Chapter 7

Access to Plant Genetic Resources, the sharing of benefits arising out of their utilization and the realization of Farmers' Rights

7.1 Introduction

Access and benefit-sharing (ABS), together with conservation and sustainable use, are at the heart of both the CBD and the ITPGRFA. In a world where countries are interdependent among each other for the plant genetic resources they need to sustain food production and to meet the increasing challenges of disease and climate change, access to those resources is essential for achieving world food security. This chapter reviews the changes that have taken place since the first SoW report was published. It covers the international legal and policy framework relevant to ABS and developments in ABS at the national level. It then reviews developments in the realization of Farmers' Rights under the ITPGRFA.

7.2 Developments in the international legal and policy framework for access and benefit-sharing

The international legal and policy framework is an area that has undergone and is still undergoing, very significant change since the first SoW report was published. Its dynamic nature has influenced and will continue to have a major influence on progress in all areas of the conservation and use of PGRFA.

7.2.1 The ITPGRFA

One of the most important developments in the PGR sector since the first SoW report was published has been the adoption and entry into force of the ITPGRFA. On the issue of ABS, the ITPGRFA draws together the threads of the International Undertaking on PGR, a non-binding international instrument that provides for 'unrestricted' availability of PGR as a common heritage of humankind and those of the CBD which is based on the principle of national sovereignty over genetic resources and access on the basis of prior informed consent and mutually agreed terms. The ITPGRFA establishes an MLS of ABS for those PGR that are most important for food security and on which countries are most interdependent. For such genetic resources, which are listed in Annex 1 of the ITPGRFA, the Contracting Parties have agreed on standard terms and conditions that will govern their transfer for the purpose of research, breeding and training. These standard terms and conditions are set out in the SMTA, adopted by the Governing Body at its First Session in June 2006. In this way, the MLS reduces the transaction costs inherent in bilaterally negotiated exchanges. The MLS automatically covers all PGRFA of Annex 1 crops that are "under the management and control of the Contracting Parties and in the public domain". Provision is made for the voluntary inclusion of other materials in the MLS by their holders.

7.2.1.1 Benefit-sharing under the Multilateral System

Benefit-sharing under the MLS takes place at the multilateral level. Facilitated access to genetic resources that are included in the MLS is, itself, recognized as a major benefit of the system. Other benefits arising from the use of PGRFA that are to be shared on a 'fair and equitable' basis, include the exchange of information, access to and transfer of technology, capacity building and the sharing of monetary and other benefits arising from commercialization (see Box 7.1). The Benefit-Sharing Fund that has been established for the purpose of receiving revenues arising from commercialization will also accept voluntary contributions received from the Contracting Parties, non-contracting parties and the private sector[1] as part of the benefit-sharing system. As of mid-2009, voluntary contributions to the fund have been made by a number of governments, including a commitment by the Government of Norway to make a voluntary contribution to the Benefit-Sharing Fund equal to 0.1 percent of the value of all seeds sold in Norway. The ITPGRFA Secretariat's first call for proposals under the Benefit-Sharing Fund closed in January 2009 and the first 11 project grants were awarded before the Third Session of the Governing Body in June 2009.

The financial benefits arising from commercialization form part of the ITPGRFA's Funding Strategy under Article 18. The strategy also includes the mobilization of funding from other sources outside the ITPGRFA. An essential element of the Strategy is the GCDT, an

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Box 7.1
Benefit-sharing under the ITPGRFA

Under the ITPGRFA, facilitated access to genetic resources that are included in the MLS is itself recognized as a major benefit of the system. Other benefits arising from the use of PGRFA that are to be shared on a 'fair and equitable' basis include:

- **the exchange of information**: this includes catalogues and inventories, information on technologies and results of technical, scientific and socio-economic research on PGRFA including data on characterization, evaluation and information on use.
- **access to and transfer of technology**: Contracting Parties agree to provide or facilitate access to technologies for the conservation, characterization, evaluation and use of PGRFA. The ITPGRFA lists various means by which transfer of technology is to be carried out, including participation in crop-based or thematic networks and partnerships, commercial joint ventures, human resource development and through making research facilities available. Access to technology, including that protected by IPR, is to be provided and/or facilitated under fair and most-favourable terms, including on concessional and preferential terms where mutually agreed. Access to these technologies is provided while respecting applicable property rights and access laws.
- **capacity building**: the ITPGRFA gives priority to programmes for scientific education and training in the conservation and use of PGRFA, to the development of facilities for conserving and using PGRFA and to the carrying out of joint scientific research.
- **sharing of monetary and other benefits arising from commercialization**: monetary benefits include payment into a special Benefit-Sharing Fund of the MLS of a share of the revenues arising from the sale of PGRFA products that incorporate material accessed from the MLS. Such payment is mandatory where the product is not available for further research and breeding, for example, as a result of certain types of patent protection. In the SMTA, adopted by the Governing Body at its First Session in 2006, the payment is set at 1.1 percent of the gross sales generated by the product less 30 percent (i.e. 0.77 percent).

international fund that was established in 2004 to help ensure the long-term *ex situ* conservation and availability of PGRFA (see Section 6.5).

7.2.1.2 Enforcement of the terms and conditions of the Standard Material Transfer Agreement

The SMTA provides a mechanism for overcoming potential difficulties of enforcement by empowering FAO, as the entity chosen by the Governing Body, to represent its interests as a third party beneficiary under the SMTA, and to initiate action where necessary to resolve disputes.

