

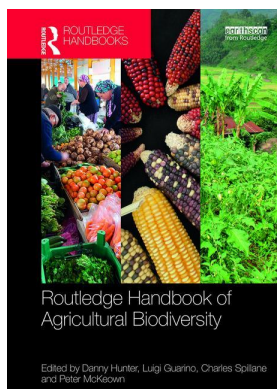
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28

‘STEWARDSHIP’ OR ‘OWNERSHIP’

How to realize farmers’ rights?

Regine Andersen

Introduction

Over the last ten millennia, farmers from all cultivated regions of the world have contributed to developing the enormous diversity of crop genetic diversity that is available today. This has been recognized in the International Treaty on Plant Genetic Resources for Food and Agriculture (ITPGRFA) as the basis for food and agriculture production throughout the world (Article 9). During the last hundred years, division of labour within the agricultural sector has increased, leading to the professionalization of plant breeding and the development of high yielding varieties. These varieties have boosted agricultural production while simultaneously wiping out untold other varieties. Breeders’ innovations have been protected and promoted with intellectual property rights, whereas the legal space for farmers to continue their contributions to the conservation and sustainable use of crop genetic resources has been reduced, and mechanisms to promote their contribution are lacking. The ITPGRFA was meant to balance this situation with its Multilateral System of Access and Benefit-Sharing and its provisions on farmers’ rights. However, the benefit-sharing mechanism is hardly functioning, and farmers’ rights are only vaguely addressed in the Treaty. This reflects the great controversies that have surrounded these issues over the years of negotiation and implementation. As an international regime, the Treaty provides an arena for developing international norms on the management of plant genetic diversity for food and agriculture. This is an ongoing process and depends on interests and power, as well as our capabilities of framing the issues and the challenges at stake. In this chapter, I provide a historical overview of the process related to Farmers’ Rights under the Treaty and present a model for understanding these developments through a ‘stewardship’ and an ‘ownership’ approach. I suggest that a clear grasp of these approaches and their potential consequences is important to develop international norms and regulations that really contribute the realization of Farmers’ Rights.

The historical development of farmers’ rights

The enormous diversity of food crops available today has developed through careful selection of seeds and propagating material and exchange over short and long distances, in close interaction with nature. At the core of this fabulous innovation are the farmers of the last ten millennia and more, the custodians of crop genetic diversity (Andersen, 2016). An estimated 7,000 species are now used as

crops worldwide (Wilson, 1992; Meldrum and Padulosi, Chapter 18 of this Handbook), with great diversity within species. The continuous growth of crop diversity was, however, brought to a halt in the last century, when modern plant breeding introduced genetically homogenous high-yielding varieties. Given the great value of crop genetic resources for food security, this caused international concern: plant genetic diversity has been argued to be more important for farming than any other environmental factor because it enables farmers to adapt to changing environmental conditions, including climate change (Andersen, 2008; Fujisaka et al., 2009; United Nations, 2009).

In response to the rapid erosion of crop genetic resources, the International Board for Plant Genetic Resources (IBPGR) was founded in 1974 under the auspices of the Consultative Group on International Agricultural Research (CGIAR).¹ Located at the FAO headquarters in Rome, it drew on staff designated for the FAO program on genetic resources conservation. Collecting missions were accelerated, and gene banks were constructed and expanded at national, regional and international levels. (FAO, 1986, 1998). Only 15% of the samples collected were designated for storage in developing countries, whereas 85% were stored in industrialized countries and in the gene banks of the international agricultural research centres (IARCs) of the CGIAR (Fowler, 1994), most of which were then located in the developed world. The IBPGR and the IARCs did invaluable work in saving fast-eroding plant varieties from extinction – but in the process, developing countries lost control over their own genetic resources. This led to the FAO Conference deciding in 1981 to draft the elements of a legal convention for the establishment of an international gene bank. This was reported back to the FAO Conference two years later (Fowler, 1994).

During the negotiations, a major conflict lay between those in favouring plant breeders' rights over improved plant varieties and those in favour of unrestricted access to all varieties (Fowler, 1994, pp. 187–191). The United States and representatives of the seed industry were the leading proponents of the former stance, while developing countries made up the latter position. This point is worth noting since most developing countries were later to change their position on access in order to provide for control over their genetic resources and benefits from their use, which required a stricter regulation of access. (This position was voiced a decade later under the Convention on Biological Diversity [CBD] and in response to the emerging Agreement on Trade-Related Aspects of Intellectual Property Rights [TRIPS Agreement], which was then being negotiated in the Uruguay Round leading to the establishment of the World Trade Organization [WTO]. This is an important background for understanding the access and benefit sharing arrangements which eventually emerged under the CBD and its Nagoya Protocol.)

When the International Undertaking on Plant Genetic Resources was adopted in 1983 by the 22nd session of the FAO Conference, it was adhered to by 113 countries. The adoption of the International Undertaking can be seen as a partial victory for developing countries because it was achieved despite the opposition of major industrialized countries led by the United States. The victory was only partial, however, because the new agreement ended up as a legally non-binding undertaking, without the adherence of industrialized countries that were important to the international management of PGRFA.

The objectives of the International Undertaking were to ensure that PGRFA would be explored, preserved, evaluated, and made available for plant breeding and scientific purposes. The International Undertaking was based on 'the universally accepted principle that plant genetic resources are a heritage of mankind and consequently should be available without restriction'. The two-pronged goal was clear: conservation and access.

Along with the International Undertaking, the Commission on Plant Genetic Resources (CPGR) was also established.² The CPGR was an intergovernmental body charged with ensuring the implementation of the International Undertaking and monitoring it, especially the operation of international arrangements for the management of PGRFA.

The main reason that developed countries did not adhere to the International Undertaking³ was its statement that genetic resources should be available without restriction, which was seen to be in conflict with plant breeders' rights. Therefore, countries could adhere to the International Undertaking only if the text was modified in some way (Andersen, 2005). It was in this context that the concept of farmers' rights was taken up in the FAO for the first time. The first documented use of the concept was at a meeting of the working group in 1986 (FAO, 1986) and arose as a response to the increased demand for plant breeders' by drawing attention towards the unremunerated innovations of farmers that were seen as the foundation of all modern plant breeding. The working group produced a report on how to deal with the reservations towards the International Undertaking and on how to attract greater adherence (FAO, 1986, para. 8), the third chapter of which is devoted to farmers' rights. It not only linked the issue to the question of access to genetic resources but also revealed substantial uncertainties as to the understanding of the concept, and called for further elucidation. At the second meeting of the working group in 1987, farmers' rights were hence addressed in greater detail, with particular attention to the need to reward farmers for their contribution to PGRFA. The rights holders were not to be single farmers or communities but, rather, entire peoples – that is, a form of a collective right. This concept can be regarded as the foundation for the stewardship approach to farmers' rights that is discussed later in this chapter.

The idea of developing farmers' and plant breeders' rights simultaneously in order to balance the two also emerged:

The Working Group concurred that Breeders' Rights and Farmers' Rights were parallel and complementary rather than opposed and that the simultaneous recognition and international legitimization of both these rights could help to boost and speed up the development of the people of the world.

(FAO, 1986, para. 12)

At the second session of the CPGR in 1987, the contact group agreed that, 'while the so-called "farmers' rights" could not yet be given a precise definition, some sort of compensation for their most valuable contribution to the enrichment of the plant genetic resources of the world was well-founded and legitimate'. It was pointed out that one way of giving practical recognition to this right could be via a form of multifaceted international cooperation that included freer exchange of plant genetic resources, information and research findings, and training. Another way could be through monetary contributions for programmes furthering the objectives of the International Undertaking (FAO, 1986, Appendix G).

Thus, the contact group did not arrive at a definition of 'farmers' rights' but outlined some means of according them practical recognition within the framework of the International Understanding.

