



High-Level Expert Workshop

Food Crops for Agriculture in Changing Climate: an Expert Communiqué

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United Nations Headquarters New York City

Room CR-D (tbc)

Concept note

THE ISSUE

In the coming years, global food production faces unprecedented challenges. Warming, drought, flooding and precipitation variability and extremes, particularly for poorer populations in urban and rural settings, bring the risks of food insecurity and the breakdown of food systems. At the same time, global food production needs to face another prospect, that is, the population will increase by one billion in the next ten years.

The common challenge is to produce more - and more nutritious - food on less land, with less water and less energy, and in an increasingly challenging climate.

There is universal recognition of the importance of crop diversity for food production, in particular for climate-smart seeds that maintain adequate productivity levels and foster the resilience of food systems. However, fewer crop species are feeding the world than fifty years ago and the genetic base of those crops narrows down at an alarming rate. A loss of diversity means that more people are dependent on key crops and key varieties, leaving them more exposed to harvest failures. Hence, the need to sustain the conservation, and the use by breeders, of crop diversity to produce and make available climate-smart seeds to farmers, at a time when agriculture is facing its most profound challenge ever.

WORKSHOP SEGMENTS

1) CONSERVATION AND MANAGEMENT OF CROP DIVERSITY

The issue of crop diversity has been increasingly raising the attention of policy makers as a key cross-sectoral issue between agriculture, environment and commerce. The International Treaty on Plant Genetic Resources for Food and Agriculture has brought the issue into the global agenda and represents the global international framework for the conservation and sustainable use of crop diversity, as well as for the sharing of the benefits arising from the use of such diversity in crop production.

On-farm conservation and management - the Leading the Field Initiative of the International Treaty has been designed as a global initiative to adapt the crucial genetic diversity that we need to adapt crop production to climate change impact through strategic action plans and immediate impact projects. Facilitated through the global Benefit-sharing Fund of the Treaty, the Initiative has identified, conserved and made available germplasm of 41 crops, containing valuable genes for climate resilience and productivity gains of key food crops in the future.

Germplasm availability - the Global Crop Diversity Trust operates an endowment fund that provides stable financial support to safeguard the diversity of the major food crops in international genebanks, and thereby the basis for food security. This is a key upstream input to future breeding programmes targeting increased productivity. Besides being important repositories of germplasm, these collections also provide valuable sources of value-added information about the collected resources. The Treaty

facilitates the distribution of such germplasm worldwide through its Multilateral System of Access and Benefit-sharing, a global gene-pool of more than 1.5 million samples of plant genetic material that Contracting Parties of the Treaty govern collectively and multilaterally.

2) THE TREATY SYSTEMS FOR DOWNSTREAM USE OF CROP DIVERSITY

A great opportunity for increasing productivity and resilience in food crops through climate-smart seeds, lies in integrating the product development chains built on plant genetic resources by better connecting upstream and downstream stages of the value addition to these resources.

Information systems- the Global Information System under the International Treaty facilitates the exchange of information on scientific, technical and environmental matters related to crop diversity, with the expectation that such sharing will contribute to solving problems related to productivity and resilience in developing countries. Within the system, a specific area will be dedicated to phenotypic and genotypic data under *DivSeek*, which is an initiative of plant scientists, genebanks and users of plant genomic data to link large-scale sequencing and phenotyping data to publicly available germplasm accessions. By assessing and identifying new sources of genetic variation through advanced science that combines genomic sequencing information with phenotypic and environmental data, the breeding cycle can accelerate and improve its efficiency.

Pre-breeding - a group of technical stakeholders is establishing a public-private partnership for pre-breeding. Taking advantage of the data generated by information systems, the partnership targets the broadening of the crop genetic base to reduce vulnerability and hence maintain sustainability of production levels, by identifying genes in distant and in exotic materials and moving them into material more readily accessible by breeders, and by moving genes from wild species into breeding populations.

3) BREEDING AND MAKING AVAILABLE CLIMATE-SMART VARIETIES TO FARMERS

For climate-smart varieties to be produced and made available to farmers, important dimensions, such as structural constraints and opportunities of institutional actors, norms on resource inputs to research and on innovation, are to be addressed.

Technology - an open Platform supports technology co-development and transfer with capacity- and institution- building, through the establishment of a one-stop shop for germplasm- and information-intensive technology packets to increase agricultural productivity.

Legal protection of plant innovations and the seed regulatory mechanisms - The multiple normative frameworks that apply to the different stages of the value chain, from access to baseline resources and sharing of the benefits of utilization, to protection of plant innovation through proprietary regimes and regulation of seed variety release, are to be implemented in a mutually supportive and result-oriented manner.