International Undertaking of certain rights of farmers in relation to saving, using and exchanging seeds, and those who feared that the Undertaking could limit the breeders' rights that would be inconsistent with UPOV and UPOV-like legislation.[42] The agreed draft text only states that article 15 is *neutral* in that respect, that is, while it could not be a sufficient legal basis for claiming rights in relation to saving, using and exchanging seeds, at the same time Article 15 does not restrict the options that may be adopted by national governments in that regard. Clearly, the agreed text does not exclude the possibility that national laws (including PBRs and seed legislation) limit farmers' rights in relation to saving, using and exchanging seeds/propagating materials.

In the following subsections the different elements of article 15.2 and 15.3 are examined.

VII.1 Protection of traditional knowledge

Conceptual and implementation issues

Different alternatives have been proposed to deal with indigenous/traditional knowledge or some components thereof. This is the case, for instance, regarding proposals relating to "tribal" or "communal" or "community intellectual rights" (Berhan and Egziabher, 1996, p.38),[43] and "traditional resource rights" (Posey and Dutfield, 1996).

Draft Article 15.2(a) of the revised International Undertaking requires measures for the protection of "traditional knowledge" but, in view of the scope and purpose of the Undertaking, it only refers to knowledge "relevant to plant genetic resources for food and

[42] See, however, controversial views on this article in The Crucible II Group, 2000, p. 60.

[43] A model of *sui generis* national legislation that would give communities property-like rights over their collective knowledge was developed by the Third World Network (Community Intellectual Rights Act) in 1994.

agriculture". Thus, Article 15.2 is narrower in scope than Article 8(j) of the CBD, and would not apply, for instance, to knowledge relating to medicinal or industrial uses of plant genetic resources. Under this approach, the issue of protection of traditional knowledge may be circumscribed to knowledge incorporated in farmers' varieties ("landraces") and certain associated knowledge (e.g. specific cultivation practices).

The development of a *sui generis* regime for the protection of farmers' varieties becomes, in this context, one of the possible components of Farmers' Rights. This issue, as mentioned above, has received considerable attention in the literature, though little progress has been made in terms of actually implementing that kind of protection.

The establishment of a *sui generis* regime poses, in fact, complex conceptual and practical issues. On the conceptual level, it is not clear whether the protection of farmers' varieties under an IPRs system would have any positive impact on their conservation or stimulate breeding activity, and whether protection would serve the purpose of strengthening the rights of communities and traditional farmers over their resources (IPGRI, 1999, p. 16). There may be more appropriate non-IPRs methods of protecting such varieties, for instance, via access legislation or a misappropriation regime (see below).

On the other hand, the impact of protecting farmers' varieties under an IPRs-system will vary according to the nature and characteristics of the national seed supply system in a particular country. Moreover, seed supply arrangements may be crop-specific. Hence, IPRs can play a different role depending on the crop at stake.[44]

If it were deemed that an IPRs-type of protection for farmers' varieties were desirable, a number of issues would need to be addressed:

Definition of subject matter (what is protected?).

The delimitation of the subject matter is a critical and complex issue, since traditional agriculture does not conserve specific genotypes or populations, but rather a total complex of genetic diversity in evolution and flux. Such agriculture uses and manages genetic diversity in a dynamic system of continuous change and adaptation. Farmers' varieties are continuously replaced, introgressed and introduced to new environments and new selection pressures (Hardon, 1997, p. 46).

Although modern techniques (molecular markers) facilitate a detailed description of the heritable material of plants and populations, it is apparently extremely difficult (if not impossible) to define individual landraces, which continuously evolve. In any case, a system of protection should be based (as in the case of breeders' rights) on the material existence of an identifiable variety.

[44] These differences had been, in fact, recognized by the UPOV Convention until its revision in 1991. Member countries were allowed, under UPOV 1978, to decide on which crops PBRs would be applicable. Article 4 made it obligatory to protect a minimum of 24 genus or species within eight years of the entry into force of the Convention in a member country (article 4.3).