Nevertheless, deep controversies over these issues remained between the countries of the Organisation for Economic Development and Co-operation (OECD), on the one hand, and the group of developing countries and their NGO supporters, on the other. These controversies were also fuelled by the Uruguay Round of the General Agreement on Tariffs and Trade (GATT), which ultimately led to the WTO, where intellectual property rights (IPR) were brought into the negotiations by the United States.⁴ During the first years of the Uruguay Round, which started in 1986, an agreement on IPRs was strongly opposed by several developing countries. Indeed, by the 1988 mid-term review of the Round, it was determined that such an agreement would be impossible (Evans and Walsh, 1994). During 1989, however, those developing countries that were in opposition changed their positions and dropped

their earlier resistance to an agreement on IPRs. This radical shift clearly resulted from their recognized need to make concessions within the negotiations, since a consensus on all of the agreements would be needed before the package could be adopted (Yusuf, 1998). Thus, the resulting Agreement on Trade-Related Aspects of Intellectual Property Rights (TRIPS Agreement) excluded from patentability plants and animals (other than micro-organisms) and essential biological processes for the production of plants and animals (other than non-biological and micro-biological processes), but it did oblige members to provide for the protection of plant varieties either by patents or an effective *sui generis* system, or a combination of these (Article 27.3.b). Even though several different *sui generis* systems are in operation, the term has most often been used with respect to the International Union for the Protection of New Varieties of Plant (UPOV) (Andersen, 2008, pp. 164–168).

The developments at the FAO Conference in 1989 should be seen in the light of the Uruguay Round, as what was sacrificed there was taken up again at the FAO in other ways. Two resolutions were adopted by this Conference: Resolution 4/89 on the Agreed Interpretation of the International Undertaking and Resolution 5/89 on Farmers' Rights (both Resolutions annexed to the International Undertaking). These Resolutions were adopted by consensus, but arose only as a result of tense negotiations: there had again been fierce resistance to the idea of plant breeders' rights among developing countries, and the interpretations that provided for the acceptance of these rights could only be adopted with the simultaneous recognition of farmers' rights (Andersen, 2005).

Resolution 4/89 stated that 'Plant Breeders' Rights as provided for under UPOV . . . are not incompatible with the International Undertaking' (para. 1) and that

states adhering to the Undertaking recognize the enormous contribution that farmers of all regions have made to the conservation and development of plant genetic resources, which constitute the basis of plant production throughout the world, and which form the basis for the concept of Farmers' Rights.

(para. 3)

Resolution 5/89 represented a milestone as the first recognition by the FAO Conference of farmers' contributions to the global pool of genetic diversity, and indeed outlined the contents and implications of the concept itself (**Box 28.1** *Extract from Resolution 5/89, Farmers' Rights*).

In 1991, a new annex to the International Undertaking was adopted as Resolution 3/91 (FAO, 1991). This time, the Conference stated that the concept of genetic resources as the heritage of mankind, as applied in the International Undertaking, was subject to the sovereignty of states.⁵ This interpretation might be seen to have been heavily influenced by the ongoing negotiations for a Convention on Biological Diversity (CBD), which was adopted only six months later and which also incorporated the principle of national sovereignty in Article 3. As a result of the CBD negotiations (and in response to the emerging intellectual property regime), negotiators from developing countries demanded control over access to their genetic resources as well as the fair and equitable sharing of the benefits arising from their use. In many circles, this demand brought about a shift in thinking on genetic resources, from a perspective based on the common heritage of mankind to a bilateral approach to benefit sharing, which was in turn a response to the IPR regime emerging from the Uruguay Round (Andersen, 2008). This shift can be seen as the beginning of the 'ownership approach' to farmers' rights, as set out later in this chapter.

After Resolution 3/91, FAO members stated that the conditions for access to plant genetic resources required further clarification (FAO, 1991, para. d). The original purpose of the International

Box 28.1 Extract from Resolution 5/89, Farmers' Rights

The FAO Conference . . . [e]ndorses 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:

- ensure that the need for conservation is globally recognized and that sufficient funds for these purposes will be available;
- assist farmers and farming communities, in all regions of the world, but especially in the areas of origin/diversity of plant genetic resources, in the protection and conservation of their plant genetic resources, and of the natural biosphere;
- 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.

(FAO, 1989)

Undertaking – which was to ensure unrestricted access to genetic resources – was no longer clear, and the principles of ‘the common heritage of mankind’ that had controlled these resources were blurred.

The adoption of the Convention on Biological Diversity (CBD) in 1992 was a decisive event for the development of the International Undertaking regime. The CBD became the first legally binding international agreement to address the sustainable management of biological diversity worldwide⁶ and was developed as a stand-alone convention as well as a framework convention (Andersen, 2008).

At the Conference for the Adoption of the Agreed Text of the Convention on Biological Diversity in May 1992, the Nairobi Final Act was adopted (UNEP, 1992), including a resolution on the inter-relationship between the CBD and the promotion of sustainable agriculture (Resolution 3). This resolution recommended that ways and means be explored to develop complementarity and cooperation between the CBD and the Global System for the Conservation and Sustainable Use of Plant Genetic Resources for Food and Sustainable Agriculture (UNEP, 1992, para. 2), which had been established under the FAO with the International Undertaking acting as a central component. Finally, the resolution recognized the need to seek solutions to two outstanding matters concerning PGRFA: (a) access to *ex situ* collections that had not been acquired in accordance with the CBD and (b) the question of farmers' rights.

At its 27th session in 1993, the FAO Conference accordingly requested the FAO director-general to provide a forum for negotiations for harmonizing the International Undertaking with the CBD (Resolution 7/93): this was the point of departure for the lengthy negotiations that finally resulted in the adoption of the ITPGRFA in 2001.

Revising the International Undertaking in harmony with the CBD was a challenging task. The specific features, uses, and management needs of PGRFA had to be considered.⁷ PGRFA constitute the basis of farming and are, except for their wild relatives, domesticated resources.

Since access to PGRFA is a condition for the further domestication, and thus continued existence, of these resources, expeditious facilitation of access was a major concern to the negotiators. To ensure access, it was also important that transferred PGRFA should remain in the public domain and not be made subject to exclusive IPRs. A means of benefit sharing other than that envisaged under the CBD had to be found, focussed on those who conserve and sustainably use the resources, rather than on the specific providers. This was because (a) for most crops, it is difficult to identify the countries of origin (the countries entitled to provide access under the CBD; Andersen, 2001; Fowler, 2001); (b) all countries are interdependent on PGRFA, so a complicated system of transfers between providers and recipients would hamper expeditious access (Palacios, 1998); (c) rewarding only the current providers of genetic resources would not be fair to farmers who maintain or develop genetic diversity that will benefit future generations.

Throughout the negotiations, farmers' rights were one of the most contested issues. Most developing countries, as well as some industrialized countries (e.g. Norway) had advocated comprehensive and internationally binding recognition of farmers' rights, a stance opposed by countries such as the United States and Australia. The controversies were complex and a breakthrough seemed unlikely when, in 1999, negotiators from the North decided to meet some of the demands from the South – and this compromise led to the long-awaited breakthrough. What resulted was the final text of the ITPGRFA on farmers' rights as we know it today.⁸

When the ITPGRFA was finally adopted in November 2001, many observers had almost given up on ever reaching a consensus. Indeed, full consensus proved impossible, and the Treaty had to be put to the vote: 116 countries voted in favour of the Treaty and two countries abstained (Japan and the United States). The ITPGRFA was the first legally binding agreement to deal exclusively with PGRFA, and it was also incidentally the first international treaty of the new millennium.⁹ Since then, both the United States and Japan have revised their policies and also ratified.¹⁰ The ITPGRFA entered into force on 29 June 2004,¹¹ and as of October 2016, it has been ratified by 141 states.