7.2.2 The Convention on Biological Diversity

The CBD continues to provide the legal and policy framework for ABS with regards to genetic resources in general. The main developments in the CBD framework since the first SoW report was published have been in the context of the work on ABS initiated by the Fourth Conference of the Parties on Biological Diversity (COP 4) in 1999 and carried out principally by a Working Group on ABS established in 2000. The first product was the non-binding Bonn Guidelines on ABS adopted at COP 6 in 2001. The Bonn Guidelines were designed to assist countries in developing and drafting policies,

Box 7.2
Potential benefits from access and benefit-sharing as listed in the Bonn Guidelines

1. Monetary benefits may include, but not be limited to:

(a) access fees/fee per sample collected or otherwise acquired;
(b) up-front payments;
(c) milestone payments;
(d) payment of royalties;
(e) license fees in case of commercialization;
(f) special fees to be paid to trust funds supporting conservation and sustainable use of biodiversity;
(g) salaries and preferential terms where mutually agreed;
(h) research funding;
(i) joint ventures;
(j) joint ownership of relevant IPRs.

2. Non-monetary benefits may include, but not be limited to:

(a) sharing of research and development results;
(b) collaboration, cooperation and contribution in scientific research and development programmes, particularly biotechnological research activities, where possible in the provider country;
(c) participation in product development;
(d) collaboration, cooperation and contribution in education and training;
(e) admittance to *ex situ* facilities of genetic resources and to databases;
(f) transfer to the provider of the genetic resources of knowledge and technology under fair and most-favourable terms, including on concessional and preferential terms where agreed; in particular, knowledge and technology that make use of genetic resources, including biotechnology, or that are relevant to the conservation and sustainable use of biological diversity;
(g) strengthening capacities for technology transfer to user developing country Parties and to Parties that are countries with economies in transition and technology development in the country of origin that provides genetic resources. Also to facilitate abilities of indigenous and local communities to conserve and sustainably use their genetic resources;
(h) institutional capacity building;
(i) human and material resources to strengthen the capacities for the administration and enforcement of access regulations;
(j) training related to genetic resources with the full participation of providing Parties and, where possible, in such Parties;
(k) access to scientific information relevant to conservation and sustainable use of biological diversity, including biological inventories and taxonomic studies;
(l) contributions to the local economy;
(m) research directed towards priority needs, such as health and food security, taking into account domestic uses of genetic resources in provider countries;
(n) institutional and professional relationships that can arise from an access and benefit-sharing agreement and subsequent collaborative activities;
(o) food and livelihood security benefits;
(p) social recognition;
(q) joint ownership of relevant IPRs.

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laws, regulations and contracts on ABS to be applied to all genetic resources and associated traditional knowledge, innovation and practices covered by the CBD and benefits arising from the commercial and other utilization of such resources, with the exclusion of human genetic resources (see Box 7.2).

In 2004, the Working Group on ABS was mandated by COP 7 to elaborate and negotiate an international regime on access to genetic resources and benefit-sharing, with the aim of adopting an instrument/instruments to effectively implement the provisions in Article 15 and 8(j) of the CBD and the three objectives of the CBD. In 2008, COP 9 agreed on a road map and a basic framework including the main components of the international regime and called for the Working Group to complete its negotiations at the earliest time possible before COP 10 in 2010. The relationship of the international regime to more sector-specific regimes such as the MLS for ABS in the ITPGRFA, is also an important issue that needs to be further addressed.

7.2.3 Access and benefit-sharing in relation to WTO, UPOV and WIPO

IPR offer one means to facilitate the sharing of benefits arising from the use of genetic resources equitably among innovators and users of innovations. Recognizing this, the relationship between ABS regimes for genetic resources, traditional knowledge and the IPR system, have been a focus of discussion in the WTO and in particular in the TRIPS Council. It has also been under discussion in UPOV and WIPO.

The TRIPS Agreement provides for periodical reviews of its implementation and other reviews in the light of any relevant new developments that might warrant modifications of the Agreement. It has become apparent that there is a difference of opinion among TRIPS Council Members as to whether there is any inherent conflict between the TRIPS Agreement and the CBD and if so, how it could be resolved. One proposal that has been made in the TRIPS Council is to amend the TRIPS Agreement to add the requirement in national patent legislation of disclosure of the origin of genetic resources and/or associated traditional knowledge in patent applications.

Article 27.3(b) of the TRIPS Agreement authorizes TRIPS members to exclude plants and animals other than microorganisms from patentability, as well as essentially biological processes for the production of plants or animals. However, TRIPS members are required to grant protection to plant varieties, either through patents, through an effective *sui generis*[2] system, or through a combination of both. The Article refers in general terms only to an effective *sui generis* system of protection for plant varieties, leaving it open for countries to devise their own *sui generis* system, should they so desire. In practice, most countries have based their protection of plant varieties on the UPOV Convention, which offers the advantage of mutual recognition among all UPOV members.[3] The UPOV Convention incorporates the principle of free access to improved varieties for further research and breeding (breeders' exemption). In its present form, the UPOV model would exclude the imposition of a requirement to disclose the origin of genetic resources as a condition for the granting of PBR, since the UPOV Convention precludes the imposition of any conditions other than novelty, distinctness, uniformity and stability.