Requirements in order to grant protection

What level of novelty, if any, would be required in order to grant protection? One specific problem posed by farmers' varieties is that most of them have been in actual use for a considerable time, and therefore they can not be deemed "new" as required, for instance, under PBRs legislation.

Since farmers' varieties are more heterogeneous than varieties produced through classical breeding, the "uniformity" and "stability" requirements provided for under PBRs would not be suitable in most cases. A possible approach may be to define minimum genetic distances with regard to the composition of varieties with overlapping claims, or to define a maximum level of genotypes that can be shared by the two varieties (IPGRI, 1999, p. 16).

Who is the titleholder?

This question as to who is the titleholder is likely to be one of the main problems to be faced in efforts to make Farmer's Rights effective. The collective nature of innovations or creative works is not, per se, an obstacle to the recognition of protection.[45] The problem is that farmers' varieties generally have no single origin and they are the result of the interaction of multiple farmers, often in different regions or countries (Fowler, 2000, pp. 4-5). Possible approaches to this problem may include one or more of the following options as set out in Table 3.

Table 3
Possible right-holders of Farmers' Rights

- Informal plant breeders from developing countries
- Landowners where PGRFA are conserved and developed, if different from plant breeders
- Farmers located in the centres of diversity of PGRs
- Indigenous and rural communities
- Individual farmers, where identifiable
- Traditional small farmers
- National States

Most authors who have studied this issue advocate the recognition of Farmers' Rights as *collective* rights, that is, as rights that belong to communities or groups of farmers and not

[45] See, for example, the UNESCO Model Law on Folklore.

to individuals or to States (Girsberger, 1999, p. 222-229). Another possible option is that the rights be administered by a State-sponsored or other kind of organization on behalf of farmers. For instance, a royalty could be charged at the national level on traded seed and the funds collected, administered and distributed by such an organization.[46]

Territorial validity of rights

Patents and breeders' rights are territorial rights, in the sense that they are only valid in those countries where registration has been obtained.[47] An important problem for a *sui generis* system is the spreading of landraces in several countries. If protection is restricted to a national jurisdiction, the varieties protected there could be in the public domain elsewhere. In order to ensure cross-border protection similar substantive rules should be adopted by other countries unilaterally or on the basis of bilateral or plurilateral agreements.[48]

How would the system operate?

Issues such as examination and registration should be carefully analysed, as well as the costs involved in the operation of a system of protection. The registration of the varieties as a condition for protection, though advisable in order to attain some degree of certainty, may pose a very heavy, often insurmountable, burden on farmers, especially the poorest. It would also require the establishment of new public functions, with their associated costs.

Enforceability

The availability of rights is useless if the system cannot be actually enforced. This depends on how easy it is or not to cheat; on the existence of preventive measures and remedies; and, above all, on the capacity to monitor and support the costs of administrative and judicial procedures. Given the essentially variable nature of farmers' varieties and the fact that providers and users thereof may be located in different countries, enforcement problems may be very substantial.

Duration

Another very important issue is that of determining the duration of protection for an intrinsically evolving material for which, in addition, the date of "creation" cannot be established?

Compensation

As noted in respect of other aspects of the implementation of Farmers' Rights, various options exist in connection with the type of compensation to be granted. Such compensation may be based on funds generated from different sources (see Table 4).

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[46] Collective entities for the collection and administration of authors rights are common in the field of copyright and related rights. See WIPO, 1990.

[47] This is a major difference with copyrights, which do not require registration and have an almost universal validity by virtue of the application of international conventions.

[48] The review of the TRIPs Agreement may provide an opportunity to develop a *sui generis* system with an international reach. However, this is unlikely to happen in the near future.

Table 4
Possible funding for compensation

· Royalties on seed sales · Taxes on seed sales · Collection fees (for materials held *in situ*) · Access fees (for materials held *ex situ*)

The definition of the possible forms of compensation needs to take into account complex issues raised by the calculation thereof and by the allocation of funds to different farmers, groups or communities. Since many PGRs have been developed by different groups/communities, including in several countries, determining the "credit" of each group/community may be extremely difficult, if not impossible.

