

Report of the First National Focal Point Meeting of the project

**“Enhancing understanding and implementation
of the International Treaty on Plant Genetic
Resources for Food and Agriculture in Asia (GCP/RAS/284/JPN)”**

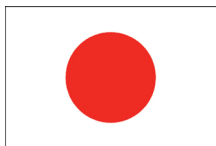


May 27-28, 2013

**Bangkok
THAILAND**

**Food and Agriculture Organization of the United Nations
Regional Office for Asia and the Pacific**





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This publication is printed by
The FAO Regional Project
“Enhancing understanding and implementation of the International Treaty on Plant Genetic
Resources for Food and Agriculture in Asia”
(GCP/RAS/284/JPN)

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Foreward

The International Treaty on Plant Genetic Resources for Food and Agriculture (ITPGRFA) is a milestone in the global efforts for effective utilization of plant genetic resources aimed at advancing food and nutrition security in the developing regions of the world. However, more than a decade after conclusion, only a fraction of the countries that signed the treaty became party to the ITPGRFA by ratifying or acceding to it. Those that postponed their decision about joining the treaty did so on a number of grounds. Some countries were confronted with inadequate institutional capacities, including trained human resources, physical capacities and financial resources for implementing the provisions of the treaty. For some countries, usage of certain terms in the text of the treaty was fraught with legal ambiguity and often was in conflict with existing national legislations for protection of plant variety rights and intellectual property rights. As a result, many adopted a cautious approach and examined a range of options to ensure protection of national interests before considering becoming a contracting party to the treaty.

FAO, the Treaty Secretariat, Bioversity International, and other international organizations undertook a number of initiatives aimed at raising awareness about the treaty as well as supporting national capacity building for its implementation both in national and sub-national contexts. In continuation of these efforts, FAO Regional Office for Asia and the Pacific launched a Regional Project GCP/RAS/284/JPN *“Enhancing understanding and implementation of the International Treaty on Plant Genetic Resources for Food and Agriculture in Asia”* with a grant assistance provided by the Government of Japan.

This document represents the outcome the first meeting of the National Focal Points (NFPs) of the 14 countries, participants of the project, held during May 27-28, 2013. The meeting was also attended by representatives of the Japanese government, the ITPGRFA Secretariat, IRRI, and Bioversity International, who delivered keynote addresses and highlighted constraints and opportunities in ongoing global efforts in facilitating adoption of the treaty by developing countries. It also provides up-to-date information in relation to management and utilization of PGRFA and ongoing activities in Asian countries with regard to fulfilling the provisions of the ITPGRFA and completing national formalities toward becoming contracting party to the Treaty.

Abbreviations and acronyms

ABS	Access and Benefit Sharing
ACIAR	Australian Centre for International Agricultural Research
BARC	Bangladesh Agricultural Research Council
BDA	Biological Diversity Act (India)
BSF	Benefit Sharing Fund
CARDI	Cambodian Agricultural Research and Development Institute
CBD	Convention on Biological Diversity
CGIAR	Consultative Group on International Agricultural Research
CIAT	International Center for Tropical Agriculture
CIMMYT	International Maize and Wheat Improvement Center
CIP	International Potato Center
DAC	Department of Agriculture and Cooperatives (India)
ESCAP	Economic and Social Commission for Asia and the Pacific (UN)
FAO	Food and Agriculture Organization of the United Nations
GCDT	Global Crop Diversity Trust
GPA	Global Plan of Action
GRiSP	Global Rice Science Partnership
IARC	International Agricultural Research Centre
IABGR	Institute of Agricultural Biotechnology and Genetic Resources (Pakistan)
ICAR	Indian Council of Agricultural Research
ICARDA	International Center for Agricultural Research in the Dry Areas
ICRAF	International Center for Research in Agroforestry
IITA	International Institute of Tropical Agriculture
IRRI	International Rice Research Institute
ILRI	International Livestock Research Institute
ITPGRFA	International Treaty on Plant Genetic Resources for Food and Agriculture
JICA	Japan International Cooperation Agency
MLS	Multilateral System
MAFF	Ministry of Agriculture, Forestry and Fisheries (Cambodia)
MARDI	Malaysian Agricultural Research and Development Institute
MIA	Ministry of Industry and Agriculture (Mongolia)
MoFSC	Ministry of Forest and Soil Conservation (Nepal)
MOAI	Ministry of Agriculture and Agro-based Industry (Malaysia),
MNGD	Ministry of Environment and Green Development (Mongolia)
NARS	National Agricultural Research System
NFP	National Focal Point
NIAS	National Institute of Agrobiological Sciences (Japan)
NISM	National Information Sharing Mechanism

NBPGR	National Bureau of Plant Genetic Resources (India)
NBC	National Biodiversity Centre (Bhutan)
NBS	Nepal Biodiversity Strategy
NAFRI	National Agriculture and Forestry Research Institute (Lao PDR)
PARC	Pakistan Agricultural Research Council
PGRC	Plant Genetic Resources Centre (Sri Lanka)
PGRFA	Plant Genetic Resources for Food and Agriculture
PIC	Prior Informed Consent
PPV&FRA	Protection of Plant Variety and Farmers' Rights Act, 2001 (India),
PSARI	Plant Science and Agriculture Research and Training Institute (Mongolia)
PVP	Plant Variety Protection
SEARICE	Southeast Asia Regional Initiatives for Community Empowerment
SMTA	Standard Material Transfer Agreement
TSWG	Technical Support Working Group (Philippines)
UPOV	International Union for the Protection of New Varieties of Plants

Report of the First Regional Meeting of the Project “Enhancing Understanding and Implementation of the ITPGRFA in Asia”

1. Introduction

The International Treaty on Plant Genetic Resources for Food and Agriculture (ITPGRFA) provides a mechanism for governments, genebanks, and agricultural research centres to pool their genetic resources in an innovative management system that ensures the full use of the materials and the fair sharing of their benefits¹. This mechanism known as the Multilateral System (MLS) of access and benefit-sharing (ABS) contains at present 1.5 million samples of the world's 64 most important food crops listed in Annex 1 of the Treaty. Between 600 and 800 samples are exchanged each day through the Standard Material Transfer Agreement (SMTA)². But notification of inclusion of national gene bank materials in the MLS is happening at an extremely slow pace. At the same time, the membership of the International Treaty needs to be expanded in the region to allow for common approaches to PGRFA management.

So far only 24 of the 127 contracting parties have provided notification of their collections and access to the relevant information facilitating their use through the MLS. Of these, 13 have made all necessary information directly available to the Secretariat. No benefit-sharing payments have been received so far under the mechanism devised by the Treaty, and as of January 2011, confirmed voluntary contributions amount to only 13.7% of the agreed target between July 2009 and December 2014³.

In order to accelerate implementation of the MLS, it is important that policy makers and gene bank managers in Asian countries are fully aware of their obligations under the Treaty and understand how the MLS functions and how they can contribute to and derive benefit from this system. It is also important to support Asian developing nations in building adequate technical and legal capacity to identify, inventory, and notify their collections to the MLS so that they can be easily accessed. To address these challenges, FAO undertook the regional project “Enhancing understanding and implementation of the International Treaty on Plant Genetic Resources for Food and Agriculture in Asia” (GCP/RAS/284/JPN) with funding support from the Government of Japan. The participating countries in the project are: Bangladesh, Bhutan, Cambodia, Indonesia, India, Lao PDR, Malaysia, Mongolia, Myanmar, Nepal, Pakistan, Philippines, Sri Lanka, Thailand and Viet Nam.

The first regional meeting of the National Focal Points (NFPs) representing countries participating in this project was held at Bangkok, Thailand during May 27-28, 2013.

¹ FAO Committee on Agriculture. Matters Related to FAO's Commissions, Treaties, and Conventions of relevance to COAG, Twenty-Second Session, 16-19 June, 2010

² ITPGRFA Report of the Secretary, Fourth Session of the Governing Body, Bali, Indonesia, 14-18 March 2011

³ Claudio Chiarolla and Stefan Jungcurt. 2011. Outstanding Issues on Access and Benefit Sharing under the Multilateral System of the International Treaty on Plant Genetic Resources for Food and Agriculture, Berne Declaration, Switzerland/ Development Fund, Norway

2. Opening Session

The meeting opened with welcome address by Mr. Hiroyuki Konuma, Assistant Director-General and FAO Regional Representative for Asia and the Pacific, Bangkok, Thailand. In his address, Mr. Konuma welcomed the participants for attending the meeting. He thanked the government of Japan for providing funds to implement this three-year (2012-2015) project. He stressed that project would greatly contribute to understanding the importance of the International Treaty on Plant Genetic Resources for Food and Agriculture (ITPGRFA) and building national capacities for its implementation as well as fostering regional cooperation among member countries in furthering the exchange of PGRFA, a cornerstone for building sustainable food security for the present and future generations.

Mr. Konuma stated that the ITPGRFA has been developed to address the concerns of FAO member states regarding access to plant genetic resources and benefit sharing from their use. This Treaty can only work if all participate and follow the rules of the Treaty. But not all countries in Asia have joined yet and he encouraged those countries to consider becoming parties to the Treaty. He hoped that all stakeholders would join hands in providing support so that the project achieves its stated objectives and outcomes. Finally, he expressed once again his sincere gratitude to the representatives of the government of Japan, National Institute of Agrobiological Sciences (NIAS), IRRI, Bioversity International, and FAO headquarters for participating this important meeting

The opening address was delivered by Mr Tetsuya Murakami, First Secretary and Deputy Permanent Representative of Japan to ESCAP Embassy of Japan in Thailand, Bangkok, on behalf of the Government of Japan. He thanked FAO for inviting him to this meeting and stated that the Government of Japan has provided funds for this project because it considers the issues related to the ITPGRFA as of fundamental importance and Japan wishes to promote international trust so that access to plant genetic resources is assured and that benefit sharing is transparent. He informed that the Japanese government has decided to become a Party to the ITPGRFA following a broad-based process of consultation with stakeholders in the agriculture sector. Japan is expected to become a Party to the Treaty shortly after approval by the Diet (the Japanese Parliament). Mr. Murakami underscored the importance of open discussion on issues surrounding the PGRFA given that the Treaty is still evolving. He urged the participants to consider this project as not only an opportunity to enhance their countries' participation in the Treaty but also an opportunity to strengthen their networking with the group of plant genetic resources workers present here today.

After the deliberations of welcome and opening addresses, Mr. Duncan Vaughan from the National Institute of Agrobiological Sciences (NIAS), Tsukuba, Japan provided a background and introduction to the first meeting of the Project “Enhancing understanding and implementation of the International Treaty on Plant Genetic Resources for Food and Agriculture (GCP/RAS/284/JPN)”. He stated that the present project is a continuation of the Japanese assistance provided to FAO under previous projects GCP/RAS/186/JPN and GCP/RAS/240/JPN that supported the development of National Information Sharing Mechanism (NISM) for monitoring the Global Plan of Action (GPA) in 15 Asian countries.

Within the framework of this project, there are specific issues that need to be addressed concerning how to effect greater inter-country germplasm flows. Among the constraints to access to PGRFA are:

- (a) Lack of resources – human and infrastructure;
- (b) Overlapping authorities or lack of clear lines of authority in relation to exchange of germplasm;
- (c) Lack of knowledge – weak information systems, lack of training;

He proposed the following objectives for the meeting:

- Renew and strengthen the Asian PGRFA network;
- To learn about the evolving ITPGRFA and related project initiatives;
- To learn about each countries perspective in relation to the Treaty;
- To identify issues for discussion to enhance the effectiveness of the Treaty for Treaty member countries
- To understand why some countries are not in the Treaty;
- To have substantive discussions related to enhancing understanding and effectiveness of the Treaty, particularly related to access to PGRFA;
- Address issues of non-Treaty member countries;
- To seek potential opportunities for benefit sharing fund (BSF) projects – particularly for non-English speaking countries;
- Develop workplans for in-country activities that address the Project documents objectives.

The outputs expected of this meeting are:

- a. Recommendations from the meeting;
- b. Publication of the proceedings;
- c. Workplans agreed;
- d. Ideas for BSF projects for Asian countries proposed

Following the introduction to the agenda of the meeting, Mr. Daniele Manzella from the ITPGRFA secretariat at FAO headquarters discussed various aspects of the ITPGRFA focusing on the multilateral system of access and benefit-sharing, benefit-sharing fund and governance of the Treaty in his presentation “Introduction to the International Treaty on Plant Genetic Resources for Food and Agriculture.”

3. Technical Session: Invited Expert Presentations

In this session, three expert presentations were made to set a scientific and technical discourse surrounding the issues of sustainable utilization of PGRFA and country-level implementation of the ITPGRFA.

Michael Halewood and Ronnie Vernooy, Policy Unit, Bioversity International, Rome, Italy presented a paper on their experience in running the project on strengthening capacities of eight countries to implement system of access and benefit-sharing under the ITPGRFA. In their presentation they highlighted that a central feature of the ITPGRFA is the multilateral system of access and benefit-sharing (MLS), whereby contracting parties agree to virtually pool a subset of the genetic resources of 64 crops and forages to be used for ‘utilization and

conservation for research, breeding and training for food and agriculture’ (ITPGRFA article 12.3(a)). They informed that according to the Treaty, access to genetic resources in the multilateral system will be provided ‘expeditiously’ and either free of charge or for ‘minimum costs involved’ (Article 12.3(b)) using the standard material transfer agreement (SMTA) adopted by the governing body of the ITPGRFA (Article 12.4). Contracting parties will ‘take the necessary legal or other appropriate measures to provide [facilitated] access to other contracting parties, including natural and legal persons within their jurisdictions’ (ITPGRFA, Article 12.2).

The project, being implemented in eight countries (Bhutan, Burkina Faso, Costa Rica, Côte d’Ivoire, Guatemala, Nepal, Rwanda, and Uganda) supported by a grant from the Netherlands to Bioversity International, has developed common terms of reference for research and capacity building to support national implementation of the Treaty under the umbrella of five interrelated themes:

- National-level multilateral system policy development
- Developing capacity to effectively implement the ITPGRFA;
- Mapping and measuring germplasm interdependence and flows;
- Linking farmers to the ITPGRFA/MLS;
- Technology transfer

The paper also identified some of the challenges that the eight country teams were facing in implementing the Treaty. The authors described eight steps that are needed to make the MLS work:

1. Ensure that there are no legal impediments to providing PGRFA under the ITPGRFA using the SMTA,
2. Confirm which PGRFA are automatically included in the MLS,
3. Develop mechanisms to encourage voluntary inclusion of PGRFA by natural and legal persons,
4. Share non-confidential information about PGRFA in the multilateral system,
5. Confirm who has the authority to consider requests and provide materials,
6. Start using the SMTA for both international and domestic transfers,
7. Develop approaches for in situ PGRFA in the multilateral system, and
8. Consider mechanisms to facilitate use of the multilateral system.

Major implementation challenges identified so far were:

1. Low levels of awareness about the Treaty and the multilateral system in particular,
2. Limited national capacities to deal with policy implementation complexities, and
3. Separate administration of ITPGRFA and the Convention on Biological Diversity

The authors concluded with a hope that this initiative, through the provision of technical support and through the creation of cross-country learning opportunities, is assisting countries to deal with these challenges. Hopefully, the experiences and lessons learned will be useful to other countries that find themselves in a similar position or are considering signing the Treaty in the near future.

Ruaraidh Sackville Hamilton, Head, TT Chang Genetics Resources Center and International Rice Genebank, IRRI, presented a paper entitled “The Treaty and the CGIAR system.” In his paper Mr. Hamilton highlighted the areas of overlapping interest between the CGIAR and the Treaty suggesting that all articles of the Treaty have synergy with the modus operandi of the CGIAR.

Each of the 11 International Agricultural Research Centres (IARCs) of the CGIAR that have genebanks (namely AfricaRice, Bioversity, CIAT, CIMMYT, CIP, ICARDA, ICRAF, ICRISAT, IITA, ILRI, IRRI) entered into a legal agreement in October 2006 with the Governing Body of the Treaty. Under these agreements, each centre’s in trust collection of annex 1 crops is included in the multilateral system of the Treaty; in trust collections of non-annex 1 crops are made available in the same way; germplasm held by Contracting Parties under the multilateral system is available to the IARCs; and the IARCs are invited to attend Governing Body meetings as observers.

However, one significant difference between the CGIAR and the Treaty must be highlighted—he stated. The mission of the CGIAR is to improve livelihoods of the poor, and conserving and sustainably using PGRFA is seen as an essential tool towards achieving the mission. In contrast, the conservation and sustainable use of PGRFA is the core mission of the Treaty. The distinct, but mutually supportive goals of the Treaty and the CGIAR reflect the mutual cooperation that actually occurs.

Makoto Kawase, Director, Genetic Resources Center, National Institute of Agrobiological Sciences, Tsukuba, Japan presented paper entitled “The ITPGRFA and Asia – perspectives from Japan”. In his paper, he discussed the hurdles Japan went through prior to the government’s decision to join the ITPGRFA and provided some perspectives on how the collaboration on PGRFA and ITPGRFA should evolve in future. According to him the language of the Treaty, was a barrier for Japanese and he highlighted a number of instances in the Treaty where legal ambiguities and illogical reasoning have been created due to use of vague terminology creating space for legal dispute and undermining the very purpose of arriving at consensus. He believed that this might be a problem for other countries who do not share a UN language as their native tongue.

As a way forward, Mr. Kawase identified several areas for capacity building: Human resources and expertise for understanding the global PGRFA system, fostering meaningful collaboration, new ways to evaluation of PGRFA, providing help to access BSF, and Treaty implementation. He questioned the logic of inclusion of crops in the list as Annex 1 to the Treaty highlighting the absence from the list of such crops as soybean, Capsicum, and tomato. In conclusion, he stated that his critical approach was meant to make the Treaty stronger and more relevant to all with Japan becoming a party to the treaty.

4. Technical Session: Highlights of Country Reports

In this session NFPs from 15 participating countries presented country reports to reflect the status of ITPGRFA with respect to its implementation in their respective countries and discuss the work plan under the project. The highlights of these reports are summarized below:

4.1 Institutional mechanism for implementing ITPGRFA

Bangladesh

Bangladesh signed and ratified the International Treaty on Plant Genetic Resources for Food and Agriculture (ITPGRFA) and is a Contracting Party (CP) to the Treaty. The institutional capacity for implementing the treaty is limited due to the absence of a National Institute of Plant Genetic Resources. At present Bangladesh Agricultural Research Council (BARC), the apex institution of the country's National Agricultural Research System (NARS), coordinates activities on PGR utilization. A National Information Sharing Mechanism (NISM) has been established to monitor the Global Plan of Action (GPA) in Bangladesh. The country has no strategic plan on PGRFA.

Bhutan

Bhutan became a Contracting Party of the ITPGRFA following its ratification by the National Assembly, the nation's Parliament, in 2003 at the initiative of the Policy and Planning Division of the Ministry of Agriculture and Forests. Since then the country has endeavoured to abide by the treaty and promote implementation of its obligations. The National Biodiversity Centre (NBC) has been designated as the National Focal Point (NFP) for the ITPGRFA.