WIPO is the United Nations (UN) specialized agency dedicated to developing a balanced and accessible international intellectual property (IP) system. In 2000, the WIPO General Assembly established an Intergovernmental Committee on IP and Genetic Resources, Traditional Knowledge and Folklore (IGC), to examine, among other things, intellectual property issues arising in the context of ABS and traditional knowledge. At the request of COP 7, WIPO was invited to examine issues regarding the inter-relationship of access to genetic resources and disclosure requirements in patent applications: the results of the examination were officially transmitted to COP 8.

7.2.4 FAO and access and benefit-sharing

The FAO CGRFA at its Eleventh Regular Session in 2007, adopted a Multi-Year Programme of Work which recommended that "FAO continue to focus on ABS for genetic resources for food and agriculture in an integrated and interdisciplinary manner…".[4] It

decided that its "work in this field should be an early task within its Multi-Year Programme of Work". In light of this decision, the CGRFA considered policies and arrangements for ABS for genetic resources at its 12th Session in 2009. ABS is a cross-cutting issue in the CGRFA, which also addresses the genetic resources of farm animals, microbial and insect genetic resources for food and agriculture, fish genetic resources and forest genetic resources.

7.3 Developments in access and benefit-sharing at the national and regional levels

7.3.1 Accessing germplasm

There are no reliable figures on the worldwide movement of germplasm for the period since the preparation of the first SoW report. However, figures are available for acquisition and distribution of PGRFA by and from the CGIAR centres (see Chapters 3 and 4).

Little information is contained in country reports on the actual flows of PGRFA to and from individual countries. Ethiopia reports that its national genebank dispatches annually about 5 000 samples nationally and internationally and the Bolivarian Republic of Venezuela reports that it has received 64 applications for access to PGRFA under the Law on Biological Diversity adopted in 2000.

Such information is still not readily available from public databases, although work is progressing on the establishment of a global accession level information system. Several country reports, for example Azerbaijan, New Zealand and Sri Lanka, indicated that having access to PGRFA held by the centres of the CGIAR was important to them, although India reported a decline in PGRFA from CGIAR centres and other national genebanks after the entry into force of the CBD. Several country reports[5] indicated that access to PGRFA from other sources is becoming more difficult, due in part to a lack of clarity over issues such as ownership and IPR and a need for clearer procedures.

7.3.2 Benefits derived from the conservation and use of PGRFA

As discussed in Chapter 4, to take full advantage of the benefits provided by access to PGRFA requires that developing countries have access to plant breeding capacity. To some extent, such capacity is being provided through the breeding programmes of the CGIAR centres, which operate in close cooperation with the NARS they serve. But there is a need for greater breeding capacity in many developing countries, a need that new programmes, such as the GIPB,[6] are helping to address. There is also a need for more fully integrated systems at the national level that provide for effective linkages between conservation, breeding and seed production and distribution, in order to bring the benefits to the farmers themselves, in the form of improved seeds.

7.3.3 Development of access and benefit-sharing arrangements at the national level

An overview of the status of ABS legislation and regulations is included in Appendix 1. More general problems and issues are discussed in the sections below.

7.3.3.1 General problems and approaches at the national level

One obstacle to regulating access to genetic resources and achieving a fair and equitable sharing of benefits has been the nature of such resources and difficulties in establishing rights over them. These difficulties stem from the intangible nature of genetic resources as compared with physical biological resources.[7]

Traditionally, ownership of genetic resources, in so far as any such ownership was recognized, has been linked to ownership of the biological resource, such as wheat in farmers' fields, or samples in *ex situ* genebanks. Ownership of the intangible genetic resource *per se* was recognized only where they were the consequence of an act of creation, as for example through the granting of IPR over new plant varieties that are the result of breeding processes. The ITPGRFA

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Box 7.3
Implementing the Multilateral System through administrative measures – the experience of one Contracting Party

The following account is drawn from the experience of one Contracting Party, but reflects the experience of a number of countries. In the example cited, the responsibility for PGRFA is shared between the federal and state authorities and PGRFA is also held in private institutions. The focal point for the ITPGRFA is the Federal Ministry of Agriculture. The framework for the implementation of the MLS, including activities of both governmental and private institutions, is provided by a National Programme on PGR, by an Advisory and Coordinating Committee and by a National Inventory for PGR.

As a **first step** in implementation of the MLS, information on the system was provided to all relevant stakeholders, both in the public and the private sectors, including the preparation of explanatory notes on the SMTA and Frequently Asked Questions (FAQs). Public and private institutions have been informed of the SMTA and the rights and obligations arising from its use. The private sector has also been encouraged to make voluntary payments when a product that incorporates material accessed from the MLS is commercialized without restrictions.

As a **second step**, existing collections of Annex 1 PGRFA were examined against the criteria of governmental 'management and control'. As a result of this examination:

- collections under the direct control of the Federal Ministry were instructed to introduce the SMTA;
- collections under the control of the states and/or local authorities were requested to introduce the SMTA;
- all other collections (mixed, private) were invited to introduce the SMTA.

The **third step** was the identification of Annex I material in the genebanks that are in the public domain, excluding both material held under black-box arrangements, for example and protected varieties, which are available for further research and breeding from the individual breeders.

