Food and Agriculture Organization of the United Nations

THE STATE OF FOOD AND AGRICULTURE

Climate change, agriculture and food security

FAO's work on climate change *SOFA*

Climate change is a growing threat to the agriculture sectors. The negative effects on agricultural production and livelihoods of farmers, foresters and fisher folk are already being felt in many places. They will only get worse overtime.

Unless climate change is addressed, agricultural productivity will decline with serious implications for food security. Millions of low-income people will be at risk of hunger and poverty.

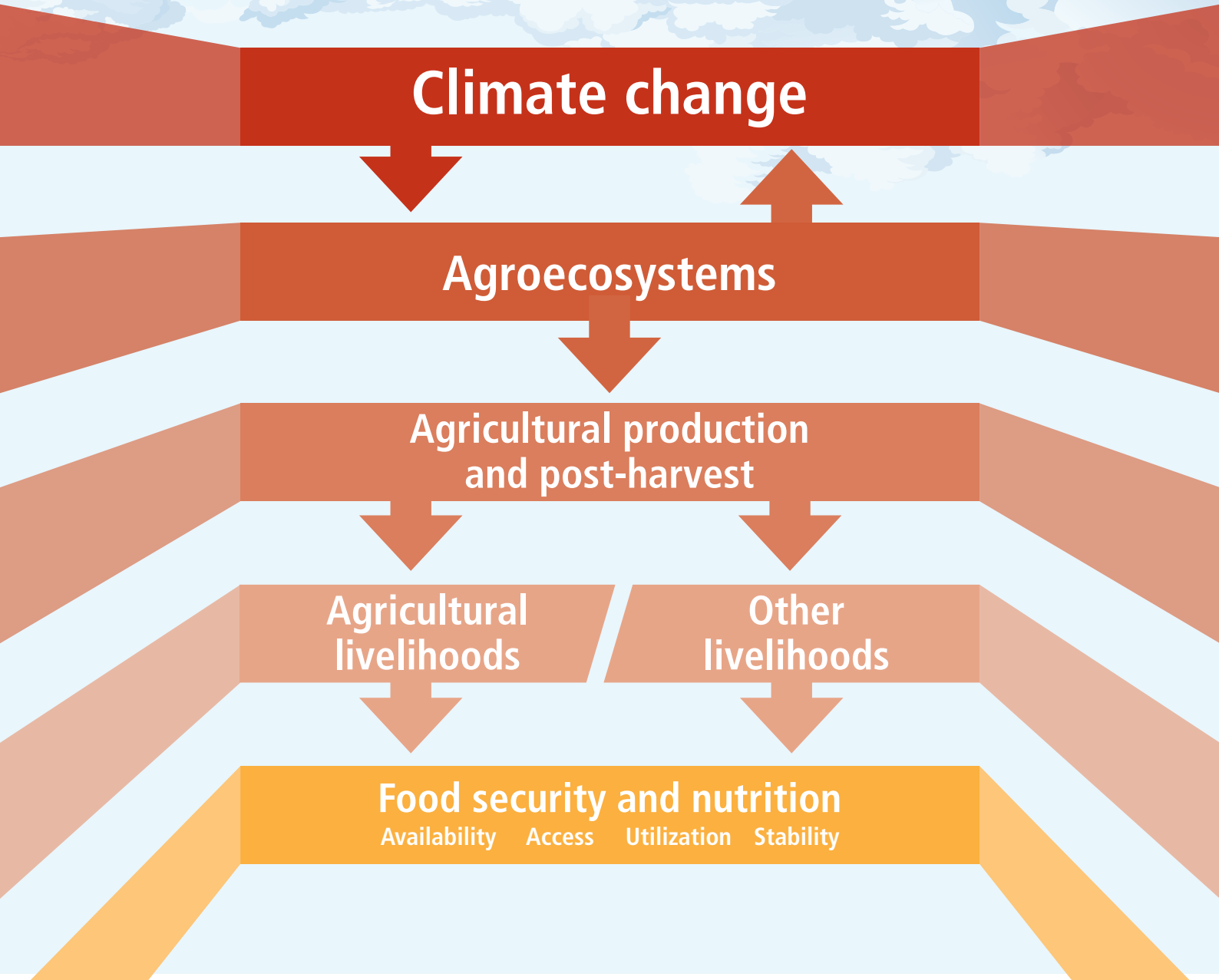
The agriculture sectors also contribute to climate change due to their emissions of greenhouse gases.

In the Paris Agreement on climate change, concluded in December 2015, the international community has recognized the need for urgent action and the role of the agricultural sectors in addressing this challenge.