Cambodia

Cambodia is a Contracting Party to the ITPGRFA; it acceded to the Treaty on 7 July 2002. The Cambodian Agricultural Research and Development Institute (CARDI); Ministry of Agriculture, Forestry and Fisheries (MAFF) is the national institution responsible for coordinating activities on PGRFA within the framework of the Treaty.

India

India signed and ratified the ITPGRFA in June 2002. The Department of Agriculture and Cooperatives (DAC) in the Ministry of Agriculture is the Nodal Agency for the Implementation of the ITPGRFA and the Joint Secretary (Seeds) is the Focal Point. The main stakeholders for the implementation of the Treaty are the Ministry of Agriculture (Department of Agriculture and Cooperation, Indian Council of Agriculture Research (ICAR), Ministry of Environment and Forest (MoEF), National Biodiversity Authority (NBA), and Protection of Plant Varieties and Farmers' Rights Authority (PPV&FRA).

The National Bureau of Plant Genetic Resources (NBPGR) of ICAR is mainly responsible for coordination and implementation of the Treaty in India and serves as the single-window system for exchange of germplasm for research. A National Advisory Board for the Management of Genetic Resources has been established for addressing issues related to the implementation of ITPGRFA, and policies and procedures concerning the exchange of PGR in India.

Besides, institutes of ICAR, State Agricultural Universities, private research institutes and Farmers Organizations are the participatory stakeholders for the implementation of the Treaty.

Lao PDR

Lao PDR acceded to the International Treaty on Plant Genetic Resources for Food and Agriculture in 2006. The National Agriculture and Forestry Research Institute (NAFRI) under the Ministry of Agriculture and Forestry is the main institution responsible for the implementation of the Treaty. Other stakeholders of the Treaty are the Department of Agriculture (DOA) and the Biotechnology and Ecology Institute (BEI) under the Ministry of Science and Technology.

Malaysia

Malaysia is a Contracting Party to the International Treaty on Plant Genetic Resources for Food and Agriculture (ITPGRFA). It acceded to the Treaty on May 5, 2003. Malaysian Agricultural Research and Development Institute (MARDI) under the Ministry of Agriculture and Agro-based Industry (MOAI), is the national institution responsible for coordinating PGRFA activities.

Mongolia

Mongolia is still not a party to the ITPGRFA. However, the Ministry of Industry and Agriculture (MIA) undertook concerted initiatives to build national consensus on the need to join the Treaty. This process is expected to be completed soon and the country looks forward to signing the Treaty at the 5th Governing Body meeting of the Treaty to be held in Muscat, Oman, 24-28th September 2013.

Myanmar

Myanmar signed the International Treaty on Plant Genetic Resources for Food and Agriculture in 2002 and is a Contracting Party to the Treaty. There are several institutions and departments under the Ministry of Agriculture and Irrigation (MOAI) and other Ministries, such as the Ministry of Environmental Conservation and Forestry, the Ministry of Medicine currently involved in PGRFA activities. Their efforts are not yet integrated under a national programme.

Nepal

The Ministry of Forest and Soil Conservation (MoFSC) is the focal ministry for the implementation of CBD, while Ministry of Agriculture Development (MoAD) is responsible for taking initiatives required to fulfill the commitment of the ITPGRFA.

Pakistan

Pakistan signed the International Treaty on Plant Genetic Resources for Food and Agriculture and is a Contracting Party to the Treaty. The Institute of Agricultural Biotechnology and Genetic Resources (IABGR) of Pakistan Agricultural Research Council (PARC) is the national institution responsible for activities concerning collection, conservation, evaluation and distribution of PGRFA.

Philippines

Philippines acceded to the ITPGRFA in September 2006 and the Treaty entered into force in January 2007. For implementation of the Treaty an Inter-agency Technical Support Working Group (TSWG) was created at the Office of the Undersecretary for Policy and Planning in the Department of Agriculture. The TSWG developed the final draft of an Executive Order to be

signed by the President of the Philippines entitled “*Providing For The Exploration, Conservation, Protection, and Sustainable Use of Plant Genetic Resources For Food and Agriculture, Appropriating Funds Therefor and For Other Purposes.*” This document provides a framework for PGRFA consistent with the Treaty and designates the Department of Agriculture as the focal point who will coordinate with other stakeholders.

Sri Lanka

Sri Lanka is not a Contacting Party to the ITPGRFA. The Plant Genetic Resources Center (PGRC) is one of many institutions in the country that maintain collections of genetic resources for conservation and utilization purposes.

Thailand

Thailand signed the ITPGRFA in 2002 but did not proceed to become a member of the Treaty. Before considering accession to the Treaty, the government of Thailand commissioned a study in 2003 to consider the impact of the Treaty on Thai economy. The study after considering the pros and cons of the treaty for the country came out with a negative opinion. Among the questions raised, the prominent were article 11.2 regarding scope of multilateral system (MLS) especially public domain, article 12.3(d) regarding intellectual property rights, article 1.3 and 11.4 regarding reconsideration of conditions for private sectors. Upon pressure from many stakeholders including the agricultural research community, the government commissioned another study in 2007 and the study came out in support of membership of the country in the Treaty. Even though Thailand is not yet a party to the ITPGRFA, Thailand has undertaken various activities to promote the ITPGRFA.

Viet Nam

Viet Nam is not yet a signatory to the ITPGRFA. But the Ministry of Agriculture and Rural Development has issued a Regulation on International Exchange of Crop Genetic Resource. According to this Regulation, most of the crop germplasm is available for exchange based on mutually/bilaterally agreed basis.

4.2 Status of on-going activities in collection, conservation and utilization of PGRFA

Bangladesh

Public research institutes under the National Agricultural Research System (NARS) hold large collections of germplasm of different crops and their wild relatives. Public agricultural universities also conserve PGR particularly of horticultural crops. Private seed companies have also some activities in PGR conservation. The total number of accessions conserved in different organizations of the country stands at: 6745 for rice including 121 wild species; 9649 for other cereal crops, vegetables, fruits, potato, aroids, flowers, and other minor crops, 1362 for sugarcane, 5978 for jute and other fibre crop, 475 for tea, 486 species for herbal medicines, and 23 species of mangrove species. For most crops the PGR is conserved in genebanks of NARS institutes with limited facilities for long-term conservation. Other crop germplasm are conserved under field conditions, in seed orchards and clonal banks.

Characterization and documentation of the conserved PGR is still at preliminary stages in the country. Bangladesh Agricultural Research Council has established a national network and is actively involved in coordinating PGRFA activities. Both public and private sector institutions are engaged in utilization of conserved PGR for breeding purposes. As of 2011, the NARS institutes have developed 385 new varieties of major food and cash crops. Public agricultural universities developed 57 crop varieties and the private sector 34 varieties of vegetable crops. Bangladesh has established a National Information Sharing Mechanism (NISM) to monitor the GPA in Bangladesh. The web site of the National Information-Sharing Mechanism for monitoring GPA implementation has been established (www.barc.gov.bd/pgrf).

Bhutan

Genebank in Bhutan is at its infancy with only about 1000 accessions. No characterization and evaluation has been carried out due to limited institutional capacity with only two breeders currently working.

Cambodia

For in-situ and on-farm conservation of PGR including native landraces diversity and crop wild relatives, Cambodia has 23 protected areas covering by 3.3 million ha including seven national parks, ten wildlife sanctuaries, three protected landscapes and three multiple use areas. The genebank in CARDI is used for ex-situ conservation with 4 243 accessions/samples of 30 crops stored as of 2011.

This includes 3 406 of rice, 291 of wild rice, 52 of maize, 12 of mung bean, 12 of soybean, 12 of peanut, 39 of wild Vigna, 10 of sesame, 08 of water melon, 02 of mango (field), 12 of fruit tree (field), 153 of banana, 29 of sugarcane, 28 of cassava (field), 13 of sweet potato (field), 02 of yam (Chheam moan and Daikla), 7 of taro, 1 of papaya, 35 of tomato, 48 of igar , 7 of winter gourd, 15 of pumpkin, 9 of cucumber, 7 of sing qua, 3 of seng qua, 13 of eggplant, 2 of bitter melon, 2 of winged bean and 5 of ornamental plant (*in-vitro*).

Activities on characterization and documentation of PGR are limited due to inadequate human and technical capacities. Breeding research by CARDI led to development and release of new plant varieties including 38 of rice (early, medium and late duration rice variety), 2 of corn, 2 of tomato, 2 of mango, 2 of water melon and 4 of mungbean.

India

The National Information Sharing Mechanism (NISM) has been developed by ICAR for monitoring the implementation of the Global Plan of Action and two country reports on the status of PGRFA in India have been submitted to FAO in 1996 and 2006. A list of 26 563 accessions along with minimal passport data belonging to nine crops under Annex 1 of the Treaty for designation under the MLS have been identified.

Lao PDR

Lao PDR is rich in biological diversity. A large number of species and varieties are used in the country's agriculture and forestry sector. Laos is the center of origin of the glutinous rice variety and is also the world's largest consumer of high glutinous sticky rice. Vegetables are the second most important food crops and are the main sources of dietary nutrients for the rural

communities. Farmers grow more than 45 vegetable species in their home gardens. A number of non-cultivated vegetables and fruits directly harvested from the forest complement these. Laotians mostly consume locally grown and wild vegetables. There are a wide range of local traditional vegetables that are grown in upland conditions in the dry season.

Malaysia

The government of Malaysia invested about RM 50 million over the last ten years in modernizing and upgrading institutional capacity for conservation and research in PGRFA. Apart from the existing genebank with a storage capacity of 20 000 accessions of rice seeds in Seberang Perai, Penang, a large seed genebank complex is currently under construction at MARDI headquarters with the capacity of 200 000 of storage. The construction is expected to be completed by the middle of 2013.

Mongolia

At present research and related activities concerning PGRFA in Mongolia are mainly coordinated by the Plant Science and Agriculture Research and Training Institute (PSARI). Activities on natural wild PGR are organized by the Ministry of Environment and Green Development (MNGD), NGOs and are mainly funded by foreign donors. Mongolia established the National Information Sharing Mechanism (NISM) for monitoring the Global Plan of Action.

In 2011-2013, a number of landraces were duplicated and safely backed up at international institutions including 150 barley landraces in ICARDA Tunisia, 343 wheat landraces in CIMMYT and, another 160 landraces were deposited in Svalbard, Norway with Global Crop Diversity Trust (GCDT) support.

Myanmar

Myanmar established a Seed Bank in 1990 with a grant from the Japan International Cooperation Agency (JICA). It has two types of conservation facilities: short-term which has a storage capacity of 21 600 accessions and medium to long-term facility which has a storage capacity of 20 000 accessions. To date, 11 916 accessions are preserved in short-term storage while 11 676 accessions are in medium to long-term storage. Rice comprises 60% of the total crop germplasm accessions. For reasons of safety, backup duplicates of *ex-situ* collections of rice, banana, and lima bean accessions are conserved at IRRI, Philippines, CIAT, Colombia, Belgium and Global Seed Vault, Norway. Myanmar participated in the FAO regional project (GCP/RAS/240/JPN) and established a National Information Sharing Mechanism for implementation of the GPA for Conservation and Sustainable Utilization of PGRFA. The NISM-GPA website of Myanmar and database is now accessible to stakeholders, interested researchers, policy makers and public people through the address, <http://www.pgrfa.org/gpa/nisms.htm>.

Germplasm characterization and evaluation activities included diversity analysis of morphological traits, biochemical and agronomic traits and biotic and abiotic stress related traits. Germplasm characterization of various crops is mainly based on Bioversity International descriptors, and IRRI descriptors. Recently, a new plant biotechnology laboratory was established in Department of Agricultural Research for effective and efficient utilization of

PGRFA in crop improvement. All rice accessions had been evaluated for biochemical characters. In addition 177 accessions of rice and blackgram also have been evaluated for molecular markers related to biotic and abiotic stress characters.

So far, 5 683 crop germplasm accessions have been distributed within Myanmar and 11500 accessions have been distributed to the International institutions.

Pakistan

The national programme on PGR comprises six labs: (i) Exploration and Collection, (ii) Seed Conservation, (iii) *In-vitro* Conservation, (iv) Germplasm Evaluation & Characterization, (v) Plant Introduction and Seed Health and (vi) Data Management. The programme has assembled 30 000 accessions mainly of cereals, legumes; oil crops and recently medicinal and aromatic plants have been added. A clonal repository of fruit species collected from within the country is a new addition to the programme. The national genebank has deposited around 5 000 germplasm accessions with Svalbard seed vault, IRRI and ICARDA for safety duplication. It published nine catalogues on germplasm and maintains a website for facilitating access to PGRs.

For PGRFA utilization, the germplasm is distributed at the rate of approximately 12 000 accessions annually up from 3 000 accessions in 2006-2007, to research and development organizations located either in Pakistan or overseas. The use of information about PGRs from stakeholders indicates that the germplasm is mostly utilized in breeding for a range of biotic and abiotic stresses, especially for tolerance to drought and salinity. Besides, the introduction of these varieties has considerably supported high yields and also sustainable management of diseases like the rust in wheat, *Aschochyta* blight in chickpea, cotton leaf curl virus in cotton and mungbean yellow mosaic virus in mungbean and mash, as well as better quality in basmati rice.

Thailand

Thailand undertook several activities on PGRFA within the framework of ITPGRFA in parallel to ongoing efforts for joining the Treaty. It promotes an integrated approach to the exploration, conservation and sustainable use of PGRFA for *ex situ* and *in situ* conservation under Article 5, to promote diverse farming systems, plant breeding efforts expanded using locally adapted crops and varieties under Article 6, and to promote developing of new markets for local varieties and diversity-rich products, increasing number of projects and policies for the rural areas for their sustainable use of PGRFA under Article 7 of the Treaty.

In addition, Thailand has also progressed in implementation of the Global Plan of Action (GPA) on surveying and inventorying PGRFA, regenerating threatened *ex situ* accessions and building strong national programmes.

The integration of existing PGRFA activities into the framework of a unified national programme provides the opportunity to enhance diverse efforts within a country. In this regard, public-private partnership (PPP) has been taken into account. A commission on PPP was established to discuss on how to strengthen the existing PPP. In the case of new varieties of *Curcuma* spp., the private sector helps the government to disseminate research outputs of new varieties.

Vietnam

Viet Nam has a strong PGR conservation network with more than 20 institutions involved and coordinated by the Plant Resources Center. At present, a total of over 29 000 crop germplasm accessions have been collected and maintained, including over 21 000 accessions in the National Genebank and around 8 000 by the network's member institutions. Passport and characterization data on PGR are well established and documented. Nationally free access to PGR is available.

The Plant Resources Centre of Viet Nam maintains collaboration with foreign organizations and institutions in collecting and exchange of crop germplasm, such as NIAS Japan, IRRI, AVRDC, Bioversity International, and Crop Diversity Trust. The number of samples exchanged with these organizations so far totals 6 215.

At present, the Plant Resources Center continues to collaborate with:

- The National Institute of Agrobiological Sciences, Japan on characterization of core collections (2013 – 2016).
- The World Vegetable Center on evaluation and exchange of some legumes and vegetables (2012 – 2015).
- The National Agro-biodiversity Center, RDA, Korea on evaluation and exchange of upland rice (2012 – 2015).

4.3 Legal and policy framework for PGRFA including participation in MLS/ABS regime of ITPGRFA

Bangladesh

Bangladesh has no national strategic plan on PGRFA. Formalization of the Biodiversity and Community Knowledge Protection Act and Plant Variety and Farmers' Rights Protection Act, and other PGR related policy documents are yet to be finalized.

Bhutan

The draft Access and Benefit Sharing (ABS) policy has been formulated to promote conservation of biological diversity and regulate the access and use of biological resources in the country balancing national interests and international commitments on issues related to PGRFA. The draft policy is yet to be endorsed by the National Assembly (Parliament). The next step following the endorsement of ABS policy would be to amend the Biodiversity Act of Bhutan 2003 and formulate rules and regulation for the revised Biodiversity Act.

Institutional arrangement for ABS regime is based on a Scientific Review Committee (SRC) consisting of members from various organizations both within and outside the MoAF that considers requests for access to PGR. The NBC serves as an Authorized Agency (AA) and Secretariat to the SRC. The Secretary of the Ministry of Agriculture and Forests (MoAF) is the Competent Authority (CA). All requests for access to biological materials in the country including those in the multilateral system are routed through the MoAF for approval. NBC is in the process of preparing a tentative list of materials in the National Genebank in consultation with different stakeholders to be included in the MLS.

India

The main legal instruments to facilitate implementation of the Treaty in India are Protection of Plant Varieties and Farmers' Rights Act 2001 (PPV&FRA), Biological Diversity Act (BDA) 2002, Plant Quarantine (PQ) (order) 2003, Seeds Act, 1966, and Environment Protection Act (EPA), 1986. Standard Material Transfer Agreements are being used in India for the exchange of germplasm with the CGIAR centres. Material Transfer Agreements (MTA) is in use for exchange of materials both within and outside the country.

Lao PDR

Relevant laws and regulations with regard to implementation of ITPGRFA are still at the preparation stage. In the framework of ongoing projects such as the "Strengthening Community Seed Systems in Lao PDR" and the "Strategic Partnership with Farmer Innovators for Adaptation and Management of Plant Genetic Resources to Climate Change", conducted in partnership with the Southeast Asia Regional Initiatives for Community Empowerment (SEARICE), there are efforts to promote farmers' rights.

Malaysia

The National Strategic and Action Plan (NSAP) of Agro-biodiversity Conservation and Sustainable Utilization was launched in September 2012. Steps were taken under the NSAP to document the PGRFA under the control of the Government (Contracting Party) for inclusion in MLS of the Treaty. But PGRFA from the private companies and private sector breeders are yet to be documented. The legal ambiguity in use of terminology in the articles on MLS/ABS of the treaty acted as a major hindrance to taking necessary measures for making the country's relevant PGRFA available through the Multilateral System and the SMTA. Malaysia has agreed to support the Benefit Sharing Fund (BSF) and will contribute to it beginning this year. The National Access and Benefit Sharing (ABS) Law, currently awaiting endorsement of the parliament, is expected to create the legal framework for systematic provision of facilitated access under the MLS of the Treaty to PGRFA in the territory of Malaysia.

Mongolia

Mongolia has a range of laws and policies on protection and conservation of agricultural biodiversity in the country. These are "Law on Natural Plants of Mongolia" (1995); "Mongolian Law on Forests"; "National Biodiversity Action Plan"; "National Action Plan for Specially Protected Areas"; "Government Guidelines on Ecology and National Security"; "Law on medical treatment"; "The red book of Mongolia" (1987) and (1997), Law on Natural Plants, Law on Protected Areas, Law on Natural Protection, Law on Forest Conservation, and "Law on Genetic Resources".

The country does not have a specific legal framework or government agency responsible for regulating access to and sharing of benefit arising from the use of PGRFA. At present, access to PGRFA conserved ex-situ is mainly exchange conducted freely based on mutual agreement between research institutions. There are no relevant legal documents of national strategy, plan and programme on conservation, coordination, and sustainable use of PGRFA in the country.

Myanmar

National PGR policies are not yet well developed in Myanmar. The Government of Myanmar enacted the Seed Law in January 2011, Plant Quarantine Law in June 1993, and Environmental Conservation Law in March 2012. A Plant Variety Protection (PVP) law is currently under preparation.