The fourth and **final step** was to include the identified material formally in the MLS and to identify such material in the databanks by an MLS flag.

The case study draws the following lessons from the national experience:

- early and comprehensive information of the relevant stakeholders on the national implementation of the MLS and the SMTA by the respective authorities is important;
- existing "infrastructure" for cooperation such as a national programme for PGRFA with a national coordination committee and a national inventory (documentation system) should be used as much as possible;
- the text of the SMTA is not self-explanatory, especially for users not speaking UN languages. There is a need for assistance through experts giving guidance and/or a courtesy translation in the national language. Explanatory notes, FAQs, etc. are useful in order to facilitate the implementation of the MLS and the SMTA at national level;
- general guidelines on how to include material in the MLS at the collection level (e.g. identification of public domain accessions) could be helpful.

avoids the issue of ownership entirely, by focusing on terms of access and provisions for benefit-sharing.

The recognition of national sovereignty over genetic resources implies that countries have the power to manage those resources and to regulate access to them, but it does not address the issue of ownership *per se*. While in many countries legal ownership of genetic resources still follows the ownership of land and the biological resources on that land, an increasing number of countries are affirming the separate ownership of genetic resources by the State. Decision 391 of the Andean Community, for example, provides that genetic resources are the property or heritage of the nation or state. Article 5 of the Ethiopian Proclamation No. 482 of 2006 provides that "the ownership of genetic resources shall be vested in the state and the Ethiopian people". The practical consequences of these ownership claims are as yet unclear.

Another obstacle frequently cited by countries in their national reports (more than 35 countries) is the lack of the necessary multidisciplinary scientific, institutional and legal capacity to develop a satisfactory system of ABS, given the interrelated dimensions of access, benefit-sharing, local community rights and traditional knowledge and the connected problems of IP and economic development.[8]

Other difficulties include the overlapping competences of different ministries. The implementation of the ITPGRFA, for example, normally requires coordination between the Ministry responsible for agricultural policies and that responsible for environmental matters, as well as coordination with ministries responsible for trade, land, forests and national parks where access to PGRFA *in situ* is concerned.

In the case of federal states or similar decentralized governmental systems, the allocation of responsibilities between a central or federal government and its individual states, regions or provinces may also provide a challenge. In Malaysia, for example, the difficulties caused by the division of responsibilities between the state and federal authorities with respect to genetic resources are specifically noted in the 1998 National Policy on Biological Diversity (paragraphs 16-20). The Malaysia country report notes that while national legislation on ABS was being developed, the States of Sabah and Sarawak had their own process underway which resulted in two state enactments on this matter. In Australia, discussions are in progress between the national government and states regarding the way in which Australia will implement the ITPGRFA. In Brazil, competence over genetic resources is shared at both federal and state levels and state laws have been enacted on access to genetic resources.[9] The federal government is responsible for establishing standards and granting import and export permits.

7.3.3.2 National and regional implementation of access and benefit-sharing under the ITPGRFA

Placing of PGRFA in the MLS: to date, the major collections formally placed in the MLS are those held by the international institutions that have signed agreements with the Governing Body of the ITPGRFA.[10]

As far as national collections are concerned, Article 11.2 of the ITPGRFA provides that PGRFA of crops and forages listed in its Annex 1 that are under the management and control of the Contracting Parties and in the public domain, are to be included automatically in the MLS. Other holders of PGRFA listed in Annex 1 are invited to place them in the MLS and Contracting Parties agree to take appropriate measures to encourage them to do so. While the ITPGRFA itself does not clearly and explicitly place an obligation on Contracting Parties to disseminate information on the material included automatically or voluntarily in the MLS, it is clear that the accessibility of such material will depend, in practice, on the relevant information being available. For this purpose, the ITPGRFA Secretariat has formally requested Contracting Parties to provide information on the materials within the MLS in their jurisdictions.[11] Updated information on the accessions included in the MLS is available at the Secretariat of the ITPGRFA.[12] A number of countries, including both developed and developing countries, as well as countries with economies in transition, have provided information on material included in the MLS.[13] The material includes some PGRFA held by private entities including, for example, at least two private breeders' associations in France.[14] EURISCO, the European catalogue of *ex situ* PGR collections,

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has been adapted to incorporate the inclusion of each accession in the MLS.

From the information available, it appears that there may be differences in the interpretation of the criteria of 'under the management and control of Contracting Parties' and 'in the public domain'. This matter may need to be referred to the Governing Body for clarification. In the meantime, it appears that wide use is being made of the persuasive powers of governments to encourage holders of non-governmental collections of Annex 1 PGRFA to place their collections in the MLS.[15]

Implementing the MLS through administrative measures: to date a number of countries are choosing to implement the MLS of the ITPGRFA through administrative measures rather than through the adoption of new national legislation. This is the case, for example, in both Germany and the Netherlands. The implementation of the MLS in Germany is illustrative of the type of administrative measures taken.

Implementing the MLS through legislative measures: while some countries consider that the MLS can be implemented solely through administrative measures, other countries have found that more formal legislative action may be necessary, in order to provide legal space in which the implementation can operate, provide for legal authority for the implementation of the system and/or provide legal certainty as to the procedures to be followed.