Moreover, the economic benefits derived from the commercial exploitation of germplasm provided by traditional farmers' may be difficult to estimate and "tax" and this may be insufficient to "really solve the problems of rural communities in terms of their economic needs, employment and management of natural resources. Royalties will be minor in comparison to what will go to the people who are engaged in the production and sale of seeds" (Shankar, 1996, p. 171-172).

Another issue that may require consideration is the use to be given to the funds received, if any, on the basis of Farmers' Rights. Should such funds be applied to conservation/development activities, or could the beneficiaries individual or collective freely dispose of them as they wished? It would seem that the latter solution should apply if decision-making by farmers is to be reinforced, unless it is too difficult to identify the group that should receive the compensation.

In any case, in designing a new system of protection adequate consideration should be given to the expected benefits and costs for society, as well as the direct costs to be borne by the government.

Possible approaches : (1) A dual system

As noted above, a crucial issue in the establishment of a *sui generis* regime would be the definition of the protected subject matter. Article 27.3b of the TRIPs Agreement requires the protection of "plant varieties", but does not provide (as in the case of inventions) a definition thereof. Therefore, national laws have ample room to determine what is to be deemed a plant "variety" for the purposes of protection. There have been lengthy discussions on the concept of "plant variety", particularly in the framework of UPOV. The scientific notion does not necessarily coincide with the legal concept. The law may

require certain characteristics for a *protected* variety that may not be essential for a scientific definition.

One option may be to distinguish different levels of protection depending upon the degree to which the uniformity and stability standards are met. Thus, varieties which meet such standards may be subject to rights broader than those applicable to varieties essentially characterized by their heterogeneity and variability. As mentioned, these are the features that confer great value on farmers' varieties as a source of germplasm for agricultural use.

A *sui generis* regime may, thus, provide for a *dual* system of protection,[49] which includes both "modern" as well as farmers' varieties. Under a UPOV-like legislation,[50] the requirements would include novelty, distinctness, uniformity and stability. For other cases (farmers' varieties) the requirements may be less stringent and be limited, for instance, to sufficient identification and distinctness.

The inclusion of farmers' varieties as a protectable subject matter would imply a radical departure from existing IPRs regimes. One of the major difficulties in dealing with such varieties, however, is their essentially variable nature. The definition of the subject matter and, consequently, the enforcement of rights become more difficult and complex than in cases where uniformity and stability are present.

Nevertheless, the subject matter of protection under IPRs law need not always be defined with precision for the acquisition of the relevant rights. Thus, trade secrets are protectable without description and registration. It is a matter of proving in each individual case whether or not there has been infringement.

It may be convenient to make it clear, in any case, that protection should be granted with respect to a variety as such and that, therefore, it would not extend to any constituent of the plants, including their genetic information, nor to specific characteristics of the plants or of the harvested materials. In some jurisdictions, patents have been accepted on the basis of characteristics or functional specifications (Correa, 1994), a possibility that a *sui generis* regime should clearly prevent.

In the case of farmers' varieties, the creation of the variety is generally a collective endeavour and, therefore, the rights should not be granted to individuals, but to the community that has developed and used the variety. Of course, the collective nature of these rights, and the dissemination of farmers' varieties in different areas or communities, may create controversies about the entitlement to the respective rights. This situation is not essentially different, however, from cases in which two or more persons or firms claim to have developed a given piece of technology or information. Co-ownership is also a possibility.

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[49] In Switzerland, for instance, a register for groupings of cereals that do not meet the ordinary homogeneity requirements has been established.

[50] UPOV 1978 provides a model for legislation that is more flexible and adaptable to the needs of developing countries than UPOV 1991.

