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The International Treaty on Plant Genetic Resources for Food and Agriculture: Saving, Sharing and Taking Care of the Plants and Seeds that Feed the World

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The objective of the ITPGRFA

The International Treaty on Plant Genetic Resources for Food and Agriculture (ITPGRFA) is the key global instrument whose primary purpose is to save, share and ensure the sustainable use of all plant genetic resources for food and agriculture, the basis of the world's crops for the present and for the future. It also aims to ensure that the benefits derived from such use are shared equitably. The International Treaty currently has 148 Contracting Parties, including the European Union. This large and growing membership is evidence of the tremendous importance of these precious natural resources.

Plant genetic resources for food and agriculture (PGRFA) are, in fact, the basic building blocks of the food upon which we all depend for survival, nutrition and nourishment. In simple terms, PGRFA refer to seeds and all other plant materials that grow into food crops and forages, which are then consumed by human beings and by animals. In more technical terms, DNA information and other technical, scientific and environmental data are also highly relevant to PGRFA. The plain fact is that the vast majority of the food consumed on a daily basis either started as a seed, or needed a seed in order to grow. Our food and our agriculture both depend on the availability of diverse plant genetic resources, and the larger the diversity of PGRFA available in the world, the better it is for everybody.

Abstract

This Policy Brief provides an introduction to the International Treaty on Plant Genetic Resources for Food and Agriculture and its contribution to conserve, sustainably use and fairly and equitably share the benefits of plant genetic resources for food and agriculture, for sustainable agriculture and food security. The brief also provides an update on the involvement of the ITPGRFA in the prevailing issues under discussion in various biodiversity-related fora, including ongoing negotiations for a Post-2020 Global Biodiversity Framework, and response to the COVID-19 global pandemic.

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Este informe de políticas ofrece una introducción al Tratado Internacional sobre los Recursos Fitogenéticos para la Alimentación y la Agricultura y su contribución a la conservación, la utilización sostenible y la distribución justa y equitativa de los beneficios de los recursos fitogenéticos para la alimentación y la agricultura, en aras de la agricultura sostenible y la seguridad alimentaria. El informe también proporciona una actualización sobre la participación del TIRFAA en las cuestiones predominantes que se están debatiendo en varios foros relacionados con la biodiversidad, incluidas las negociaciones en curso para un Marco Mundial de Biodiversidad posterior a 2020, y la respuesta a la pandemia mundial COVID-19.

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Ce document présente le Traité international sur les ressources phytogénétiques pour l'alimentation et l'agriculture et sa contribution à la conservation, à l'utilisation durable et au partage juste et équitable des avantages des ressources phytogénétiques pour l'alimentation et l'agriculture, pour une agriculture durable et la sécurité alimentaire. Le document fournit également des informations récentes sur l'implication du TIRPAA dans les questions en cours de discussion dans divers forums liés à la biodiversité, y compris les négociations en cours pour un cadre mondial de la biodiversité pour l'après-2020, et une réponse à la pandémie mondiale de COVID-19.

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All nations are inter-dependent for PGRFA

We are all inter-dependent when it comes to food production. All nations depend on one another for food security. For example, potatoes that are a staple part of diets in many European and other Western nations were not native to these places; rather, they originated in Latin America. Similarly, wheat, which is a staple in India, Italy and many other nations, originated in the fertile crescent of Mesopotamia. Beyond this historical component, more recent analyses draw the picture of a world that continues to be highly interdependent. Countries continue to depend on crops whose origin and pool of genetic diversity are far away. In this sense, at the global scale, the average degree of countries' dependence on crops with foreign origin was found to be above 65 per cent.

The diversity of our food crops helps us weather unexpected disasters

This is extremely important, particularly in the face of more frequent climate variability, environmental shocks, and pests and diseases, such as the recent desert locust infestation in the Horn of Africa, the floods in Somalia followed shortly thereafter by the desert locusts, or the tropical cyclone Idai, one of the worst tropical cyclones on record to affect Africa and the Southern Hemisphere. Crises such as these result in massive losses and human distress, not the least of which are hunger, poverty and the destruction of crops. These disasters ravage local food production systems and cause enormous damage to food crop fields, thus to important reservoirs of crop diversity in the affected countries. But the loss of crop diversity consequently also adversely impacts on the local, national and even global economies and overall human wellbeing.