The objectives of the ITPGRFA are the conservation and sustainable use of PGRFA as well as the fair and equitable sharing of benefits arising from their use – in harmony with the CBD – for sustainable agriculture and food security (Article 1). The Treaty sets out that the contracting parties shall promote an integrated approach to the exploration, conservation, and sustainable use of PGRFA (Article 5): suggested measures include improving *ex situ* conservation of plant varieties and wild crop species and providing farmers with support for on-farm management and conservation of PGRFA – the latter being particularly relevant for farmers' seed systems and farmers' rights.

The ITPGRFA stipulates that contracting parties shall develop and maintain appropriate policies and legal measures that promote sustainable use of PGRFA (Article 6). This provision is an obligation for all contracting parties and may include such measures as promoting diverse farming systems; encouraging research that enhances and conserves biological diversity; developing plant breeding with the participation of farmers in developing countries; broadening the genetic bases of crops; increasing the range of genetic diversity available to farmers; expanding the use of local and locally adopted crops and underutilized species; making wider use of a diversity of varieties and species in on-farm management, conservation, and sustainable use; and adjusting the breeding strategies and regulations on variety release and seed distribution.

The ITPGRFA also sets out a Multilateral System of Access and Benefit Sharing (MLS) (in Articles 10–13¹²) which covers 35 food crops and 29 forage plants that are in the public domain and under the management and control of the contracting parties (the Annex I crops), see Engels and Rudebjer, Chapter 41 of this Handbook.¹³

In the preamble to the ITPGRFA, the contracting parties affirm that the past, present, and future contributions of farmers in all regions of the world – particularly those in the centres of origin and diversity – in conserving, improving, and making available these resources, constitute the basis of farmers' rights. They also affirm that the rights recognized in the ITPGRFA to save, use, exchange, and sell farm-saved seed and other propagating material, to participate in relevant decision making, and to encourage fair and equitable benefit sharing are fundamental to the realization of farmers' rights. Article 9 of the ITPGRFA recognizes the enormous contribution of farmers in the conservation and development of PGRFA and that this contribution constitutes the basis of food and agriculture production throughout the world. It explicitly states that responsibility for the implementation of farmers' rights, as they relate to the management of PGRFA, rests with national governments. Certain measures to protect and promote farmers' rights are suggested, for example the protection of traditional knowledge, the right to participate in equitable benefit sharing, and the right to participate in decision making at the national level. Also the rights that farmers have to save, use, exchange, and sell farm-saved seeds and propagating materials are addressed, but without any particular direction. As these provisions are vague, contracting parties, in particular developing countries, have sought guidance and assistance for the implementation of Farmers' Rights since the entry into force of the Treaty, without much effect so far. There have, however, been consultation processes between the sessions of the Governing Body and negotiations related to the resolutions from the Governing Body that contribute to shaping a common ground of understanding of what it takes to realize farmers' rights. In order to make progress in this regard, it may be useful to analyze the negotiations and discussions along the lines of a 'stewardship' and an 'ownership' approach to realizing farmers' rights.

Two approaches to the realization of farmers' rights under the Treaty

As described earlier, farmers' rights constitute a cornerstone of the ITPGRFA.¹⁴ Achieving the conservation and sustainable use of crop genetic resources as set out in Article 1 depends decisively on farmers and their ability to maintain these resources *in situ* on-farm, which in turn depends on farmers' rights. The provisions on access and benefit sharing under the Treaty are vital to the realization of farmers' rights but as the aforementioned historical account outlines, the topic of Farmers' Rights has been discussed in the contexts of different rationales, resulting in different perceptions on their main contents. Two basic ways of approaching the concept of Farmers' Rights have been advanced previously (Andersen, 2006, 2016) and are further developed here.

The 'stewardship approach'

The stewardship approach describes the idea that agro-biodiversity as a principle belongs to the common heritage of mankind and that it should be shared for the common good as part of the public domain. As such, the stewardship approach can be said to have been the dominant rationale throughout the history of agriculture until the advent of intellectual property rights. In terms of farmers' rights, a stewardship approach would refer to the rights that farmers must be granted collectively in order to enable them to continue as stewards and innovators of agro-biodiversity and reward them for this contribution. A core idea is to uphold and enhance the 'legal space' required for farmers to continue this role. Another core idea is that farmers involved in the maintenance of agro-biodiversity – on behalf of their generation and for the benefit of all mankind – should be rewarded and supported for their contributions, and that this principle should constitute the basis of a benefit-sharing system.

The 'ownership approach'

The ownership approach evolved when the interests in the commercial use of genetic resources increased along with the growing economic stakes of biotechnologies in the second half of the last century, followed by demands for intellectual property rights to protect and promote inventions. As intellectual property systems are costly institutions, the capacity of developing countries, rich in genetic resources, to develop and effectively use such systems was limited (Andersen, 2008). These emerging power asymmetries were met with much protest against intellectual property rights to genetic resources from the 'Global South', along with the demands of securing control over their resources through systems regulating access on mutually agreed terms and prior informed consent between purported owners and users of these resources. There should be fair and equitable sharing of the benefits arising from the use of genetic resources between purported owners and users of these resources. This is the basis of the ownership approach, which describes the idea that establishing individual or collective ownership to genetic resources provide important incentives to promote breeding as well as the conservation and sustainable use of agro-biodiversity. Furthermore, it enables control over the genetic resources that are covered with ownership rights for the holders of such rights, the purported owners, and makes it possible to trade with them as well as to attract benefit sharing. In terms of farmers' rights, an ownership approach would establish the right of farmers to be rewarded on an individual or collective basis for genetic material that has been obtained from their fields and used in commercial varieties and/or protected with intellectual property rights. The idea is that such a reward system is necessary to enable the equitable sharing of benefits arising from the use of agro-biodiversity and to establish an incentive structure for the continued maintenance of this diversity. Access and benefit-sharing legislation and farmers' intellectual property rights would be central instruments.

The distinctions between the two approaches are not clear-cut. An evolving ownership approach to the management of crop genetic resources will enable different actors to exclude each other from the access to, and use of, these vital resources, and thereby reduce the legal space for all to contribute to the conservation and sustainable use of crop genetic diversity (Andersen, 2008). A stewardship approach would maintain and enhance the legal space and possibilities to contribute to the conservation and sustainable use of crop genetic resources. The paradox is, however, that without sufficient measures to avoid it, the stewardship approach might result in genetic resources and information from the public domain being privatized and thus becoming subject to the ownership approach. Whereas the stewardship approach may result in misappropriation of crop genetic resources by third parties, the ownership approach may result in disincentives to share crop genetic resources among farmers and thus reduce the millennia-old traditions of seed exchange and distributions that have contributed to the agro-biodiversity we have today. It is important to understand not only the different rationales behind the two approaches, but also how they can be combined to achieve the conservation and sustainable use of genetic resources, the sharing of benefits arising from the use of these resources, and the realization of farmers' rights.

The next section will examine in detail the four elements of farmers' rights – namely, protection of traditional knowledge, benefit sharing, participation in decision making, and the rights to save, use, exchange, and sell farm-saved seed – and how they can be interpreted under the stewardship and ownership approaches. It will also discuss how the two approaches can be combined to achieve the goals of the International Treaty.

Protecting farmers' traditional knowledge

Understanding traditional knowledge related to plant genetic resources for food and agriculture requires a holistic understanding of the dynamic nature of this knowledge, including factors such as livelihoods, cultures, and landscapes. Traditional knowledge is vital to understanding the properties of plants, their uses, and how they are cultivated. It includes knowledge on how to select seeds and propagating material, how to store them, and how to use them for the next harvest. Thus, it also comprises the basic necessities for farmers to be able to maintain crop genetic diversity in the fields. Article 9.2(a) is the only provision on traditional knowledge in the ITPGRFA, and provides for 'the protection of traditional knowledge relevant to plant genetic resources for food and agriculture'. The Treaty provides no further guidance on how this article can be interpreted and operationalized. However, since the objectives of the ITPGRFA are to be implemented in harmony with the CBD (Article 1), Article 8j of the CBD is also relevant in this context. According to this article, each contracting party shall – as far as possible and as appropriate and pursuant to national legislation – respect, maintain, and preserve traditional knowledge, innovation, and practices and promote their wider application, with the approval of the holders of such knowledge, innovations, and practices. The equitable sharing of benefits from its use should be encouraged.