Nepal

Nepal has prepared two draft legislations that are yet to be revised and approved by the parliament: Access to Genetic Resources and Benefit-Sharing (2002 draft) and Plant Variety Protection and Farmers Right Draft Bill (2005 draft). The country has a range of policy documents that address utilization of agricultural biodiversity and genetic resources for food and agriculture:

Nepal Biodiversity Strategy (2002): The Nepal Biodiversity Strategy (NBS) is an important strategy for implementing the CBD and serves as an overall framework for the conservation and sustainable use of national biodiversity and biological resources in the country.

Nepal Biodiversity Strategy Implementation Plan (2006-2010): It provides a framework to materialize the vision of the NBS into practical actions for effective conservation of biodiversity and sustainable use of biological resources.

Biosafety Guidelines (2005): It aims at balancing biodiversity conservation and public health-related concerns with the development of biotechnology in the country.

National Biosafety Policy (2007): It aims at protecting biodiversity, human health and the environment from adverse effects of research and development activities of modern biotechnology. This is an outcome of the government's realization of the significance of biosafety in conservation of biological diversity and safeguarding human health.

National Agro-biodiversity Policy (2007): It addresses conservation, promotion and utilization of agriculture genetic resources and community and state rights on them. The priority programmes identified by the policy include scientific studies, research, extension and biodiversity registration and documentation. The policy also includes a working policy on *in-situ* conservation, *ex-situ* conservation, agro-biodiversity utilization, benefit sharing and biosafety. It was revised in 2011 but priority has not been given to address ITPGRFA implementation.

National Seed Policy 2012: It addresses conservation and use of agro biodiversity for variety improvement and quality seed production to improve the food security of the country. It also emphasizes involvement of private sectors in quality seed production and its distribution.

Seed Regulation 2013: Based on Nepal Seed Act 1988 and seed regulation 1997, this revised seed regulation has three major sub-committees such as 1) variety approval, release and registration 2) planning and monitoring and 3) quality standard determination and management. It has also provisions of database management of imported and local landraces of different crop species, de-notification of any released variety if required, encourage private sectors for variety promotion, release and registration and management breeder seed production of different crop varieties.

Seed vision 2025: Ratified by the Nepal government in 2013, the document assigns priority to agro-biodiversity conservation, sustainable use and variety and seed replacement for increased agriculture growth rate by increasing seed and variety replacement rate by 25 percent on a yearly basis.

Pakistan

Pakistan is still in the process of formulating a comprehensive legal framework for access to genetic resources, benefit sharing, farmers' rights and breeders' rights and IPRs for effective implementation of the Treaty.

Malaysia

Malaysia has taken necessary steps to document their relevant plant genetic resources that are really under the control of the Government (as a Contracting Party) with newly launched National Strategic and Action Plans (NSAP) of Agro-biodiversity Conservation and Sustainable Utilization (September 2012). This is due to the National Access and Benefit Sharing (ABS) Law is still currently being drafted and in a final stage prior to endorsement of the Parliament which could pave the way for facilitated access to genetic resources in Malaysia, systematically. It is hoped that when the National ABS Law started to be implemented, it will strengthen the MLS of PGRFA in Malaysia. This can also help Malaysia to implement ITPGRFA within the context of nation building of social, economic, cultural development and international cooperation.

Mongolia

In the case of natural wild plant species the Ministry of Environment and Green Development has authority to issue permission to access for collection, export and use based on the special regulations. Mongolia has taken substantial steps towards achieving legal protection of species inside and outside of protected areas in Mongolia. The several relevant documents such as “ Law on Natural Plants of Mongolia” in 1995; “ Mongolian Law on Forests”; “National Biodiversity Action Plan”; “ National Action Plan for Specially Protected Areas”; “Government Guidelines on Ecology and National Security”; “ Law on medical treatment”, “The red book of Mongolia” in 1987 and 1997, Law on natural plants, Law on protected areas, Law on Natural protection, Law on Forest conservation etc.

Sri Lanka

Sri Lanka has a range of legislations to manage and protect biological resources. These legislations are generally developed for conservation purpose, but not for utilization or regulating the access to the resources. Presently a national policy to regulate the access to genetic resources is not available. The Legal Task Force established by the Ministry of Environment and Natural Resources developed recommendations for the fair and equitable sharing of benefits arising out of the utilization of genetic resources. It contains the structure and organization of an access and benefit sharing (ABS) mechanism. However, a framework has not yet been developed to initiate or regulate access issues and its benefit sharing system.

Thailand

Nationally, access to PGRFA is prescribed under the Plant Variety Protection (PVP) Act of Thailand that has provisions for prior informed consent (PIC) and access and benefit sharing (ABS). As the provision regarding PIC has no punishment, the researchers tend to consider it as cumbersome, and as a result, very few researchers have followed the PIC. The regulation of the Thai ABS system entered into force in January 2013. It is in the process of considering applications for plant breeders' rights based on whether breeders in their breeding processes have used PGRFA that are prescribed under the PVP Act for benefit sharing.

Thailand has recognized farmers' rights under Article 9 of the ITPGRFA in three main issues: (a) it has carried out research for drafting the law of the protection of traditional knowledge, (b) farmers' communities have a right to equitable sharing of benefit arising from the utilization of PGRFA, and (c) farmers have the right to be members of the PVP commission for making decision under the PVP Act.

Viet Nam

Viet Nam has a comprehensive framework of laws and regulations concerning agricultural biodiversity and utilization of PGRFA:

1. Law on Protection and Development of Aquatic Resources and Products was promulgated in 1989. Along with this law, there are Governmental Decree and Circular Letter of the Ministry of aquaculture guiding implementation of the law.
2. Law on Forest Protection and Development was promulgated in 1991. Along with this Law, there are Governmental Decree and Circular Letter of the Ministry of Forestry (nowadays the Ministry of Agriculture and Rural Development) guiding implementation of the Law.
3. Law on Environment Protection was promulgated in 1991. Along with this Law, there are Governmental Decree and Circular Letter of the Ministry of Science, Technology and Environment (nowadays the Ministry of Natural Resources and Environment) guiding implementation of the Law.
4. Law on Seed Management was promulgated in 2004. Along with this law, there are Governmental Decree and Circular Letter of the Ministry of Agriculture and Rural Development guiding implementation of the law.
5. Law on Animal Husbandry Race Management was promulgated in 2004. Along with this law, there are Governmental Decree and Circular Letter of the Ministry of Agriculture and Rural Development guiding implementation of the law.
6. Law on Biodiversity was promulgated in 2008. This Law provides for the biodiversity conservation and sustainable development; rights and obligations of organizations, households and individuals in the biodiversity conservation and sustainable development.
7. Provisional Regulation on Conservation of Genetic Resources issued by the State Committee on Science and Technique (nowadays the Ministry of Science and Technology) in 1987.
8. Government Decree No 7/CP on Seed Management issued in 1996. Under this Decree, there is Circular Letter of the Ministry of Agriculture and Rural Development guiding implementation of the Decree. This Decree has already been replaced by the law on Seed Management.
9. Government Decree No 8/CP on Animal Husbandry Race Management issued in 1996. Along with this Decree, there is Circular Letter of the Ministry of Agriculture and Rural Development guiding implementation of the Decree. This Decree has already been replaced by the law on Animal Husbandry Race Management.
10. Government Decree No 9/CP on Plant Variety Protection issued in 2001. Under this Decree, there is Circular Letter of the Ministry of Agriculture and Rural Development guiding implementation of the Decree.
11. National Plan on Environment Protection and Sustainable Development for period 1991-2000 was approved by the Prime Minister in 1991.

12. National Action Plan on Conservation of Biological Diversity approved by the Prime Minister in 1997.
13. Regulation on Management and Conservation of Genetic Resources issued by the Ministry of Science and Technology in 1997. This Regulation replaced Provisional Regulation on Conservation of Genetic Resources in 1987.
14. Regulation on International Exchange of Crop Genetic Resources issued by the Decision No 79/2005/QĐ-BNN of the Ministry of Agriculture and Rural Development. This regulation allows Viet Nam facilitate international exchange of PGRFA despite not being a party to the Treaty.

4.4 Status of sharing benefits by countries under ITPGRFA

India

In 2010, two institutions namely Gene Campaign and People to People Humana received funds under the Benefit Sharing Funds of the Treaty for implementation of the following two projects:

1. Using rice diversity to support farmers' adaptation to climate change for sustainable food production and improved livelihoods in India.
2. Seeds for life-action with farmers in Uttar Pradesh-IGP region to enhance food security in the context of climate change.

Philippines

A project entitled *“Integrating the Conservation of Plant Genetic Resources for Food and Agriculture into Decentralized Landscape Management for Food Security and Biodiversity Conservation in Critical Eco-Regions in the Philippines”* is awaiting final approval for funding from the Benefit Sharing Fund of the Treaty. This project to be implemented by the Bureau of Agricultural Research in the Department of Agriculture aims at strengthening conservation of plant genetic diversity crucial to food security through integration with landscape level planning and decentralized government programming across five critical bio-geographic regions (Luzon, Palawan, Negros-Panay, Mindoro and Mindanao) in the Philippines.

4.5 Constraints to participation in and implementation of the ITPGRFA

The existing constraints, highlighted in the country presentations, can be summarized as follows:

- Lack of a national consensus in certain countries on the benefits that may accrue by being a signatory to the ITPGRFA. While in some countries this is due to conflict of national plant variety protection laws with key provisions of the treaty and also expert opinion on the basis of commissioned studies on the benefits of the treaty, in other countries this is mainly due to awareness about it.
- Inadequate awareness about the treaty, particularly understanding of the provisions of the MLS and its legal ramifications for exercising national authority on PGRFA, legal ambiguity and inadequate clarity with regard to protocol for undertaking certain activities;

- Limited knowledge and expertise at the policy making levels on procedures for inclusion of PGRFA under national jurisdictions in the MLS of the treaty, including the Standard Material Transfer Agreement (SMTA);
- Insufficient capacity to use <Easy-SMTA>, the new version of the Online Information Technology Tool developed by the Treaty Secretariat in support of the Multilateral System of Access and Benefit Sharing of the Treaty;
- Lack of a comprehensive regulatory framework in many countries of the region with regard to formulating national approaches to undertaking activities for implementing the provisions of the ITPGRFA;
- Inadequate institutional capacity (administrative/policy, scientific/technical) and insufficient funding for a sound national programme capable of strengthening collection, conservation and use of PGRFA as well as meeting national obligations under the treaty.

4.6 *Priorities identified for action in National Programmes on PGRFA*

Bangladesh

- Establishment of National Institute for PGRFA conservation, use and enhancement of biodiversity
- Development of national strategy and action plan for PGRFA
- Documentation of all available information related to PGR for users
- Human resources development and capacity building in PGR activities
- Collection and characterization of PGR (morphological, biochemical and molecular)
- Preservation facilities (*in situ*, *on-farm*, *ex situ*, *in vitro*, cryo-preservation) for genetic material.
- Formalization of the Biodiversity and Community Knowledge Protection Act and Plant Variety and Farmers' Rights Protection Act, other PGR related policy documents.
- Training on: *in-situ* methodologies, regeneration and conservation, marker aided selection, information technology for database management and information sharing on conservation and sustainable utilization of PGR, genebank management.
- Establishment of international collaboration for the development of national programme on PGR.

Bhutan

- Enhancement of technical and legal capacity and negotiation skills
- Sensitization of key stakeholders of PGRFA
- Endorsement of ABS Policy by National Assembly
- Build germplasm collections
- Build technical capacity of breeders
- Prepare a tentative list of materials in the National Genebank for inclusion in the MLS

Cambodia

- Strengthening genebank facilities and laboratory at national level
- Capacity building on PGR as well as national laws and policies related to PGRFA
- Mobilizing technical and financial assistance from development partners for capacity building in PGRFA management

India

- Completion of the process of notification under the Biological Diversity Act 2002 for multilateral exchange of crops under Annex 1.

Malaysia

- Finalization of the National Access and Benefit Sharing (ABS) Law
- Speeding up gathering of information of PGRFA in the country
- Capacity building and creating awareness about the treaty

Mongolia

- Completion of the national procedures and formalities for joining the ITPGRFA
- Development of strong national programme on conservation and utilization of PGRFA in the country
- Development of legal framework for access and benefit sharing of PGRFA and revision of existing law on “Crop varieties and seeds”
- Translation of the official text of the Treaty and other relevant information for completing the official clearance process by relevant Ministries
- Holding a national seminar with the assistance of FAO and the Treaty Secretariat on raising awareness on PGR in Mongolia
- Drafting a national law on PGRFA

Myanmar

- Establishment of National PGRFA Committee (NPC)
- Synthesizing the National Action Plan of PGRFA under NBSAP
- Training and capacity building for PGRFA and IT
- Formation of coordination framework for all stakeholders from different institutions under the National Action Plan
- Increasing public awareness and participatory conservation through PGRFA network
- Extension of stakeholders from relevant organizations of government and NGOs
- Regular updating of data and information by stakeholders
- Holding workshops on the impacts of PGRFA on the society and future directions
- Strengthening cooperation with regional and international organizations through PGRFA networks
- Synthesizing country report on the state of PGRFA to FAO.

Nepal

- Raising public awareness through wider consultation with stakeholders regarding the value of PGR and their interdependency for building food security
- Establishment of the governance mechanism for PGRFA in the country
- Preparation of the national list of Annex 1 crop accessions to be included in the MLS
- Preliminary exercise in identification of incentives for the inclusion of PGRFA in the MLS by eliminating disincentives
- Identification of possible options for inclusion of in situ materials in the MLS
- Examination of the legal requirement to implement the MLS by revising existing policies and laws related to PGRFA

- Development of draft policies, legislations, regulations and administrative guidelines to implement the MLS.

Thailand

- Following up actions aimed at clearing obstacles for joining the ITPGRFA.

Vietnam

- Conducting persistent negotiation with FAO at high level in order for Viet Nam to join the ITPGRFA.

4.7 Conclusion

Institutional capacities of countries in the Asian region to implement the provisions of the Treaty in the larger national context of management and utilization of PGRFA are at different stages of development. Some countries in the region have developed a fairly robust framework of relevant policies, strategies, rules, and regulations to foster a comprehensive approach in undertaking activities and creating an enabling environment for compliance to the provisions of the ITPGRFA. Other countries also undertook initiatives in preparation of national draft legislations to create necessary legal spaces for meeting national obligations as signatory to international treaties, such as the Convention on Biological Diversity, the ITPGRFA, Cartagena Protocol on Biosafety, etc. But in many instances these draft legislations are yet to be endorsed by respective national parliaments. In absence of a sound regulatory framework, these countries are constrained in undertaking significant meaningful steps toward exchange of PGRFA and placing national PGRFA under the purview of the MLS/ABS regime of the country. There is also a significant gap in awareness about the Treaty and its importance for having continued undeterred access to PGR for crop breeding at different levels of the society : the general public, farmers, agricultural scientists and extension officials, lawmakers, and policymakers at the top level of national decision making. It is possible that the cautious approach that some countries adopted toward fully embracing the ITPGRFA might be due to their continuing ability to access PGRFA from the IARCs through various existing mechanisms and frameworks of collaboration with them.

5. Recommendations

1. Countries differ in relation to their PGRFA systems and understanding those differences is important. Some countries with young PGRFA systems still need to collect and characterize their PGRFA, others have newly developed Genebanks (Nepal and Malaysia).
2. Delegates **agreed** to provide as soon as possible *flowchart diagrams* showing the institutional and administrative setting in their respective countries for accessing materials from the Multilateral System (MLS). This should include among others the National Focal Points and the authority to sign SMTAs. The flowchart may illustrate real life examples of access cases. This will help each country better understand how to approach other countries in the region if it wishes to submit a formal request for access to PGRFA.

3. It was recognized there is a need to familiarize farmers' communities and organizations in the developments related to the Treaty so they may understand its objectives and operations, and become active stakeholders. Therefore, it was **recommended** that consultations be conducted with farmers' organizations and communities on the Treaty including the MLS. It was also **recommended** that the Treaty and the SMTA be translated into the various national languages, where they are not already translated, and that, in addition to direct translation, some easy guides to understanding the Treaty and the SMTA be prepared in national languages.
4. It was recognized that there is an urgent need to promote harmony at the interface between the CBD/Nagoya Protocol and the Treaty, in order to develop mutually supportive and transparent ABS mechanisms. It was recommended that countries take action as needed to promote a dialogue between environmental and agriculture authorities on the ABS in the national setting so as to create legal space for the operation of the MLS and develop integrated ABS solutions. It was also **recommended** that the results of these consultations be conveyed to actual users of the system.
5. It was recognized that there is a need to promote awareness on the Treaty among all stakeholders, in particular in non-Contracting Party countries, including on specific issues in relation to the MLS (e.g. reporting and monitoring obligations). It was **recommended** that each country undertake activities on raising awareness of different aspects of the Treaty as necessary and this may be an activity of in country project workplans.

REGIONAL COOPERATION

1. Training on Treaty implementation and use of the SMTA: It was **agreed** that a regional training for key select individuals in Asian countries would be useful. The objective would be for trained individuals to be able to clearly explain the Treaty and SMTA to stakeholders in their own countries after the Training. It was **recommended** that a 'Training for Trainers' on the Treaty be held as soon as possible.
2. It was proposed that a specific workshop be held on the Nagoya Protocol/Treaty interface for selected concerned countries.
3. It was considered that a Regional Treaty's portal to contain the national flowchart diagram and other relevant information related to access to PGRFA at the national level would be useful. It was **recommended** that the Treaty Secretariat explore this possibility and perhaps use flow charts provided by project member countries as a starting point for this, if considered feasible.
4. It was **recommended** to maintain and strengthen regional networking among countries present and to organize a follow up meeting in 2014 or 2015 to review progress made concerning IT implementation and results of in-country activities

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ITPGRFA

The 1st Regional Meeting on

“Enhancing Understanding and Implementation of the International Treaty on Plant Genetic Resources for Food and Agriculture in Asia”, 27-28 May 2013, Bangkok, Thailand

Day 1 (May 27, 2013)	
Time	Programme
08.00 – 09.00	Registration
Opening Session	
09:00 – 09:10	Welcome Address – Mr. Hiroyuki Konuma, Assistant Director General / Regional Representative, FAO Regional Office for Asia and the Pacific
09:10 – 09:15	Opening address – Mr. Tetsuya Murakami, Embassy of Japan in Thailand (TBC)
09:15 – 09:45	Participants introduction and meeting programme – Mr. Duncan Vaughan, NIAS
09:45 – 10:20	ITPGRFA – Mr. Daniele Manzella, ITPRFA Secretariat
10:20 – 10:40	Group Photo and Tea Break
Session 2	
10:40 – 11:20	Examples of how to get the Treaty working – Ronnie Vernooy, Bioversity
11:20 – 11:50	The Treaty and CG system – Dr. Ruairaidh Sackville-Hamilton, IRRI, The Philippines
11:50 – 12:05	Japan’s Process of Joining the Treaty- Mr. Makoto Kawase, Genetic Resources Center, NIAS, Japan
12:15 – 13:15	Lunch

Session 3 Chairman: Mr. Daniele Manzella	
13.15 – 15:00	(Part I) Status of ITPGRFA in Countries and (Part II) main elements of draft work plan (7 countries)
15.00 – 15.15	Tea Break
Session 4 Chairman: Mr. Makoto Kawase	
15.15 – 17:15	(Part I) Status of ITPGRFA in Countries and (Part II) main elements of work plan (7 countries)
Day 2 (May 28, 2013)	
Time	Programme
Session 5	
08:30 – 09:00	Structure of the day – Daniele and Duncan
09:00 – 10:30	Working Group 1 –Ronnie and Ruairaidh Working Group 2 – Daniele and Duncan
10:30 – 10:45	Tea break
Session 6	
10:45 – 12:15	Plenary discussion
12:15 – 13:15	Lunch
Session 7	
13.15 – 14.00	Development of in-country workplans
14:00 – 15:15	Presentation of in-country workplans
15:15-15:30	Tea break
Session 8 Chairman: Mr. Subash Dasgupta	
15:30 – 16.30	Closing session and presentation of outputs



Welcome address

Hiroyuki Konuma

Assistant Director-General and
FAO Regional Representative for Asia and the Pacific

Very good morning to all of you!

