

# BIODIVERSITY FOR FOOD AND AGRICULTURE

## *A treasure for the future*

Biodiversity for food and agriculture is the diversity of plants, animals and micro-organisms at genetic, species and ecosystem levels, present in and around crop, livestock, forest and aquatic production systems. It is essential to livelihoods and food security and to the supply of ecosystem services. Many of its key components are in decline.



### ANIMAL GENETIC RESOURCES

Only **8** of the nearly **40** domesticated mammalian and bird species provide more than **95%** of the human food supply from livestock

There are about **8 800** recorded breeds, of which **7%** are extinct and **24%** at risk of extinction

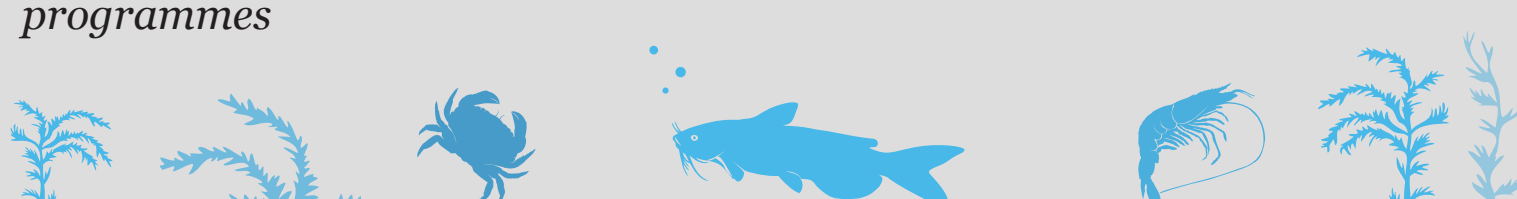


### FOREST GENETIC RESOURCES

Forests are home to over **80%** of terrestrial biodiversity

Globally, more than **700** species are included in tree improvement programmes

There are over **60 000** tree species, but only about **2 400** of them are actively managed for products and/or services



### AQUATIC GENETIC RESOURCES

**3.2 billion people** obtain at least **20%** of their intake of animal protein from fish

The top **10** captured species/related species groups account for **28%** of marine capture fisheries production

It is estimated that there are over **160 000** species of fish, and aquatic molluscs, crustaceans and plants, of which only 1.1% are currently fished or harvested and 0.3% are currently farmed

**10 species** make up **50%** of aquaculture production

**17 species** make up **2/3** of aquaculture production but there are few recognized strains in AqGR



### PLANT GENETIC RESOURCES

**82%** of the calories in the human food supply are provided by terrestrial plants

Globally, there are almost **400 000** plant species. A little over **6 000** plant species have been cultivated for food. **9 species** account for over **66%** of all crop production



sugar cane, maize, rice, wheat, potatoes, soybeans, oil palm fruit, sugar beet and cassava

Some **5.3 million** accessions are stored in **652 genebanks** around the world

### MICRO-ORGANISMS and INVERTEBRATES

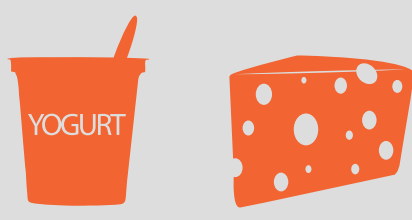
Over **99%** of bacteria and protist species remain unknown

**35%** of the world's total crop production by volume comes from species that are, at least in part, pollinated by animals

**1.8 million tonnes** of honey are produced annually and there are **90 million** beehives in the world



Approximately **80%** of global pollination services are carried out by around **2%** of pollinator species



They are essential in many food and agro-industrial processes

Soils biodiversity is under threat in all regions of the world

### ECOSYSTEMS OF IMPORTANCE TO FOOD AND AGRICULTURE

The global area of many types of ecosystems of importance to food and agriculture is declining: wetlands (estimated decrease of over 70% in inland and 60% in coastal wetlands since 1900), mangroves (estimated 20% decrease between 1980 and 2005), coral reefs, seagrasses (estimated 29% decrease over a century) and forests (continuing decline, although rate of loss decreased by 50% in recent decades).

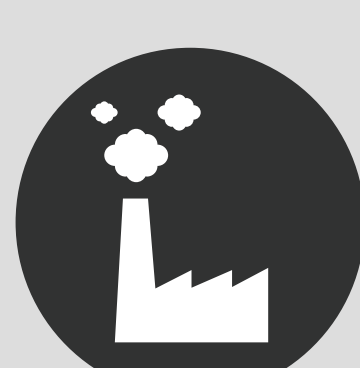
### THREATS TO BIODIVERSITY FOR FOOD AND AGRICULTURE INCLUDE



climate change



loss of natural habitats



environmental degradation



effects of increasing population pressure



change in consumer demand



development and use of a few species, varieties and breeds

### FOR A SUSTAINABLE FUTURE FOR BIODIVERSITY FOR FOOD AND AGRICULTURE



Improve policy and legal frameworks



Integrate biodiversity into the development agenda and strengthen conservation and sustainable use



Facilitate access to genetic resources and their related knowledge

### COMMISSION ON GENETIC RESOURCES FOR FOOD AND AGRICULTURE

The Commission provides the only permanent forum for governments to discuss and negotiate matters specifically relevant to biodiversity for food and agriculture. The main objectives of the Commission are to ensure the conservation and sustainable use of genetic resources for food and agriculture, and the fair and equitable sharing of benefits derived from their use, for present and future generations.

[www.fao.org/cgrfa](http://www.fao.org/cgrfa)

Data presented in this infographic are compiled from various sources and have various reference years. For more information contact [CGRFA@fao.org](mailto:CGRFA@fao.org)



Food and Agriculture  
Organization of the  
United Nations

COMMISSION ON  
GENETIC RESOURCES  
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