It is, therefore, in our collective self-interest to conserve, sustainably use and equitably share the benefits of these precious natural resources. That is where the International Treaty (Plant Treaty) plays a critical role: it works with farmers, plant breeders, scientists and policy-makers around the world to ensure the conservation, exchange and sustainable use of all PGRFA. Indeed, the International Treaty's objectives are "the conservation and sustainable use of plant genetic resources for food and agriculture and the fair and equitable sharing of the benefits arising out of their use, in harmony with the Convention on Biological Diversity, for sustainable agriculture and food security."[1]

Need to conserve biodiversity

Unfortunately, much of the diversity of the food crops humans rely on has vanished during our lifetime. We have been losing biodiversity at alarming rates, as pointed out in various reports, including the FAO State of the World's Biodiversity for Food and Agriculture,[2] and the Intergovernmental Science-Policy Platform on Biodiversity and Ecosystem Services (IPBES) Global Assessment Report on Biodiversity and Ecosystem.[3] Added to the increasing global population, this means more and more people are relying on less and ever reducing crops and diversity for our food, thus further compounding existing vulnerabilities. It is therefore more urgent than ever to conserve the biodiversity we have left, because once varieties are lost, they are gone forever.

As the current world population of 7.6 billion increases to 8.6 billion in the next 10 years, and then on to 9.8 billion by 2050, it will become even more challenging to be able to feed everyone, while respecting and protecting the natural environment. To prevent this, it is extremely important to stem further loss of the biological diversity of our PGRFA.

In this context, the International Treaty has a number of robust global mechanisms that can help stem further loss of biodiversity of the world's PGRFA. The International Treaty's Contracting Parties (members) are committed to conserving, sustainably using and sharing the benefits from using PGRFA for the common good through these Treaty mechanisms.

Multilateral System of Access and Benefit-sharing

The International Treaty's truly innovative solution to access and benefit-sharing is the commitment of its Contracting Parties that 64 of our most important crops, which together account for 80 per cent of all human consumption from plants, will comprise a pool of genetic resources that are accessible to everyone. On ratifying the International Treaty, Contracting Parties agree to make their genetic diversity and related information about the crops stored in their gene banks available to all through the Multilateral System (MLS). This Multilateral System for Access and Benefit-sharing is currently the largest global gene pool of crops for food and agriculture available for exchange across the globe.

The MLS has already enabled **over 6 million global transfers** at an average rate of 1000 transfers a day. The more material there is available in the MLS, the greater the opportunity for a secure food supply for all.

This gives farmers, scientific institutions and plant breeders the opportunity to work with, and potentially improve the materials stored in gene banks or even crops growing in fields. By facilitating research, innovation and exchange of information without restrictions, this cuts down on the costly and time-consuming need for breeders to negotiate contracts with individual gene banks, providers and nations.

Annex I of the International Treaty currently lists 64 of the world's most important crops and forages, but there are discussions to expand this list. The formal discussions on a potential enhancement of the MLS have been ongoing for a number of years and were recently put in abeyance over some particularly complex issues, such as digital sequence information (DSI), so as to allow informal consultations to tackle these issues.

Global Information System

For plant genetic material to be truly valuable, it is important to also have access to vital information about that material. The Global Information System of the International Treaty provides a rapidly growing web portal for all data needs relating to PGRFA by using revolutionary international data standards. The Global Information System for PGRFA integrates and augments existing systems to create the global entry point to information and knowledge for strengthening the capacity for PGRFA conservation, management and utilization. This facilitates the exchange of vital PGRFA information and is thus indispensable particularly for plant breeders and PGRFA scientists.