Understanding the challenges related to the protection of traditional knowledge has significantly influenced current views about how Article 9.2(a) can be implemented. Examining the contents of this right from the stewardship and an ownership approaches suggests rather different possibilities:

- 1 *Protection against extinction* means ensuring that traditional knowledge is kept alive and can further develop among farmers. Under a stewardship approach, the best way to protect traditional knowledge from the threat of extinction is to share it – a widespread approach in the North – and, thus, the motto: 'protection by sharing'. Measures for the sharing of traditional knowledge include:
 - Seminars and gatherings among farmers to share knowledge;
 - Seed fairs for the exchange of propagating material and associated knowledge;
 - Documentation of knowledge in seed catalogues and registries;
 - Documentation of knowledge in books, magazines, and on websites; and
 - Documentation of knowledge in gene banks and making such knowledge accessible.
- 2 *Protection against misappropriation* is a different approach. It is based on the anticipation that farmers' varieties, and associated knowledge, could be appropriated by commercial actors without prior informed consent from the holders of this knowledge and benefit-sharing on mutually agreed terms. Thus, the sharing of knowledge should not take place unless measures are in place to avoid this. This view is often accompanied by a widespread regret that the fear of misappropriation has made it necessary to be cautious. An ownership approach to protecting traditional knowledge would mean providing farmers with the right to act against misappropriation of their knowledge and to decide over the use of this knowledge and related plant genetic resources.

In order to consider the two approaches, it is important to assess the threat of misappropriation of crop genetic resources. To what extent is such misappropriation taking place? According to existing documentation, it seems that, in developing new varieties, commercial plant breeders tend

to use already improved varieties from their own stocks or from other plant breeders. Farmers' varieties are generally regarded as being difficult to work with due to their genetic heterogeneity. Only when particular traits are sought – those not found in their own stocks or other improved varieties – are farmers' varieties deemed necessary. When they are sought, they are normally obtained from gene banks and not from farmers' fields or markets. In gene banks, little traditional knowledge is typically included in the passport data. Thus, traditional knowledge related to crop genetic resources is still rarely used in commercial breeding. Generally, the genetic foundation for commercial plant breeding appears to be narrowing (Esquinas-Alcázar, 2005, p. 948). This situation, together with the effects of climate change, may well change demand for landraces and farmers' varieties – together with their associated knowledge – in the future (Esquinas-Alcázar, 2005).

In any case, based on the ownership approach, protection of traditional knowledge would mean offering ownership status to farmers with the right to act against misappropriation and to decide over the use of their knowledge and related plant genetic resources. In Norway, farmers stress that their traditional knowledge is about to disappear. Therefore, protection, as they understand it, must ensure that such knowledge does not die out (Andersen, 2011). To achieve this, knowledge must be shared in the broadest manner possible. Norwegian farmers are thus prone to a stewardship approach. They fear that an ownership approach to protection could provide disincentives to sharing knowledge between and among farmers. Proponents of the stewardship approach insist that ownership in this context has been an alien idea among farmers and that it represents a profound break with traditional perceptions.

Ultimately, the measures that are chosen should reflect the situation. What is most important today, with the rapid erosion of traditional knowledge, is to protect traditional knowledge related to crop genetic resources from becoming extinct. Nevertheless, avoiding misappropriation is important, and considered a condition in many communities for sharing knowledge. For this purpose, we need to take a closer look at what misappropriation of traditional knowledge may be about in the context of the ITPGRFA and the multilateral system on access and benefit sharing.

Basically, there are three forms of action that farmers tend to regard as misappropriation: (a) if farmers' varieties and related knowledge are used in commercial plant breeding without recognizing the farmers in question; (b) if plant breeders obtain IPR to farmers' varieties, thereby removing the varieties from the public domain and the traditional uses of farmers; and (c) if plant breeders profit from the use of farmers' varieties and related knowledge without sharing the benefits with the farmers in question.

Measures to avoid such misappropriation could include:

- *Certifying recognition*: Recognition is very important to many farmers, particularly in the South. Ways of showing recognition include naming varieties after the farmers or communities in question, providing information about the farmers on the wrapping of products, and/or rewarding farmers for their contribution in terms of benefit sharing (see discussion later in this chapter) or with awards. With respect to the first measures, it may be difficult to identify the individual farmers in question since several farmers/communities/regions may have maintained a crop variety or contributed to its development. Awards are different in this regard since they can often be awarded for the maintenance of diversity and related knowledge, as such, and not necessarily for specific varieties.
- *Avoiding breeders' claims to intellectual property rights on farmers' varieties*: Documenting plant varieties and their related knowledge is normally a useful way to establish prior art. It means that no one can claim intellectual property rights over those varieties in the form in which they are documented. This measure is, to date, the most promising means of ensuring protection against the misappropriation of genetic resources and associated traditional

knowledge while, at the same time, promoting the sharing of knowledge. Plant variety registries have been established locally in many countries – for example, in the Philippines and in Nepal (Andersen and Winge, 2008). The formulation of legal clauses in catalogues of genetic material and associated material is also a measure to avoid misappropriation, as has been done with great success in Peru (see following paragraphs).

- *Ensuring benefit sharing:* Under the ITPGRFA, benefit sharing is to take place according to the Standard Material Transfer Agreement in the multilateral system. The benefits should be shared with farmers in developing countries and in countries with economies in transition who conserve and sustainably use crop genetic diversity and related knowledge (not between specific providers of genetic resources and the users of these specific resources). It should be noted, however, that there are many questions related to benefit sharing, which will be addressed in the following paragraphs.

Other measures for protection against misappropriation, as provided under the Convention on Biological Diversity and its Nagoya Protocol in access and benefit-sharing could include regulating access to genetic resources and associated traditional knowledge with measures on prior informed consent and mutually agreed terms, and could introduce ‘user country measures’ such as conditions for intellectual property rights and certificates of origin for genetic resources and following the appropriate legal procedures for access to genetic resources in provider countries.

There exist many useful and inspiring databases and catalogues on crop genetic resources and associated traditional knowledge around the world. These sources also establish prior art with regard to farmers’ varieties and contribute to benefit sharing by making the knowledge accessible. Some of them also give explicit recognition to farmers. An impressive example is the potato catalogue from Huancavelica, Peru (Centro Internacional de la Papa and Federación Departamental de Comunidades Campesinas, 2006; see also Scurrah et al., 2008). Other success stories include *in situ* conservation in Switzerland, which has combined on-farm conservation of a huge number of crop varieties with a range of measures for the dissemination of information regarding the varieties and the associated traditional knowledge (Andersen and Winge, 2008); the community registry at Bohol, the Philippines, which is helping to keep traditional knowledge alive and accessible (Andersen and Winge, 2013); and information and seminar activities in Norway that are helping to disseminate traditional knowledge (Andersen and Winge, 2008).

These models have succeeded in implementing farmers’ rights with respect to traditional knowledge that is associated with crop genetic resources. However, they are only a beginning. Much more is needed to keep such knowledge alive among farmers and to promote its further development. In many countries, it would appear to be necessary to raise awareness about the importance of traditional knowledge related to crop genetic resources and to develop strategies on how to maintain and disseminate traditional knowledge in a systematic way before such knowledge is lost completely.

Finally, whether a stewardship approach, an ownership approach, or a combination of the two is chosen, it is important to ensure that it does not provide any disincentives to the sharing of knowledge and genetic resources among farmers and that it does not contribute to genetic erosion or the loss of traditional knowledge.

