



MESSAGE OF THE EXECUTIVE SECRETARY OF THE CONVENTION ON BIOLOGICAL DIVERSITY

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“Water and Food Security”

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Today there are over seven billion people to feed on our planet. Great advances in food production have been achieved over the past three decades to feed the world's population. But while the global famine widely predicted in the 1960s and 1970s was successfully avoided due to the so-called “green revolution”, this progress came at significant environmental costs. Losses of natural areas, pollution of waterways, and the depletion of freshwater resources have had significant impacts on ecosystems and biodiversity.

Still there remain far too many people without sufficient food or even access to food of the necessary nutritional value. Most estimates suggest that a 70 per cent increase in food production will be required in order to feed what is expected to be a global population of nine billion people by 2050. This is a significant challenge: limited opportunities exist for expanding the area of land under cultivation without compromising other land uses, and agriculture is currently too dependent on external inputs and over-reliant on fossil fuels. But most importantly, water availability is now regarded as the key constraint to further gains in agricultural output. While we require only about two to four litres of water a day to drink, it takes between 2,000 and 5,000 litres of water to produce one person's daily food.

Agriculture already accounts for 70 per cent of water use and there is increasing competition with other uses, particularly for industry and the rapidly expanding urban populations. Recent assessments conclude that globally we are already reaching the limit of sustainable water use and that this limit has already been exceeded in many areas, as witnessed by widespread depletion of river flows, continuing loss of wetlands, desertification and groundwater depletion on continental scales. Food security for future generations will now depend on building a successful partnership around the sustainable management of water.

The previous “green revolution” cannot be repeated in order to meet the challenge of achieving future food security. However, success is achievable by shifting the focus from simply intensification to *sustainable* intensification. Central to this will be water security to underpin food security. Biodiversity plays the central role in this. Genetic diversity held within existing farming systems and in nature is a key resource required to enable us to find the improved crop and livestock varieties needed in order to improve water-use efficiency.

Biodiversity is also important through its role in supporting ecosystem functions, and the services and benefits they deliver. With regard to water, these are significant: the quantity of water available at any time and place, and its quality, is greatly influenced by ecosystems. Rainfall is influenced by plant transpiration on regional scales. Forest vegetation maintains soil stability, thereby regulating erosion. Soil biodiversity plays the key role in enabling water to penetrate soil and be stored there, facilitating groundwater recharge, as well as nutrient cycling, to support sustainable crop production. Conservation agriculture is an approach that harnesses these benefits of biodiversity by reducing soil disturbance and chemical application, which maintains land cover and reduces water use, while delivering significant yet sustainable increases in production and farm profitability. The International Initiative on Soil Biodiversity under the Convention on Biological Diversity is playing a key role in further supporting such approaches.

Farming is already a risky business, particularly regarding water. Climate change is adding additional risks and will impact ecosystems, and therefore farming, largely through changing water availability. We therefore need to respond by managing our ecosystems better so that they can support improved water security for food production in the face of increasing scarcity of water and extremes in its availability. Our policies will need to recognize the important role of natural storage of water provided by healthy ecosystems. Water balances in soils, wetlands and groundwater, and their inter-relationships with surface water flows provided by wetlands and land cover such as forests are critical components of the water cycle. Better use of rainfed agriculture, widely regarded as having a significant role to play in increasing production without irrigation, essentially involves better use of soil biodiversity to sustain water availability for crops. Ecosystems provide “natural water infrastructure” which needs to be considered in parallel, and as complementary to, physical water infrastructure such as dams and other impoundments and irrigation approaches.

Such approaches lie at the heart of the Strategic Plan for Biodiversity 2011-2020, and it’s Aichi Biodiversity Targets, adopted at the tenth meeting of the Conference of the Parties to the Convention on Biological Diversity, held in Nagoya, Japan, in October 2010. We have shifted beyond the dialogue of “trade-offs” between biodiversity, water and food production to the recognition that there are mutually supporting objectives at play, with significant win-win opportunities. Biodiversity is increasingly being viewed as a solution to problems. With full recognition of this, and with enhanced implementation of the Strategic Plan, backed by strong political will, we can realize the goal of achieving a food- and water-secure world by 2050. Through these actions, we can make our second farming revolution truly green.
