



# Secretariat of the Convention on Biological Diversity



## MESSAGE

From Dr. Ahmed Djoghlaif, Executive Secretary  
Convention on Biological Diversity  
On the occasion of World Food Day, 16 October 2008

### *World Food Security: the Challenges of Climate Change and Bioenergy*

For information only

This past June, at the Rome Food Security Summit, countries announced increased commitment to the fight against hunger including through enhanced agricultural development. This commitment comes at a time when it is estimated that more than 850 million people are undernourished and when high food prices are putting the hungry at greater risk and pushing many more over the brink into poverty.

During the second half of the 20th century, the global food system was able to respond to the doubling of the world population by more than doubling food production whilst also contributing significantly to reducing poverty. But this came at a cost. And one of the least discussed costs is the alarming loss of agricultural biodiversity and the increasing reliance of agriculture on a dangerously narrow base of biodiversity. Globally, there are 6,500 breeds of domesticated animals, but 20 per cent of these are under threat of extinction. FAO data indicate that during the past six years a breed has been lost each month. Of the 27,000 species of higher plants, about 7,000 are used in agriculture, but only 30 crops provide an estimated 90 per cent of the world population's dietary energy requirements; less than 14 animal species account for 90 per cent of global livestock production.

Biodiversity, the foundation of all crops and domesticated livestock and the variety within them, is the basis for providing stability to agriculture. It also provides and maintains ecosystem services essential to agriculture, which include: regulation of pests and diseases; nutrient cycling, sequestration and conversion; maintenance of soil fertility and biota including regulating soil organic matter and soil water retention; and pollination by bees and other wildlife. Animals and insects pollinate approximately 80 per cent of angiosperms, which amounts to about 300,000 flower-visiting species.

Food security is about more than access to staples and requires a sustainable healthy and nutritious diet. Agricultural ecosystems that are rich in biodiversity provide a diversity of foods that can increase food security and improve nutrition by broadening the food base and diversifying diets. Diverse diets can contribute to the fight against malnutrition, obesity and other health problems in both developing and developed countries. Even within a particular crop, nutrient contents vary significantly between varieties. Different varieties of rice vary in their protein content from 5 to 14 per cent; beta-carotene content of different sweet potato varieties can vary by a factor of 60; and in different banana varieties, the provitamin A content ranges up to 8,500 fold from one variety to another.

Feeding a growing population, and meeting the Millennium Development Goals collectively, is challenging enough in a stable world. But climate change has now to be factored in. As areas of the Earth become warmer or colder, wetter or dryer, we shall need nature's bounty to help us cope. Approximately 80 per cent of the world's remaining biodiversity is found within indigenous peoples' territories. Despite the fact that these communities are usually the first to face the impacts of climate change, indigenous communities are also the custodians of unique knowledge and skills and the genetic and biological diversity in plant and animal production that may be vital in adapting to climate change.

Biodiversity is the basis of new varieties that will be needed to face changing conditions. We will need a healthy ecosystem that will sustain agriculture and allow us to adapt to climate change whilst ensuring food security and continuing to reduce poverty. Agriculture itself is a major driver of climate change. Agriculture accounts for 44 per



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United Nations  
Environment Programme

413 Saint-Jacques Street, Suite 800  
Montreal, QC H2Y 1N9, Canada

Tel : +1 514 288 2220  
Fax : +1 514 288 6588

<http://www.cbd.int>  
[secretariat@cbd.int](mailto:secretariat@cbd.int)

cent of anthropogenic methane emissions and about 70 per cent of nitrous oxide gases, mainly from the conversion of new land to agriculture and nitrogen fertilizer use. Twenty per cent of CO<sub>2</sub> emissions in the 1990s originated from land-use changes, mostly deforestation. Complications increase as production systems shift attention to bioenergy. Models indicate that the production and use of liquid biofuels can contribute to a net reduction in greenhouse gas emissions, and in so doing help to mitigate climate change, thereby contributing indirectly to the conservation of biodiversity. However, use of unsustainable agricultural methods and inappropriate planning may have adverse impacts, for example through the loss of habitat, pollution and over-use of water, and increased net GHG emissions from wetland conversion and deforestation. In addition, the redeployment of land from food production—particularly of grain—into fuel production could contribute to commodity shortages, higher food prices and increased pressure on land elsewhere.

The ninth meeting of the Conference of the Parties to the Convention on Biological Diversity, held in Bonn, from 19 to 30 May 2008, recognized these complex relationships and agreed that biofuel production and use should be sustainable in relation to biological diversity. Sustainable agriculture both promotes and is enhanced by biodiversity. Sustainable agriculture uses water, land and nutrients efficiently, while producing lasting economic and social benefits. Barriers inhibiting its widespread adoption need to be reduced.

Promoting biodiversity is critical to world food security, even more so in the context of climate change and bioenergy. Indeed, together we must find ways to address the challenges of climate change including by using biodiversity to support human welfare and to achieve sustainable development. On this day, the Secretariat of the Convention on Biological Diversity is fully committed to enhance its partnership with the Food and Agriculture Organization of the United Nations (FAO) and other sister agencies to assist in achieving this strategic objective.

Montreal, 15 October 2008