The need to provide legal space may be necessary where legislation is already in place for the implementation of ABS procedures under the CBD. Legislative action in this context may be limited to the recognition that ABS under the MLS should follow different and simplified procedures, leaving those procedures to be defined by administrative measures or by further legislative action, or else it may enter into the detailed procedures applicable as with other genetic resources or uses. The legislation of Ethiopia is one example of the first approach, where the legislation provides that access to genetic resources under an MLS is to be made in accordance with the procedure specified in the MLS and in accordance with future regulations to be issued on the subject.[16] There are to date no instances of national legislation that set out detailed procedures for dealing with ABS under the MLS. It is known however that a number of countries are considering, or in the process of drafting, such legislation, whether as part of stand-alone legislation on PGRFA, or in the context of national legislation on genetic resources in general.[17]

Regional cooperation in the implementation of the MLS: reference has already been made to regional initiatives in the implementation of ABS. A number of regions are also taking cooperative action for the implementation of the MLS. One such initiative is that launched by the Arab Organization for Agricultural Development (AOAD) with the support of FAO and Bioversity International for the development of guidelines and model legislation on the implementation of the ITPGRFA and its MLS in the countries of the Near East region. A workshop held in Cairo in March/April 2009 agreed on a roadmap for the development of the guidelines and their implementation in selected countries in the region.

A second example is the European initiative to establish AEGIS. This system, which has been developed within the framework of the ECPGR, would provide for the establishment of a European Collection, consisting of selected accessions designated by the individual countries. Material designated as part of the European Collection would continue to be conserved in the individual genebanks concerned, but would be maintained in accordance with agreed quality standards and would be made freely available, both within Europe and outside, in accordance with the terms and conditions set out in the ITPGRFA using the SMTA. In so doing, the countries plan to share responsibilities relating to the conservation and sustainable use of PGRFA and thus to develop a more efficient regional system in Europe. Both Annex 1 and non-Annex 1 materials can be designated as part of the European Collection.[18]

A third regional: initiative is that underway in the Pacific Region, where the Pacific Island countries have agreed to make Annex 1 material available through their regional genebank, CePaCT, run by the SPC. The SPC is in the process of concluding an Agreement with the Governing Body under Article 15.5 of the ITPGRFA, placing the regional germplasm collection within the purview of the ITPGRFA.

Access and Availability of PGRFA under the MLS: Table 7.1 provides information on rates of acquisition and distribution by CGIAR centres during the first seven months of operation of the system as reported to its Governing Body at its Second Session in 2007.[19] Further information is provided on acquisition and distribution by CGIAR centres during the year commencing 1 August 2007 as reported to the Third Session of the Governing Body.[20] Seventy-four percent of the materials were distributed to developing countries and six percent to developed countries.

So far, there is still little quantifiable information on the flow of germplasm from national sources, although it is clear that an increasing amount of PGRFA is now circulating under the MLS. In particular, it is understood that a number of countries, such as Canada, Egypt, Germany, the Islamic Republic of Iran, the Netherlands, the Nordic countries and the Syrian Arab Republic, are now distributing Annex 1 materials widely under the SMTA. The ITPGRFA Secretariat's report to the Third Session of the Governing Body on the implementation of the MLS also provides information on materials made available under emergency disaster situations over the last decade or so.[21]

7.3.3.3 National and regional implementation of access and benefit-sharing under the Convention on Biological Diversity

The implementation of ABS does not necessarily require the adoption of a legislative framework. Indeed, the number of national instruments implementing ABS under the CBD is still relatively limited. Several countries, particularly developed countries, tend to favour a strategy of using administrative policies and placing few if any legal or regulatory conditions on access to genetic resources, other than those inherent in general property laws (real and intellectual), contract law, forest and wildlife protection laws and/or under international agreements such as the ITPGRFA. The Nordic Ministerial Declaration of 2003 'Access and Rights to Genetic Resources'[22] is an example of this approach.

The number of laws regulating ABS is, however, increasing. As of February 2010, the CBD Database on ABS Measures[23] listed 32 countries[24] that had some legislation or regulations addressing ABS, of which 22 had adopted new laws or regulations since 2000. The laws are either part of general legislation on the environment or free-standing legislation on biodiversity or genetic resources.

For the most part, ABS legislation tends to be drafted primarily to cover the issues raised by *in situ* bioprospecting including, in particular, access to genetic resources and associated traditional knowledge in indigenous and local communities, although the legislation also applies, sometimes expressly, to accessing genetic resources in *ex situ* conditions.

So far as access regimes are concerned, provisions in national legislation are fairly standard, requiring application to a central authority for permission to access genetic resources and associated local knowledge, prior informed consent of the national authority and the indigenous and local landowners or communities where access is to take place, and arrangements for benefit-sharing with both the central authority and the indigenous or local communities concerned. In an increasing number of countries,[25] a distinction is being made between access for research and access for commercial purposes, although the borderline is very difficult to establish. Where the use

TABLE 7.1
Experience of the CGIAR centres with the SMTA from 1 January 2007 to 31 July 2007 (first line) and 1 August 2007 to 1 August 2008 (second line)

Acquisitions	Transfers of raw PGRFA	Transfers of PGRFA under development	Total transfers	Shipments	Countries	Rejections
3 988	38 210	48 848	97 669	833	155	3
7 264	95 783	348 973	444 824	3 267	-	0

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changes after the initial research, then a new ABS agreement is required, but many innovators hesitate to access genetic resources if they have to renegotiate ABS as soon as a profitable product appears on the horizon.