Sharing the benefits of PGRFA and supporting farmers

The International Treaty supports farmers as they combat emerging environmental and climatic conditions by building their resilience and capacity to face these challenges and continue to feed their families, their communities and the world at large. The Benefit-sharing Fund of the International Treaty invests in high-impact projects dealing with the sustainable use and management of PGRFA, helping farmers face emerging challenges. The Benefit-sharing Fund (BSF) has already directly benefitted over 1 million people in 67 developing countries, through 81 projects. The projects have included over 500 partnering institutions, establishing over 100 new Community Seeds Banks in rural areas in developing countries and supporting the development of hundreds of climate resilient crop varieties, thus addressing needs at a local level, while also contributing to global goals and wellbeing. The projects supported by BSF have also contributed thousands of new PGRFA accessions into the MLS, making them available for global exchange through the MLS of the International Treaty.

The variety of the crops for food available to humanity today is due, in large part, to farmers and local and indigenous communities all around the world. Indeed, they are also pivotal when it comes to saving, sharing, and caring for the seeds of the food crops that feed the world. Particularly smallholder farmers, and local and indigenous communities in the centres of origin and diversity have been the guardians of the world's plant genetic resources for millennia, and they continue to play a vitally important role in maintaining the biodiversity of our food crops.

Farmers' Rights

With their knowledge and skills farmers domesticated, improved, managed and conserved the food crops that feed the world today; and yet, the crucial role of these custodians and innovators of plant genetic diversity that are of global significance to food and agriculture, was not formally recognized at the international level until the adoption of the International Treaty in November 2001.[4] The International Plant Treaty is the first legally binding international instrument to formally acknowledge the enormous contributions of local and indigenous communities and smallholder farmers as traditional custodians of the world's food crops, and it calls on nations to protect and promote farmers' rights. Article 9 of the International Treaty explicitly recognizes the enormous contributions of farmers, and local and indigenous communities in developing and conserving crop diversity over the millennia.[5]

Farmers' rights are important for millions of farmers throughout the world, particularly in developing countries where they are the largest sector of the population. Through the International Treaty, governments agree to realize and protect the rights of farmers as they relate to plant genetic resources through various provisions. For example, by protecting relevant traditional knowledge; by making it possible for farmers to participate equitably in the sharing of benefits derived from their use; and by ensuring the right of farmers to participate in national decision-making processes related to the conservation and use of plant genetic resources. The International Treaty also stipulates that these provisions

should not limit the rights of farmers to save, use, exchange and sell farm-saved seeds and propagating material.

The International Treaty offers a variety of capacity development materials and an Inventory on farmers' rights with national measures, best practices, and lessons learned, with a digital version recently published on its website. Building on the Inventory, an expert group is currently developing options to encourage, guide and promote the realization of farmers' rights. The Secretariat of the International Treaty provides support to national governments and other stakeholders in formulating policies to protect the rights of farmers.

Global development agenda

The International Treaty is deeply involved in the prevailing issues under discussion in various biodiversity-related fora, particularly when it comes to addressing the urgent challenge of addressing the alarming loss of biodiversity. The activities of the International Treaty contribute to a number of broader global frameworks, particularly the 2030 Agenda for Sustainable Development, Climate Change, Farmers' Rights, and recovery from the COVID-19 global pandemic. It is also contributing to the ongoing negotiations for a Post-2020 Global Biodiversity Framework.

The International Treaty contributes to the global development agenda, addressing prevailing biodiversity-related issues of particular import, including:

