Post-2015 and SDGs

Nourishing people, Nurturing the planet

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Highlights

- The critical role of biodiversity in sustainable development was recognized in the Rio+20 outcome document, *The Future We Want*.
- Biodiversity provides basic goods and services upon which food security and nutrition depend; it should be conserved and used sustainably.
- The diversity, richness and complexity of ecosystems, species and genetic resources are crucial for sustainable production, poverty eradication, sustainable economic development, hunger eradication, health and other global objectives.
- The conservation of biodiversity and of genetic resources for food and agriculture, and the maintenance and restoration of ecosystem functions and services should represent shared objectives for all sectors contributing to sustainable development, food security and better nutrition.
- Biodiversity related instruments developed within the agriculture sectors (including crop, livestock, forestry, fisheries and aquaculture) could play a key role in achieving biodiversity goals.

Ecosystem services, biodiversity, genetic resources

Overview

Biodiversity[1] is key to food security and nutrition. Its genetic component provides the variation needed to increase food production, enhance its quality and adapt it to ever-changing environmental and socio-economic conditions. Biodiversity also provides essential services to production systems, while healthy ecosystems are resilient to stress and are crucial for coping with the effects of climate change.

Biodiversity is of high relevance to critical life issues such as hunger eradication, poverty reduction, health and sustainable economic development. Many economic sectors depend on biodiversity and ecosystem services, including agriculture, fisheries, forestry, health, nutrition, energy and tourism. The world's fisheries employ approximately 200 million people, and have a value estimated at USD 80 billion. Insects and other animals that transmit pollen, especially for fruits and vegetables, are estimated to be worth more than USD 200 billion per year to the global food economy.

[1] Biological diversity is defined as "*the variability among living organisms[...]; this includes diversity within species, between species and of ecosystems*" (Convention on Biological Diversity (CBD), Article 2)

Key challenges

The expected growth of the human population, and the consequent need for additional food, feed and fibre, will put stronger pressure on the environment. A number of major drivers (e.g. land-use change and land degradation, unsustainable use of resources, pollution, invasive alien species, climate change and ocean acidification) are affecting biodiversity, reducing the number of species, impoverishing their genetic diversity and stressing ecosystems, often beyond their capacity.

Presently, humans use only a fraction of the existing biodiversity for food security and nutrition. For instance, of the 30 000 terrestrial plants known to be edible, just four of them – wheat, rice, maize and potatoes – provide 60 percent of the world population's energy intake. Aquatic species provide almost 20 percent of animal protein intake for about 3 billion people worldwide, yet in aquaculture 10 out of 600 farmed food fish and algae species account for half of the production. Using such a small number of species, often with a narrow genetic base, increases the vulnerability of agriculture systems and puts food security and nutrition at increasing risk.

> Useful and nutritious varieties and breeds are being lost, or their genetic pool is being eroded, mainly caused by unsustainable use or, indeed, lack of use. Of the 8 300 livestock breeds known, eight percent are extinct and 22 percent are at risk of extinction. In the oceans, close to 30 percent of stocks are overfished.

There is still much that we do not know. Ongoing degradation is severely affecting forest genetic resources, threatening their existence even before their potential use can be adequately investigated. Presently less than one percent of the 80 000 tree species in the world have been studied for their use in any depth. And the key contributions of micro-organisms and invertebrates to food security and nutrition are still too poorly known to be properly managed.

A large number of the world's population rely directly on biodiversity and ecosystem services, and it is their livelihoods that would be affected first and foremost by biodiversity loss. The impacts would be particularly severe for the poor and vulnerable, including women, children and indigenous people.

What needs to be done?

Maintaining biodiversity is a global responsibility. The conservation, restoration and sustainable use of biodiversity can provide viable solutions to a range of societal challenges.

Global initiatives have been established addressing the conservation and sustainable use of biodiversity (including genetic resources for food and agriculture) and ecosystem services. With the declaration of the UN Decade on Biodiversity, the Strategic Plan for Biodiversity 2011–2020 and the Aichi Biodiversity Targets have been recognized as the UN-wide framework for addressing issues related to biodiversity at ecosystem, species and genetic levels.

In addition, a number of biodiversity-related instruments have been developed in the various sectors of agriculture, including crops, livestock, forestry, fisheries and aquaculture. Their implementation needs to be strengthened, including via integration into National Biodiversity Strategies and Action Plans.

To facilitate the implementation of these instruments at national level, more investments at different levels are needed. The conservation of biodiversity and of genetic resources for food and agriculture, and the maintenance and restoration of ecosystem functions and services, should represent shared objectives in all sectors contributing to sustainable development, food security and nutrition.

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