NordGen – Nordic Genetic Resource Center – is a joint Nordic institution, responsible for the conservation and sustainable use of agricultural, horticultural and forestry genetic resources. NordGen’s mandate includes environmental aspects of genetic resources relevant to food and agriculture. NordGen is funded by the Nordic Council of Ministers.

NordGen maintains a comprehensive seed collection of more than 30,000 different samples of various Nordic plants. We collaborate with gene banks, research centers and breeding programs at both Nordic and global levels.

NordGen has the operational responsibility for the Svalbard Global Seed Vault. We participate in extensive international collaboration with Bioversity International and the Food and Agriculture Organization of the United Nations (FAO).

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World food security is threatened. Humankind depends on both agriculture and forestry for future supply of food and other resources, and they are among the activities that are hardest hit by the effects of climate change. Although they contribute to the problems that underlie the changing climate, they can also play significant roles in contributing to the solutions.

All living organisms, both wild and domesticated, are adapted to the climate they live in. Some species have a greater resilience than others, but all have their limits. A changing climate will therefore affect the living world in different ways and to different degrees.

**BIODIVERSITY IS THE KEY for both mitigation and adaptation.** The need to conserve and make available crop genetic diversity is a fundamental component of climate change adaption.

**CLIMATE CHANGE – A THREAT TO AGRICULTURE AND FORESTRY**

Both agriculture and forestry are climate sensitive and a changing climate will lead to many challenges.

- An increasing temperature will result in some crops in some areas growing larger and faster and ripening earlier, while the same crop in other areas, and other crops in the same area, might be stressed and not ripen.
- We will see some of the best agricultural lands become inundated, while others will be affected by drought.
- There is a substantial risk for more, and more severe, storms that will damage fields and forests critically.
- A changing climate is likely to change the pest and disease spectrum. Insects and fungi might increase in numbers, spread into new areas and threaten both farming and forestry.

**BIODIVERSITY – A TOOL FOR ADAPTATION**

Climate change will put production of food under great pressure, but in some parts of the world it will also represent new opportunities. To limit the negative impacts and to take advantage of the new possibilities

1. We need to develop crops that can cope with heat, drought, flooding and other extremes.
2. We must act now, given both the serious threat to food security and the time required to breed new crop varieties.
3. We must change our cultivation methods and develop new technologies.

Our ability to breed new crop varieties cannot be taken for granted, as it is undermined by the loss of the biological bases of our food supply – the genetic diversity of crops.

Because of increasing uncertainties, and more extreme and fluctuating weather conditions, it is important that farmers and forest owners spread their risks by growing a wider variety of crops and trees. Biodiversity is therefore not just a base for development of new species and varieties, but also represents an insurance policy for the individual farmer against the increased variability in the weather.

**BIODIVERSITY – A TOOL FOR MITIGATION**

Agriculture and forestry are not just victims of climate change, they are also among the major contributors to the problem. More than 30 percent of all greenhouse gas emissions originate from the land use sector, particularly from fossil fuels and fertilizers.

We can reduce dependence of fossil fuels and grow species and varieties that are better adapted to local circumstances. By using more suitable soil fertility practices we can use less fertilizer. This usually implies incorporating different crop rotations.

Climate change and loss of biodiversity are the two greatest challenges that humanity has ever faced and their combined effects are potentially devastating.

**Biodiversity is the key.**