Food and Agriculture Organization of the United Nations

# INITIATIVE ON **BIODIVERSITY** FOR **FOOD** AND **NUTRITION**

**Information note on progress and priorities (2024)**

## INTRODUCTION

Biodiversity, human well-being, food and nutrition are closely linked. The variety of crops, animals and other organisms used for food and agriculture plays a crucial role in providing the diverse nutrients necessary for optimal human health. It is also particularly important for vulnerable and marginalized communities, who often depend on biodiversity to safeguard their livelihoods and enable their access to food.

However, the world is currently experiencing an increasingly rapid loss of biodiversity. A significant reduction in the variety of edible plants and animals – both domesticated and wild – poses a major threat to food security and adequate nutrition. Moreover, current food production, manufacturing, retailing and consumption patterns, which revolve around a limited number of commodities, result in an increasingly homogenous food landscape and exacerbate biodiversity loss. For vulnerable and marginalized communities that depend on biodiversity, this loss increases their marginalization and perpetuates their vulnerability, creating a cycle of increasing fragility. Understanding the relationship between biodiversity, diets, and trends in food choices and preferences is therefore becoming increasingly important to ensure the sustainable, inclusive, diversified and resilient agrifood systems that are in turn necessary for both human and planetary health.

**Only 9 species currently supply 66 percent of our total crop production (FAO, 2024).**

**Only 8 species provide more than 95 percent of our total livestock food supply (FAO, 2024).**

**Only 10 species account for 50 percent of total aquaculture production (FAO, 2024).**

# OVERVIEW OF THE INITIATIVE

The initiative on **biodiversity for food and nutrition** of the Convention on Biological Diversity (CBD)[1] aims to promote the sustainable use of biodiversity in programmes contributing to food security and nutrition, and counter the loss of diversity in diets and ecosystems.

The initiative is built around four elements:

**Element 1**

### Developing and documenting knowledge

To substantiate the links between biodiversity, food and nutrition, in particular clarifying the relationship between biodiversity, dietary diversity and food preferences, and the relevant links between human health and ecosystem health.

**Element 2**

### Integration of biodiversity, food and nutrition issues into research and policy instruments

To mainstream the conservation and sustainable use of biodiversity into agendas, programmes and policies related to nutrition, health, agriculture and hunger and poverty reduction.

**Element 3**

### Conserving and promoting wider use of biodiversity for food and nutrition

To counter the loss of diversity in human diets, and in ecosystems, by conserving and promoting the wider use of biodiversity for food and nutrition.

**Element 4**

### Public awareness

To raise awareness of the links between biodiversity, food and nutrition, and the importance of biodiversity conservation to meeting health and development objectives, including the elimination of hunger.

[1] The cross-cutting initiative on biodiversity for food and nutrition was adopted by the Conference of the Parties (COP) to the CBD in 2006, in COP 8 Decision VIII/23. For more information, see: http://www.cbd.int/decision/cop/default.shtml?id=11037

# KEY ACHIEVEMENTS: FAO'S ROLE AND CONTRIBUTIONS

1. To date, the Food and Agriculture Organization of the United Nations (FAO) has supported the four elements of the initiative by:

   - compiling composition values for foods at within-species level (i.e. at variety/ cultivar/breed level) and for wild foods;
   - developing voluntary guidelines for mainstreaming biodiversity into policies, programmes and national and regional plans of action on nutrition, and identifying entry points to improve biodiversity and diets simultaneously;
   - integrating biodiversity concerns into nutrition instruments such as food systems-based dietary guidelines;
   - developing sustainable business models and market incentives for species that are currently underutilized or of potential value for nutrition – including through public procurement and school feeding programmes, development of local markets and certification schemes; and
   - awareness-raising products such as podcasts, videos and flyers linking biodiversity, food and nutrition.

2. In close collaboration with the Alliance of Bioversity International and CIAT, and with the financial support of the Global Environment Facility (GEF), FAO and the United Nations Environment Programme (UNEP) supported the roll-out of the initiative in Brazil, Kenya, Sri Lanka, and Türkiye, through a project entitled "Mainstreaming Biodiversity Conservation and Sustainable Use for Improved Nutrition and Well-Being". The project demonstrated how harnessing the link between biodiversity and nutrition can support biodiversity conservation at country level, and directly improve food security and nutrition.

[2] For example, see: FAO/INFOODS. 2013. *FAO/INFOODS Food Composition Database for Biodiversity Version 2.1 – BioFoodComp2.1.* Rome. https://openknowledge.fao.org/handle/20.500.14283/i3560e

[3] For more information, see: FAO. 2015. Voluntary guidelines to support the integration of genetic diversity into national climate change adaptation planning. Rome. https://openknowledge.fao.org/handle/20.500.14283/i4940e

[4] For more information, see: FAO. 2021. Climate change, biodiversity and nutrition nexus – Evidence and emerging policy and programming opportunities. Rome. https://doi.org/10.4060/cb6701en

[5] For more information, see: FAO. 2024. Food systems-based dietary guidelines: An overview. Rome. https://openknowledge.fao.org/handle/20.500.14283/cc9394en

[6] For more information, see: FAO. 2024. Sustainable public food procurement. In: FAO. https://www.fao.org/nutrition/markets/sustainable-public-food-procurement/en/

[7] For example, see: FAO. 2024. Climate change, biodiversity and nutrition – the nexus [audio recording]. https://soundcloud.com/unfao/sets/climate-change-biodiversity

# SUPPORTING THE KUNMING-MONTREAL GLOBAL BIODIVERSITY FRAMEWORK

By linking biodiversity, food, and nutrition across a range of potential actions (see Table 1), the initiative can boost efforts to halt biodiversity loss, promote sustainable use of genetic resources, and strengthen policy coherence – directly supporting multiple interrelated and mutually supportive targets of the Kunming-Montreal Global Biodiversity Framework (GBF).