An important aspect of a *sui generis* regime relating to plant varieties would be the scope of the rights conferred on titleholders. In most cases, IPRs grant exclusive rights, that is, the faculty to prevent third parties from exploiting the protected subject matter. Some modalities of IPRs, however, do not entail exclusivity, but other types of rights. Even the TRIPs Agreement does not require the granting of exclusive rights in a number of instances, such as with respect to undisclosed information.

In the case of farmers' varieties, national legislation may recognize a "remuneration right", that is, an entitlement to receive compensation in all cases of use of a protected variety for propagating purposes outside the respective farming community or communities. This formulation would amount, in practice, to an open licensing system whereunder any interested party may utilize the protected variety for planting or multiplication, against a payment in favour of the titleholders. Consideration should also be given to the *status* of any derivatives of farmers' varieties, including essentially derived varieties, and the remuneration if any to be paid for these.

Possible approaches: (2) A misappropriation regime

Another possible way of protecting farmers' varieties would be through a regime that aims to prevent the misappropriation of such varieties. This type of regime would not imply the establishment of any form of monopolization that could contradict farmers' practices and values, but the legal faculty to prevent multiplication or commercialization of propagating materials acquired in a manner that is contrary to the applicable rules on collection, transfer and use of germplasm.

Thus, national legislation may establish that no intellectual property rights shall be conferred with respect to farmers' varieties. In the case of infringement of this rule, the conferred title should be declared void. A delicate problem to be addressed is the extent to which derivatives from such varieties, particularly essentially derived varieties, should be also excluded from IPRs protection, or subject to the control of the original suppliers of the varieties.

If such a regime were established, national laws would be free to determine the means to prevent misappropriation, including criminal and civil remedies, and how to empower communities for the exercise and enforcement of their rights. Protection would not be subject under the proposed scheme -- like as in the case of trade secrets -- to any kind of registration. Protection would last for as long as the conditions that justify it subsist. Given the collective nature of these rights and that farmers communities generally lack a legal personality, a possible mechanism for enforcement may be to establish an "ombdusman" empowered with the right to act on behalf of the communities so as to enforce their rights.

Some of the main features of such a regime as proposed, are the following:

- it would recognize the informal, collective and cumulative systems of innovation of local and indigenous communities and farmers;
- no novelty, inventiveness or secrecy would be required;

- there would be no arbitrary time limit for protection;
- the conferred rights would be "non-monopolistic" and would not hinder the non-commercial use and exchange of germplasm within and among communities;
- no registration, and therefore, administrative machinery, would be necessary;
- it would not oblige farmers or communities' members to keep secrecy or change their traditional practices;
- since no monopolies would be recognized, possession of the same knowledge by different communities would be perfectly legitimate;
- the rights against infringers would arise when a variety has been acquired in a manner contrary to certain rules, such as national access legislation or other accepted practices on the collection of germplasm;

VII.2 Benefit-sharing

The FAO Resolution 5/89 introduced the concept of "benefit-sharing" as one of the *components* of Farmers' Rights. This concept was incorporated later in Article 15 of the CBD and given a broader scope. This article applies in relation to "the results of research and development and the benefits arising from the commercial and other utilization of all kinds of genetic resources". The CBD also added that such sharing should be "upon mutually agreed terms".

The fair and equitable sharing of benefits is a major goal of the CBD. It is also an important element in the International Undertaking. The draft text on Article 14 which was agreed (with a number of remaining brackets) by the Contact Group at its First Inter-sessional Meeting (Rome, 20-24 September 1999) provides that the benefit-sharing within the Multilateral System that is to be established will take place through the transfer of technology, capacity building and the exchange of information. Differences still exist on whether funding and a fair and equitable sharing of the results of R&D and of commercial exploitation of PGRFA would be included (Article 14.2, Document CGRFA/CG-1/99/TXT).

The same draft provision states that the benefits arising from the use of PGRFA should flow "directly or indirectly, to farmers in all countries, particularly in developing countries and countries with economies in transition who conserve and sustainably utilize PGRFA". However, it is not agreed whether such flows should "primarily" benefit such farmers or only "*inter alia*".