I am extremely happy to be here to say a few words in the opening ceremony of this very important 1st Regional Meeting of the project “Enhancing Understanding of the Implementation of ITPGRFA”. First of all, I would like to thank the government of Japan for providing funds to implement this three years (2012-2015) project which will greatly help in understanding the importance of this Treaty and continue building national capacities on this topic in Asia.

I would like to welcome all of you in this meeting. I thank the representatives of the government of Japan for funding and technical support, especially Dr Kawase, Dr Vaughan and other officers of NIAS for providing support and to be with us today. FAO attaches high priority to this project and ensured that highly qualified resource persons are present here to steer and contribute to technical discussions. FAO Regional office has been closely working with FAO, HQ on this issue. I welcome all of you again.

This project is designed to enhance our understanding of one of the most important key topics which would have a great influence to future food security. That is sustainable exchange and use of plant genetic resources. Why it is so important in the current context of development? First of all productivity growth rates of major food crops have either stagnated or are declining in different parts of the world. It is coupled with negative consequences of climate changes that are posing increasing threats to realizing the yield potential of the existing popular varieties. It is happening at a time when developing countries, as FAO estimates show, face the challenge of increasing their food production by 77 percent by the year 2050, 60 percent worldwide.

As we all know, for both yield stagnation or decline and climate change, we have to find solutions that include developing varieties. In this situation availability and sharing of suitable germplasm is of crucial importance.

The main objective of the project is to brief participating countries on the activities of the project, raise awareness of the importance of the Treaty, identify scope of work and cooperation among countries, and develop country work plan. It is expected that project will have following three expected outputs:

1. Awareness among stakeholders regarding importance and implementation of the Treaty;
2. Scope of regional cooperation on exchange and use of PGRFA materials identified;
3. Detail country work plan in order to expedite the implementation of ITPGRFA in contracting countries and capacity development of non-contracting countries to raise awareness of the importance of the Treaty developed.

Exchange of crops and their varieties, which has been going on since the birth of agriculture, from one region to another has played a significant role in enhancing global food security.

This is evident in the adoption of potato, chili, cassava, oil palm and other crops in Asia that originated in other continents. The point is the inter-connectedness of the world when it comes to food and the genetic resources needed to protect and increase food production. However, today some major food security crops are mainly grown in very few countries and are being produced in large scale under industrial agricultural production systems in those countries. This also means that vast areas of land are covered with a very few genotypes which are vulnerable to diseases and pests; hence is a food security issue.

Another contemporary issue is the restriction in free movement of germplasm from one country to another and from one region to another as a result of Intellectual Property Rights (IPR) issues. This might impede to choice of appropriate germplasm to develop new varieties that address the challenges posed by climate change and yield decline.

The International Treaty of Plant Genetic Resources for Food and Agriculture has been developed to address the concerns of FAO member states regarding access to plant genetic resources and benefit sharing from their use. This Treaty can only work if all participate and follow the rules of the Treaty. At present in Asia most countries have joined, and I am glad to learn that Japan will soon be a party to the Treaty. But not all countries in Asia have joined yet and I want to encourage those countries to consider becoming parties to the Treaty.

As you all know, although, the treaty came into force in 2004, as of 30th April 2013, 129 countries (including EU) of the world agreed with the Treaty, however, only 14 countries of Asia have ratified the Treaty. It indicates that we have to do our best to convince members countries to be the part of the Treaty. In this sense, today's meeting is very important and timely.

On the other hand, becoming a Party to the Treaty is one point but it is also important that countries once party to the Treaty fully participate. Currently the vast majority of PGRFA that are distributed are material in the CG network of Genebanks rather than from country to country. Greater flows of germplasms between countries within the Treaty are necessary.

There is also unfinished business regarding the Treaty. The Treaty does not include all PGRFA, but only crops explicitly mentioned in Annex 1 to the treaty. Annex 1 does not include some important crops such as soybean and tomato. It is our view that the Treaty should

be comprehensive both in terms of countries that are Party to the Treaty and also the coverage of PGRFA under its purview.

Finally, I would like to express once again our sincere gratitude to the representatives of the government of Japan, NIAS, IRRI, Bioversity and FAO headquarters for having with us here. Our special thanks go Mr Duncan Vaughan for his continuous support to the project and I do hope it will continue.

I firmly believe that with your support, project will be able to achieve above mentioned objectives and outcomes.

Thank you again and I wish you a pleasant stay in Bangkok.



Opening address

Mr Tetsuya Murakami

First Secretary and Deputy Permanent Representative of Japan to ESCAP
Embassy of Japan in Thailand

Mr. Konuma, ladies and gentlemen.

It is a pleasure for me to say a few words at the opening of this two days meeting for the project “Enhancing understanding and implementation of the International Treaty on Plant Genetic Resources for Food and Agriculture in Asia”. The Government of Japan has provided funds for this project because it considers the issues related to the ITPGRFA are of fundamental importance. Japan wishes to promote international trust so that access to plant genetic resources is assured and that benefit sharing is transparent.

The Japanese government has decided to become a Party to the ITPGRFA. This decision was made after broad based and careful in-country consultation. Agriculture is, of course, a very important part of Japanese society and culture. It was necessary to consult with stakeholders in Japan about the Treaty to get their understanding. This has been achieved and Japan is expected to become a Party to the Treaty shortly after approval by the Diet (the Japanese Parliament).

However, Japan realizes that the Treaty is still evolving, and this project is designed to try and improve the working of the Treaty in Asia. We know there are other initiatives to this effect, such as the one that Nepal and Bhutan are participating in, but this project includes most Asian countries. I believe this is an excellent opportunity to discuss implementation of the Treaty and how to improve that at the national and regional level. I would therefore ask that you openly discuss issues on PGRFA and find ways to improve the reality of interaction on this topic.

It is appreciated that the meeting will benefit from experts that can guide discussions and provide advice regarding in-country activities of the project. Please view this project as an opportunity to enhance both your countries participation in the Treaty but also to strengthen ties between the network of Plant Genetic Resources workers that are represented here today.

I would also like to echo the words of Mr. Konuma the topic of plant genetic resources is of fundamental importance to all societies. Farmers that use these resources to produce the food we eat each day require support in the form of improved varieties that can be grown sustainably. Against this backdrop your deliberations this week are very important.

Thank you.

Background and introduction to the first meeting of the Project “Enhancing understanding and implementation of the International Treaty on Plant Genetic Resources for Food and Agriculture (GCP/RAS/284/JPN)”

Duncan Vaughan

National Institute of Agrobiological Sciences,
Tsukuba, Japan

In recent years Japan has supported FAO in relation to the development of National Information Sharing Mechanism for monitoring the Global Plan of Action in 15 Asian countries (GCP/RAS/186/JPN and GCP/RAS/240/JPN). This present project that the Government of Japan is supporting is specifically related to implementation of the International Treaty on Plant Genetic Resources for Food and Agriculture (ITPGRFA or the Treaty) (GCP/RAS/284/JPN).

The Treaty is a work in progress and continually evolving. The rapid pace of global environment change means that it is not possible to predict what the future needs will be in relation to PGRFA. Thus the first State of the Worlds PGRFA made no mention of global climate change. Now we realize that global climate change is resulting in extreme weather events that are impacting agriculture. Indeed it is weather, rather than climate, that farmers are most concerned with. Similarly in 1996 the impact of biotechnology in agriculture and societies responses to biotechnology could not have been predicted.

In the context of the rapid changes that are taking place it is increasingly important that the PGRFA community is in regular contact. The informal network of 15 Asian countries established during the last Japanese funded PGRFA project on NISM has the opportunity again to meet with this new project and continue the regional dialogue on PGRFA.

There are many other PGRFA forums such as the Commission on PGRFA, and Treaty meetings. I am informed that as a result of friendships made during the relatively small Asia regional meetings held during the last NISM project, when Asian representatives go to the much larger global meetings they already have established friends that serves to strengthen the Asian group. This is important because there are issues related to PGRFA that are specific to Asia. For example, the great agriculturally productive Asian deltas will be affected by rising sea levels. Therefore the issue of saline tolerant varieties of crops is perhaps more important to Asian countries than other areas. Predictions are that among countries Viet Nam will be the most affected by rising sea levels in particular the Mekong Delta where most of Viet Nam's rice is grown.

Asia is the world's major producer of palm oil (producing more than 80% of global production)⁴ and rubber (producing more than 90% of global production)⁵ but genetic resources for these commodity crops are in other regions. On the other hand the major production of soybeans globally is in the Americas, particularly the US, Brazil and Argentina, but the genetic resources center for soybean is northeast Asia.

In the context of PGRFA there are specific issues nationally and regionally that should be discussed. There are specific issues that need to be addressed concerning how to effect greater inter-country germplasm flows. Among the constraints to access to PGRFA are:

- a) Lack of resources – human and infrastructure;
- b) Overlapping authorities or lack of clear lines of authority in relation to exchange of germplasm;
- c) Lack of knowledge – weak information systems, lack of training.

This meeting is divided into two parts. The first day will be devoted to sharing knowledge and the second day will be devoted to discussion of issues.

The *objectives* of this meeting are:

- Renew and strengthen the Asian PGRFA network;
- To learn about the evolving ITPGRFA and related project initiatives;
- To learn about each country's perspective in relation to the Treaty;
- To identify issues for discussion to enhance the effectiveness of the Treaty for Treaty member countries
- To understand why some countries are not in the Treaty;
- To have substantive discussions related to enhancing understanding and effectiveness of the Treaty, particularly related to access to PGRFA;
- Address issues of non-Treaty member countries;
- To seek potential opportunities for benefit sharing fund (BSF) projects – particularly for non-English speaking countries;
- Develop workplans for in-country activities that address the project documents objectives.

The expected outputs of the meeting are:

- Recommendations from the meeting;
- Publication of the proceedings;
- Workplans agreed;
- Ideas for BSF projects for Asian countries proposed.

We have little time and much to do. Thank you.

⁴ http://en.wikipedia.org/wiki/Social_and_environmental_impact_of_palm_oil

⁵ http://www.rubberasia.com/v2/index.php?option=com_content&view=article&id=555:global-ru



Introduction to the International Treaty on Plant Genetic Resources for Food and Agriculture

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1. The International Treaty – a Key Instrument to Cope with Global Challenges

The International Treaty is the only operational international agreement of legally binding nature with the overall goal of achieving global food security through the conservation and the sustainable use of crop diversity. It regulates the exchanges of a number of the most important crops and thereby facilitates the access to crop varieties and their components for agricultural research and breeding of new varieties.

In order to better understand the importance of conserving and exchanging agricultural crops, some insights into their special nature compared to other kinds of genetic resources will prove useful. What is it that differentiates crop genetic resources from other components of biodiversity and requires and justifies a dedicated legal regime, apart from their evident importance for food security?

1.1 The Special Nature of Agricultural Crops

The special nature of agricultural crops can be summarized as follows:

- Reliance on human management; and
- Countries' *interdependence* on agricultural crops.

Reliance on Human Management

Unlike most other genetic resources, agricultural crops are essentially a man-made form of biodiversity. This means that they are not found in nature on their own and for the most part cannot exist without continued human intervention. Agricultural crops have been created by farmers who have domesticated wild plants over the millennia since the very beginnings of agriculture some 10 000 years ago. Through a continuing process of selection and breeding they have been made suitable for agriculture.

Undesirable natural traits – such as shattering of seed-heads prior to maturity – that allow those plants to survive in the wild have been deliberately bred out, while additional traits that were not previously found in a given plant – such as resistance to drought – have been bred in. Any individual crop variety is thus the product of the breeding work of many generations of farmers and breeders, which may stretch across many countries and continents. Without continuing human care most agricultural crops will revert to the wild and may be of little further value to food and agriculture.

The plant breeding process calls for a broad range of crop varieties as inputs into any single successful new variety. At the stage of developing a new commercial variety, breeders may have to screen literally thousands of samples in search of a particular trait. Depending on the crop, they commonly work with up to around 60 different varieties originating from 20 to 30 different countries. This wealth of parentage means that it is difficult to track the origins of any given crop

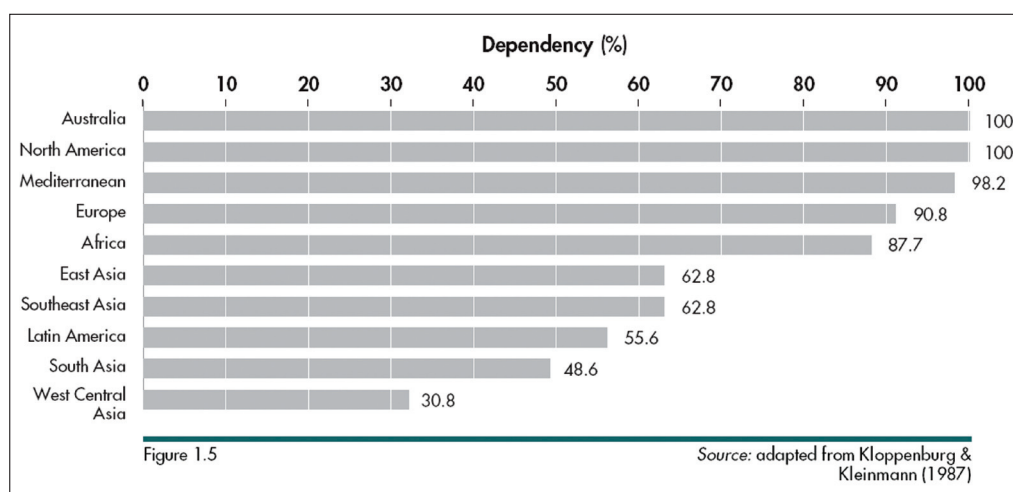
variety.⁶ It is equally complex to calculate the extent to which any particular trait that has been bred in was instrumental in producing the specific characteristics of a given new variety.

In both these senses, agricultural crop varieties are unlike other forms of biodiversity. Plant varieties used for the development of pharmaceutical products, for example, are generally wild plants that exist in nature. A given pharmaceutical product may often be derived from a single natural source, with human input limited to the knowledge of the properties of the natural sources.

Countries' Interdependence on Agricultural Crop Varieties

Agricultural crops have been freely and widely exchanged across the world regions for centuries: potatoes originated in the Andes in Latin America and are now staple crops in Europe and elsewhere in the world; barley and wheat were first domesticated in the Near East; rice originated in Southeast Asia.⁷ The exchange of agricultural crops has continued over the ages, with the result that today almost all countries in the world depend heavily on each other regarding crop diversity for their agricultural development.

Figure 1: Percentages of Food Production of Major Crops Based on Species Originating from Other Regions



⁶ Fowler (2003).

⁷ FAO (2001b).

Source: *The State of the World's Plant Genetic Resources for Food and Agriculture*.⁸

Table 1: Indicators of Global Interdependency of Selected Crops

Crop	Region(s) of significant genetic diversity ¹	Major <i>ex situ</i> collections ²	Major producing countries ³	Major breeding and research activities	Countries for which major consumption has been recorded ⁴	Products/ importing countries ⁵
Eggplant (<i>Solanum melongena</i>)	Indo-Myanmar region	AVRDC, India	China, India, Egypt, Turkey, Indonesia	AVRDC, India	African countries, China, India, Indonesia, Malaysia, Nepal, Pakistan, Sri Lanka	France, Germany, Iraq, United Kingdom, United States of America
Groundnut (<i>Arachis hypogea</i>)	South America	CGIAR, USDA, India, China, Senegal, Brazil	China, India, Indonesia, Nigeria, United States of America	Australia, Brazil, China, India, United States of America	Confectionary China, India, Indonesia, Nigeria, United States of America	Groundnut shelled Canada, Mexico, Netherlands, Russian Federation, United Kingdom
Maize (<i>Zea mays</i>)	Asia, Central America and Mexico, North America, South America	CGIAR, India, Mexico, Russian Federation, United States of America	Argentina, Brazil, China, Mexico, United States of America	CGIAR, Africa, Brazil, China, Europe, India, United States of America	China, India, Indonesia, Mexico, South Africa	China, Japan, Mexico, Republic of Korea, Spain

Source: *The Second Report on the State of the World's Plant Genetic Resources for Food and Agriculture*.⁹

Unlike the movements of genetic resources for pharmaceutical research, on which much media focus has been put in recent years as they often occur one-sidedly from genetically rich countries in the South to industrialized countries in the North, in the case of agricultural crops the flow is more complex. No country or region of the world is entirely self-sufficient in terms of crop diversity needed to sustain and improve its major food crops: the degree of dependence for the major food crops is over 50 percent for most world regions.¹⁰ This high degree of interdependence that is illustrated in Figure 1 and Table 1, is likely to further increase under the growing pressures of climate change. These are the main reasons that called for the adoption of an international agreement which would facilitate access to crop genetic resources for agricultural research and breeding.¹¹

1.2 The Contribution of the International Treaty to Global Agricultural Policy

In its Objectives

The objectives of the International Treaty are laid down in its Article 1. There we find the first and most prominent reference to the challenges that the Treaty addresses. In fact, the overall goal of the International Treaty is the achievement of food security. This goal is to be attained through the conservation and the sustainable use of crop genetic resources, and the fair and equitable sharing of the benefits that may arise from the use of these resources.

In its Main Components

Conservation and Sustainable Use of Plant Genetic Resources for Food and Agriculture

Articles 5 and 6 of the International Treaty provide guidance to countries regarding measures and activities to be undertaken that promote the conservation and the sustainable use of crop diversity.

⁸ FAO (1997), p. 23.

⁹ FAO (2010), p. 19.

¹⁰ In Central Africa the interdependence ranges from 67 percent to 94 percent and in the Indian Ocean countries from 85 percent to 100 percent. At the other end of the scale we have for example Bangladesh where the figures range from 14 percent to 21 percent.

¹¹ Section 1.1 (The Special Nature of Agricultural Crops) is adapted from Moore and Goldberg (2010), pp. 3-5.