1. The **2030 Agenda for Sustainable Development**: The International Treaty contributes directly to the achievement of a number of Sustainable Development Goals (SDGs), particularly SDGs 2 and 15:
    a) SDG 1 – by working to end poverty by helping empower smallholder farmers;
    b) SDG 2 – by promoting sustainable agriculture and working to end hunger;
    c) SDG 5 – by working to achieve gender equality, particularly through its capacity development efforts and BSF projects;
    d) SDG 13 – by supporting projects that combat climate change; and
    e) **SDG 15 – by halting the loss of crop biodiversity**.
2. The **Post-2020 Global Biodiversity Framework**: The Global Biodiversity Framework will address the vital importance of conserving PGRFA, and is expected to be adopted at the Fifteenth Conference of Parties (COP-15) of the CBD. Issues related to agricultural biodiversity play an important role in framing the Post-2020 Global Biodiversity Framework, because agricultural biodiversity contributes to meeting people's survival and needs. In this context, the conservation and protection of biodiversity must go hand-in-hand with the sustainable use of the resources and with the sharing of benefits arising from that use. The International Treaty is the leading global agreement dealing with PGRFA, and therefore, contributes actively to the development of the Post-2020 Global Biodiversity Framework. It will also play a vital role in the implementation of the Framework, when adopted.
3. **Climate change:** Climate change is one of the existential issues of our times, and goes hand-in-hand with biodiversity loss. The International Treaty's mandate and activities include addressing numerous global challenges faced due to climate change, particularly through its BSF projects, which actively help farmers combat climate change by helping them use crop varieties that are adapted to be resilient and appropriate to local conditions and needs.
4. The **United Nations Declaration on the Rights of Peasants and Other People Working in Rural Areas:** For thousands of years farmers all over the world have domesticated plants, developed new varieties, saved seeds and planting material for the following season, and exchanged seeds and plants with their neighbors and other farmers. Through both deliberate efforts and trial and error, they bred and grew crops that are adapted to their environment and provide for their nutritional and various other needs. In so doing, they created diversity – a wealth of plant genetic diversity of global importance for food and agriculture. As the first international instrument to explicitly acknowledge the tremendous contribution of smallholder farmers and local and indigenous communities to the management and development of the world's food crops, the International Treaty was prominently considered in the negotiations of the UN Declaration on the Rights of Peasants and other People Working in Rural Areas and contributes to its implementation.
5. The **COVID-19 global pandemic:** The ongoing COVID-19 global pandemic has laid bare many

> of the world's shortcomings and vulnerabilities. The harsh truth is that COVID-19 has taken and continues to take a toll—on human life, on our food systems and on the management of the crops upon which we depend. It has disrupted agricultural value chains and thereby posing risks to food security, globally and at the household level. The pandemic highlights our interconnectedness and reconfirms the importance of conserving and sustainably using the biodiversity of PGRFA upon which the world relies for food, nutrition and agriculture. The International Treaty offers mechanisms that can aid in and contribute to pandemic recovery to help build back better.

The Secretariat of the International Treaty is mobilizing resources and expertise to assess the impacts of the COVID-19 pandemic on the management of crop germplasm, which is a fundamental asset for sustainable agricultural and resilient food systems. The Secretariat of the International Treaty conducted a survey that provided national focal points and other International Treaty stakeholders the opportunity to share information and views, identify needs and actions. Subsequently, with the support of the Kingdom of Morocco and in collaboration with the Global Crop Diversity Trust, the International Treaty convened an online panel with high-level international experts. The first online expert panel addressed current and potential impacts of the COVID-19 pandemic on the conservation, management and use of plant genetic resources for food security and sustainable agriculture. In particular, the Panel discussed how to mobilize the resources and mechanisms of the International Treaty to adapt to COVID-19 realities, as well as the alignment of the International Treaty with FAO COVID-19 Response and Recovery Programme.

That was the first in a series of important global discussions organized by the International Treaty along with FAO and other partners in 2021. So far, there has been an International Expert Panel on the Challenges of conservation, exchange and use of fruit and vegetable diversity, in the context of the International Year of Fruits and Vegetables. This was followed by another hugely successful online discussion, the First International Multi-stakeholder Symposium on PGRFA, which focused on *in situ* conservation and on-farm management of PGRFA. In addition, an international virtual panel was organized on Cryopreservation: A long-term strategy for hard-to-conserve PGRFA collections in a post-COVID world.