Many countries have no national ABS legislation or policies in place and a constant theme in many of the reports from developing countries is the need to develop them.[26] It is not possible to describe all aspects of national arrangements for ABS. This section will therefore concentrate on the following four issues: benefit-sharing arrangements, traditional knowledge and the rights of indigenous and local communities, as well as regional cooperation and compliance.

Benefit-sharing arrangements: in general, there are few, if any, examples of laws and policies that are broadly acknowledged to be successful in generating tangible benefits and that could provide a model for other countries.[27] Most countries with ABS arrangements in place allow for flexibility in the actual nature of the benefits. This is in line with the thrust of recent studies indicating wide divergences in the practices and interests involved in different sectors that depend on access to genetic resources.[28] There is clearly a need for better market information on the valuation of genetic resources used in different sectors. Recent legislation in some Latin American countries, however, seems to take a different approach, requiring fixed percentages of payments to be made under benefit-sharing arrangements, in addition to non-monetary benefits.

Costa Rica, for example, requires that up to 10 percent, of the budget for research and bioprospecting and up to 50 percent of the royalties obtained from commercialization be paid by the applicant (the actual amounts to be agreed in advance). Under prior informed consent agreements entered into in the period 2004-2006 between the National System of Conservation Areas (SINAC) as provider and the National Institute for Biodiversity as user, SINAC obtained monetary benefits of approximately USD 38 387 of which 89.3 percent resulted from the percentage of the research budget and 10.7 percent from royalties.

Peru requires that the ABS agreement foresee an initial monetary payment or equivalent to the providers of traditional knowledge, to be applied to sustainable development and not less than five percent of the value of the gross sales of products developed from the direct or indirect use of such knowledge. A percentage of not less than 10 percent of the gross value of the sales of those products must also be paid into the Fund for the Development of Indigenous Peoples.[29]

Traditional knowledge and the rights of indigenous and local communities: specific recognition of the rights of holders of traditional knowledge or community knowledge is given in many new ABS enactments. Examples are the African Model Legislation,[30] a proclamation in Ethiopia,[31] and a law in Peru. One new approach has been to provide for the registration of traditional knowledge and to take action against acts of misappropriation. In Peru, this is done through the dissemination of information on the registered rights to patent offices around the world and by taking legal action to oppose IPR being awarded for inventions based on traditional knowledge that has been misappropriated.[32] A new law in Portugal provides for the registration of local varieties and other indigenous material and of associated traditional knowledge, developed in a non-systematic manner by local populations.[33] Registration allows for the sharing of benefits and some protection against misappropriation. It also implies a corresponding responsibility on the rights' holders for the continued *in situ* maintenance of the registered plant material.

Regional Cooperation in the implementation of ABS: the Conference of Parties to the CBD has, on a number of occasions, stressed the importance of regional cooperation on ABS.[34] A number of initiatives have been taken at the regional level in this respect. Examples are Decision 391 of the Andean Community of 1996 establishing a Common Regime on Access to Genetic Resources, the ASEAN Framework Agreement on Access to Biological and Genetic Resources of 2000 and the African Model Legislation for the Protection of the Rights of Local Communities, Farmers and Breeders and for the Regulation of Access to Biological Resources (the Organization of African Unity [OAU] Model Legislation), also of 2000. Each of these regional initiatives takes as its starting point the sovereign rights of states over their genetic resources and sets out basic principles for access to

genetic resources, including prior informed consent of the national government providing access and of the local communities involved, along the lines of the Bonn Guidelines adopted in 2001. The OAU Model Legislation deals in more detail with the rights of local communities and Farmers' Rights and also covers PBR. Both the OAU Model legislation and the ASEAN Framework Agreement take the form of guidelines for the establishment of ABS regimes by national governments in the region; however no African country has yet enacted law following the OAU model. The Andean Community Decision 391, on the other hand, requires each Andean Community member to enact legislation that is consistent with it. To the extent that the regional initiatives set out detailed procedures for ABS based on the bilateral model, there may well be a need for Parties to the ITPGRFA to consider revising them to take into account the MLS of ABS established under the ITPGRFA.

Compliance: one of the problems facing national ABS regimes has been difficulty in ensuring compliance with and enforcing the conditions placed on the use of the genetic resources, especially once the material has been accessed and has left the country. Taking legal action to enforce the agreed conditions of ABS in foreign courts is very expensive and can be beyond the resources of many countries. Legal recourse may be necessary not only where genetic resources have been accessed in contravention of national legislation or used in contravention of the agreed conditions but also when, following initial research, the material is used for purposes that were not covered in the original agreement, such as commercial exploitation. It was partly for these reasons that the role of the Third Party Beneficiary was conceived in the SMTA under the MLS established under the ITPGRFA.[35]

While the issue of compliance remains complex, the proposal for a certificate of origin/source/legal provenance is one approach being suggested in international fora as a means of alleviating at least some of the concerns, although its feasibility remains in some doubt. The requirement for such a certificate has been taken up in the ABS legislation of a number of developing countries, for example Costa Rica and Panama.

Disclosure of origin requirements have been enacted in the patent legislation of a number of European countries, including Belgium, Denmark, Germany, Norway, Sweden and Switzerland.

