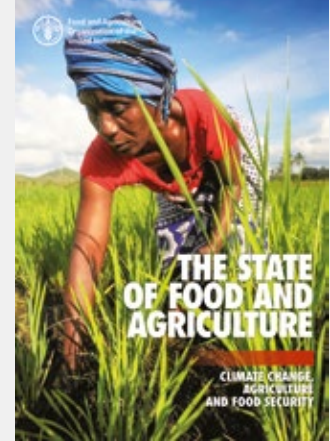




Food and Agriculture  
Organization of the  
United Nations

2016

# THE STATE OF FOOD AND AGRICULTURE



## Climate change, agriculture and food security

In adopting the goals of the 2030 Agenda for Sustainable Development and the Paris Agreement, the international community is now committed to making transformative and sustainable changes in the face of an unprecedented challenge: ending hunger and poverty while addressing the impacts of climate change. That political commitment now needs to be turned into concrete action.



In this context, this edition of *The State of Food and Agriculture* presents evidence on the current and future impacts of climate change on agriculture and food security. Based on this evidence, the report goes on to describe transformative policies and institutions that can facilitate an effective response to climate change.

**Climate change is already affecting agriculture and food security. Without urgent action, millions more people will be at risk of hunger and poverty.**

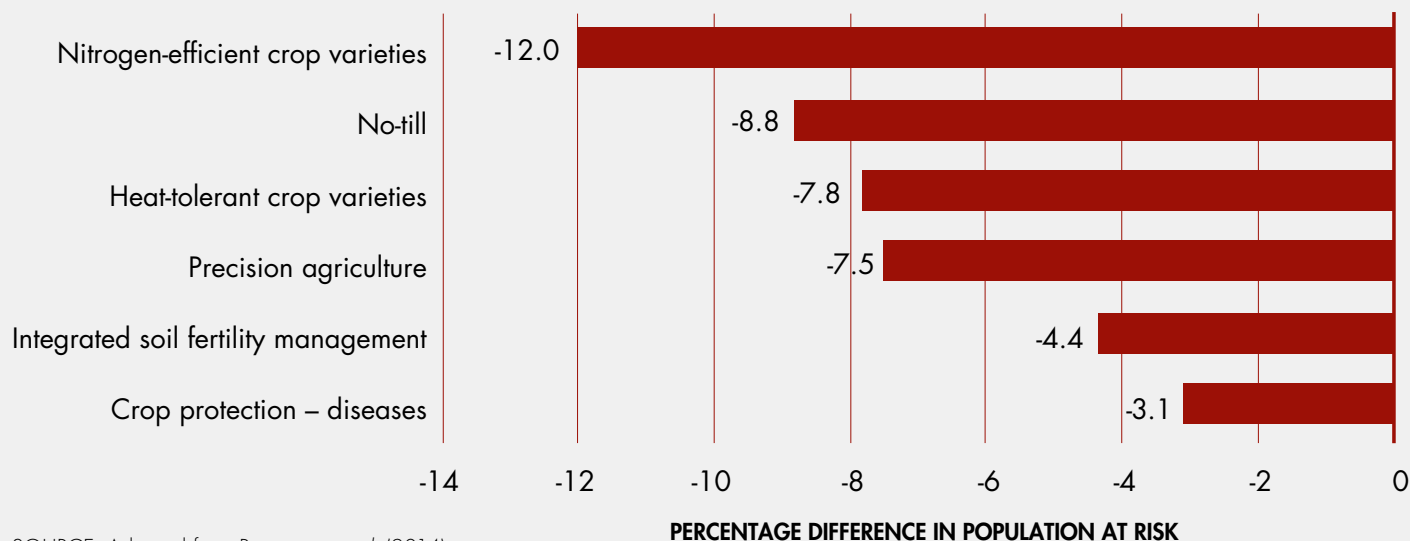
Unless climate change is addressed, agricultural productivity will decline, with serious implications for food security. Food supply shortfalls could cause dramatic increases in food prices, with greater climate variability exacerbating price volatility. Millions of low-income people would be directly affected in regions with already high rates of hunger and poverty. The report estimates that a “business as usual” approach could increase the number of poor by between 35 and 122 million by 2030 relative to a future without climate

change. Most affected would be populations in poor areas in sub-Saharan Africa, especially those reliant on agriculture.

**To maximize the co-benefits of climate change adaptation and mitigation efforts, deep transformations in agriculture and food systems are needed.**

Agricultural and rural development policies need to be reoriented to promote the adoption of sustainable practices in agricultural production, natural resources management and consumer behaviour. In doing so, particular attention should be given to the some 475 million low-income smallholder farmers whose access to technologies, markets and credit is often very limited. They urgently need support in adapting to climate change and managing the associated risks. Without building resilience in smallholder agriculture through widespread adoption of sustainable land, water, fisheries and forestry practices, global poverty cannot be eradicated.

## CHANGE IN 2050 IN THE NUMBER OF PEOPLE AT RISK OF HUNGER, RELATIVE TO THE BASELINE SCENARIO, AFTER ADOPTION OF IMPROVED AGRICULTURAL TECHNOLOGIES



SOURCE: Adapted from Rosegrant *et al.* (2014), based on simulations with IFPRI's IMPACT model.

At the same time, agriculture sectors have a pivotal role to play in climate change mitigation – agriculture, forestry and land-use change generate one-fifth of global greenhouse gas emissions. This report examines a wide range of options for making agriculture and food systems resilient to changing climate patterns while minimizing environmental impacts. However, it also acknowledges that not all solutions are necessarily “win-win”. Tough choices will need to be made and there will be trade-offs to be dealt with.

### The costs of inaction will far exceed those of enabling food producers to respond effectively to climate change.

The report shows that making agriculture and food systems sustainable is both economically viable and technically feasible. Estimates suggest that the aggregate cost of adaptation and making farm systems more resilient is only a fraction that of inaction.

In the context of a changing climate, resilient agriculture sectors can deliver transformative change for the world's poorest, helping them to improve their

incomes and access to food. The adoption of improved management practices will help to achieve a significant reduction in the number of food-insecure people.

However, while well-designed adaptation initiatives can generate higher returns in the medium and long term, barriers to adopting climate-smart practices will need to be lowered, especially for smallholder and women farmers. Lasting benefits will only be achieved when supported by appropriate policies, institutional frameworks and investment finance mechanisms.

### Paris Agreement commitments underpin a global transformation to sustainable food and agriculture, but require action on a broad front.

In their intended nationally determined contributions, countries have made strong commitments to both adaptation and mitigation efforts in agriculture. This means that established mechanisms for addressing climate change will have to be integrated into broader agriculture, food security and

nutrition policies. Policies in areas such as agricultural support measures, energy, nutrition, and food consumption will need to be realigned in order to facilitate the transition to sustainable agriculture and food systems.

In parallel with policy changes, there will have to be support from investment finance mechanisms and institutional frameworks. More climate finance needs to flow to agriculture to fund large-scale transformation of its sectors and the development of climate-smart food production systems. In addition, the international community needs to support developing countries in strengthening their capacity to design and implement integrated policies that address agriculture and climate change.

Unless action is taken now to make agriculture more sustainable, productive and resilient, climate change impacts will seriously compromise food production in the most fragile countries and regions. Inaction or delay will force poorer countries to fight poverty, hunger and climate change all at the same time.



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*The State of Food and Agriculture*, FAO's major annual flagship report, aims at bringing to a wider audience balanced science-based assessments of important issues in the field of food and agriculture.

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