Ensuring equitable benefit sharing

Article 9.2(b) of the ITPGRFA concerns a farmer’s right to participate equitably in the sharing of benefits arising from the utilization of plant genetic resources for food and agriculture. To interpret this provision, some guidance can be found in Article 13 on benefit sharing in the multilateral system. This article lists the most important benefits as: (a) facilitated access to plant

genetic resources for food and agriculture; (b) the exchange of information; (c) access to, and transfer of, technology; (d) capacity building, and (e) the sharing of monetary and other benefits arising from commercialization. Moreover, it specifies that benefits arising from the use of plant genetic resources for food and agriculture that are shared under the multilateral system should flow primarily, directly, and indirectly to farmers in all countries – especially in developing countries and countries with economies in transition – who conserve and sustainably utilize plant genetic resources for food and agriculture.

Whereas these provisions all relate to the multilateral system and not directly to the provisions on farmers' rights in the ITPGRFA, they reflect a line of thought on benefit sharing that is relevant for interpreting Article 9.2(b) as a measure to protect and promote farmers' rights. First, it is clear that there are many forms of benefit sharing, of which monetary benefits compose only one part. Second, the benefits are not only to be shared with those few farmers who happen to have plant varieties that are utilized by commercial breeding companies but also with farmers in all countries that are engaged in the conservation and sustainable use of agro-biodiversity.

Measures to ensure the equitable sharing of benefits arising from the use of genetic resources can be designed in many ways. Under an ownership approach, these measures would mandate the development of direct benefit sharing in which the benefits would be shared directly between the purported 'owners' and 'buyers' of genetic resources – based on a prior informed consent on mutually agreed terms (as set out in the CBD).¹⁵

In the South, policies on benefit sharing – if any – are normally present in the laws and regulations on access to biological resources, which are sometimes found in the national legislation on the protection of biological diversity. Countries with legislation on indigenous peoples' rights often include provisions on benefit sharing in these laws, which then also cover indigenous farmers. Most of these regulations compose forms of direct benefit sharing between the 'owners' and the 'buyers' of genetic resources, often based upon prior informed consent on mutually agreed terms, as set out in the CBD. However, despite all of these efforts, so far there have hardly been any examples of direct monetary benefit sharing between the providers and recipients of plant genetic resources for food and agriculture as a result of such legislation.

There are, however, other ways of sharing benefits, which are often referred to as indirect approaches to benefit sharing. These approaches are in line with FAO's mandate in the early days of negotiations on farmers' rights, inspired by a stewardship approach. A basic principle was that benefits should be shared among 'entire peoples', the stewards of plant genetic resources in agriculture and society at large (FAO, 1987, Appendix F, section 8). This principle is based on the idea that it is farmers' legitimate right to be rewarded for their contributions to the global genetic pool from which we all benefit, and it is an obligation of the international community to ensure that such recognition and reward is provided.

Where should the funds come from to enable such benefit sharing? First of all, as already noted, the benefit-sharing mechanism under the multilateral system specifies that the benefits from the system should flow primarily to farmers in all countries, especially in developing countries and countries with economies in transition, who conserve and sustainably use crop genetic resources (Article 13.3). The basic principles of the multilateral system is that the countries that are parties to the ITPGRFA include all the genetic material of their Annex I crops that are in the public domain and under their control in the multilateral system. This material is freely accessible upon signing a standard material transfer agreement. In order for this material to remain in the public domain, it is not allowed to seek intellectual property rights on the material in the form it is received. If recipients develop it further and then patent it, then a mandatory fixed payment is to be paid to the benefit-sharing fund under the multilateral system. If the developed material is commercialized, but without patenting, then a contribution is voluntary. Other voluntary

payments may also be paid to the benefit-sharing fund, and most of the funds received so far belong to this latter category. However, it is uncertain how much funding can be generated by this mechanism and even whether this mechanism will be successful and make a substantial difference to the farmers it is supposed to be helping.

The funding strategy of the ITPGRFA (as set out in Article 18) is another important source insofar as it supports the implementation of conservation (Article 5), sustainable use (Article 6), and farmers' rights (Article 9), which would all greatly benefit diversity farmers. However, since there are to date no fixed mandatory contributions, it is uncertain how much money the fund can generate. Thus, for the time being, Article 7 on international cooperation and Article 8 on technical assistance are important provisions on benefit sharing. In these articles, the contracting parties agree to promote the provision of technical assistance to developing countries and countries with economies in transition, with the objective of facilitating the implementation of the ITPGRFA. The third source of benefit sharing, and the most successful at the present time, is official development assistance (Brush, 2005; Andersen, 2008). Official development assistance can be channelled through bilateral or multilateral cooperation or through NGOs. There are many examples of NGO-channelled support, which have greatly supported diversity farmers in the South and thus contributed to benefit sharing in many developing countries.

In an international stakeholder survey carried out in 2005, the most frequently mentioned non-monetary benefits were (Andersen, 2005):

- access to seeds and propagating material and related information;
- participation in the definition of breeding goals;
- participatory plant breeding with farmers and scientists collaborating;
- stronger and more effective farmers' seed systems;
- conservation activities, including local gene banks; and
- enhanced utilization of farmers' varieties, including market access.

(Andersen, 2005)

This 2005 survey showed that – for many reasons – benefit sharing is more promising when the primary target for funding is the farming community that actually contributes to the maintenance of plant genetic diversity rather than the providers of genetic resources to commercial plant breeders. Since then, many organizations have engaged in such forms of benefit sharing, as documented in Andersen and Winge (2013) and Vernooij et al. (2015), for example.

Still, the dominant view on benefit sharing in many countries, particularly in the South, is the ownership approach, whereby direct benefit sharing between purported 'owners' and 'buyers' is the preferred mode. While such an ownership approach might seem to be fair and equitable as a point of departure, there are many difficulties with it. These difficulties include the facts that:

- it is difficult to identify exactly who should be rewarded;
- the demand for farmers' varieties among commercial breeders is limited, so relatively few farmers would benefit and most of the contributors to the global pool of genetic resources would remain unrewarded;
- the approach could lead to disincentives to share seeds and propagating material among farmers because of the expectations of personal benefit or the benefit to a community;
- although several countries in the South have enacted legislation on direct benefit sharing, no instances of such benefit sharing have been reported so far with regard to agro-biodiversity; and
- in many countries, the transaction costs of establishing access and benefit-sharing legislation have been considerable.

Thus, the ownership approach has not proven to be especially promising so far, and these concerns must be taken into account when measures are designed to ensure benefit sharing that is in line with the intentions of the ITPGRFA.¹⁶

According to the findings of the Farmers' Rights Project, three categories of measures appear to be particularly important when seeking to operationalize the concept of benefit sharing with regard to farmers' rights (Andersen, 2009). The first category ensures that *incentive structures* in agriculture favour farmers who conserve and sustainably use plant genetic resources for food and agriculture. Such incentive structures might include extension services to support particularly the farmers of the first group, loans on favourable conditions for the purchase of farm animals and other necessary input factors, the facilitation of marketing products from diverse varieties, and other infrastructure measures. A strategy for such incentive structures would substantially support farmers who conserve and sustainably use agro-biodiversity. This has not been done systematically in any country so far. In fact, existing incentive structures have generally proven to be detrimental to farmers' customary practices. However, there are also many local-level initiatives that can provide good models of how incentive structures could be designed on a larger scale.

The second category would create *reward and support systems* that would enable farmers to benefit significantly from their contributions to the global genetic pool, through added value to the crops they grow and through improved livelihoods and increased income. There currently exist many small-scale programs and projects that demonstrate the enormous potential in this regard – such as community seed banks, seed fairs, and registries (to ensure access); dynamic conservation programs coupled with participatory plant breeding; plant breeding and farmers' field schools; capacity building; and various marketing activities. Today, however, the benefit of these programs reaches a limited number of farmers. A major challenge is to scale up these activities so that all farmers engaged in the maintenance of agro-biodiversity can share in these benefits. Examples of successful upscaling of such programmes has, however, been possible, as has happened in Nepal (Vernooy et al., 2015), for example. NGOs and IGOs are central in such efforts, and there are also examples of state entities engaging in the work.