7.4 Farmers' Rights under the ITPGRFA

The ITPGRFA deals with the issue of the realization of Farmers' Rights, a concept originally launched in the interpretations of International Undertaking on PGR. Recognizing that the responsibility for realizing Farmers' Rights rests with national governments, Article 9 of the ITPGRFA calls on Contracting Parties to take appropriate measures to protect and promote Farmers' Rights. For the first time in an international instrument, the possible scope of Farmers' Rights is clarified, as including: the protection of traditional knowledge relevant to PGRFA; the right of farmers to equitably share benefits that result from their use; and their right to participate in making decisions, at the national level, on matters related to the conservation and sustainable use of PGRFA. The ITPGRFA does not limit any rights that farmers have to save, use, exchange and sell farm-saved seed/propagating material, subject to national law.

Recent debates on the implementation of Farmers' Rights have focused on the distinction between the 'ownership' approach and the 'stewardship' approach. The former places emphasis on the right of farmers to be rewarded for genetic material obtained from their fields and used in commercial varieties and the latter places emphasis on the rights that farmers need to have in order to allow them to continue as stewards and innovators of agrobiodiversity. Both approaches are clearly reflected in the present state of national implementation of Farmers' Rights as described in Chapter 5.

The Third Meeting of the Governing Body of the ITPGRFA, held in Tunis in 2009,[36] reviewed the state of implementation of Article 9 of the ITPGRFA dealing with Farmers' Rights. As Contracting Parties had provided only a small number of submissions, describing the status of implementation, the Secretariat of the ITPGRFA was requested to convene

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regional workshops on Farmers' Rights to discuss national experiences in implementing the Article.

7.5 Changes since the first State of the World report was published

Since the publication of the first SoW report, there has been a great deal of activity with respect to the development of the international and national legal and policy frameworks for ABS. Less progress has been made overall in the implementation of Farmers' Rights. Major changes that have occurred in these areas include:

- perhaps the most far-reaching development has been the entry into force of the ITPGRFA in 2004. This International Treaty establishes an MLS of ABS that facilitates access to PGRFA of the most important crops and forages for food security; as of February 2010, there were 123 Parties to the ITPGRFA;
- negotiations have been initiated by the Contracting Parties to the CBD aimed at developing an international regime on ABS. These are scheduled to be finalized before the 10th Meeting of the Conference of Parties in 2010;
- discussions on certain matters related to ABS are also taking place in other fora such as the TRIPS Council, WIPO and WHO;
- the FAO CGRFA adopted a Multi-Year Programme of Work in 2007 and recommended that "FAO continue to focus on ABS for genetic resources for food and agriculture in an integrated and interdisciplinary manner…", including PGRFA, along with genetic resources of farm animals, microbes and beneficial insects, fish and forest species;
- in February 2010, the CBD Database on ABS Measures listed 32 countries with legislation or regulations addressing ABS. Of these, 22 had adopted new laws or regulations since 2000. Most of these have been developed in response to the CBD rather than the ITPGRFA.

7.6 Gaps and needs

While much has been achieved, the following is a list of some of the areas that still require attention:

- at the global level, there is still a great deal of work to be done in international fora on defining a comprehensive international ABS regime. Any new international regime needs to take into account the specific needs of the agriculture sector and other sectors;
- while the special requirements of PGRFA are provided for in the ITPGRFA, more needs to be done to raise awareness of the importance of the ITPGRFA among governments and to encourage wider participation therein;
- many countries have expressed the need for assistance, both with regards to advice and capacity building for the implementation of the ITPGRFA and its MLS for ABS. Assistance is also needed in ensuring a proper interface between the ITPGRFA and the CBD;
- potential difficulties remain in implementing ABS in the context of material found in *in situ* conditions, even when that material falls within the MLS;
- there is a need for stronger coordination in the development of policies, legislation and regulations among the various ministries, state, regional or provincial governments and other institutions having responsibility for different aspects of PGRFA;
- several countries have expressed the need for assistance in developing policies, legislation, regulations and practical measures for implementing Farmers' Rights. While a few countries are experimenting in this area, to date there are no well-proven models that could be widely adopted. Existing examples of such legislation need to be evaluated and information made available on their effectiveness and how they function in practice;
- one way to realize Farmers' Rights is through making available better varieties. Plant breeding and seed dissemination systems need to be strengthened and greater attention paid to the needs and circumstances of resource-poor farmers, the guardians of much genetic diversity. Regulatory systems also need to be responsive to the needs of farmers.

References

[1] Article 13.6 requires the Contracting Parties to consider modalities of a strategy of voluntary benefit-sharing contributions from Food Processing Industries that benefit from plant genetic resources for food and agriculture.

[2] The term *sui generis* is used in the legal sense of an instrument that is designed for a specific purpose, in this case a legal instrument specifically designed to protect plant varieties.

[3] Article 5.2 of the International Convention for the Protection of New Varieties of Plants, 1961, as revised in 1972, 1978 and 1991.

[4] **CGRFA-**11/07/Report. Available at: ftp://ftp.fao.org/docrep/fao/meeting/014/k0385e.pdf

[5] Country reports: Morocco, Nepal, Spain, Sri Lanka and Uruguay.

[6] Available at: http://km.fao.org/gipb/

[7] **Young, T.** 2004. Legal issues regarding the international regime: objectives, options and outlook. *In* Carriosa, S., Brush, S., Wright, B. and McGuire, P. (Eds.) *Accessing Biodiversity and Sharing the Benefits: Lessons from Implementing the Convention on Biological Diversity.* IUCN Environmental Policy and Law Paper No. 54, 2004, pp. 271-293.

