



AGRICULTURAL BIODIVERSITY

IN FAO

FAO's goal is to alleviate poverty and hunger by promoting sustainable agricultural development, improved nutrition and food security, and the access of all people at all times to the food they need for an active and healthy life. The importance of biological diversity for food security was reconfirmed in commitment No.3 of the Rome Declaration on Food Security made at the World Food Summit held in Rome in 1996. FAO is actively promoting the conservation and sustainable use of biodiversity for food and agriculture. FAO provides intergovernmental fora where biodiversity-related policy is discussed and relevant agreements negotiated and adopted by member countries. The International Plant Protection Convention, the Code of Conduct for Responsible Fisheries and the International Treaty on Plant Genetic Resources adopted in 2001, are examples of such agreements. FAO assists in the implementation of the Global Plan of Action on Plant Genetic Resources and the Global Plan of Action for Animal Genetic Resources, adopted under the aegis of FAO's Commission on Genetic Resources for

Food and Agriculture (CGRFA) in 1996 and 2007, respectively. The Organization manages a broad range of programmes and activities to enhance sustainable agricultural systems and management practices, for example the promotion of mixed agricultural systems such as rice-fish farming and agroforestry; participatory training for integrated pest management; pollination management; advice on soil and water conservation; and promotion of technologies and management options of grasslands and forage resources in arid, semi-arid and humid tropical ecosystems. FAO also addresses legal and economic aspects of agricultural biodiversity, and seeks to capitalize on its multidisciplinary expertise through an integrated approach to biodiversity conservation and sustainable use. Through its work as a specialized UN organization, FAO assists countries in the implementation of

biodiversity-related agreements of relevance to food and agriculture. These include the International Treaty on Plant Genetic Resources for Food and Agriculture (ITPGRFA), the Convention on Biological Diversity (CBD), and the Convention to Combat Desertification (CCD). The leading role of FAO is recognized in these international fora and FAO contributes actively to the development of international plans and programmes in this area. The Conference of the Parties (COP) to the CBD has recognized the "specific nature of agricultural biodiversity and its distinctive features and problems requiring distinctive solutions", and the leading role of FAO in agricultural biodiversity, including leading support to the programme of work on agricultural biodiversity (Decision V/5 Nairobi 2000).



Further information about the work of FAO on biodiversity is available at: www.fao.org/biodiversity

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HOW DOES BIODIVERSITY BENEFIT AGRICULTURE?

PRODUCTIVITY: Conservation and management of broad-based genetic diversity within domesticated species has been improving agricultural production for 10 000 years. A wide range of species provide many thousands of products through agriculture. High production levels are sustained through maximizing the beneficial impact of ecosystem services for agriculture.

ADAPTATION: A diverse range of organisms contributes to the resilience of agricultural ecosystems and their capacity to recover from environmental stress and to evolve. Informed adaptive management of planned agricultural and unplanned associated biodiversity above and below ground secures agricultural production and provides valuable options in the face of climate change.

MAINTENANCE OF ECOSYSTEM FUNCTIONS: Essential functions such as nutrient cycling, decomposition of organic matter, crusted or degraded soil rehabilitation, pest and disease regulation, and pollination are maintained by a wide range of populations in and near agricultural ecosystems. Building on and enhancing these functions reduces external input requirements by increased nutrient availability, improved water use and soil structure, and natural control of pests.

HOW DOES AGRICULTURE BENEFIT BIODIVERSITY?

DELIVERY OF ECOSYSTEM SERVICES: Agriculture occupies more than one-third of the land in most countries of the world. Agricultural lands and coasts managed sustainably as ecosystems contribute to wider ecosystem functions such as maintenance of water quality, soil moisture retention with reduction of runoff, water infiltration, erosion control, carbon sequestration, pollination, dispersal of seeds of wild and endangered plants, and refugia for species during droughts.

INCENTIVES: A range of populations needed by agriculture, such as pollinators and beneficial predators, need habitat diversity to survive. Agriculture therefore provides incentives to preserve areas such as hedgerows and field borders. The need for adaptation and potential for improvement in productivity provides an incentive for the conservation of a diverse range of genetic resources both *in situ* and *ex situ*.

ECOLOGICAL KNOWLEDGE: A large part of the human legacy of knowledge of biodiversity, its importance and functions has been gained and will continue to be gained across cultures through agriculture practice and reflection. This is a resource that should be more actively used, as in schools' programmes, to strengthen the ecological literacy of all citizens.