The third category would ensure the *recognition of farmers' contributions* to the global genetic pool in order to show that their contributions are valued by society. One form of recognition that is often discussed is the procurement of intellectual property rights for farmers, under an ownership approach. There are strong views for and against such rights. Proponents claim that farmers should be granted intellectual property rights on an equal footing with breeders as a matter of fairness. Opponents stress that such a system would create disincentives for farmers to share their seeds because of the expectations that the seeds could prove to be economically valuable. Such a development could be harmful to traditional seed systems and could negatively affect farmers' rights to save, use, exchange, and sell their own seeds. A more usual way of granting recognition to farmers and farming communities is through awards for innovative practices, as has been done in several countries. Yet this is not to say that farmers are not entitled to intellectual property rights. Rather, it indicates where the greatest potential for benefit sharing may lie and what dangers should be avoided if countries are seeking to establish intellectual property rights for farmers.

There are many good examples of indirect forms of benefit sharing, including incentive structures in the Philippines; community seed fairs in Zimbabwe; community gene banks and on-farm conservation in India; dynamic conservation and participatory plant breeding in France; participatory plant breeding in Nepal, which is adding value to farmers' varieties; capacity building for seed potato selection in Kenya; the development of a Peruvian Potato Park; and the reward for best farming practices in Norway (Andersen and Winge, 2008, 2013; Vernooy et al., 2015). These are all examples of programs and developments that provide models for the further implementation of farmers' rights. The major challenge today is to find ways and means to scale up such

activities – for example, through the national agricultural extension service systems and other ways of linking up with government policies, as exemplified in Nepal (Vernooy et al., 2015). However, such initiatives are heavily dependent on political will, which is often lacking. In order to increase the political will, it is necessary to raise awareness in society in general on the vital importance of agro-biodiversity and farmers' rights.

Participation in decision making

Article 9.2(c) deals with the right of farmers to participate in decision making at the national level on matters related to the conservation and sustainable use of plant genetic resources for food and agriculture. However, no further guidance is provided in the ITPGRFA as to how such decision making can be implemented in practice. To operationalize this measure, it will be necessary to specify the 'relevant matters' in which farmers can have the right to participate as well as the way in which they can participate.

The development of laws and regulations related to the management of plant genetic diversity in agriculture is clearly relevant for farmers' participation. At the current time, there are numerous examples of such laws and regulations, including seed acts, seed certification regulations, other regulations regarding seed distribution and trade, plant variety protection laws, patent laws, bio-prospecting laws or regulations, laws on the conservation and sustainable use of biodiversity in general or crop genetic resources in particular (as well as on several specific crops), and legislation on the rights of indigenous peoples and traditional knowledge. In addition, it is also important to consider any legislation that regulates mainstream agriculture since such legislation tends to produce incentive structures that are often detrimental to farmers' rights without providing any compensation. The extensive use of hearings at various stages in the decision process is an important measure to ensure participation. It is particularly important to ensure that farmers that are engaged in the management of plant genetic diversity are aware of the processes and are explicitly invited to participate through their organizations.

The implementation of laws and regulations is also relevant to farmers' participation. The way in which these regulations are interpreted and implemented often has an enormous influence on a farmer's management of these resources and also on his or her livelihood. Normally, such acts and regulations establish boards and institutions to oversee and/or administer implementation. Farmers' representation and participation in these bodies is therefore integral, and the means by which farmers are selected for membership is of crucial importance. If they are appointed by a government official, for example, they can hardly be said to represent the farmers of the country. If, however, they are appointed by farmers through their own organizations, it is more likely that they will be regarded as true representatives of the farming community – depending on the number of farmers that they represent and the process by which they were appointed. Again, it is essential to ensure that farmers are actually represented and engaged in agro-biodiversity conservation – there are too few success stories in this regard. In addition, the development of policies and programs in agriculture, particularly in relation to the management of plant genetic resources for food and agriculture, also requires farmer participation. In order to create policies and programs that are valuable for farmers, they have to be targeted specifically at the situations that farmers are in, taking farmers' perspectives as points of departure.

Ultimately, then, the implementation of farmers' rights requires farmers' participation. This is not only because of their unquestioned right in this regard, according to the ITPGRFA, but also because they are the ones who can best define the needs and priorities of farmers in the context of farmers' rights and they are also the central actors in the implementation process. Comprehensive consultative processes of various kinds are relevant – the better represented farmers are, the

greater legitimacy the results will have and the more likely it is that they will constitute effective measures for the realization of farmers' rights. In particular, it is important for farmers to actually be involved in the management of plant genetic diversity in order to participate in such processes since they constitute the main target group of the ITPGRFA.

There are two major preconditions for the increased participation of farmers in decision making. First, decision makers need to be aware of the role that is played by farmers in conserving and developing plant genetic resources for food and agriculture, and thus in contributing to national food security, in order to understand why their participation is so important. Second, without prior capacity building, many of the world's farmers would not be in a position to participate effectively in complicated decision-making processes. Hence, it is essential to raise awareness among decision makers on the role of farmers in agro-biodiversity management and to build the capacity of farmers' organizations. While there is not much evidence of the former to date, there has been much more activity with regard to the latter goal.

In general, we find few examples of legislation on farmers' participation, although some countries in the South have extensive legislation on farmers' participation in decision making (Andersen, 2005). All the same, the actual participation of farmers in decision-making processes seems marginal and is often limited to large-scale farmers who are normally not engaged in the maintenance of plant genetic diversity. In the North, the participation of farmers in decision-making processes is more common, even if diversity farmers are rarely represented, but such participation does not usually involve specific laws or policies. It should be noted that some farmers in the North claim that their influence is decreasing, due to their countries' commitments to regional and international organizations and agreements such as the World Trade Organization (WTO) and the European Union (EU) (Andersen, 2005).

While the process of implementing participation has been slow, there have been a few success stories. The most comprehensive consultative process on the implementation of farmers' rights to date was carried out in Peru in 2008, and it involved 180 farmers from many different regions as well as numerous central decision makers (Scurrah et al., 2008).¹⁷ Other success stories include capacity-building measures to prepare farmers for participating in decision making in Malawi, Zimbabwe, the Philippines, and Peru, and several successful advocacy campaigns regarding the implementation of elements of farmers' rights, where farmers have been directly involved, as for example in India, Norway, and Nepal (Andersen and Winge, 2008, 2013).

Under both the stewardship and ownership approaches, participation in relevant decision making is important but for different reasons. Under a stewardship approach, the most important objectives would be to ensure legal space for farmers to continue their practices as custodians and innovators of plant genetic resources and to establish reward mechanisms for farmers' contributions to the global genetic pool. Under the ownership approach, the goals would be to ensure appropriate legislation on access and benefit sharing as well as to safeguard farmers' intellectual property rights to the genetic resources in their fields and related knowledge. It is clear that these two sets of objectives could be conflicting. However, the overall objectives of the ITPGRFA to conserve, sustainably use, and share benefits from crop genetic resources for sustainable agriculture and food security may serve as guiding principles. Measures that limit a farmer's ability to take part in these activities would go against the intentions of the Treaty.

Farmers' rights to save, use, exchange, and sell farm-saved seed

Farmers' customary use of propagating material – to save, use, exchange, and sell farm-saved seed and propagating material – is a pivotal element of farmers' rights and rooted as a 10,000-year-old tradition that enabled mankind to develop today's rich agro-biodiversity. However, the ITPGRFA

is vague on farmers' rights to save, use, exchange, and sell farm-saved seed. Section 9.3 of the Treaty states that nothing in the relevant article (Article 9 on farmers' rights) 'shall be interpreted to limit any rights that farmers have to save, use, exchange and sell farm-saved seed, subject to national law and as appropriate', but this article does not really offer much direction, except for labelling these practices as 'rights'. Despite this lack of precision, the general line of thought would seem clear. It is important to grant their rights to save, use, exchange, and sell farm-saved seed, but individual countries are free to define the legal space that they deem to be sufficient.