The International Treaty will also undertake further assessment of both the medium and longer-term impacts of the current COVID-19 crisis, while identifying lessons learned from the various experiences of stakeholders, in order to adequately prepare for future crises or systemic shocks. The International Treaty provides some concrete mechanisms that can help alleviate these setbacks. Among the strong mechanisms that we can rely on are the national and international gene banks, which are part of a strong Multilateral System of Access and Benefit-sharing, a vital Global Information System, and the ultimate back-up of PGRFA conservation in the Svalbard Global Seed Vault. These structures can help us regenerate, rebuild and regrow, and contribute to the overall resilience of our food systems. The International Treaty continues working hand-in-hand with farmers, plant breeders and scientists to conserve, sustainably use and exchange PGRFA every day. In doing so, we are doing what we can to ensure food security during this global crisis and beyond.

Governing Body Sessions

Once in every two years, the International Treaty convenes a meeting of its Governing Body comprising of all its Member States. All Contracting Parties and other interested stakeholders gather for Governing Body sessions, during which the work of the past biennium is reviewed, issues of common interest are discussed, and decisions for the coming biennium are made. The Ninth Session of the Governing Body (GB-9) is scheduled to take place in May 2022, to be hosted by India.

The theme for GB-9 is **"Celebrating the Guardians of Crop Diversity: Toward an Inclusive Post-2020 Biodiversity Framework" —** in recognition of farmers and other custodians of biodiversity as champions and saviors of seeds, which is an undeniably important part of conserving and using the biodiversity that the world relies on for food, nutrition and agriculture.

GB-9 will provide an excellent opportunity to recognize the contribution of the world's smallholder farmers and other custodians of crop biodiversity to PGRFA, while providing a unique opportunity to gather inputs and consider options for the implementation of the Post-2020 Global Biodiversity Framework.

Conclusion

Because of the very high level of inter-dependence among countries in regard to PGFRA that they need for food and agricultural production, it is invariable therefore, that significant progress can only be made through effective and well-oriented international co-operation. In addition to the growing environmental challenges, issues related to genetic resources are also evolving in a context of rapid technological change, and complex scientific and economic activity, further reinforcing the urgent need for increased cooperation among countries.

The International Treaty provides a platform for such cooperation and a forum for discussion and decision-making on the related common issues and challenges. It is in this respect that the International Treaty can, with its partners, facilitate and catalyze processes for the acceleration of sustainable agricultural production, as envisaged in its objectives. In this context, PGRFA can make a decisive contribution to global food security and the sustainable development goals, supported by sound domestic and international policy framework and environmental management.

The International Treaty will continue to work around the world to save, share and take care of the world's plant genetic resources for food and agriculture for the common good of all.

Endnotes:

[1] Article 1.1 of the International Treaty on Plant Genetic Resources for Food and Agriculture.

[2] The FAO report points out that the biodiversity upon which our food systems depend is disappearing at an alarming rate, threatening the future of our food, livelihoods, health and environment.

[3] The IPBES report found that approximately 1 million (animal and plant) species are currently at risk of becoming extinct. This is an unpreceded loss of biodiversity, more than ever before in human history.

[4] The FAO Conference adopted the International Treaty on 03 November 2001, which entered into force on 29 June 2004.

[5] The preamble of Article 9 of the International Treaty states: "Affirming that the past, present and future contributions of farmers in all regions of the world, particularly those in centres of origin and diversity, in conserving, improving and making available these resources, is the basis of Farmers' Rights."

[6] The draft Post-2020 Global Biodiversity Framework "sets out an ambitious plan to implement broad-based action to bring about a transformation in society's relationship with biodiversity and to ensure that, by 2050, the shared vision of living in harmony with nature is fulfilled. The framework aims to galvanize urgent and transformative action by governments and all of society, including indigenous peoples and local communities, civil society and businesses, to achieve the outcomes it sets out in its vision, mission, goals and targets, and thereby contribute to the objectives of the Convention on Biological Diversity and other biodiversity related multilateral agreements, processes and instruments." Source: https://www.cbd.int/article/zero-draft-update-august-2020.

The South Centre is the intergovernmental organization of developing countries that helps developing countries to combine their efforts and expertise to promote their common interests in the international arena. The South Centre was established by an Intergovernmental Agreement which came into force on 31 July 1995. Its headquarters is in Geneva, Switzerland.

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