

Adaptation to climate change is a crucial component to achieve food security



# Get it right

## Adapt food systems to climate change



Hunger is on the rise. Over one billion people in the world are undernourished. Facing this challenge means adapting our food systems, agriculture sectors and land use to climate change. Ignoring climate change will increase the threat on world food security. We must get it right and adapt food systems to climate change.

### Climate change affects food security as well as economic, social and political stability

The consequences of climate change and variability are not new and many who depend on agriculture for their livelihoods are already facing the impacts through irregular or unpredictable rainfall patterns, uncommonly heavy rainfall, increased incidence of storms and droughts and the emergence and spread of pests and diseases that affect agriculture and ecosystem services.

Climate variability and change will increase pressure on natural resources and will affect food security at global and local scales. This in turn will have impacts on economic growth and social and political stability.

### Local communities are at the center of successful adaptation

Climate change impacts will differ around the world. Rural communities in fragile environments—such as coastal zones, drylands and mountain areas— will be the most affected, especially vulnerable groups such as women and indigenous peoples as they face the risk of increased and recurrent crop failure; loss of livestock, fisheries and forestry products; and reduced availability of natural resources.

Location-specific adaptation measures are required that take into account local vulnerabilities and the opportunities and constraints that rural people face as well as the diversity of systems they rely upon. Adaptation must be considered as an integrated, participatory and flexible process.

#### Adaptation is not an option, but a must, to ensure sustainable development

Local adaptation of the agriculture, fisheries and forestry sectors is necessary to meet the demands of a growing global population. Adaptation to climate change will be an essential component of development efforts. Countries will need to take pro-active adaptation approaches that, on one hand, help communities address the immediate impacts of increasing climate variability, and on the other, invest in preparations for long-term impacts of climate change such as changes in mean temperatures, rainfall, salinization and sea-level rise.

Food security and sustainable development are the overarching priorities. Investments in adaptation to climate change in the agriculture sectors provide opportunities for synergies with these objectives.



## Scientific and traditional knowledge are fundamental for adaptation

Farming, pastoral and fishing communities have generated traditional knowledge and adapted practices to environmental constraints for centuries, but today they face additional challenges, as they need to cope with the rate and magnitude of the changes in climate. Adaptation practices in the agriculture sectors will need to draw from traditional coping mechanisms and also new science and technologies. Traditional practices will benefit from new water management technologies, better adapted or high yielding crop varieties, efficient harvesting and food processing technologies, monitoring and evaluation tools, as well as innovative approaches to rural development.

## Agricultural research and its transfer to the field will underpin the success of adaptation

Research and transfer of new technologies for adaptation to climate change in agriculture, forestry and fisheries must move quickly to provide:

- new plant breeds, more tolerant to different environmental stresses;
- improved technologies such as alternative cropping systems, conservation agriculture, more efficient livestock production, fish harvesting and sustainable aquaculture;
- sustainable forest management and agroforestry as well as efficient post-harvest technologies;
- sustainable intensified production systems with efficient inputs of energy, fertilizers, water, seeds, pesticides, wastes and
- weather and climate monitoring as well as forecasting systems accessible to rural communities.

## Institutions and policies must enable adaptation

Farming, pastoral and fishing communities play a central role in adapting the agriculture sectors and food systems to climate change but they need the support of strong institutions at all levels. National and regional policies and laws for planning, management and tenure of land and water, crop development, plant breeding, seed distribution systems, risk management, environmental conservation, food quality and trade must themselves adapt to enable adaptation to climate change.

## In agriculture, adaptation for food security can be achieved together with mitigation efforts

Unlike in other sectors, sustainable crop, livestock, forestry, fisheries and aquaculture technologies can simultaneously increase the adaptive capacity and contribute to climate change mitigation. These win-win opportunities should be pursued with highest priority.

### The international community is still on time to provide assistance to the most vulnerable

The costs of adapting agricultural sectors and rural communities to the impacts of climate change are still uncertain. What remains clear is that a substantial amount of funds, human resources and technology transfer will be required to speed-up the adaptation efforts of the most vulnerable.

There is still time to avoid major food crises and conflicts fostered by climate change. Adaptation to climate change can help to build a food secure world and strive for the protection of ecosystems and natural resources.