Svalbard Global Seed Vault
Anniversary Seminar

Frozen Seeds in a Frozen Mountain - Feeding a Warming World

Summary statement

Food security is threatened. Forecasts for declines in the yields of staple crops show that climate change will place unprecedented pressures on our ability to grow the food we require, particularly in developing countries. All Intergovernmental Panel on Climate Change scenarios show warming over the next several decades will take place irrespective of any action taken today. The same models show conditions for agriculture will be dramatically different from those which dominate today. Adapting agriculture to these future conditions is therefore essential.

The need for new crop varieties that can withstand these challenges is now widely recognized and is frequently cited in climate change discussions. This statement draws the world's attention to the following:

- **the development of crops that can cope with heat, drought, flood and other extremes will likely be the single most important action we can take to adapt to climate change;**
- **this is an urgent need requiring action now, given both the serious threat to food security and the time required to breed new crop varieties;**
- **our ability to breed these new varieties cannot be taken for granted, as it is undermined by the loss of the biological basis of our food supply – the genetic diversity of crops.**

At the Copenhagen Climate Conference in December 2009, the need to conserve and make available crop diversity, as the bedrock of all plant breeding efforts, must be recognised as a fundamental component of climate change adaptation.

Agriculture is founded on the diversity of plant and animal genetic diversity. The ability of agriculture to adapt draws on this diversity: it is therefore the foundation of the world's food security. There is a global need for crop varieties adapted to climate change, in order not only to reach the UN Millennium Development goals to reduce hunger but strengthening global food security in the medium- and long term. It is increasingly important, and acknowledged, that all countries should recognise their responsibility for food production and the need for international collaboration in this regard. All countries should make sustainable use of their natural resources. To achieve this, national and international development programs need an increased focus on agriculture.

Yet the breeding of new varieties cannot be taken for granted – it is vital to have as much as possible of the genetic diversity of our crops available for the task, but this diversity is being lost. Global interdependence in this area is total. No country in the world is self-sufficient in the genetic diversity of the crops that feed its people. It is therefore in the interests of every nation to ensure that this diversity is conserved and is available to all. Many actions are required to adapt agriculture, but underlying all is the single prerequisite that the genetic diversity of our crops be conserved and available to plant breeders: conserving crop diversity is therefore one of the most cost-effective measures possible to increase food.

Increased international resources are needed to ensure the conservation of crop genetic diversity, and in particular. It should be recognized that conserving the world's crop diversity requires a partnership between the agriculture, environment and development communities. The framework for this exists: for example, the International Treaty on Plant Genetic Resources for Food and Agriculture and the Convention on Biological Diversity both call for its conservation. A more effective worldwide network of genebanks is required, to which the Svalbard Global Seed Vault is a vital contribution, providing long term secure storage of seed diversity for future generations. The Global Crop Diversity Trust should be further strengthened to maintain its role as a key element in the support and coordination of this global conservation network.

Breeding new varieties takes time, often about 10 years to produce a new variety, meaning the dramatically different conditions predicted for 2030 are a mere two crop breeding cycles away. There is therefore a need to accelerate the breeding of climate ready varieties. Bearing in mind that many crops of importance to food security will not be of interest for commercial breeding companies, there is a need for adequate support of breeding activities at both national and global levels. It will be of special importance to increase breeding capacity, technology transfer and breeding efforts in developing countries, e.g. in close cooperation with the CGIAR institutes.

The International Treaty on Plant Genetic Resources for Food and Agriculture provides the international framework and international mechanisms for the conservation and use of crop diversity. Developed countries in particular should ensure the adequate financing to implement the Treaty and creative financing mechanisms should also be examined, such as a payment based on the sale of seeds in developed countries. In keeping with the fact that the genetic diversity of our crops has become a critical issue in climate change adaptation, governments, private sector and farmers' organizations must cooperate in these matters to meet a common threat.

At the Copenhagen Climate Conference in December 2009, the need to conserve and make available crop diversity, as the bedrock of all plant breeding efforts, must be recognised as a fundamental component of climate change adaptation. The Svalbard Global Seed Vault bears witness to the importance of crop genetic diversity for the world, and to the potential of concerted international action. At Copenhagen, we ask the nations of the world to recognise the urgency of adapting agriculture to climate change, that crop diversity is a prerequisite for this adaptation, and therefore that the importance of ensuring that the genetic diversity of our crops is properly conserved and available is a basic prerequisite for feeding a warming world.