



Rendiconti

Accademia Nazionale delle Scienze detta dei XL

*Memorie di Scienze Fisiche e Naturali*

133° (2015), Vol. XXXIX, Parte II, Tomo I, pp. 245-249

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## **The International Treaty on Plant Genetic Resources for Food and Agriculture. Family farming, climate change and genetic resources**

### *1. Introduction*

In the near future the world population will significantly increase, mostly in two continents, Asia and Africa, where the availability of agricultural land is a long-standing problem and the degree of the anthropogenic pressure by the population in the area has reached unacceptable levels. We must be aware that there are natural limits that we cannot go beyond and that agriculture cannot afford to go indiscriminately using every means to increase crop production.

Small farmers contribute to food security and nutrition worldwide and, at the same time, carry out many other roles in the territory. Historical data show that agriculture on small-scale, adequately supported by policies and public investments, contribute effectively to food security and economic growth. As such, family farmers can be an answer to these questions at economic and social level. They may help to mitigate the negative effects of the climate change and can one of the solutions to reduce the excessive use of inputs in intensive agriculture production. Family farming is generally practiced by in small or medium-sized farms and by community indigenous people. Companies are managed by family groups, largely headed by women, who often play an important role in the activities of production, processing and marketing. The aspect of the size of cultivated land, usually less than a hectare, is very important to help categorize and explain this phenomenon, which often coincides with that of small producers.

Family Farming can be a solution for food security and sustainable develop-

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ment. Everyone, from governments, including local, regional and international organizations, the civil society and private industry as well as research institutes, has a specific role to play.

## *2. Genetic resources for food and agriculture and climate change*

Family farming contributes to protect the ecosystem by adverse events. Many farm families live in marginal lands where the effects of the climate change are most impressive and they have become expert in the identification of those species and varieties more resistant to shocks and natural pressures.

Climate change is a fundamental threat to food security, sustainable development and the eradication of poverty. It is expected to reduce agricultural productivity, stability and incomes in many parts of the world, and to become an additional stress and risk factor in areas already facing high levels of food insecurity. Production systems and the genetic resources upon which they are based are severely threatened.

Conservation and utilization of a broad range of genetic resources in agriculture at local level is an essential element of strategies for coping with the effects of climate change. In contrast, the role of family farming in conserving genetic resources for food and agriculture, especially in terms of adaptation, has so far received little attention.

## *3. Genetic resources are part of the solution*

High diversity of genetic resources may appear redundant at one point in time, however it can become important when the environment changes and it is essential for maintaining and enhancing the efficiency and the resilience of agro-ecosystems.

Selection and breeding, such as the participatory breeding made by farmers, can be used to develop new traits that enable crops to perform well in specific conditions. This can help farmers to reduce their vulnerability to risks associated with climate. However, the use of such breeds or varieties does not preclude the importance of conserving and continuing to use a wide variety of genetic resources.

Most countries need to access genetic resources from elsewhere for their agricultural production and food security. It is expected that the challenges posed by climate change will increase interdependency and lead to greater international exchange of genetic resources for food and agriculture.

Farmers are able to transmit their knowledge of understanding their territory and to limit, often with few resources available, the loss of local biodiversity. The varieties used and in particular their link with their land of origin are of high relevance.

## *4. The International Treaty on PGRFA (The Treaty)*

The Treaty takes these distinct characteristics of Plant Genetic Resources for Food and Agriculture (PGRFA) into account by creating an Access and Benefit

Sharing (ABS) regime that is directly linked to fulfilment of the conservation and sustainable use objectives.

The international policy framework established by the Treaty contributes to global food security by ensuring the continued access and availability of PGRFA. The Treaty can utilize three powerful policy tools to maintain and expand access to PGRFA: 1) promoting effective implementation of its Multilateral System; 2) promoting conservation and sustainable use of PGRFA; and 3) advocating for the Treaty's model of open access to PGRFA and equitable benefit sharing.