Farmers' Rights

A distinguishing feature of the International Treaty is the fact that Article 9 recognizes the enormous contribution of generations of local and indigenous communities and farmers around the world over thousands of years in conserving and expanding the genetic diversity of crops. Through this recognition of Farmers' Rights, the International Treaty aims at supporting farmers in managing and conserving crop diversity on their farms.¹²

The Multilateral System of Access and Benefit-sharing

The Multilateral System of Access and Benefit-sharing (hereinafter "Multilateral System") is established by Articles 10-13. It is often referred to as the core operational component of the International Treaty. The Multilateral System can be described as a global pool of a number of the most important crop genetic resources for food security, shared and managed jointly by all countries that adhere to the International Treaty.

Countries grant each other facilitated access to these crop genetic resources for agricultural research and breeding activities in exchange for a commitment to share the benefits that may arise from their subsequent use. The crops that form part of the Multilateral System are defined in the list that is commonly referred to as 'Annex I'. Together, the crops listed in Annex I account for more than 80 percent of human calorie intake from plants.

The Multilateral System facilitates availability of, and access to, a number of the most important crop genetic resources for food security. Through this facilitated exchange, it boosts agricultural research and breeding activities for the development of high-yielding and more nutritious crops that are better adapted to new and extreme climate conditions. This, in turn, contributes significantly to addressing the food security and climate change challenges.

The Funding Strategy

In its Article 18 the International Treaty establishes the base for a strategy to facilitate the mobilization of funds for its own functioning and the realization of its objectives (hereinafter "Funding Strategy"). The Funding Strategy recalls that the various Contracting Parties dispose of uneven capacity and financial resources, and calls especially upon Contracting Parties that are developed countries to effectively allocate resources for the conservation and sustainable use of crop diversity worldwide.

The centrepiece of the Funding Strategy is its so-called 'Benefit-sharing Fund'. This is a multilateral fund that collects financial resources that are used to support initiatives aimed at the conservation and the sustainable use of crop diversity. Financial resources from the Benefit-sharing Fund are primarily allocated to projects in developing countries that help ensure sustainable food security by assisting farmers to adapt to climate change.¹³

¹² Hegwood (2009), p. 3.

¹³ In 2010, the Benefit-sharing Fund was officially recognized in the context of the adaptation funding interface of the United Nations Framework Convention on Climate Change (UNFCCC).

2. The International Treaty at a Glance

In this section, we will examine in more detail the components of the International Treaty. The International Treaty was adopted by Resolution 3/2001 of the Thirty-first Session of the Conference of the Food and Agriculture Organization of the United Nations (FAO) in November 2001 and entered into force in June 2004. By the end of 2011, 127 countries have become Contracting Parties to the International Treaty.¹⁴

2.1 Objectives and Scope of the International Treaty

Objectives

With the ultimate goal of achieving sustainable agriculture and global food security, the International Treaty pursues the following three main objectives:¹⁵

- Conservation of plant genetic resources for food and agriculture (hereinafter “PGRFA”);
- Sustainable use of PGRFA; and
- The sharing of the benefits arising from the use of PGRFA in a fair and equitable way.

Generally speaking, PGRFA are plants that are of value to human nutrition and used in agriculture – i.e. ‘crops’ – including their parts and components, such as seeds. The International Treaty proposes a set of measures for countries to implement at the national level to conserve their PGRFA and use them more effectively and in a sustainable way.

To enhance the conservation and the sustainable use of crop diversity, the International Treaty creates a system that facilitates exchanges of PGRFA for purposes of agricultural research and breeding: the Multilateral System. The Multilateral System is also the main mechanism that promotes the sharing of benefits that are generated through the use of PGRFA in a fair and equitable manner among countries and stakeholders.

Scope

The International Treaty is clear and brief in its Article 3, stating: “this Treaty relates to plant genetic resources for food and agriculture”.¹⁶

The International Treaty thus establishes a framework for the conservation and the sustainable use of **all** PGRFA, including also wild plants from which crops are derived (referred to as “Crop Wild Relatives”). It does not apply, however, to plant genetic resources that are not used for food and agricultural purposes.¹⁷

¹⁴ For a constantly updated list of Contracting Parties see: <http://www.fao.org/Legal/treaties/033s-e.htm>.

¹⁵ International Treaty on Plant Genetic Resources for Food and Agriculture (2001), Article 1.

¹⁶ International Treaty on Plant Genetic Resources for Food and Agriculture (2001), Article 3.

¹⁷ The fact that the scope of the International Treaty covers all PGRFA is important to highlight in order to avoid confusion with the coverage of the Multilateral System. In fact, whereas the International Treaty as a whole applies to all PGRFA, its Multilateral System regulates the terms of access and benefit-sharing of a specific list of a number of the most important food crops and forages. The list is contained in Annex I of the International Treaty.

Main Advantages of Being a Contracting Party of the International Treaty

In the language of the International Treaty, member countries are called ‘Contracting Parties’. On a general level, Contracting Parties benefit from the guidance provided by the International Treaty for the elaboration of national laws and policies related to crop diversity. A main direct advantage is that agricultural researchers and breeders of a Contracting Party enjoy facilitated access to the global pool of crop samples of the Multilateral System. At the same time, Contracting Parties and stakeholders within their jurisdiction have the possibility to receive a share of the benefits that arise from the use of these crops. At the political level, a Contracting Party can ensure that its national needs and interests related to PGRFA are taken into consideration by the international community.

Contracting Parties meet at least every two years in the ordinary sessions of the Governing Body of the International Treaty to take decisions and provide guidance regarding the further implementation of the International Treaty. The Governing Body has positioned itself as a major intergovernmental policy-making body in the area of PGRFA and is increasingly gaining importance in other related forums. The fact that the decisions of the Governing Body are taken by consensus ensures that the outcomes are balanced and all Contracting Parties have an equal say in the decision-making process. Countries that are not Contracting Parties of the International Treaty are not eligible to receive financial support under the benefit-sharing mechanism of the Multilateral System, and they do not receive additional support in the form of capacity building.

2.2 Conservation and Sustainable Use of Plant Genetic Resources for Food and Agriculture

To ensure that crop diversity is effectively conserved for present and future generations and used in a sustainable way, Articles 5 and 6 of the International Treaty propose non-exhaustive enumerations of measures to Contracting Parties. Contracting Parties commit themselves to integrate such measures into their agricultural policies and rural development programmes.¹⁸

Conservation under the International Treaty

The heading of Article 5 indicates that there is more to conservation of PGRFA than their mere preservation. It reads “Conservation, Collection, Characterization, Evaluation and Documentation of Plant Genetic Resources for Food and Agriculture”. In accordance with the International Treaty, effective conservation of PGRFA thus comprises all of these aspects.

¹⁸ International Treaty on Plant Genetic Resources for Food and Agriculture (2001), Article 7.

Neither the provisions of Article 5 dealing with conservation nor those of Article 6 dealing with sustainable use of PGRFA contain specific obligations that are enforceable as such. This is because not all Contracting Parties dispose of the same resources and capacities that would allow them to fully implement the required measures to the same degree. Nevertheless, upon ratification of the International Treaty countries commit themselves to pursue its objectives within the limits of their national capacities and to ensure the conformity of their laws and policies with the provisions of the International Treaty.

In a nutshell, conservation is about finding and bringing together samples of as much of the crop diversity as possible that is out there (collection), determining what exactly it is that is out there, i.e. the identification of the crop variety, its origins, and the variation in the population (characterization), identifying the special traits of a given resource, the uses the resource might fulfil and possible threats it might be exposed to (evaluation), and compiling all that information and keeping it accessible together with the resource that is being conserved (documentation).

More concretely, under Article 5 Contracting Parties agree to undertake the following activities:

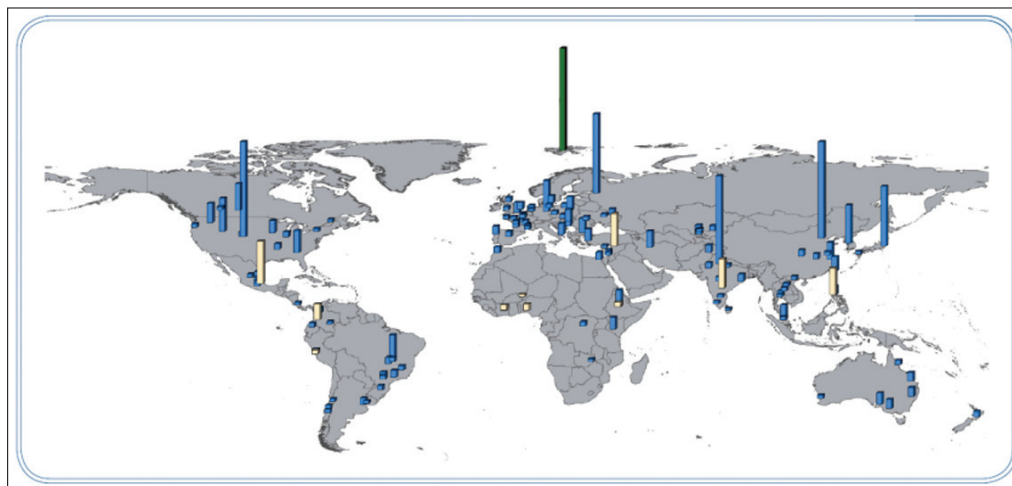
- Surveys and inventories of PGRFA;
- Collection of PGRFA and relevant associated information;
- Promotion of on-farm and in situ conservation of PGRFA and their wild relatives;
- Promotion of a system of ex situ conservation; and
- Monitoring and maintenance of collections of PGRFA.

The article highlights the importance to approach *in situ* and *ex situ* conservation in a complementary way. While emphasizing the role of farmers, indigenous and local communities for on-farm and in *situ* conservation, it equally underpins the importance of international collaboration for the establishment of an efficient network of *ex situ* collections.

Since the entry into force of the International Treaty, substantial progress has been achieved regarding the promotion of an effective system of *ex situ* conservation: in October 2006, the International Agricultural Research Centres of the Consultative Group on International Agricultural Research (hereafter “CGIAR Centres”) entered into agreements with the Governing Body of the International Treaty. Thereby, they agreed to place their base collections of PGRFA in the Multilateral System of the International Treaty. In the meantime, many collections of national gene banks and other organizations have also been officially included in the Multilateral System, creating a network that up to date contains more than 1.4 million crop samples.¹⁹

¹⁹ For more information on the Multilateral System see below section 2.4.

Figure 2: Geographic Distribution of Gene Banks with Holdings of >10 000 Accessions (national and regional gene banks in blue; CGIAR Centres gene banks in beige; Svalbard Global Seed Vault in green)



Source: *The Second Report on the State of the World's Plant Genetic Resources for Food and Agriculture*.²⁰

In order to ensure a complementary approach to conservation in the context of the Funding Strategy of the International Treaty, the Governing Body has made on-farm management and conservation of PGRFA a priority for the disbursement of financial resources under its direct control. The majority of the projects supported by the Benefit-sharing Fund of the Funding Strategy therefore focus on on-farm and in situ conservation.

Sustainable Use under the International Treaty

Neither the concept of ‘sustainability’ nor ‘sustainable use’ are defined per se in the text of the International Treaty. However, using PGRFA in a sustainable way – broadly speaking – implies making use of crop diversity to meet the food security needs of present generations without compromising its availability as the base of food security for future generations. Possible uses of PGRFA may include activities such as agricultural research, breeding and cultivation, and in the broader sense also consumption.

Under Article 6, Contracting Parties agree on adopting measures to promote the sustainable use of PGRFA, including:

- Agricultural policies that promote diverse farming systems;
- Research that benefits crop diversity and farmers;
- Participatory plant breeding;
- Broadening the range of genetic material available to farmers;
- Promotion of locally adapted crops;
- Support of on-farm diversity; and
- Reviewing regulations concerning variety release and seed distribution.

²⁰ FAO (2010), p. 56.

As we can see from these measures, Article 6 has a strong focus on the importance of on-farm management of PGRFA and providing farmers with a broad genetic base of crops, as well as on involving farmers in the breeding of locally adapted crops.

The implementation of Article 6 is a standing priority item on the agenda of the Governing Body. The Governing Body considers submissions by Contracting Parties, other governments and relevant organizations and institutions with regard to their experiences and progress related to the sustainable use of PGRFA. It does so with the aim of assessing progress and identifying gaps and opportunities with regard to the sustainable use of PGRFA. The Governing Body thereby seeks to facilitate an integrated approach to the sustainable use of PGRFA among Contracting Parties.

The Link between Conservation and Sustainable Use

It is essential to note that the conservation and the sustainable use of crop diversity and its components are intrinsically linked. In the text of the International Treaty, this link is provided in the chapeau of Article 5 that reads: “Each Contracting Party shall [...] promote an integrated approach to the exploration, conservation and sustainable use of plant genetic resources for food and agriculture [...].”

The practice of *in situ* on-farm conservation is illustrative to demonstrate the link of conservation and sustainable use. Through on-farm management crops are conserved by being cultivated in farmers fields, notably in the agricultural ecosystems where they have evolved. Thereby, on-farm conservation allows crops to adapt to local conditions by being constantly exposed to them.

Box 1: An Example for the Promotion of In situ on-farm Conservation through Community Seed Banks: the GREEN Foundation in India

The GREEN Foundation is a community-based organization that has been working since the early 1990s with about 4 200 households spread across 109 villages in Karnataka, India. It aims to preserve and promote crop diversity in this region by conserving seeds of indigenous varieties of plants. In order to do this, the foundation introduced and promoted the concept of community seed banks in conjunction with other organizations working at the grassroots level. According to the GREEN Foundation, a seed bank is not just a store house where seed is kept for distribution or marketing or a sophisticated storage facility which is controlled for temperature and humidity. It is an important self-help strategy for maintaining genetic diversity in crop and plant species on farms. It is also a system in the process of community agriculture which includes village level facilities, a garden or field where traditional varieties are safeguarded. Through this system, farmers have played a key role in the creation, maintenance and promotion of genetic diversity. They have developed skills to meet their specific needs such as quality, resistance to pests and pathogens, adaptation to soils, water and climate etc. Local farmers have established their own seed networks to facilitate seed supply to their families and local markets.

Seeds are given free of cost to members of a seed bank. Anyone from the community can become a member by paying a nominal annual fee. The member then sows the seed, harvests the crop, and returns to the seed bank twice the quantity he received to replenish the store. The seed banks are managed by women's groups. The women have the capacity to select the seeds, store the seeds and maintain the germination to the level of improving their performance. Their work involves the process of seed mapping, which is to gather information about the varieties of seeds that have become extinct or fallen into disuse and collecting small quantities of them. The foundation then multiplies these seeds by growing them on small plots of land and setting up seed banks.

Among the various methods adopted by the foundation for this purpose, *in situ* on-farm conservation involves distribution of seed diversity among farmers, monitoring it using cards and then collecting them after the season. Seed bank registers, monitoring cards and *in situ* farmers' lists are maintained as part of the conservation activity.²¹

²¹ The text in the box is adapted from Centre for Education and Documentation (2009).

Ex situ conservation can be seen as a safety backup measure on the one hand, and a measure to facilitate research and breeding of new varieties on the other hand. In case a certain variety is wiped out by a natural disaster, for example, it can be reintroduced and used again if it has been stored in a safe gene bank facility. In addition, most international and national agricultural research institutions and public and private organizations maintaining collections of germplasm in *ex situ* conditions do so for activities including characterization, evaluation and documentation of the material, as well as for the breeding of improved varieties. Furthermore, germplasm cannot be stored in a gene bank forever; it has to be renewed regularly after a certain period of time to ensure it maintains its germination capacity. This entails equally that in the meantime it needs to be cultivated, i.e. used.

In this sense, conservation and sustainable use of PGRFA are truly two sides of the same coin. As long as crop diversity continues to be used in a sustainable way, both for cultivation in the fields and for research in the labs, its use will ensure its conservation. On the other hand, active conservation efforts – especially of underutilized crop varieties – make sure that crop diversity remains available for future use.

What makes PGRFA truly unique with regard to other natural resources and most other components of biodiversity is that they are not depleted through overuse, quite on the contrary: they need to be continuously used in order to be conserved for the future.

Box 2: The Svalbard Global Seed Vault – a Leading Initiative for long-term Safety Conservation

The Svalbard Global Seed Vault (hereafter “Seed Vault”) was officially opened on 26 February 2008, to serve as the ultimate safety net for one of the world’s most important natural resources: plant genetic resources for food and agriculture.

The world’s seed collections are vulnerable to a wide range of threats – civil strife, war, natural catastrophes, and, more routinely but no less damagingly, poor management, lack of adequate funding, and equipment failures. Unique varieties of our most important crops are lost whenever any such disaster strikes: securing duplicates of all collections in a global facility provides an insurance policy for the world’s food supply.

The Seed Vault is dug into a mountainside near the village of Longyearbyen, Svalbard. Svalbard is a group of islands nearly a thousand kilometres north of mainland Norway. For nearly four months a year the islands are enveloped in total darkness. Permafrost and thick rock ensure that, even without electricity, the samples remain frozen.

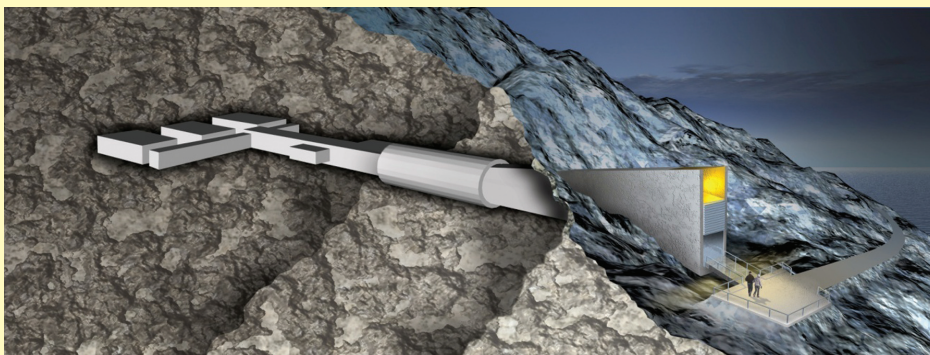


Image: Global Crop Diversity Trust

The Seed Vault's construction was funded by the Norwegian government as a service to the world, and Norway also contributes an annual sum towards its operation. The Seed Vault is managed in partnership between the Global Crop Diversity Trust (hereafter "Crop Trust"), the Nordic Genetic Resource Centre (hereafter "NordGen") and the Government of Norway.

The Seed Vault is an essential component of the Crop Trust's activities that aim at strengthening the global system of *ex situ* conservation for the diversity of all our crops. The Crop Trust is therefore committed to supporting ongoing operational costs, and is assisting developing countries with preparing, packaging and transporting samples of unique accessions from their gene banks to the Arctic. As of May 2010 the Seed Vault held over 500 000 samples.

All seeds stored in the Seed Vault remain the property of the country or institution which sent them. There is no change of ownership; though, in any case, any seeds accepted for storage at the Seed Vault must be freely available under the terms of the International Treaty. In other words, there are no seeds stored at the Seed Vault which would not be easily accessible simply by directly contacting the gene bank which sent them.

These institutions send their seed collections to the Seed Vault in order to benefit from the safety and insurance it provides – storing seeds in the Seed Vault is entirely free to them, and voluntary. The depositing institution signs a contract with NordGen. In fact, neither the managers of the Seed Vault, Norway, the Crop Trust, nor anyone else has any right even to open the boxes in which the seeds arrive and are stored. Information about which countries have sent seeds, and the seeds which are already stored in the Seed Vault, is all public.²²

²² Adapted from Global Crop Diversity Trust (2011).