In April 2000 further discussion took place in the Contact Group on the monetary dimension of benefit-sharing and the following text was developed:

14.2 (d) <u>Sharing of [monetary] benefits on commercialization</u>

(i) [Parties agree, under the Multilateral System, to [share]/[promote] commercial benefit[s][-sharing] through measures that involve the private sector in activities

identified under Article 14 of the International Undertaking through partnerships in research and technology development;]

(ii) [Whenever the use of PGRFA accessed under the Multilateral System results in a product protected by patents, or any form of commercial protection that restricts further access to the genetic material involved for research and plant breeding, parties agree that a fixed share of royalties shall be paid into a mechanism to be decided by the Governing Body as a contribution to the implementation of agreed plans and programmes as established in accordance with Article 16.] [51]

At this stage of the negotiation of the International Undertaking it is still uncertain how this issue will be finally solved, and the extent to which farmers will participate in benefits-sharing at the international level. As indicated above, however, one of the elements of Farmers' Rights to be realized at the *national* level, in accordance with draft Article 15.2(b), relates to benefit-sharing.

National governments may implement such sharing through a variety of modalities. One option is to include specific provisions in *access legislation*, as appropriate. Benefit-sharing may also be implemented through farmers' access to funds arising from taxes or levies associated with trade in seeds, or through other charges imposed on breeders that benefit from farmers' contributions. This latter approach may be based on a general contribution (for instance, registration fees imposed on all breeders), or on payments associated with the specific use by a breeder of materials for which the contribution of traditional farmers may be determined and valued.

For this purpose, national patent, PBRs and seed laws may establish the obligation to reveal the source of a genetic material used for the creation of a new variety and, if appropriate in the particular case, to prove that the applicant has complied with rules relating to access and sharing of benefits. This type of requirement ("certificate of origin"), would not be inconsistent with the TRIPs Agreement, which does not limit the States rights to make the grant of a patent conditional on complying with certain obligations (such as the payment of a registration fee).

Whichever approach is followed, national governments should carefully examine the costs and benefits of any policy to be implemented and, in particular, of its likely impact on farmers, breeders and consumers. For example, taxes, or levies applied on seeds are likely to increase the prices charged to farmers, who may or may not transfer this extra cost to consumers, depending on market structure and conditions and regulatory requirements.

VII.3 Participation of farmers in decision-making

[51] Based on ASSINSEL's proposal.

One of the components of Farmers' Rights, according to draft Article 15.2 (c) would be "the right to participate in making decisions" at the national level "on matters related to the conservation and sustainable use" of PGRFA.

This right, which would benefit "the local and indigenous communities and farmers", should be recognized, according to the *chapeau* of Article 15.2, "as appropriate" and subject to "national legislation". This means that national governments have considerable scope to determine the extent of such right.

The importance of ensuring the participation of local, indigenous and farming communities in decision-making concerning PGRFA has been stressed in various fora. In particular, the Draft UN Declaration on the Rights of Indigenous Peoples developed by the Working Group on Indigenous Populations recognizes the communities' rights to political and legal autonomy and the rights of indigenous peoples over cultural and genetic resources as follows:

> "Indigenous peoples are entitled to the recognition of full ownership, control and protection of their cultural and intellectual rights... They have the right to special measures to control, develop and protect their sciences, technologies and cultural manifestations, including human and other genetic resources, seeds, medicines, knowledge of the properties of fauna and flora, oral traditions, literatures, designs and visual and performing arts" (article 29).

Some national laws have begun to incorporate these principles. In the Philippines, the *Indigenous Peoples Rights Ac*t contains a broad recognition on community rights. Access legislation adopted in some countries also provides for some form of participation in relation to the collection of genetic materials. In accordance with the Philippines Executive Order No. 247, for instance, the rights of indigenous and local communities must be taken into account with regard to informed consent procedures.

