

Post-2015 and SDGs



Nourishing people, Nurturing the planet

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Highlights

- Climate change adds another challenge to food and agriculture systems. It poses a fundamental threat to global food security, sustainable development and poverty eradication.
- Agriculture, including the forestry and fisheries sectors, must adapt to the impacts of climate change and improve the resilience of rural production systems and value chains while managing a sustainable increase in its goods and services.
- While agriculture, forestry and fisheries do contribute to Greenhouse Gas (GHG) emissions, they also offer opportunities for climate change mitigation. When supported through appropriate incentive mechanisms, mitigation can work in synergy with adaptation, contributing substantially to rural development and environmental sustainability.
- Climate change must be addressed as an integral part of the overall development agenda to result in sustainable beneficial outcomes.

Climate change

Overview

Agriculture, forestry and fisheries face many challenges today. Agricultural production will have to increase globally by an estimated 60 percent by 2050, and to double in developing countries, to meet projected expanding demands for food and feed from a growing and changing world population. Many current production systems are already under stress through degradation of land and water resources and loss of biodiversity and ecosystem services resulting from unsustainable practices. These challenges will be exacerbated by projected climate change and an expected increase in extreme weather events. Production and livelihoods will be affected by, amongst others, high temperatures that exceed survival thresholds of crop, tree and fish species, increased ocean acidity and increased severity of extreme weather events. Without properly addressing these issues, we will not succeed in ensuring world food security, sustainable and equitable development and poverty eradication.

Climate change is expected to impact the agriculture, forestry and fisheries sectors in many different ways. While rising temperatures and the effects of CO² fertilization may benefit production in some regions, in the short term the overall consequences to yields are expected to be adverse. And it will be the most vulnerable – those with the least adaptive capacities, that will be affected the most. Agriculture, forestry and associated land use and land use change contribute to 20–30 percent of the total anthropogenic GHG emissions. In particular, agricultural expansion for crop or livestock production is a major cause of deforestation and peat land degradation, resulting in substantial losses of carbon stocks contained in these valuable ecosystems, as well as their genetic resources.

Key challenges

Climate change represents a serious threat to global food security. It affects the four dimensions of food security: food availability, food accessibility, the stability of food supply, and the ability of consumers to adequately utilize food including food safety and nutrition. Agriculture and food systems must undergo fundamental transformations in order to meet the related challenges of global food security and climate change.

Adaptation of the agricultural, forestry and fisheries sectors, with a focus on improved resilience of production systems and the local communities depending upon them, is of paramount importance in coping with the expected changes in climatic conditions. These actions need to be developed in the context of the needed sustainable increase in agricultural production. More efficient resource use and harnessing of ecosystem services are crucial elements of this strategy. Agriculture, forestry and fisheries can, therefore, be a significant contributor to global mitigation efforts by reducing their carbon footprint through adoption of low emissions growth strategies and enhancing carbon storage in soils, forests and aquatic systems.

The Inter-governmental Panel on Climate Change asserts that roughly 20 to 30 percent of species it has assessed are likely to be at an increasingly high risk of extinction as global mean temperature exceeds pre-industrial levels by 2 to 3 degrees centigrade.

What needs to be done?

Addressing climate change challenges requires coordination of a variety of approaches, often specific to certain sectors or practices and local conditions. FAO has developed and promotes a unified approach, known as Climate-smart agriculture (CSA), to developing the technical, policy and investment conditions to support its member countries achieve food security under climate change. CSA recognizes that action needs to be implemented alongside three interlinked pillars:

1. Sustainably increasing agricultural productivity and incomes;
2. Adapting and building resilience to climate change; and
3. Reducing and/or removing greenhouse gas emissions, where possible.

The CSA approach builds location-specific assessments of the potential food security, adaptation and mitigation benefits from agricultural technologies and practices to guide agricultural strategies. CSA explicitly links climate finance with traditional sources of agricultural finance by identifying adaptation and mitigation benefits and means of measuring, reporting and verifying their provision.

International governance is also a vital element in assuring appropriate action in the sectors related to designing and implementing climate change responses. The United Nations Framework Convention on Climate Change (UNFCCC) is the key policy forum for climate change-related issues. In 2015, a new international climate regime is to be agreed upon under the UNFCCC to keep global warming below crucial levels. This agreement should address the concerns of developing countries, and in particular of least developed countries, regarding their needs to adapt to increasing variability and expected climate change impacts on their agricultural sectors, while promoting their potential to contribute to the overall reduction of GHG emissions.