2.3 Farmers' Rights

For the first time in history the efforts and the enormous contribution of farmers – including local and indigenous communities – worldwide to the development and conservation of crop diversity has been recognized in an international legally binding instrument, through Article 9 of the International Treaty. The International Treaty advises Contracting Parties to take measures to protect and promote Farmers' Rights in accordance with national laws, and provides farmers a basis to advocate their rights.

Before the adoption of the International Treaty, in the absence of an internationally agreed common ground, the concept of Farmers' Rights has come to mean different things to different people and across world regions. While some were associating it with a desire for a new form of intellectual property rights for farmer-developed materials at first, to others it was more of a political slogan seeking recognition of farmers' contributions to the conservation and sustainable use of PGRFA and support for their activities in this regard. To many it meant also to protect the ability of farmers to continue conserving PGRFA and using them in a sustainable way, and enabling farmers to take an active part in decision-making related to crop diversity.²³

Box 3: The Linkages between Traditional Knowledge and Food Security

Millions of traditional farmers and indigenous and local communities use their traditional knowledge to ensure food and livelihood security in a wide range of ecosystems, including fragile and harsh ones. Traditional practices are related to cultural traditions and bio-cultural dynamics and can regenerate local food systems while increasing socio-environmental sustainability and resilience. Such practices can also be applied in innovative ways to help tackle today's problems.

Worldwide, 2.5 billion people derive their livelihoods from agricultural resources; 900 million poor people live in rural areas and 720 million – 400 million of whom are indigenous peoples – directly depend on agriculture and related activities. Traditional knowledge of food and agriculture has existed for millennia, and has evolved over the last 10 000 years with the domestication of plants and animals and the development of agriculture.

Many rural peoples have generated traditional knowledge related to the thousands of indigenous crop and plant varieties, animal breeds, landraces and wild species that they use as food, medicine and other products to ensure food and livelihood security. Today, throughout the world, 10 000 cultures and 6 900 languages are involved in thousands of traditional knowledge systems. Traditional knowledge is maintained by experts and non-experts in local communities; it is held, owned and developed both collectively and individually; and it is transmitted through written, oral and non-verbal means among and within cultures, generations, population groups, communities, households and individuals.

The concept of Farmers' Rights is intrinsically linked to the traditional knowledge of farmers and indigenous and local communities. The International Treaty is the first international legally binding instrument that endorses these rights and acknowledges the enormous contribution of local and indigenous communities and farmers of all world regions to the conservation and development of PGRFA.²⁴

Article 9 clarifies the issue by providing the internationally agreed common ground that was lacking prior to the adoption of the International Treaty. It notably provides the following list of measures for Contracting Parties to take at the national level for the protection and promotion of Farmers' Rights:

²³ Fowler (1997).

²⁴ Adapted from FAO (2009), p. 3.

- The *protection of traditional knowledge* relevant to PGRFA;
- The *right to participate in the sharing of benefits* arising from the use of PGRFA; and
- The *right to participate in decision-making* related to PGRFA.

This list of measures is a non-exhaustive, indicative list. Important to note, however, is the clear statement in Article 9 that the realization of Farmers' Rights falls under the responsibility of national governments, and the adoption of the above and other measures for the promotion of Farmers' Rights remains thus at the discretion of national authorities.

In addition to these measures, the importance of the rights of farmers to save, use, exchange and sell farm-saved seed is affirmed in the preamble of the International Treaty. However, the provisions of Article 9 are neutral with respect to the so-called 'farmers' privilege', which is a term derived from the field of plant variety protection. The International Treaty acknowledges that farmers may have such rights in certain national settings, and reaffirms that where farmers do have these rights, there is no way that they could be limited by the provisions of Article 9.²⁵

Farmers' Rights as laid down in Article 9 are backed by other provisions of the International Treaty, including the preamble and a number of the measures proposed for the promotion of the conservation and the sustainable use of PGRFA that were summarized in the previous section. Certain provisions linked to benefit-sharing under the Multilateral System and to the Funding Strategy are also supportive of Farmers' Rights.²⁶

The Secretary of the International Treaty regularly compiles views on Farmers' Rights and experiences with their implementation by Contracting Parties and other relevant organizations for the consideration of the Governing Body.²⁷ A number of Contracting Parties have expressed uncertainty about how to best implement Farmers' Rights. To facilitate the exchange of views and experiences among stakeholders and Contracting Parties, the Governing Body has decided to convene consultations on Farmers' Rights and integrate a Farmers' Rights component into the programme of work on sustainable use.

2.4 The Multilateral System of Access and Benefit-sharing

The Multilateral System constitutes the core mechanism of the International Treaty. It is instrumental to achieving the objectives of the International Treaty – both the conservation and the sustainable use of PGRFA, as well as the fair and equitable sharing of benefits arising from their use. The entire part IV of the International Treaty, i.e. Articles 10-13, is dedicated to the Multilateral System.

²⁵ Adapted from Moore and Tymowski (2005), p. 15.

²⁶ Notably Arts. 5.1 c), 5.1 d), 6.2 b), 6.2 c), and 6.2 d) in the context of conservation and sustainable use; 12.3 e), 13.2 b) iii), 13.2d), and 13.3 in the context of the Multilateral System; and 18.5 in the context of the Funding Strategy.

²⁷ Secretariat of the International Treaty on Plant Genetic Resources for Food and Agriculture (2009a).

Facilitated Access to the Global Gene Pool

All countries of the world highly depend on PGRFA for their sustainable agricultural development. The most immediate advantage for a Contracting Party is that any natural or legal person under its jurisdiction enjoys facilitated access to the vast range of crop samples contained in the global gene pool of the Multilateral System for purposes of agricultural research and breeding.

Natural and legal persons include, among others, national genebanks and research institutions, individual breeders and farmers, non-governmental organizations as well as public and private breeding companies.

By the end of 2011, this global gene pool encompassed more than 1.4 million unique samples of crop varieties, and more are continuously being added to it. Facilitated access to the global gene pool favours the development of new varieties with higher yields, for instance, or with resistances to stresses induced by climate change, such as drought, salinity or pests.

Thanks to the International Treaty, it becomes easier to locate existing crop samples. Contracting Parties and other entities that formally include their samples into the Multilateral System notify the Secretariat of the International Treaty about their inclusions, and all formal notifications are published online.²⁸ In addition, the Secretariat works towards more efficient coordination and integration of existing web-based catalogues and other information technology systems that make it easier to search for PGRFA.

Another main element of facilitated access under the International Treaty is that complicated procedures and time-consuming negotiations of specific contracts for exchanges of PGRFA are eliminated. A breeder who would like to receive a given crop sample from a certain gene bank collection, for example, can simply do so according to the terms of the Standard Material Transfer Agreement (SMTA).

The SMTA is a standard contract for transfers of crop samples under the Multilateral System, which has been negotiated and agreed internationally (i.e. by the Governing Body of the International Treaty). It provides a transparent set of terms and conditions and thus guarantees legal security in exchanges of PGRFA.

Sharing the Benefits from the Use of Crop Diversity

Contracting Parties and stakeholders within their jurisdictions have the possibility to receive a share of the benefits that arise from the use of the PGRFA that are exchanged under the Multilateral System. Once crop genetic material has been included in the common gene pool of the Multilateral System, this material falls under the shared competence of all Contracting Parties for the benefit of humanity. Accordingly, a country cannot expect an individual benefit in return from a specific crop sample it has placed in the gene pool. In fact, the benefits that arise from the use of material from the Multilateral System are shared in a multilateral way.

²⁸ For inclusions of PGRFA into the Multilateral System see: http://www.planttreaty.org/inclus_en.htm.

Benefits are shared according to internationally agreed priorities for the conservation and sustainable use of crop diversity and taking into account the needs of Contracting Parties. On this note, the International Treaty foresees that benefits flow primarily to farmers who conserve and sustainably utilize crop diversity, especially in developing countries and countries with economies in transition.

More concretely, the International Treaty foresees the sharing of both non-monetary and monetary benefits arising from the use of the material contained in the Multilateral System.

Options for non-monetary benefit-sharing include:

- *Exchange of information* related to PGRFA, such as inventories, information on technologies and relevant research results;
- *Access to and transfer of technology* for the conservation and sustainable use of PGRFA that are part of the Multilateral System; and
- *Capacity-building* in developing countries, primarily related to conservation and sustainable use, including through developing and strengthening facilities for those purposes, and carrying out scientific research.

The fund that receives the sharing of monetary benefits is called ‘Benefit-sharing Fund’. The Benefit-sharing Fund is an international trust fund that invests in high impact projects for the conservation and sustainable use of crop diversity. It has a fundraising target of US\$ 116 million over a five-year period ending December 2014.

Any governmental or non-governmental organization, including gene banks and research institutions, farmers and farmers’ organizations and regional and international organizations, based in developing countries that are Contracting Parties to the International Treaty, has the possibility to apply for financial support from the Benefit-sharing Fund.²⁹

A Global Gene Pool for the Benefit of Humanity

The Contracting Parties of the International Treaty have created the Multilateral System in the framework of which they grant each other facilitated access to a number of their most important food crops and forages. The Multilateral System can be thought of as a global pool of PGRFA shared and managed jointly by all Contracting Parties of the International Treaty, and from where PGRFA can be obtained on standardized terms. A standard contract (the ‘Standard Material Transfer Agreement’, hereafter “SMTA”) has been adopted by the Governing Body to regulate transfers of material that is contained in this global gene pool. The SMTA provides transparent regulations that guarantee legal security in exchanges of PGRFA. It thereby prevents misuse of the material that is exchanged and ensures that the benefits that arise from commercial use of material from the Multilateral System will be shared in a fair and equitable way among Contracting Parties.

²⁹ Please refer to lesson 4 (Main Components and Governance of the International Treaty) to learn more about the Benefit-sharing Fund in the context of the Funding Strategy.

Box 4: Sovereign Rights over PGRFA

Countries have sovereign rights over their PGRFA. Sovereign rights over PGRFA are grounded in the Charter of the United Nations and the principles of international law, and formally recognized in the CBD.³⁰ The fact that the Contracting Parties of the International Treaty grant each other facilitated access to a number of the most important crops for food security by including them in the Multilateral System does not mean that they renounce their sovereign rights over these resources. Rather, they make use of their sovereign rights to place their PGRFA in the Multilateral System for the benefit of the international community.³¹ Both the Multilateral System and the CBD do thus equally respect countries' sovereign rights over their PGRFA.

This global gene pool, however, is not physically located in one single place in the world. On the contrary, it is a global network of international and national gene banks and other institutions that hold PGRFA – a virtual gene pool so to speak.

Coverage of the Multilateral System

Whereas the scope of the International Treaty as a whole comprehends the conservation and the sustainable use of all PGRFA, the coverage of the Multilateral System is limited to the genetic material of 64 food crops and forages. These crops are listed in Annex I of the International Treaty and are therefore generally referred to as 'Annex I crops'.³²

The list of Annex I-crops has been defined according to the following two criteria:

- their importance for global food security; and
- interdependence: the degree on which countries depend on genetic material of a given crop from other countries and regions for their agricultural research and breeding activities.

Globally, the crops contained in Annex I provide for more than 80 percent of human calorie intake from plants.³³ Being the International Treaty a legally binding international instrument, the Annex I list of was negotiated and agreed-upon by all Contracting Parties in a spirit of compromise. It is for this reason that some crops of importance to food security, such as soybean and tomatoes, are not included in Annex I. It is important to note, however, that the coverage of the Multilateral System is not carved in stone; it is within the Governing Body's capacity to re-open negotiations on the crops to be included in Annex I.

Contracting Parties commit to include in the Multilateral System all PGRFA listed in Annex I that are under their management and control and in the public domain (e.g. material stored in national gene banks). Furthermore, they invite other holders of PGRFA within their jurisdiction, including natural and legal persons (e.g. individuals, civil society organizations and the private sector) to include their Annex I-material in the Multilateral System. In addition

³⁰ Convention on Biological Diversity (1992), Article 3.

³¹ International Treaty on Plant Genetic Resources for Food and Agriculture (2001), Article 10.

³² International Treaty on Plant Genetic Resources for Food and Agriculture (2001), Arts. 3 and 11.

To consult the list of Annex I-crops see: http://www.planttreaty.org/training/annex1_en.htm

³³ Grugel (2009), p. 4.

to that, the Annex I-material held by the CGIAR Centres and other international institutions that enter into special agreements with the Governing Body forms part of the Multilateral System.

The main contributors of PGRFA to the Multilateral System up to date are the CGIAR Centres, a number of other international institutions, national gene banks of Contracting Parties and also some natural and legal persons. At present, the Multilateral System already contained over 1.4 million samples of germplasm, and 600-800 samples were exchanged under the terms of the International Treaty on a daily basis.³⁴

Conditions Related to Transfers of PGRFA from the Multilateral System

Agricultural researchers and breeders – including, among others, national genebanks and research institutions, individual breeders and farmers, non-governmental organizations as well as public and private breeding companies – can all benefit from facilitated access to the plant genetic material that has been placed in the gene pool of the Multilateral System.³⁵

The material can only be accessed for the purpose of utilization and conservation for research, breeding and training activities related to food and agriculture. The use of material to other ends, such as chemical or pharmaceutical research, is not allowed.³⁶ If any, only minimal costs, such as shipping costs, are to be charged by the provider of the material. In addition, the provider has the obligation to make associated descriptive data available to the recipient together with the plant genetic material.³⁷ Recipients, in turn, cannot claim any intellectual property right on the material in the form that they have received it from the Multilateral System, nor on any genetic part or component thereof. In the case that recipients conserve the material, they are bound to continue to make it available to subsequent users.³⁸

Regulation of Transfers of PGRFA

The Governing Body has adopted a standard contract to regulate transfers of PGRFA, the above-mentioned SMTA. The SMTA is a private bilateral contract under international law between a provider and a recipient of PGRFA that are part of the Multilateral System. It includes the above conditions regarding access and use of PGRFA, and defines the terms under which the monetary benefits that may arise from the commercial use of the material are to be shared within the Multilateral System. The terms for benefit-sharing under the SMTA are dealt with below.

³⁴ For more detailed information regarding the inclusion of PGRFA collections see: http://www.planttreaty.org/inclus_en.htm.

³⁵ International Treaty on Plant Genetic Resources for Food and Agriculture (2001), Article 12.2.

³⁶ International Treaty on Plant Genetic Resources for Food and Agriculture (2001), Article 12.3a).

³⁷ *Idem*, Articles 12.3b) and 12.3c).

³⁸ *Idem*, Articles 12.3d) and 12.3g).

The Governing Body has not yet decided on an agreed meaning of “in the form received”. The issue of under what conditions a plant genetic resource for food and agriculture originating from the Multilateral System can be protected by a form of intellectual property has therefore not been conclusively dealt with.

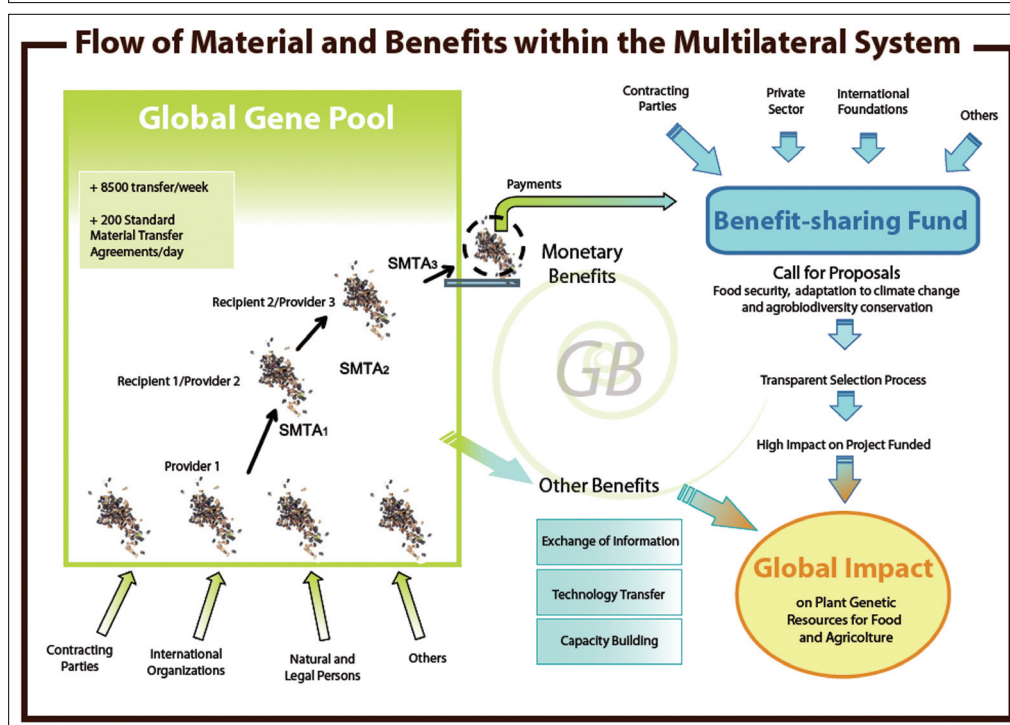
Benefit-sharing under the Multilateral System

In its Article 13, the International Treaty foresees several options for both monetary benefit-sharing arising from the commercialization of material accessed from the Multilateral System and non-monetary forms of benefit-sharing. The Contracting Parties have agreed that such benefits should flow primarily to farmers in developing countries who promote the conservation and sustainable use of PGRFA.³⁹

As seen above, mechanisms for non-monetary benefit-sharing include ⁴⁰:

- *Exchange of information* related to PGRFA, such as inventories, information on technologies and relevant research results;
- *Access to and transfer of technology* for the conservation and sustainable use of PGRFA that are part of the Multilateral System; and
- *Capacity-building* in developing countries, primarily related to conservation and sustainable use of PGRFA, including through developing and strengthening facilities for those purposes, and carrying out scientific research.

Figure: Flow of Material and Benefits within the Multilateral System



³⁹ International Treaty on Plant Genetic Resources for Food and Agriculture (2001), Article 13.3.

⁴⁰ Idem, Articles 13.2a), 13.2b) and 13.2c).

Monetary benefit-sharing from commercialization

Anyone who commercializes a new crop variety that incorporates traits from plant genetic material originating from the Multilateral System is encouraged to pay an equitable share of commercial profits from subsequent use into the Benefit-sharing Fund. The Benefit-sharing Fund, which is under the exclusive control of the Contracting Parties to the International Treaty, is part of the Funding Strategy of the International Treaty.