The relationship between indigenous peoples and national governments is, however, problematic in many countries:

> "Some indigenous peoples understand themselves to be a nation within a nation or a nation whose peoples cross the borders of two or more nations. Some governments consider themselves to be the sole and entirely sufficient voice of all the peoples within their sovereign territory" (The Crucible II Group, 2000, p. 77)

The realization of Farmers' Rights in relation to farmers' participation in decision-making will be dependent, in the last instance, upon the nature of the relations between local, indigenous and farming communities, on the one hand, and national governments, on the other hand. A wide range of scenarios can be considered in this regard. Some tension may be expected between the exercise of such a right and the operation of a multilateral system which requires a free flow of the germplasm in question. In any case, the formal recognition of Farmers' Rights in the International Undertaking would certainly constitute an important step towards the reaffirmation of farmers' and communities' rights to take

decisions that essentially concern the kind of farming system that they wish to keep as an integral part of their culture and lifestyles.

VII.4 The right to save, sell and exchange seeds

As indicated above, farmers' rights with regard to saving, selling and exchanging seed is a controversial issue. One view is that farmers should be freed from any restriction with regard to the use and disposition of seeds, including those protected under IPRs. This view is not shared, however, by those who believe that the unrestricted use of IPRs-protected materials by farmers will erode the incentives to commercial breeding and create a threat to future world food security (The Crucible II Group, 2000, p.99).

As indicated above, a clear distinction must be made according to the types of materials involved. There can be no objection to the idea that one of the components of the Farmers' Rights should be the right to reuse *non-protected* seeds and to commercialize their own produce.

However, the distribution of non-protected farmers' varieties may be restricted by the relevant *national seed legislation*, which in many countries imposes constraints, based on agronomic considerations, aiming at ensuring the dissemination of adequate and safe seeds. It does not seem reasonable to think that this type of regulation pertaining to seeds could be overridden by a general concept of Farmers' Rights, but measures may be adopted in order not to unduly prevent farmer-based exchanges.

The implementation of this aspect of Farmers' Rights needs to distinguish between the various kinds of materials that may be involved in farmers' practices and the role of IPRs.

Farmers' varieties

There is no doubt that farmers can use, exchange, sell or otherwise dispose of the varieties that they have developed and which are not subject to third parties IPRs. In fact, farmers' varieties ("landraces") are today outside the IPRs system. They are within the "public domain". Hence, the farmer that has developed such varieties cannot be prevented from any action relating to them. At the same time, he/she has no legal faculty to prevent others from using or reproducing such varieties; this is precisely one of the problems that some proposals for *sui generis* protection aim to address (see Section 6.1 above).

Farmers' own produce

Similarly, farmers are free to dispose of their own produce, whether it has been obtained from their own varieties or with varieties protected by IPRs (unless this right is curtailed by contractual obligations imposed by seed distributors) . In this sense, the recognition of the right to dispose of the "farm produce" as proposed, for instance, in the Indian draft law on PBRs, does not mean any significant concession to farmers, since they legally already enjoy the right to sell it (Cullet, 1999, p. 639).

Protected varieties

The situation may be substantially different, however, in relation to the sale or other forms of distribution of seeds for propagating purposes, when such seeds are protected by third parties' IPRs. Though PBRs legislation has generally admitted an exception for the reuse of protected seeds in the farmers' own exploitation ("farmers' privilege"), it has normally prevented acts that may lead to further propagation without the consent of the PBRs titleholder.

The scope of the "farmers' privilege" varies in different national laws. Under UPOV 1978, most countries allowed such privilege in broad terms. The 1991 revision of UPOV has narrowed the scope for such exception, which can be established under national law, within reasonable limits and safeguarding the legitimate interests of the breeder (Article 15.2).

