



Food and Agriculture Organization

Climate change and food security

Climate change will increase hunger and malnutrition

Climate change will worsen the living conditions of farmers, fishers and forest-dependent people who are already vulnerable and food insecure. Hunger and malnutrition will increase. Rural communities dependent on agriculture in a fragile environment will face an immediate risk of increased crop failure and loss of livestock. Mostly at risk are people living along coasts, in floodplains, mountains, drylands, and the arctic. In general, poor people will be at risk of food insecurity due to loss of assets and lack of adequate insurance coverage.

Climate change will particularly affect vulnerable people and food systems

More frequent and more intense, extreme weather will have adverse immediate impacts on food production, food distribution infrastructure, on livelihood assets and opportunities in both rural and urban areas. Changes in mean temperatures and rainfall, increasing weather variability and rising sea levels will affect the suitability of land for different types of crops and pasture, the health and productivity of forests, the incidence of pests and diseases, biodiversity and ecosystems. Loss of arable land is likely due to increased aridity, groundwater depletion and the rise in sea level.

Agriculture contributes to climate change

Greenhouse gas emissions from the food and agriculture sector contribute over 30 percent of the current annual total emissions (deforestation 17,4 percent, agriculture 13,5 percent).

Sustainable forest management

Around 13 million hectares of forests are annually being lost due to deforestation, according to FAO. Reducing forest degradation and deforestation helps to protect water and soil resources as well as biodiversity and it contributes to the reduction of greenhouse gas emissions. Climate change will also affect the health of forests through an increase of forest fires and pests and diseases. Without economic or other incentives and political will, it will be difficult to stop deforestation and forest degradation.

Fishing and aquaculture are threatened by climate change

Climate change is having an impact on oceans, seas, lakes and rivers and on the animals and plants that are found in them. Climate change will affect the around 200 million people and their families worldwide who live by fishing and aquaculture. Some fish resources will become less abundant while important species may move to other areas where they are less available to the fishers. This will make it harder for many fishing communities to continue to make a living from fish or to provide fish for feeding their families. Coastal communities may also be displaced by rising sea levels and will be forced to find new places to live and new ways to earn a living.

New patterns of pests and diseases will emerge

Humans, plants, livestock and fish will be exposed to new pests and diseases that flourish only at specific temperatures and humidity. This will pose new risks for food security, food safety and human health.

Agriculture should reduce greenhouse gas emissions

Agriculture should contribute to reducing greenhouse gas emissions through reduction of deforestation, better control of wild-fires, improving nutrition for ruminant livestock, more efficient management of livestock waste, conservation agriculture and agro-forestry systems.

Adapting to climate change

Disruptions or declines in global and local food supplies due to climate change can be avoided through more efficient irrigation and watershed management, improved land cultivation and livestock management and the development of crop varieties and breeds that are adapted to changing climatic conditions. An effective use of climate data and forecasts, through early warning systems, can assist in analyzing the impacts of climate change on agricultural production and the entire food chain.

Promoting agro-biodiversity

Plant and animal biodiversity increases resilience to changing environmental conditions and stress (drought, salinity, flooding). FAO promotes the use of indigenous and locally adapted plant and animal diversity.

Sustainable livestock management

Land use for livestock production, including grazing land and cropland dedicated to the production of feed, represents approximately 70 percent of all agricultural land in the world. Overgrazing is the greatest cause of degradation of grasslands. Improved land management practices by both intensive and extensive livestock producers would help to resolve the balance between competing demands for animal food products and environmental services in more sustainable ways. Improved pasture management and integrated agro-forestry systems are effective ways to conserve the environment and mitigate climate change.

FAO's role: supporting those that are least likely to adapt to climate change

Climate change adaptation requires the use of good agricultural, forestry and fisheries practices to meet changing and more difficult environmental conditions and the introduction of improved risk management measures. FAO's role is to promote the numerous adaptation options and assist rural communities in applying them. FAO provides a neutral forum for sharing information about best practices. FAO works with governments, rural communities, research institutions and other bodies and provides global geo-spatial data, analytical tools and models, crop forecasting and impact monitoring and information on risks related to climate variability and change.

In Nigeria, at the request of the Ministry of Agriculture, FAO evaluated the impact of climate change on agriculture and food security. In Morocco, FAO contributed to a World Bank assessment study, covering climate change, agriculture and irrigation issues. In Bangladesh, FAO assists the Department of Agriculture and Extension in designing and implementing a project on how rural communities can adapt to climate change in drought prone areas.

International conference on climate change and food security

FAO will organize a high-level conference on world food security and the challenges of climate change and bioenergy, to take place in Rome from 3-5 June 2008.

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