[8] Some assistance is already being offered by FAO and Bioversity International under their Joint Programme of Assistance to countries who request it in the implementation of the ITPGRFA and its MLS. See ftp://ftp.fao.org/ag/agp/planttreaty/noti/NCP_GB3_JIP1_e.pdf

[9] For example, the Acre State Law, Accesso a recursos genéticos lei estadual, 1997, and Amapá State Law on Access to Genetic Resources, 1997.

[10] These include the 11 CGIAR centres holding in trust collections, CATIE, the COGENT coconut collection for Africa and the Indian Ocean, the COGENT coconut collection for the South Pacific, and the Mutant Germplasm Repository of the FAO/IAEA Joint Division. Agreements are expected to be signed in the near future with the International Cocoa Genebank of the University of the West Indies, and the Secretariat of the Pacific Community (SPC).

[11] Notification from the ITPGRFA Secretariat dated 11 June 2008. Available at: ftp://ftp.fao.org/ag/agp/planttreaty/noti/csl806e.pdf

[12] Available at: http://www.planttreaty.org/inclus_en.htm

[13] Op cit. Endnote 12.

[14] Review of the Implementation of the MLS, FAO Doc. IT/GB-3/09/13.

[15] Country reports: Germany and Netherlands. It is also reported that United Kingdom has also successfully encouraged government-supported institutions to place their collections in the MLS.

[16] Ethiopia, Proclamation No. 482/2006 on Access to Genetic Resources and Community Knowledge, and Community Rights, 2006, Article 15. The Proclamation provides for a Special Access Permit.

[17] Country reports: Morocco, Sudan and Syrian Arab Republic.

[18] For an account of AEGIS, see http://www.ecpgr. cgiar.org/AEGIS/AEGIS_home.htm

[19] Experience of the centres of the CGIAR with the implementation of the agreements with the Governing Body, with particular reference to the SMTA, FAO Doc. IT/GB-2/07/Inf. 11.

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[20] Experience of the International Agricultural Research Centres of the CGIAR with the Implementation of the Agreements with the Governing Body, with particular reference to the use of the SMTA for Annex 1 and Non-Annex 1 Crops, FAO Doc. IT/GB-3/09/Inf.15.

[21] Review of the Implementation of the MLS, FAO Doc. IT/GB-3/09/13.

[22] Available at: http://www.norden.org/pub/miljo/jordogskov/sk/ANP2004745.pdf

[23] Available at: http://www.cbd.int/abs/measures.shtml

[24] Country reports: Afghanistan, Argentina, Australia, Bhutan, Brazil, Bulgaria, Cameroon, Colombia, Costa Rica, Cuba, Ecuador, El Salvador, Ethiopia, Gambia, Guatemala, Guyana, India, Kenya, Malawi, Mexico, Nicaragua, Panama, Peru, Philippines, Portugal, South Africa, Uganda, Vanuatu, Venezuela (Bolivarian Republic of) and Zimbabwe.

[25] Country reports: Bhutan, Brazil, Bulgaria, Costa Rica, Ethiopia, Malawi and Philippines.

[26] Country reports: Afghanistan, Algeria, Albania, Armenia, Dominica, Dominican Republic, Fiji, Ghana, Jordan, Lao People's Democratic Republic, Lebanon, Madagascar, Malawi, Malaysia, Mali, Morocco, Namibia, Nepal, Nigeria, Oman, Pakistan, Palau, Russian Federation, Tajikistan, United Republic of Tanzania, Thailand, Trinidad and Tobago, Uruguay, Viet Nam and Zambia.

[27] Op cit. Endnote 7, p. 275.

[28] For example, **Laird, S. & Wynberg, R.** 2008. Study on access and benefit-sharing arrangements in specific sectors, UNEP/CBD/WG-ABS/6/INF/4/Rev.1. Document presented to the Sixth Meeting of the Ad Hoc Open-ended Working Group on Access and Benefit-sharing, Geneva, 21-25 January 2008.

[29] Law No. 27811 of August 2002, Articles 8 and 27 (c).

[30] African Model Legislation for the Protection of the Rights of Local Communities, Farmers and Breeders. and for the Regulation of Access to Biological Resources, OAU Model Law, Algeria, 2000. Available at: http://www.opbw.org/nat_imp/model_laws/oau-model-law.pdf

[31] Proclamation No. 482/2006 on Access to Genetic Resources and Community Knowledge, and Community Rights.

[32] Law No. 27811 establishing the Protection Regime for Collective Knowledge of Indigenous Peoples Connected with Biological Resources, 2002.

[33] Decree-Law No. 118/2002.

[34] For example, COP decisions II/11 and III/15.

[35] The primary role of the Third Party Beneficiary is to initiate dispute-resolution proceedings under the SMTA where necessary to protect the interests of the MLS. However, the concept originally arose during the negotiations of the SMTA in part out of concern by developing countries for an international mechanism to ensure compliance with the terms and conditions of the SMTA.

[36] **FAO.** 2009. Report of the Governing Body of the ITPGRFA, Third Session. Tunis, Tunisia, 1-5 June 2009 IT/GB-3/09/Report.