Since UPOV 1991, national laws have tended to restrict the scope of the farmers privilege to different degrees, both in developed and in developing countries. Thus, the European Community Plant Variety Rights (Council Regulation EC No. 2100/94) limits the "farmers' exception" to certain species and requires the payment of an "equitable remuneration" to the breeder for planting-back protected seeds, except in the case of "small farmers" (article 14.2 and 14.3). In Brazil, law No. 9456 (1997) has established that such exception does not apply in relation to sugar cane. It only benefits small farmers, who can provide or exchange seeds on a non-commercial basis with other small farmers. In sum, PBRs provide some room for the farmers' practice of saving seed, but the recent legislative trend has been to restrict the room available for following such practice. Under product patent protection the restriction on such practice is straightforward and stronger than under PBRs. In principle, the patent owner may prevent such practice or require additional payment for the reuse of seeds.

Some options that would reconcile IPRs with the farmers' right to save, sell and exchange IPRs *protected* materials may be considered, such as the following:

1. To distinguish different groupings of farmers with regard to the planting-back of protected material, on the basis of volume of output, size of landholdings, species concerned, etc. Thus, a broad farmers' exception may be granted to "primarily-subsistence farmers", or to "small" farmers who customarily reuse seed because they lack access to or financial resources for new seed every growing season. Large farmers in the commercial sector may be subject instead to other, more stringent, rules.

2. To exempt exchanges of seed that take place within the same community or with neighbours, and between farming communities.

3. To allow certain sales of seeds as propagating materials, for instance, those that take place within the farmers' customary market area.

All these activities may be important to maintain genetic diversity and enhance local plant breeding. Those activities under b) and c) may be seen, however, as a threat to PBRs and inconsistent with obligations under UPOV (where this convention is applicable), if such activities were not really an expression of traditional practices and were just used as a means to circumvent PBRs (The Crucible II Group, 2000, p.99).

VII.5 Other promotional measures

As mentioned, the agreed draft Article 15.2 is merely illustrative; it indicates only some of the measures that States could take for the protection and promotion of Farmers' Rights, but it does not exclude other measures. Table 5 indicates some promotional measures that may be adopted at the national level.

Table 5
Measures that may be undertaken for the promotion of Farmers' Rights at the national level

- Support of conservation and development of PGRFA by traditional farmers
- Research
- Training
- Integration of traditional and modern knowledge
- Technical assistance and training
- Transfer of technology
- Improvement of access to credit

- Participation of farmers, e.g. via prior consent for access to PGRFA

As shown in Table 5 there is a wide range of possibilities for promoting the realization of Farmers' Rights. Of course, any promotional measure would imply costs that many developing countries will not be in a position to bear. The development of international cooperation may be essential to implement promotional policies effectively.

Several interesting experiences made in a number of developing countries, offer possible approaches to be followed elsewhere, including the following examples.[52]

- Participatory plant breeding (Eyzaguirre and Iwanaga, 1996; Smith, Weltzein, Meitzner and Sperling, 2000).

- Agroecological-based natural resource management for low-income farmers (Altieri and von der Weid, 2000).

- Reintroducing farmers' varieties to replace modern varieties and reduce the vulnerability created by genetic uniformity (for example, experience with rice cultivation in the Henwal Valley, India) (Singh, 1999, p. 12).

- Farmer-centred research and extension with a view to combining the knowledge and research capabilities of local farmers with those of R&D organizations (for example, centres for propagation in the region of Moramanga, Madagascar) (Tucker, 1999, p.106).

- Low-External-Input Sustainable Agricultural Practices based on participatory development and support of farmers' experimentation (for example, experiences in northern Ghana, Andean valleys and Indian Deccan Plateau) (ILEIA, 1999, p.5).

[52] See also Srivastava, Jitendra, Smith, Nigel and Forno, 1998.

VIII. CONCLUSIONS

The concept of Farmers' Rights, first introduced by the International Undertaking in 1989, has been reaffirmed in a number of international instruments and is gaining growing recognition in some proposed national laws and regulations. Efforts to win full acceptance of this concept and its implication have been at the very heart of the negotiations for the revision of the International Undertaking.