**Table 1. Potential nutrition-related actions to support the Kunming-Montreal Global Biodiversity Framework (GBF)**

| GBF Targets | Potential nutrition-related actions |
|---|---|
| **Target 4.** Halt Species Extinction, Protect Genetic Diversity, and Manage Human-Wildlife Conflicts | Assessing shifts in food preferences and nutrition can shed light on current consumption trends and identify potential risks and opportunities for protecting genetic diversity and preventing species extinction. |
| **Target 5.** Ensure Sustainable, Safe and Legal Harvesting and Trade of Wild Species | Increasing dietary diversity across and within food groups can reduce overexploitation of certain wild species in marine, freshwater and terrestrial ecosystems. |
| **Target 7.** Reduce Pollution to Levels That Are Not Harmful to Biodiversity | Leveraging purchasing practices to increase demand for foods from sustainable agrifood systems can incentivize more supply-chain actors to change their practices accordingly, thus accelerating the transition to agrifood systems with lower environmental footprints. |
| **Target 9.** Manage Wild Species Sustainably to Benefit People | Managing wild foods in a sustainable way can contribute towards better nutrition by complementing a limited number of staple foods and by preserving food traditions, local knowledge and community livelihoods – particularly in vulnerable situations. |
| **Target 10.** Enhance Biodiversity and Sustainability in Agriculture, Aquaculture, Fisheries, and Forestry | Leveraging demand for diverse foods can enhance diversity within supply chains, agriculture, aquaculture, fisheries and forestry. |
| **Target 14.** Integrate Biodiversity in Decision-Making at Every Level | Recognizing the important interlinkages between biodiversity, food and nutrition in policy frameworks can strengthen policy coherence, while accelerating results on global intertwined challenges such as climate change, biodiversity loss and malnutrition. |
| **Target 16.** Enable Sustainable Consumption Choices to Reduce Waste and Overconsumption | Leveraging consumer education can increase public understanding on the environmental and health impacts of food, as well as awareness of proper storage, preparation and consumption for better nutrition – including by reducing food loss and waste. |
| **Target 18.** Reduce Harmful Incentives by at Least USD 500 Billion per Year, and Scale Up Positive Incentives for Biodiversity | Documenting the interlinkages between biodiversity, food and nutrition, and estimating the effect of biodiversity loss on nutrition outcomes and vice-versa, can serve as an incentive for the conservation and sustainable use of biodiversity, and can promote sustainable consumption choices. |

# GLOBAL CHALLENGES AND RELEVANCE

A range of pressing global issues underscore the importance of the initiative, and the relevance of further work on biodiversity for food and nutrition:

**Climate change** exacerbates the vulnerability of agrifood systems, reducing crop yields and nutrient content, and increasing food insecurity and malnutrition (Beach et al., 2019). Biodiversity can strengthen the resilience of agrifood systems through a wide range of species and genetic resources, as well as through ecosystem services that can contribute to climate change mitigation and adaptation.

**Malnutrition** – including micronutrient deficiencies – remains prevalent across the globe. Biodiversity plays a crucial role for vulnerable populations, including Indigenous Peoples, and provides essential sustenance for such communities (FAO and Alliance of Bioversity International and CIAT, 2023).

Tackling biodiversity loss and supporting the conservation and sustainable use of genetic resources can enhance food security and nutrition.

The **nutrition transition,** influenced by globalization and urbanization, has increased the supply of affordable foods, but has also caused a spike in the consumption of foods high in added sugars and fats, as well as in sodium and refined carbohydrates. The sustainable use of biodiversity for food and nutrition can counteract these trends by promoting diverse, safe and nutritious foods, fostering the development of sustainable business models, and enhancing food security and nutrition. Agrifood diversification supports social, economic, and environmental sustainability, ensuring resilient agrifood systems that benefit both human and planetary health.

# WAYS FORWARD: PRIORITIES FOR ACCELERATION

**Consolidate evidence:** Strengthen data collection and analysis and ensure robust studies to explore the linkages between biodiversity, nutrition, and diets – providing an evidence-based foundation for policy and programme development.

**Raise awareness:** Promote the importance of biodiversity for food and nutrition, as well as the need to preserve diversity in human diets and ecosystems, by raising awareness among policymakers, practitioners and the public.

**Mobilize evidence for policy coherence:** Facilitate the integration of biodiversity, food, and nutrition considerations into national and regional policies, by providing technical support and fostering cross-sectoral collaboration among stakeholders.

**Enhance capacity building and technical support:** Preserve and promote the wider use of biodiversity for food and nutrition by building capacity and technical support, and by empowering communities to utilize evidence for actions to conserve and restore biodiversity and improve consumption of diverse nutritious foods.

# REFERENCES


**Beach, R.H., Sulser, T.B., Crimmins, A., Cenacchi, N., Cole, J., Fukagawa, N.K., Mason-D'Croz, D. *et al.*** 2019. Combining the effects of increased atmospheric carbon dioxide on protein, iron, and zinc availability and projected climate change on global diets: A modelling study. *The Lancet Planetary Health*, 3(7): e307–e317. https://doi.org/10.1016/S2542-5196(19)30094-4

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