In the case that the new variety is no longer available to others for further research and breeding, the payment of a share of the profits into the Benefit-sharing Fund becomes mandatory. This would happen, for example, if the breeder has taken out a patent on the new material that does not allow for facilitated access according to the terms of the International Treaty. The share of the profits that is to be paid into the Benefit-sharing Fund in such a case is determined in the SMTA the provider and the recipient of the original material from the Multilateral System have entered into at the moment of the transfer of the material. It is 1.1 percent of net sales less 30 percent, which comes down to 0.77 percent of gross sales.⁴¹

2.5 The Funding Strategy

The International Treaty creates a funding strategy to facilitate the mobilization of financial resources for the realization of its objectives. The Funding Strategy notably aims at supporting Contracting Parties in their efforts of implementing the national measures required to meet the International Treaty's objectives. It was adopted at the first session of the Governing Body in 2006, based on Article 18 of the International Treaty.⁴²

The Sources of the Funding Strategy

The Funding Strategy comprises resources over which the Governing Body has direct control, as well as resources that are allocated by other entities for the implementation of the International Treaty's objectives, over which the Governing Body does not have direct control.

Sources that are not under the direct control of the Governing Body include those financial resources that Contracting Parties invest within their own national context in policies, programmes and projects for the conservation and sustainable use of crop diversity. In addition, they embrace all those financial resources that are channelled into projects and programmes aiming at implementing the objectives of the International Treaty through bilateral, regional and multilateral cooperation among Contracting Parties. A third and important category of funding sources that are not under the direct control of the Governing Body include those financial resources that are allocated by international mechanisms, funds and bodies other than the International Treaty, but pursuing the same objectives and therefore contributing to the implementation of the International Treaty.

⁴¹ International Treaty on Plant Genetic Resources for Food and Agriculture (2001), Article 13.2d)ii).

For the text of the SMTA see: <ftp://ftp.fao.org/ag/agn/planttreaty/agreements/smta/SMTAe.pdf>

Please note that the SMTA allows also for an alternative payment scheme with a discounted rate of 0.5 percent during a fixed period of 10 years. Under this option the rate applies to all sales of PGRFA that belong to the same crop as the one obtained under the SMTA, regardless of whether or not they continue to be available for further research and breeding (see Article 6.11 and Annex 3 of the SMTA).

⁴² Secretariat of the International Treaty on Plant Genetic Resources for Food and Agriculture (2006).

One of the major set of resources not under the direct control of the Governing Body is created and managed by the Global Crop Diversity Trust (hereinafter “Crop Trust”). The Crop Trust administers an endowment fund that has been established in 2004 with the aim to conserve crop diversity in perpetuity. Its work focuses notably on strengthening the global system of *ex situ* conservation by supporting the activities of reference genebanks around the world. Together with the Government of Norway the Crop Trust covers the maintenance costs of the Svalbard Global Seed Vault. The Governing Body of the International Treaty officially welcomed the Crop Trust as an essential element of its Funding Strategy, in relation to *ex situ* conservation and availability of PGRFA. The Funding target of the Crop Trust is US\$ 260 million, which would generate approximately US\$ 12 million per year. To date, it has raised over US\$ 150 million.⁴³

The sources that are under the direct control of the Governing Body are in part used for the organization of the regular sessions of the Governing Body and intersessional meetings of subsidiary bodies and expert groups. This includes also the work of the Secretariat of the International Treaty in preparation for these meetings and in carrying out the tasks accorded to it by the Governing Body.

An important share of the resources under the direct control of the Governing Body flows directly into initiatives for the conservation and the sustainable use of PGRFA in developing countries. These are mainly contributions that are allocated for this purpose to the Benefit-sharing Fund of the International Treaty. Financial resources resulting from monetary benefit-sharing from commercialization will also flow into the Benefit-sharing Fund.

Table 2: The Sources of the Funding Strategy		
3. Sources under the direct control of the Governing Body		
Financial resources resulting from <i>monetary benefit-sharing from commercialization</i> .	<i>Voluntary contributions</i> from Contracting Parties, the private sector, and other organizations and institutions.	Financial resources provided through the Regular <i>Programme of FAO</i> .
4. Sources not under the direct control of the Governing Body		
Resources allocated through <i>bilateral, regional and multilateral channels</i> .	Resources allocated by other <i>international mechanisms, funds and bodies</i> .	Resources allocated through <i>national activities</i> of Contracting Parties.

⁴³ Status 31 December 2010.

For more detailed information about the relationship of the Crop Trust and the International Treaty refer to lesson 5 of this module.

The Benefit-sharing Fund

As seen above, the Benefit-sharing Fund is an innovative mechanism that seeks to share the global benefits that arise from the use of PGRFA directly with those who actively contribute to the conservation and sustainable use of crop diversity. The Benefit-sharing Fund supports initiatives that focus on on-farm management and conservation of PGRFA and the sustainable use of PGRFA, in Contracting Parties that are developing countries. The Benefit-sharing Fund is a trust account that was set up to collect the financial resources that arise from monetary benefit-sharing from commercialization referred to above in the context of the Multilateral System. In addition, it can also receive voluntary contributions by Contracting Parties, international institutions, foundations, the private sector and other possible sources.⁴⁴

The Benefit-sharing Fund is thus fed by the first two sources illustrated in Table 2 above: financial resources from monetary benefit-sharing and voluntary contributions. In fact, up to date the Benefit-sharing Fund relies entirely on voluntary contributions. This is mainly because the process to develop a new crop variety until its commercialization takes about 10-15 years. Consequently, since the International Treaty has only entered into force in 2004, mandatory monetary benefit-sharing from commercialization cannot realistically be expected before 2015-2020.

Early Implementation of the Benefit-sharing Fund

Thanks to early contributions by Contracting Parties⁴⁵ the Governing Body was able to launch the first call for proposals of the Benefit-sharing Fund in 2009. A total of US\$ 550 000 was allocated to eleven small-scale projects in developing countries over a period of two years. In Peru, for example, the Benefit-sharing Fund supported the Potato Park of the ANDES association. This project helps enabling local farmers to adapt their traditional potato varieties to climate change.⁴⁶ This first round of projects supported by the Benefit-sharing Fund can be seen as the pilot implementation phase of the Benefit-sharing Fund.

In 2009, the Governing Body also approved the Strategic Plan for the Implementation of the Benefit-sharing Fund of the Funding Strategy (hereinafter “Strategic Plan”). The Strategic Plan, as illustrated in Table 3, establishes a funding target of US\$ 116 million for the Benefit-sharing Fund, to be reached over the five-year period between July 2009 and December 2014.⁴⁷

⁴⁴ International Treaty on Plant Genetic Resources for Food and Agriculture (2001), Arts. 13.2d)ii) and 18.4f).

⁴⁵ The first donors included the Governments of Italy, Norway, Spain and Switzerland.

⁴⁶ For a short description of the first projects funded under the Benefit-sharing Fund see: ftp://ftp.fao.org/ag/agp/planttreaty/funding/pro_list09_01_en.pdf.

⁴⁷ Secretariat of the International Treaty on Plant Genetic Resources for Food and Agriculture (2009b).

Thanks to subsequent contributions from Contracting Parties and institutional donors, the Secretariat opened the second call for project proposals in July 2010. The thematic focus of the second call for proposals was on ensuring sustainable food security by assisting farmers to adapt to climate change through a targeted set of high impact activities. For this second project cycle of the International Treaty, the Benefit-sharing Fund has been able to invest US\$ 6 million.⁴⁸

Table 3: Plan to Secure the US\$ 116 million Objective in Commitments over a Five Year Period.

	Year 1 (18 months)	Year 2	Year 3	Year 4	Year 5
Cumulative Target (USD million)	10	27	50	80	116
Annual Target (USD million)	10	17	23	30	36
# Contracting Party contributions	5-7	6-8	6-8	10-14	10-14
% Contributed by Contracting Party	98- 100%	90-95%	90-93%	80-85%	75-85%
# other contributors	0 – 3	2-4	4-6	6-10	8-12

3. Governance of the International Treaty

3.1 The Governing Body

The Governing Body is the supreme decision-making body of the International Treaty. It is constituted by all Contracting Parties – i.e. those countries that have formally ratified, accepted, approved or acceded to the International Treaty. Its core function is to promote the full implementation of the International Treaty.

The sessions of the Governing Body take place at least every two years to review the progress and programme of work of the International Treaty. The representatives of the Contracting Parties meet to take the necessary decisions for the gradual implementation of the International Treaty.⁴⁹ Inter alia, the Governing Body provides policy direction and guidance, and adopts plans, programmes and budgets. It is further empowered to establish subsidiary bodies (e.g. *ad hoc* committees) and launch intersessional processes. The Governing Body may also consider and adopt amendments to the International Treaty.⁵⁰ The decisions of the Governing Body are taken by consensus among Contracting Parties.

⁴⁸ The major donors of the second call for project proposals included the Governments of Australia, Ireland, Italy, Norway and Spain.

All relevant information on the Call for Proposals 2010 is available at:
http://www.planttreaty.org/funding_en.htm.

⁴⁹ For an overview of the reports and working documents of past sessions of the Governing Body see:
http://www.planttreaty.org/gbpre_en.htm.

⁵⁰ International Treaty on Plant Genetic Resources for Food and Agriculture (2001), Article 19.

For example, the Governing Body adopted the SMTA and the Funding Strategy at its first session in 2006, and at its third session in 2009 it adopted the Strategic Plan for the Implementation of the Benefit-sharing Fund of the Funding Strategy.

3.2 The Bureau

The Bureau of the International Treaty is composed of the Governing Body's Chairperson and the Vice-Chairpersons, one for each FAO region, which makes a total of seven Bureau members.⁵¹ The Bureau members are elected by the Governing Body for the period in between two sessions, and ensure coordination among the Contracting Parties of their region.⁵² The Bureau meets in the intersessional period in order to discuss topics to be addressed by the Governing Body, oversees the progress of the subsidiary bodies and processes and provides guidance to the Secretary. For example, in the context of the project cycle under the Benefit-sharing Fund, the Bureau assumes the role of selecting the project proposals to be funded.

3.3 The Secretary

The Secretary is appointed by the Director-General of FAO. Together with its staff – jointly referred to as the Secretariat – the main functions of the Secretary are to provide practical and administrative support for the sessions of the Governing Body and to assist the Governing Body in carrying out its functions. The Secretary carries out the tasks conferred upon him by the Governing Body. For the accomplishment of these tasks, the Secretary establishes and maintains partnerships and cooperation with other relevant organizations and institutions.⁵³

The Secretariat also provides support for the Bureau and any other subsidiary body established by the Governing Body. Concretely, the Secretariat is responsible for the organization of the meetings of these bodies and the preparation of the necessary documentation. In addition, the Secretary communicates the decisions of the Governing Body, as well as any information received from Contracting Parties in accordance with the provisions of the International Treaty, to Contracting Parties and to the Director-General of FAO.⁵⁴

3.4 Subsidiary Bodies

In order to advance the Governing Body's work in the period between two sessions, a number of subsidiary bodies have been established. The subsidiary bodies are composed by experts who are selected on regional basis. They deliberate on the further implementation of certain components of the International Treaty and prepare strategies and legal text for the consideration and adoption by the Governing Body.

The following subsidiary bodies have been established to date:

⁵¹ The Governing Body has seven regions: Africa, Asia, Latin America and the Caribbean, Near East, Northern America, South West Pacific.

⁵² International Treaty on Plant Genetic Resources for Food and Agriculture (2001), Article 19.11.

⁵³ For an overview on such partnerships and collaborations please refer to lesson 5 of this module (The Legal Architecture Governing Crop Diversity and Partnerships for Implementation).

⁵⁴ International Treaty on Plant Genetic Resources for Food and Agriculture (2001), Article 20.

Ad Hoc Advisory Committee on the Funding Strategy;

- *Ad Hoc* Technical Advisory Committee on the Standard Material Transfer Agreement and the Multilateral System;
- *Ad Hoc* Working Group on Compliance (now mutated into the Compliance Committee);
- *Ad Hoc* Third Party Beneficiary Committee.

3.5 The Role of the National Focal Points

The National Focal Points are the contact persons appointed by the governments of Contracting Parties. They ensure the link between the international and the national level for all matters related to the International Treaty. The Secretariat channels its communications to Contracting Parties through their National Focal Points. The role of the National Focal Points is to communicate and coordinate issues related to the International Treaty with the relevant institutions and officials at the national level, as appropriate.

In order to facilitate the communication among Contracting Parties, a list with the contact details of National Focal Points is available online.⁵⁵ Contracting Parties that have not yet nominated a National Focal Point are invited to do so through their competent ministries.⁵⁶

4. Conclusive Summary

The International Treaty is an operational Treaty, in the sense that it is continuously being further developed and implemented by its Contracting Parties.

The provisions related to conservation and sustainable use of PGRFA highlight the need for a complementary approach to *in situ* and *ex situ* conservation. Moreover, they emphasize the inherent linkage between the conservation and the sustainable use of crop diversity. The underpinning logic of the International Treaty is that conserving PGRFA is of limited value if it is not done with the aim of subsequently using them for agricultural research and breeding, and finally cultivation and consumption.

The International Treaty is the first legally binding international agreement that acknowledges the contribution of farmers all over the world to the development and conservation of crop diversity. While the realization of the measures to promote Farmers' Rights remains at the discretion of national authorities, the International Treaty advises Contracting Parties to implement national regulations related to Farmers' Rights and provides farmers a basis to advocate their rights.

The Multilateral System of Access and Benefit-sharing is the core mechanism of the International Treaty. It can be thought of as a global pool of PGRFA shared and managed jointly by all Contracting Parties of the International Treaty, and from where PGRFA can be obtained on standard terms. The crops that are part of the Multilateral System provide for more than 80 percent of human calorie intake from plants.

⁵⁵ See: http://www.planttreaty.org/members_en.htm.

⁵⁶ Nominations should be sent to pgrrfa-treaty@fao.org.

The 1.4 million samples of germplasm in the Multilateral System can be accessed for the purposes of agricultural research and breeding according to a standard contract, the SMTA. The SMTA facilitates exchanges of PGRFA and ensures that commercial benefits are shared in a fair and equitable way.

The Benefit-sharing Fund substantiates the monetary benefit-sharing component of the Multilateral System. It has a funding target of US\$ 116 million until 2014. It became functional in 2009, and in 2010 opened its second call for project proposals. For this second project cycle the Benefit-sharing Fund will invest more than US\$ 10 million in initiatives aiming at the conservation and sustainable use of PGRFA in Contracting Parties that are developing countries, and that have a focus on helping ensure sustainable food security by assisting farmers to adapt to climate change.

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Strengthening capacities to implement the multilateral system of access and benefit-sharing: efforts under way and challenges encountered in Bhutan, Burkina Faso, Costa Rica, Côte d'Ivoire, Guatemala, Nepal, Rwanda, and Uganda⁵⁷

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Efforts under way

A central feature of the International Treaty on Plant Genetic Resources for Food and Agriculture (the Treaty) is the multilateral system of access and benefit-sharing (MLS), whereby contracting parties agree to virtually pool a subset of the genetic resources of 64 crops and forages to be used for 'utilization and conservation for research, breeding and training for food and agriculture' (ITPGRFA article 12.3(a)). According to the Treaty, access to genetic resources in the multilateral system will be provided 'expeditiously' and either free of charge or for 'minimum costs involved' (Article 12.3(b)) using the standard material transfer agreement (SMTA) adopted by the governing body of the ITPGRFA (Article 12.4). Contracting parties will 'take the necessary legal or other appropriate measures to provide [facilitated] access to other contracting parties, including natural and legal persons within their jurisdictions' (ITPGRFA, Article 12.2).

Teams in eight countries (Bhutan, Burkina Faso, Costa Rica, Côte d'Ivoire, Guatemala, Nepal, Rwanda, and Uganda) supported by a grant from the Netherlands to Bioversity International have developed common terms of reference for research and capacity building to support national implementation of the Treaty.⁵⁸ Activities are carried out in all eight countries under the umbrella of five interrelated themes: 1: National-level multilateral system policy development: common 'core' activities (and products); 2: Developing capacity to effectively implement the ITPGRFA: research on policy network structure, actor characteristics and coalitions; 3: Mapping and measuring germplasm interdependence and flows: research on the dynamics of the global crop commons; 4: Linking farmers to the ITPGRFA/MLS: potential and challenges of strengthening access to PGRFA through community-based gene/seed bank; 5: Technology transfer: generating non-monetary benefit sharing in support of conservation and sustainable use of PGRFA. This paper focuses on the steps required to make progress under Theme 1; the steps are described in italics in the next section. The paper also identifies some of the implementation challenges that the eight country teams are facing.

⁵⁷ This paper builds on the working paper "National level implementation of the multilateral system of access and benefit-sharing: notes on progress and points of intersection with the Convention on Biological Diversity," written by Michael Halewood with contributions from Elsa Andrieux, Léontine Crisson, Jean Gapusi, John Wasswa, Edmond Koffi, Tashi Dorji, Madan Bhatta and Didier Balma, presented at the workshop "The International Treaty and the Nagoya Protocol: Supporting mutual supportiveness in the implementation of both instruments at the national level," held in Rome, Italy, January 29-31, 2013, supported by the ABS Capacity Development Initiative.

⁵⁸ For more information about the initiative known as the Genetic Resources Policy Initiative 2, see: <http://grpi2.wordpress.com/about/grpi-2/>. For the details of the five themes, see: http://www.bioversityinternational.org/index.php?id=19&user_bioversitypublications_pi1%5BshowUid%5D=6930

Progress on theme 1: making the MLS work

Ensure that there are no legal impediments to providing PGRFA under the ITPGRFA using the SMTA

One fundamental issue that all teams are addressing is whether there are policies or laws in force in the country that would impede the ability to implement the Treaty. If so, there is a need to identify means by which policies and laws can be amended to create the requisite ‘legal space’ to provide facilitated access to multilateral system PGRFA using the SMTA. More recent access and benefit-sharing legislation, developed since the ITPGRFA came into force, address this situation by either a) exempting PGRFA in the multilateral system from the applicable legislation (e.g. Bhutan, Uganda) or b) anticipating the passage of specialized regulations, pursuant to the same legislation, to implement the multilateral system (e.g. envisioned in Nepal). The exemption approach is currently more common than the anticipating regulation approach.

The *Biodiversity Act of Bhutan*, Water Sheep Year 2003, which establishes access and benefit-sharing rules for genetic resources exempts: “... plant and animal genetic resources access, which will be governed by Special Rules and Regulations or Conditions such as those established by multilateral systems for access and benefit-sharing, especially in the case of plant genetic resources for food and agriculture, in accordance with the international law.”

The *Guidelines for Accessing Genetic Resources and Benefit-sharing in Uganda*, 2007, article 3.2 states that: “There are some activities that lead to access of the country’s genetic resources which are exempted from the requirement of an Access Permit [as otherwise required by the Guidelines]. These include: [...] Access to plant genetic resources for food and agriculture shall be done in accordance with existing relevant laws and international conventions e.g. the International Treaty on Plant Genetic Resources for Food and Agriculture (Acceded to by Uganda in March 2003)”

Confirm which PGRFA are automatically included in the MLS

GRPI 2 countries have a more or less clear understanding of PGRFA that are not ‘in the management and control’ of the national government and ‘in the public domain:’ PGRFA on land, or in collections, controlled by provincial or municipal governments, in farmers’ fields, in community genebanks, in companies’ collections, or subject to plant breeders’ rights or patents. Some doubts exist, in Rwanda, for example, about collections held by parastatal corporations or national public universities. Another example of uncertainty raised in a few countries, Bhutan, for example, concerns recent (or anticipated) deposits in national genebank organizations (usually by national public agricultural research organizations) that have coordinated collecting activities in the country, where there is no formal written record of the conditions under which the materials were collected or deposited. In some such cases, there is uncertainty on the part of the genebank as to the understanding of the farmers from whom the PGRFA were collected, and their legal rights in such cases. To date, a number of contracting parties have gone through exercises to confirm the identity of at least some portion of the

PGRFA within their borders that are automatically included in the multilateral system. Rwanda has been the first of the GRPI 2 countries to do so (adapted from <http://www.planttreaty.org/inclusions>).