The progress made in defining and realizing Farmers' Rights since the concept was adopted, has been slow. There are complex conceptual and practical problems that need to be addressed, including the relationship with IPRs. Opinions diverge, Farmers' Rights can be regarded as a "non-IPRs mechanism", but, in fact, the rationale for the recognition of Farmers' Rights significantly differs from that applicable to IPRs. The clarification of such rationale seems essential in order to characterize and define the content of Farmers' Rights. Equity, conservation, and the preservation of farmers' traditional practices, provide sound justifications for the establishment of such Rights.

Farmers' Rights may be seen as a moral recognition of farmers' past and present contributions to making agriculture sustainable. However, they can also play a significant role as concrete *instruments* to protect and promote traditional farming activities and communities' culture and lifestyles. To this end, important issues need to be clarified in relation to the scope, content, title-holders, duration and other aspects of such Rights.

The discussions and several proposals made in the context of the revision of the International Undertaking have contributed to the identification of the nature of certain actions that may be taken at the national level in order to implement Farmers' Rights. The possible scope and characteristics of such measures need to be further developed so as to provide more concrete guidelines to governments on how best to comply with their responsibilities in this field.

The preliminary consensus reached on a draft of Article 15 of the International Undertaking, has been an important step towards the definition of Farmers' Rights as a component of national policies. That article also provides possible elements for the realization of those rights, while leaving considerable room for national governments to determine how to implement them through protective and promotional measures. Though this may lead to very different ways of approaching the matter, it also ensures that each country can adapt the concept to its own reality and needs.

There is still considerable work to be done to ensure that Farmers' Rights are recognized in practice. This will require, *inter alia*, capacity building, training, transfer of technology and a fair reward for farmers' contributions. Though the issues which are pending are important and complex there seems to be a gradual movement from the realm of ideas towards the design of such measures that can be realized in practice and which

supports and promotes farmers' activities in the conservation and improvement of plant genetic resources for food and agriculture.

ANNEX I

Article 15: Farmers' Rights

(Article 15 as negotiated during the Eighth Regular Session of the Commission, April 1999)

15.1 The Parties recognized 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.

15.2 The Parties agree that the responsibility for realizing Farmers' Rights, as they relate to Plant Genetic Resources for Food and Agriculture, rests with national governments. In accordance with their needs and priorities, each Party should, as appropriate, and subject to its national legislation, take measures to protect and promote Farmers' Rights, including:

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

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

(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.

15.3 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.

Document CGRFA-8/99.

ANNEX II

FAO Resolution 5/89 on Farmers' Rights

The Conference,

Recognizing that:

(a) Plant genetic resources are a common heritage of mankind to be preserved, and to be freely available for use, for the benefit of present and future generations,
(b) full advantage can be derived from plant genetic resources through an effective programme of plant breeding, and that, while most such resources, in the form of wild plants and old landraces, are to be found in developing countries, training and facilities for plant survey and identification, and plant breeding, are insufficient, or even not available in many of those countries,
(c) plant genetic resources are indispensable for the genetic improvement of cultivated plants, but have been insufficiently explored, and in danger of erosion and loss,

Considering that:

(a) In the history of mankind, unnumbered generations of farmers have conserved, improved and made available plant genetic resources,
(b) the majority of these plant genetic resources come from developing countries, the contribution of whose farmers has not been sufficiently recognized or rewarded,
(c) the farmers, especially those in developing countries, should benefit fully from the improved and increased use of the natural resources they have preserved.
(d) there is a need to continue the conservation (*in situ* and *ex situ*), development and use of the plant genetic resources in all countries, and to strengthen the capabilities of developing countries in these areas.

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

(a) ensure that the need for conservation is globally recognized and that sufficient funds for these purposes will be available;
(b) assist farmers and farming communities, in all regions of the world, but especially in the areas of origin/diversity of plant genetic resources, …

(c) allow farmers, their communities, and countries in all regions, to participate fully in the benefits derived, at present and in the future, from the improved use of plant genetic resources, through plant breeding and other scientific methods.

(Adopted on 29 November 1989)

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