The freedom to define such legal space for farmers is restricted by other international commitments. Most countries in the world are members of the WTO and are thus obliged to implement the WTO Agreement on Trade-Related Aspects of Intellectual Property Rights (TRIPS Agreement).¹⁸ According to the TRIPS Agreement, all WTO member countries must protect plant varieties either by patents, by an effective *sui generis* system (a system of its own kind), or a combination of both (Article 27.3.b). The limits to a *sui generis* system and the meaning of an 'effective' *sui generis* system are not explicitly defined in the text. In other words, countries have to introduce some sort of plant breeders' rights.

The Union for the Protection of New Varieties of Plants (UPOV) explains that the most effective way to comply with the provision concerning an effective *sui generis* system is to follow the model of the International Convention for the Protection of New Varieties of Plants (UPOV Convention).¹⁹ There are several versions of the UPOV model. The most recent (the 1991 Act of the UPOV Convention) provides that plant breeders are to be granted comprehensive rights – to the detriment of farmers' customary rights to save, re-use, exchange, and sell seeds. It is possible to make exceptions for small-scale farmers but only within strict limits. Exchange and sales of seeds among farmers are prohibited. It should be noted, however, that these regulations apply only to seeds protected by plant breeders' rights and not to traditional varieties.

The UPOV model has met resistance from some countries and many organizations that fear that ratification of the Convention would be detrimental to the rights of farmers to save and share propagating material. The TRIPS Agreement provides only minimum standards, leaving enough scope for the development of other solutions that are more compatible with the demand for farmers' rights. The challenge in the context of the ITPGRFA is thus for WTO member countries to meet their TRIPS obligations regarding plant breeders' rights, while also maintaining the necessary legal space to realize farmers' rights to propagating material.

A further constraint to farmers' rights in many countries is the introduction of seed laws that affect all propagating material, whether it is protected with intellectual property rights or not. The most important factor is that these laws also affect traditional varieties and farmers' varieties. They require that all varieties be officially approved for release and that seed and propagating material be certified before they are offered on the market. The original reason for these regulations was to ensure plant health and seed quality. However, in many countries, the regulations have gone so far that they now hinder the maintenance of crop genetic resources in the fields in two ways. First, since traditional varieties are normally not genetically homogeneous enough to meet the requirements for approval and certification, these varieties are excluded from the market and gradually disappear from active use when those farmers who currently use them begin to give them up. Second, many seed laws also stipulate that only authorized seed shops are allowed to sell seeds, and they prohibit all other seed exchange (with rare exceptions).

This is the case in most of Europe. The EU has tried to solve these hurdles with a specific directive on conservation varieties. However, EC Directive 62/2008 (EU Conservation Varieties Directive) is not adequate with regard to farmers' rights, because (a) seed exchange and sale are still prohibited among farmers; (b) only varieties deemed interesting by certain authorities can be covered by the system, which limits diversity; (c) the variety release and certification criteria are

still too strict to allow for the release of many traditional and farmers' varieties; (d) the marketing and use of the varieties are limited to the regions of origin; (e) only limited quantities may be used; and (f) the conservation varieties may not be further developed by farmers. A comprehensive evaluation was carried out by the EU Commission to provide a foundation for revisions of the EU directives on seeds and propagating material. The evaluation led to a proposal to simplify the whole structure of relevant directives and solve many of the constraints highlighted previously. The proposal was approved by the EU Parliament, but eventually turned down by the EU Commission, thus further prolonging these issues.

When combined, these two processes – restrictions on plant variety release and seed marketing laws – may constitute serious obstacles to the implementation of the ITPGRFA in terms of *in situ* on-farm conservation and sustainable use as well as to farmers' rights. It is a paradox that rules originally intended to protect plant health have, in fact, contributed to removing the very basis for ensuring plant health in future – namely, the diversity of genetic resources.

What possibilities are there to make such laws more compatible with the customary rights of farmers, which are so crucial to the maintenance of agro-biodiversity for food security, today and in the future?

Under a stewardship approach, the goal would be to grant the rights to save, use, exchange, and sell farm-saved seed, whether from protected or non-protected varieties. Due to the present constraints of existing legislation, however, the challenge seems rather to uphold or re-establish sufficient legal space for farmers to continue their crucial role as custodians and innovators within the existing legal framework on plant breeders' rights, variety release, and seed distribution.

Under an ownership approach, on the other hand, the goal would be to provide farmers with intellectual property rights on the varieties in their fields on equal footing with breeders' rights. Arguments related to this objective have been discussed earlier in this chapter.

There are several pertinent stories on how legal space for farmers' rights can be established and maintained in order to allow farmers to maintain their traditional practices and innovation in agriculture (see, e.g. Andersen and Winge, 2008, 2013). These include India's 2001 *Protection of Plant Varieties and Farmers' Rights Act*;²⁰ Norway's 'no' to stricter plant breeders' rights in order to maintain the balance with farmers' rights, and the ways in which farmers are circumventing the law in the Basque Country in Spain. Nevertheless, establishing and maintaining legal space for farmers' rights to save, use, exchange, and sell farm-saved seed constitutes the main barrier to implementing the ITPGRFA in terms of the conservation and sustainable use of crop genetic diversity and of the realization of farmers' rights. Solutions are urgently needed.

Undoubtedly, there are many other means of combining the stewardship and ownership approaches in order to realize farmers' rights to seed and propagating material. What matters in this context is that the approach that is chosen must not conflict with the principles of the stewardship approach, which has been the primary goal of the FAO since the issue was first taken up as well as the rationale behind the ITPGRFA.

Future directions: how can Farmers' Rights be realized?

Whereas the implementation of Farmers' Rights under the ITPGRFA is a national responsibility, the Governing Body of the ITPGRFA is responsible for promoting the full implementation of the Treaty, including the provision of policy direction and guidance, and monitoring of implementation (Article 19). According to the Article 21, the Governing Body is to ensure compliance with all provisions of the ITPGRFA, and the Preamble of the Treaty highlights the necessity of promoting farmers' rights at the national as well as international levels. In this final section, I will

consider how the Governing Body has carried out its responsibilities, with a view to national implementation.

In the first session of the Governing Body in 2006, the issue of farmers' rights was on the working agenda. Since then, the topic has been discussed at each session of the Governing Body, resulting in resolutions from the decisions made (see Resolutions 2/2007, 6/2009, 6/2011, 8/2013, and 5/2015 of the Governing Body of the International Treaty). There has been extensive consultation processes prior to each of the sessions of the Governing Body, most notably the Informal International Consultation on Farmers' Rights in Lusaka, Zambia, in 2007; the Global Consultation on Farmers' Rights in Addis Ababa, Ethiopia, in 2010; and the Global Consultation on Farmers' Rights in Bali, Indonesia, in 2016. Each of the first consultations resulted in comprehensive reports and summarizing input papers which were presented at the Governing Body at its sessions in 2007 (by Norway and Zambia) and 2011 (by Ethiopia). The consultation in 2016 had just been finalized when this chapter was submitted.

