



منظمة الأغذية
والزراعة
للأمم المتحدة

联合国
粮食及
农业组织

Food
and
Agriculture
Organization
of
the
United
Nations

Organisation
des
Nations
Unies
pour
l'alimentation
et
l'agriculture

Продовольственная и
сельскохозяйственная
организация
Объединенных
Наций

Organización
de las
Naciones
Unidas
para la
Agricultura
y la
Alimentación

COMMITTEE ON AGRICULTURE

Twenty-first Session

Rome, 22-25 April 2009

SEED SECURITY FOR FOOD SECURITY IN THE LIGHT OF CLIMATE CHANGE AND SOARING FOOD PRICES: CHALLENGES AND OPPORTUNITIES

I. Introduction

1. Seed is one of the most crucial elements in the livelihoods of agricultural communities. It is the repository of the genetic potential of crop species and their varieties resulting from the continual improvement and selection process over time. The potential benefits from increasing the use of quality seeds of a diverse range of crop varieties by farmers are widely acknowledged as it increases food security through improved crop productivity. In addition, production increases brought about by the use of adapted varieties augment farmers' income, when market linkages exist. Food security is heavily dependent on the seed security of the farming community.
2. In many developing countries, however, farmers' access to quality seed of a diverse range of adapted varieties has been impeded by factors such as weak seed production and distribution systems, poor seed quality assurance systems, lack of information about adaptation and quality of seed available in the market, lack of access to and credit for inputs and inadequate seed policies. Furthermore, the pressure from soaring food prices and climate change creates additional challenges. This document briefly describes the key challenges to seed security in developing countries and the essential elements for seed systems development to overcome the constraints through a strategic approach. It contributes to and develops the seed security-related aspects of FAO's new strategic framework for sustainable intensification of crop production.

II. Impact of Soaring Food Prices and Climate Change on Seeds

3. The recent food crisis characterized by volatility in food prices together with increases in input prices has resulted in high levels of food insecurity. The sharp rise in food prices in 2007/08 has presented dual characteristics. It has exposed the vulnerability of the food-insecure households that are net food buyers and who often rely on food grain for seed. The prices of seed and other agricultural inputs have increased leading to the lack of access and stagnation in

This document is printed in limited numbers to minimize the environmental impact of FAO's processes and contribute to climate neutrality. Delegates and observers are kindly requested to bring their copies to meetings and to avoid asking for additional copies. Most FAO meeting documents are available on the Internet at www.fao.org

production in developing countries. At the same time, higher food prices can be an opportunity to promote more productive agriculture based on the use of improved technologies, including improved varieties, quality seed, fertilizer, improved production practices, better information exchange and linkages between farmers and markets. To seize that opportunity and ensure sustainable increases in food production, many governments and development institutions have realised that investment in seed production and supply systems is critical.

4. With regard to climate change, recent trends and studies indicate that changing climatic patterns in the coming decades will result in increased abiotic and biotic stresses and therefore will directly impact food production. It is clear that strategies are needed to facilitate the adaptation of agriculture systems to climate change through better management of crop species and varieties. Agricultural diversification, crop and variety relocation, based on mapping agro-ecological zones and variety characterization, will be necessary to provide farmers with the germplasm (landraces and modern varieties) adapted to shifting agro-ecologies. Intensification of plant breeding activities will also be required to develop varieties adapted to changing agro-ecologies. Improved ways of transmitting information about crop variety adaptation through market and non-market channels are needed as well. These approaches will require countries to develop policies to ensure effective development and transfer of adapted varieties and information to and from farmers through effective seed supply systems.

III. Challenges and Opportunities

5. Soaring food prices and climate change imply a complex set of challenges for the entire seed system chain, and in particular vulnerable small farmers. Within a national context, seed systems need to be strengthened to make them more resilient. Strategies need to capture the value of plant genetic resources and their contribution to the local seed systems. Within the national, regional and international context there is a critical need for concerted action to address the issues in a comprehensive manner, and in particular taking into account the needs and demands of small farmers. A strategic approach is needed along with the full commitment of public and private sector players, an enabling environment, resources and a long-term perspective. Some of the main elements for such a strategic approach are as follows:

- **Better linkage of the formal and informal seed sector.** The informal sector is the main provider of seed in much of the developing world as regards main food crops. In order to improve farmers' access to quality seed, it is crucial to strengthen linkages between the formal and the informal seed systems.
- **Development of local seed enterprises.** Seed production can be a profitable activity, especially for food crops with market potential. There is a need to adopt an integrated approach to support the emergence of small-scale seed enterprises through organization of producers, linkage to markets and value adding.
- **Revitalize the public seed sector.** The public sector has an important role because it is creating the enabling environment for seed sector development. Early generation seed multiplication from research institutions should be supported, as well as implementation of seed quality assurance and variety release systems.
- **Improved seed policies and legislation.** The development or revision of seed policies and seed legislation is fundamental to rectify inadequacies in the existing system and provide the foundation for the growth of the seed sector oriented to serving the needs of the farmers and to protect them in cases of crisis.
- **Regional harmonization of seed rules and regulations.** In many regions, cross-border seed trade is hampered by the differences between national seed rules and regulations. This barrier can be eliminated by harmonizing seed rules and regulations at the regional level. Facilitated seed trade will favour the development of the private seed sector and increase the availability of adapted varieties, since agro ecologies are similar in many neighbouring countries.
- **Better management of plant genetic resources.** The loss of the plant genetic resources for food and agriculture of many local crop varieties and the genes contained therein is

significantly affecting the potential of resilience of agricultural systems. Better coordination is needed to enhance the collection, conservation and characterization of germplasm. National capacities should also be increased to adequately map the crop diversity and the changing agro-ecosystems with a view to design crop/variety relocation strategies and breeding cultivars adapted to local conditions.

- **Better information for seed security and seed sector development.** Building capacity to develop, manage and disseminate information related to seed and planting material in the formal and informal seed sectors will contribute to seed sector development and improve seed security. Farmers, seed services, agricultural extension services, seed enterprises and non-governmental and international institutions need information to make decisions for the development of the seed systems and their rehabilitation after disasters.

6. Using this strategic approach, FAO is currently supporting member countries to strengthen their seed systems at the national and community level. In Africa, a continent-wide African Seed and Biotechnology Programme established with the African Union provides a strategic framework for the development of the seed sector in Africa. At the subregional level there are number of initiatives for the harmonization of seed rules and regulations¹ and to develop comprehensive regional seed sector development strategies. FAO also launched the Global Initiative on Plant Breeding (GIPB)² with the aim of improving food security through the enhancement of national plant breeding capacity. FAO has conducted studies on factors affecting farmers' access to seed and crop in local rural markets and potential means of improvement in Africa, Asia and Latin American countries. These activities will strengthen seed systems and our knowledge about how they can be improved, thus assisting farmers to boost production and better meet environmental challenges arising from climate change.

¹ Central Asia and the Caucasus, Central Africa, Western Africa, Southern Africa

² Global Partnership Initiative for Plant Breeding Capacity Building (<http://km.fao.org/gipb/>)