On March 26, 2013, the **Rwanda** Agriculture Board has notified the Secretary that the following plant genetic resources for food and agriculture listed in Annex 1 of the International Treaty are included in the MLS:

- The collections held by the Rwanda Agriculture Board (RAB) in the various agriculture research centres of the Board throughout Rwanda. (<http://www.rab.gov.rw>)

- The bean, Irish potatoes and rice collections held by the Higher Institute of Agriculture and Animal Husbandry (ISAE) located in Musanze, Rwanda. (<http://www.isea.ac.rw>).

Information on the composition of the collections can be found at: National Information Sharing Mechanism for plant genetic resources for food and agriculture: <http://www.pgrfa.org/gpa/rwa/advancedsearch.jsp>

Develop mechanisms to encourage voluntary inclusion of PGRFA by natural and legal persons

To date, there is not much information in the reports from contracting parties to the ITPGRFA governing body about materials that have been voluntarily included in the multilateral system. Five countries, France, Germany, Netherlands, Peru, United Kingdom, Switzerland, provided such details. There is also little information documented to date about the measures that member states are taking to encourage such inclusions. GRPI 2 country teams are researching the issue.

In Nepal, the country GRPI 2 team conducted a survey of organizations holding PGRFA in the country, gathering information that will be relevant to determining if they are automatically included in (or excluded from) the MLS. The team will write a paper setting out its preliminary analysis of this issue to be shared in the latter half of 2013 with the relevant stakeholders in a dedicated meeting. The team also conducted a survey of breeders and community seed banks concerning their perceptions of incentives or disincentives to eventually include materials in the MLS in a voluntary manner. The team will formulate some recommendations based on this survey.

Share non-confidential information about PGRFA in the multilateral system

To date, the global information system has not been developed, with the result that there is not yet a centralized point for sharing information about materials in the multilateral system. To address this situation, the Treaty Secretary circulated a request to national Treaty focal points requesting information about the collections that are included in the multilateral system. To date, 33 countries have provided such information, and more are planning to do so relatively soon. That information is posted on the Treaty website,⁵⁹ including, in most cases, links to databases containing accession level passport, characterization and evaluation data (that is non-confidential).

⁵⁹ See <http://www.planttreaty.org/inclusions>

Confirm who has the authority to consider requests and provide materials

In the eight GRPI 2 countries, ITPGRFA that is automatically included in the multilateral system is spread across a number of national governmental research organizations, genebanks, protected areas, and so on. PGRFA that is voluntarily included in the multilateral system may reside in community genebanks, companies' collections, farmers' fields or hobbyists' gardens. In theory, as noted above, all such organizations or individuals could be empowered to consider/approve requests for multilateral system PGRFA, as well as to physically provide the resource. None of the countries has yet firmly decided which agency or agencies will be charged to consider/approve/ reject requests and this also is the case for who will be the ultimate provider of materials requested through the MLS.

In **Uganda**, while the policy development process is not yet complete, it is anticipated that one or two institutions will be designated to play the role as 'provider' of MLS materials that are 'under control and management' of the national government, particularly in reference to *ex-situ* collections. This approach is informed by the fact that most of the collections in Uganda are housed in organizations that operate under the overall umbrella of the Uganda National Agricultural Research Organization, and public universities. Concerning *in-situ*, on-farm, PGRFA (not automatically included in the multilateral system) the existing Ugandan access and benefit sharing legislation and regulations gives individuals and communities the space to negotiate matters on their own, with local councils empowered to take the role of 'Lead Agencies'. To address the interface between the national access and benefit sharing law and the MLS, particularly with respect to voluntary inclusions of materials in the multilateral system through deposits to the national genebank, it may be useful to develop model clauses/instruments/procedures for use by the potentially hundreds of Lead Agencies.

Start using the SMTA for both international and domestic transfers

Given the modest progress made on the steps described above, the eight countries have yet to start making ample use of the SMTA.

Develop approaches for in situ PGRFA in the multilateral system

To date, no country has developed specifically targeted laws or regulations or guidelines for access to in situ materials in the multilateral system. GRPI 2 country teams will research this issue.

Consider mechanisms to facilitate use of the multilateral system

National agricultural research organizations and national genebanks in the eight GRPI 2 are or will be engaged (as well as Ethiopia, India and Papua New Guinea) to work with farmers to identify materials that are adapted to changing climate conditions in those farmers' zones. These exercises have involved providing training, technical back-up and service provision, using climate analogue tools, crop modelling, accession level information systems, seeking access to useful material through the multilateral system, and participatory evaluation of the performance of the materials used.

Implementation challenges

Low levels of awareness about the Treaty and the multilateral system in particular

In all the eight GRPI 2 countries, there only is relatively small circle of plant breeders, university researchers, plant genetic resources specialists and, in some countries, a handful of farmers' and civil society organizations who know about the Treaty and about its importance for national food security and access to genetic diversity. Research underway on policy actors and networks (theme 2) suggests that in most of the GRPI 2 countries the number of Treaty knowledgeable persons varies from 20-40, which is a very low number to form a critical mass. In several of the GRPI 2 countries, parties whose cooperation is required for implementation – including ministries of environment—do not actually know much or anything about the multilateral system. All eight GRPI 2 country teams are carrying out a series of activities to raise awareness and increase the number of knowledgeable persons.

Limited national capacities to deal with policy implementation complexities

GRPI 2 country teams all face difficulties to tackle the multiple policy and legal aspects related to Treaty implementation. The Treaty is still a relatively new item on the agenda of several national governments. Some of the GRPI 2 countries face particular governance problems, such as the reassignment of key decision-makers to other posts, slow new government formation, and complicated procedures for inter-agency cooperation.

Separate administration of ITPGRFA and the Convention on Biological Diversity

Implementing the MLS and other Treaty measures in the eight GRPI 2 countries is taking place in conjunction with CBD implementation. Actual activities, however, have been and are developed in relative isolation from one another. This is due, in several of the GRPI 2 countries, to separate administration by the ministry of environment for the CBD and the ministry of agriculture for the ITPGRFA.

In **Burkina Faso**, the Treaty focal point (also occupying the position of Secretary of the Permanent Secretariat of the National Plant Genetic Resources Management Commission) has been empowered by way of a projet d'arrêté interministériel (interministerial order) to be able to convene meetings and engage in policy-level communications within his own Ministry (of Scientific Research and Innovation) and with other Ministries (e.g. agriculture, environment) that need to be engaged in developing strategies for implementing the MLS. The scene is now set for high-level, interdepartmental consideration of the range of issues that need to be considered for Treaty implementation.

Rwanda and Uganda have created permanent multistakeholder committees or boards to facilitate information sharing, awareness raising, interagency consultation and identification of options for national policy development pursuant to both the CBD and the ITPGRFA. These bodies include representatives from departments of agriculture, environment, forestry and the attorney general; they also include representatives from national farmers' organizations, indigenous peoples, industry groups, and civil society organizations. However, often these

committees exist only on paper, and need resources to be put into practice. In addition, in other countries, for example Rwanda and Côte d'Ivoire, where there has not yet been significant progress implementing access and benefit-sharing mechanisms under either the CBD or the ITPGRFA, there are discussions about the possibility of ministries of environment and agriculture working together to develop a single law, with delegated responsibilities between ministries, to implement the multilateral system and access and benefit-sharing under the CBD, including the Nagoya Protocol. Such an approach may be simpler to follow in those rare countries where the ITPGRFA focal point, and the CBD access and benefit-sharing focal point are the same person, as in Rwanda, or the same government agency, as in Bhutan.

A final word

The GRPI 2 initiative, through the provision of technical support and through the creation of cross-country learning opportunities, is assisting countries to deal with these challenges. Hopefully, the experiences and lessons learned will be useful to other countries that find themselves in a similar position or are considering signing the Treaty in the near future.



The Treaty and the CGIAR system

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The mission of the CGIAR is to contribute to solving development problems through collaboration with research and development partners (www.cgiar.org). The relevance to the Treaty is clear. The subject matter of the Treaty – the conservation, evaluation and sharing of genetic diversity – is explicitly recognized as an essential and major component the CGIAR’s strategy to improve livelihoods, and there is much in common between the Treaty and the CGIAR in their approaches. In this paper we consider not only the areas that are the subject of legal agreements, but also other areas of common relevance. These include all the articles in the main body of the Treaty, from Article 5 on Conservation, exploration, collection, characterization, evaluation, documentation, to Article 17 on the Global Information System.

Each of the 11 International Agricultural Research Centres (IARCs) of the CGIAR that have genebanks (namely AfricaRice, Bioversity, CIAT, CIMMYT, CIP, ICARDA, ICRAF, ICRISAT, IITA, ILRI, IRRI) entered into a legal agreement in October 2006 with the Governing Body of the Treaty. Under these agreements: each centre’s in trust collection of annex 1 crops is included in the multilateral system of the Treaty; in trust collections of non-annex 1 crops are made available in the same way; germplasm held by Contracting Parties under the multilateral system is available to the IARCs; and the IARCs are invited to attend Governing Body meetings as observers.

The basic operations of the 11 genebanks – conservation, characterization, documentation and dissemination of germplasm – are managed by the 11 IARCS under the CGIAR Research Project (CRP) “Managing and Sustaining CGIAR-held Collections of PGR”. This “Genebank CRP” is managed by the Global Crop Diversity Trust, together with the CGIAR Consortium Office. It covers primarily Treaty Articles 5 (conservation), 12 (facilitated access) and 15 (in trust collections of the IARCs). It is organized into four objectives: to secure crop and tree diversity in perpetuity; to keep conserved germplasm clean, available and disseminated; to inform and facilitate use of conserved diversity; and to conserve crop diversity in a rationalized, cost-effective and globalised system.

It is impossible to do justice here to the contribution of the CGIAR to Treaty Article 6 (Sustainable use of Plant Genetic Resources). Essentially this covers most of the CGIAR's mission. It spans the entire spectrum of activities required to improve livelihoods (financial, social and environmental) of the poor through sustainable use of crop diversity on farm. This includes research on crop diversity, pre-breeding, breeding, and improving agronomic practices and agricultural and marketing systems; all within the context of meeting defined socio-cultural, environmental and market needs and national policy objectives. These activities are organized through 15 other CRPs, working with all relevant stakeholders from all sectors, such as farmers, national programmes, research institutions, policy makers, and the seed industry. The CRPs involve major, global partnerships which can be very extensive. For example, over 900 partners take part in the Global Rice Science Partnership GriSP, one of the CRPs.

Treaty articles 7.2 and 8, though small, are closely related to the activities of the CGIAR. The *modus operandi* of the IARCs includes organizing training courses, hosting trainees, coordinating capacity-building projects, and providing such specific assistance as may be needed – all activities within scope of 7.2. This very meeting is itself within scope of article 8: Japan is promoting the provision of technical assistance to Contracting Parties, through the appropriate international organizations.

The CGIAR respects and promotes farmers' rights as implemented by each country (Treaty article 9). The IARCs engage farmers, directly or through national programmes, to determine their needs, thus directly fulfilling 9.2(c), which acknowledges the farmer's right to participate in making decisions on conservation and sustainable use of PGRFA. Farmers are the target beneficiaries of CGIAR research, thus also fulfilling 9.2(b). Article 9.2(a), on the protection of traditional knowledge, is somewhat problematic because what such protection entails is not well defined. In addition, it is generally not clear how to combine this right with their right to be beneficiaries of CGIAR technologies, which requires solutions that combine their traditional knowledge with CGIAR knowledge.

Facilitated access (Treaty article 12) by the IARCs is one of the greatest benefits the CGIAR brings. Annual distribution from the IARCS is approximately 600 000 samples. The majority of these (approximately 70%) are of improved material, distributed outside the genebank CRP as part of the other 15 CRPs; and 75% of the material distributed is sent to developing countries. This clearly reflects that the focus is on supporting developing countries, and that their need is primarily for improved materials, rather than traditional varieties from the genebanks.

Treaty article 13 (benefit-sharing) recognizes five modalities for sharing benefits: access to PGRFA; exchange of information; access to and transfer of technology; capacity-building; and sharing of monetary and other benefits of commercialization. These precisely reflect the way the CGIAR works to benefit poor farmers, although the last modality requires further consideration. The IARCs do not commercialize or make profits out of their products, and thus get no monetary benefits to share. Rather, commercialization is done through the beneficiary countries, which therefore reap 100% of the monetary benefits of commercialization of CGIAR products. However, historically, the IARCs have not restricted who can commercialize their products. This means that, while at the national level 100% of the benefits accrue to the

beneficiary countries, the individuals and organizations that benefit within the country are not necessarily those envisaged by the Treaty. Therefore there is a need and a tendency for the IARCs to start taking control of their intellectual property, so that they can control who are the beneficiaries, thus furthering the aims of the Treaty.

The benefits brought by the CGIAR in this way, estimated from numerous independent impact studies, are enormous. An overall average, estimated across the whole CGIAR system is \$9/year benefit to developing countries for each \$1 invested in CGIAR research (www.cgiar.org). Some studies estimate far higher returns. For example, according to a detailed independent study of rice in three countries by ACIAR (2011), the annual GDP of Vietnam, Philippines and Indonesia has increased by \$21/year for every \$1 of IRRI's contribution to rice improvement in those countries.

One significant difference between the CGIAR and the Treaty must be highlighted. The mission of the CGIAR is to improve livelihoods of the poor, and conserving and sustainably using PGRFA is seen as an essential tool towards achieving the mission. In contrast, the conservation and sustainable use of PGRFA is the core mission of the Treaty. The distinct, but mutually supportive goals of the Treaty and the CGIAR reflect the mutual cooperation that actually occurs



The ITPGRFA and Asia – perspectives from Japan

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There are two issues I wish to discuss that I feel are relevant to this meeting:

- (1) I would like to explain the process that Japan has gone through prior to the government's decision to join the ITPGRFA;
- (2) I will give some personal perspectives of how I hope that collaboration on PGRFA and the ITPGRFA will evolve in the future.

Japan's entry into the ITPGRFA:

Traditionally agriculture has played a very large role in Japanese society and hence taking decisions related to agriculture requires careful consultation. In addition Japanese culture is a consensus culture and decisions are always made after consultation. First it was necessary to translate the documents associated with the Treaty and explain the meaning of the Treaty and its implications to the public and private sector.

Translation is a big task and Japan shares this problem with many of our Asian neighbours that do not have a UN language as their native language. It is also difficult to explain the logic of the Treaty. For example while we understand what Annex 1 crops are it is difficult for a Japanese farmer to understand why rice falls into Annex 1 crops but not soybeans.

Explaining article 12-4 of the Treaty would be difficult for anyone – whatever language you use. The single sentence has over 100 words. When most English speaking people see the term “natural and legal individuals” they need to pause and think - what does that mean? Determining what is in the “public domain” may not be so simple. These are issues that are important to explain to the broader community of PGR stakeholders.

Unlike some parts of the world such as North and South America and Africa – the number of national languages in Asia, that are non-UN languages, is very many and this might be part of the reason Asian countries have been slower than those in some other regions to join the Treaty.

Looking forward

Human resources and expertise for understanding the global PGRFA system

There is need for a dedicated national person to keep up-to-date with international PGRFA issues and information. The problem of PGRFA staff turnover and insufficient human resources capacity is very real. The Treaty is not the only international issue related to PGRFA, there is for example UPOV and other forums particularly on regulations related to transgenic plants that require monitoring at the national level.

Fostering meaningful collaboration

All these different issues directly or indirectly related to PGRFA require a considerable amount of expertise. Countries vary in their ability to keep up-to-date. In Asia there is a more than 2 000 fold difference in population of countries in Asia. The strain on resources for smaller countries is great and therefore there is a need for greater regional or global sharing of responsibilities. I heard that one genebank head of a small country was jokingly told “that the best place to meet you is in the airport!!” because that person had to attend so many international meetings.

New ways to evaluation PGRFA

There are pressing global concerns that demand attention from the PGRFA community. Among them is global climate change and increasingly erratic weather events. The Treaty benefit sharing project themes address this issue. What seems to be crucial is heavy investment in multi-location testing – not just within countries but across countries. In this way the adaptability of germplasm can be checked. This is one of the strengths of the single crop CG centers, like IRRI, that have developed crop testing networks. But there are many crops that do not fall under the umbrella of the CG centers, such as many fruit crops - papaya, mango, pineapple and apples. Also crops that are globally minor but regionally of major importance, such as some of the Asian *Vigna* crops. If some of these minor crops fail that can be a disaster for poor people who rely on these crops. Networks to test genetic resources of these ‘major locally but minor globally’ crop are needed.

Providing help to access BSF

Asia has two thirds of the world’s population and most of the world’s poor and hungry. But it is noticeable that in terms of receipt of benefit sharing funds (as far as I could see from the maps) 14 projects have been awarded to Latin America, 12 to Africa and only 8 to Asia (none in mainland Southeast Asia). Of projects awarded to Asia 4 out of the eight were countries with good English skills (India, Nepal, Bhutan and the Philippines). May be this meeting can help countries with less developed English skills to benefit from the BSF – such as Cambodia, Lao PDR and Myanmar.

Treaty implementation

This project focusses on access to PGRFA because I think it is widely acknowledged that the MLS (multilateral system) is not functioning as well as it could. Superficially it seems quite straight forward but it is not. The meeting organizers have provided the “core requirements and steps in Treaty implementation”. It is good that we have experts from the Treaty to explain these steps. Each meeting of the Governing Body results in new decisions and it is a constant race to keep up. For example the document I had that explained 12.3h of the Treaty includes the phrase “...in accordance with such standards as may be set by the Governing Body”. May be they have been set but I don’t know.

Annex 1 crops

These comments bring me to what I think is one of the strangest parts of the ITPGRFA which is Annex 1 crops. There is clearly politics behind why some crops are in and others not in Annex 1. The lack of the “commodity” crops is obvious but large quantities of bananas are produced by a few big companies particularly in Latin America and banana is an Annex 1 crop. Soybean is perhaps the strangest absence from the list of Annex 1 crops. But so is the absence of Capsicum and tomato. Where would Korea, Thai, Bhutanese and Sri Lankan cuisine be without chili pepper from Central American?

I found it amusing that in the Brassica complex there is a special sentence in Annex 1 that excludes *Lepidium meyenii*. You may wonder, why as I did as I had not heard of this species, but it is a root crop of the Andes with, no doubt importantly, aphrodisiac properties. Clearly everyone had their own say regarding what they wanted in or out of the Annex 1 crops. But this obviously leads to complications. Is the material in Annex 1 or not, was it collected before 1993 or not and so on.

Conclusions

The comments above are not meant as constructive criticism since the ITPGRFA is still evolving and now that Japan is becoming Party to the Treaty we hope to help it become stronger and more relevant to all.

Thank you for your kind attention