The resolutions to date call for:

- information gathering and knowledge exchange;
- the formulation of national action plans;
- the reviewing and adjusting national measures;
- engagement with farmers' organizations and relevant stakeholders in decision making;
- the enhancement of interactions and coordinations between institutions;
- regional workshops and other consultations;
- preparation of a study on lessons learned, to be presented to the Governing Body;
- a consideration of success stories and how they can be used to promote farmers' rights;
- the launch and implementation of a joint capacity development programme;
- the finalization of an educational module on Farmers' Rights;
- the identification of the interrelations between UPOV/WIPO and the Treaty with regard to Farmers' Rights;
- a report on any discussions related to farmers' rights in other FAO fora;
- an invitation to farmers' organizations to participate in sessions of the Governing Body;
- an invitation for contracting parties and development cooperation organizations to provide support;
- the conducting of active outreach activities on Farmers' Rights to stakeholders; and
- support for the implementation of these decisions and reporting back to the Governing Body.

The list is comprehensive and, at first sight, promising, and some of the decisions can be regarded as a breakthrough for the negotiations. Since the entry into force of the Treaty, much has been achieved in terms of establishing a joint understanding of important issues related to the realization of farmers' rights. However, little is happening from the side of Contracting Parties as well as the Secretariat in terms of implementation. Many of the provisions are made subject to the availability of funding, which is mostly scarce. Some NGOs and IGOs are doing substantial work to realize farmers' rights in many countries, but national efforts are lagging behind. To strengthen the work on farmers' rights much more attention to the topic and its pivotal importance for the implementation of the Treaty is required.

Since 2007, developing countries, along with some developed ones, have demanded that voluntary guidelines be prepared to guide and assist countries in the implementation of Farmers' Rights. There was strong resistance against that from several developed countries. Nevertheless, the demand is being repeated with greater strength for each session of the Governing Body. It is demanded that the guidelines be developed through a participative, inclusive, and transparent

manner. Not only would such guidelines provide necessary guidance and assistance for contracting parties and other stakeholders, it would also provide an important arena for establishing a common ground of understanding with regard to why farmers' rights are important for the implementation of the Treaty and what it takes to realize these rights.

Conclusions

The International Treaty on Plant Genetic Resources for Food and Agriculture is the single most important international instrument that currently exists to ensure the sustainable management of crop genetic resources. After ten years of implementation, it is evident that progress has so far been slow. Developing countries are demanding a functioning benefit-sharing mechanism and greater emphasis on the realization of farmers' rights in order to support the Treaty, for example by placing their genetic resources in the multilateral system. Action in this regard is urgently required. By understanding the different rationales behind the discussion in the Governing Body, that is, the stewardship and the ownership approaches, it might become clearer how they affect the conservation and sustainable use of crop genetic resources for food and agriculture. The consequences of the ownership approach might be detrimental to the on-farm conservation and sustainable use of crop genetic resources, as shown in this chapter. The stewardship approach could, seen in isolation, provide a solid basis for the on-farm conservation and sustainable use of crop genetic resources. The paradox is, however, that the resources from the public domain can be made subject to private ownership and thus be turned into a part of the ownership approach. Thus, the stewardship approach could not be the sole approach under the treaty, but may need to be complemented by elements of the ownership approach.

Much has been achieved with regard to developing a joint understanding of farmers' rights, their importance, and the steps required for their realization – and there are many success stories, mainly at a local level. Much still remains to be done to ensure that these rights are realized on a scale that is required to enable farmers to continue to maintain and further develop the crop genetic diversity. This is a contribution to ensuring the basis of local and global food security and to recognize and reward these farmers for their contributions to the global genetic pool. Awareness of the challenges, political priority, and international cooperation are required to make farmers' rights a reality.

Notes

- 1 In 1974, the International Board for Plant Genetic Resources (IBPGR) was transformed into the IPGRI, which is now Bioversity International, a part of the Consultative Group on International Agricultural Research (CGIAR). The CGIAR was founded in 1971 on the initiative of the Ford and Rockefeller Foundations to unite privately funded international agricultural research centres (IARCs) into one network. As an informal association of public and private donors that support the IARCs, it is a donor-led group that has provided a forum for discussion of research priorities and coordination of funding (FAO, 1998, p. 248). As divisions of the network, the IARCs have their own governing bodies. The United Nations Environment Programme (UNEP), the FAO, the United Nations Development Programme, and the World Bank co-sponsor the system, and the CGIAR is headquartered at the premises of the World Bank in Washington, DC (FAO, 1998).
- 2 It was established by FAO Conference Resolution 9/83. It was later renamed the Commission on Genetic Resources for Food and Agriculture (CGRFA), as its mandate was broadened (as discussed later in this chapter).
- 3 At that time, there were still only 74 signatories.
- 4 General Agreement on Tariffs and Trade, 30 October 1947, 55 UNTS 194.
- 5 This principle was first voiced at the 1972 United Nations Conference on the Human Environment in Stockholm in the form that states have sovereign rights to exploit their natural resources in accordance

- with their own environmental priorities (Stockholm Declaration on the Human Environment, 16 June 1972, 11 ILM 1416 (1972), Principle 21).
- 6 According to the Treaty Reference Guide of the United Nations Office of Legal Affairs, the term 'agreement' can be used for legally binding as well as non-binding agreements (see <http://untreaty.un.org/ola-internet/Assistance/Guide.htm#agreements> [last accessed 15 June 2012]).
 - 7 This section is based on Andersen et al. (2010).
 - 8 A thorough analysis of the recognition of farmers' rights in the ITPGRFA is found in Bjørnstad (2004). Further analyses of the ITPGRFA provisions on farmers' rights are provided by the Farmers' Rights Project, online: www.farmersrights.org (last accessed 15 June 2012); see also Moore and Tymowski (2005).
 - 9 The Cartagena Protocol on Biosafety to the Convention on Biological Diversity, 29 January 2000, online: <http://sedac.ciesin.org/pidb/texts-menu.html>. It is not dealt with in this chapter, but, as a protocol to the CBD, it is a part of an already established regime.
 - 10 The United States has also signed the CBD but has not ratified it.
 - 11 An interesting analysis of the contents and prospects of the ITPGRFA is found in Fowler (2004). Explanations on the background and contents of the ITPGRFA are presented in Moore and Tymowski (2005).
 - 12 This section is based on Andersen (2008) and Andersen et al. (2010).
 - 13 For example, rice, wheat, maize, rye, potatoes, beans, cassava, and bananas. Not included are other important crops, including soybeans, tomatoes, cotton, sugarcane, cocoa, and groundnuts, as well as many vegetables and important tropical forage plants.
 - 14 This chapter is based on the results of the Farmers' Rights Project of the Fridtjof Nansen Institute, an international project designed to support the implementation of farmers' rights, as they are addressed in the ITPGRFA. Started in 2005, it is a long-term project with many different components, comprising research and surveys as well as policy guidance, facilitation of consultations, information, and capacity building. For an overview of the research reports and activities, see www.farmersrights.org. International Treaty on Plant Genetic Resources for Food and Agriculture [ITPGRFA], 29 June 2004, online: www.planttreaty.org/texts_en.htm (last accessed 15 June 2012).
 - 15 Convention on Biological Diversity, 31 ILM 818 (1992).
 - 16 An agreement on access to teff genetic resources in Ethiopia, and the fair and equitable sharing of benefits derived from their use, has been hailed as one of the most advanced of its time. A thorough study of this agreement between a Dutch company and Ethiopian authorities shows, however, that the implementation failed. As a result of several circumstances, Ethiopia was left with fewer possibilities for generating and sharing the benefits from the use of teff genetic resources than before (Andersen and Winge, 2012).
 - 17 Progress is slow, however, due to a lack of resources and political attention.
 - 18 Agreement on Trade-Related Aspects of Intellectual Property Rights, Annex 1C of the Marrakech Agreement Establishing the World Trade Organization, 15 April 1994, 33 ILM 15 (1994).
 - 19 International Convention for the Protection of New Varieties of Plants, 2 December 1961, online: www.upov.int/en/publications/conventions/index.html (last accessed 15 June 2012).
 - 20 *Protection of Plant Varieties and Farmers' Rights Act*, 2001, online: <http://agricoop.nic.in/seeds/farmersact2001.htm> (last accessed 15 June 2012).

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