Global food security depends on our ability to increase agricultural production and productivity. To accomplish this on a narrowing natural resource base we will need to exploit the full potential of the agricultural gene pool. The trinity of conservation, sustainable use, and access and benefit sharing are the basis for an international policy framework that will enable scientists, researchers and farmers to improve crops for a sustainable and secure future.

The Treaty is a specific agreement acknowledging the special nature of plant genetic resources for food and agriculture and addressing the need to conserve and utilize these resources in order to reach global food security and to develop a sustainable agriculture, for current and future generations. Many of its articles directly bear on the conservation and utilization of plant genetic resources for food and agriculture.

##### *5. Impact of the Treaty on the conservation and utilization of plant genetic resources*

The Treaty greatly promotes the conservation and utilization of plant genetic resources. First of all, the conclusion and subsequent ratification of the Treaty by more than 135 Contracting Parties implies that many governments have now recognized the importance of plant genetic resources, the threats to their survival, and the need to develop specific policies in order to conserve them and make wider use of them. Plant genetic resources have reached the agenda and raised the attention of policy makers and politicians.

A number of more specific impacts can also be distinguished, both at the international and the national level.

- At the international level, through the creation of the Multilateral System, the Treaty establishes a common pool of plant genetic resources for which the Contracting Parties bear a joint responsibility. In doing so, the Contracting Parties recognize the importance of and common dependence on plant genetic resources, and their function as economic assets. The Contracting Parties also recognize the importance of conservation and utilization of plant genetic resources for food and agriculture in Article 1 of the Treaty.

- Placing collections in the Multilateral System will help countries that include these resources to feel responsible for the proper conservation of these collections. Furthermore, placing collections in the Multilateral System will promote their use by a much wider user community.

- The *ex situ* collections of the International Agricultural Research Centres of the CGIAR have also been placed in the Multilateral System through specific agreements between these Centres and FAO on behalf of the Governing Body of the Treaty.

The International Treaty provides an effective policy response to the global challenges of crop diversity loss, food security and climate change, through:

- its comprehensive provisions providing guidance to countries regarding the measures and activities to be undertaken at the national level for the conservation and the sustainable use of crop diversity;
- its provisions on Farmers' Rights which aim at supporting farmers and local and indigenous people in conserving crop diversity on their farms endorsing the role of family farming;
- the Multilateral System that facilitates access to a global gene pool of crop genetic resources for agricultural research and breeding of new crop varieties that may achieve higher yields and nutritional values and that are adapted to new climate conditions;
- the Benefit-sharing Fund of the Funding Strategy supports initiatives for the conservation and the sustainable use of crop diversity in developing countries, with a focus on helping ensure sustainable food security by assisting farmers adapt to climate change.

## 6. *The way forward*

The Treaty can help the role of the farmers in ensuring the sustainable conservation and use of plant genetic resources and supporting crop production intensification. Recommended measures that could affect the family farming include:

- *Strengthening linkages between the conservation of PGR and the use of diversity in plant breeding*, particularly through improved characterization and evaluation of traits and much closer collaboration among institutions concerned with conservation and breeding.
- *Increasing the participation of farmers in conservation, crop improvement and seed supply* in order to support work on a wider diversity of materials, to ensure that new varieties are appropriate to farmer practices and experiences, and to strengthen on-farm conservation of PGR and farmer seed supply systems.
- *Improving policies and legislation for variety development and release, and seed supply*, including national implementation of the provisions of the Treaty, enactment of flexible variety release legislation, and the development or revision of seed policies and seed legislation.
- *Supporting the emergence of local, private sector seed enterprises* through an integrated approach involving producer organizations, linkages to markets and value addition.

Many of those actions are already being taken in various countries and by various institutions. The main challenge is to share experiences and build on the best practices that have been identified to sustain the role of the farmers and the growing relevance of family farming.

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