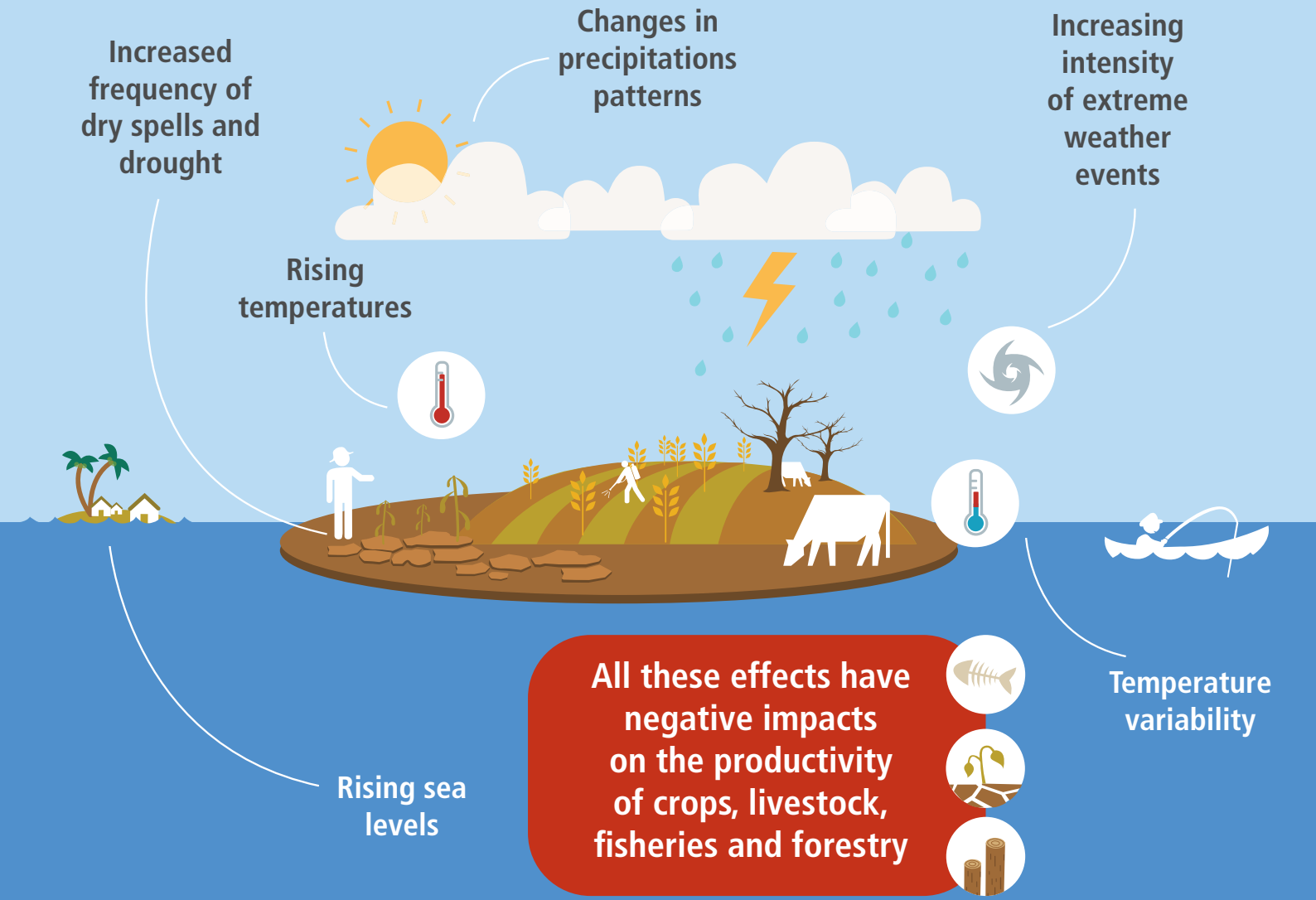
It is essential that the country pledges that formed the basis of the 2015 Paris Agreement on climate change are turned now into action.

These infographics are based on key findings in the FAO Report "State of Food and Agriculture 2016 – Climate change, agriculture and food security" available at www.fao.org/publications/sofa/sofa2016

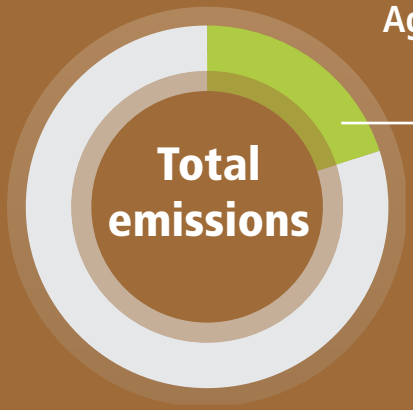
How climate change affects food security?



Climate change affects agriculture...

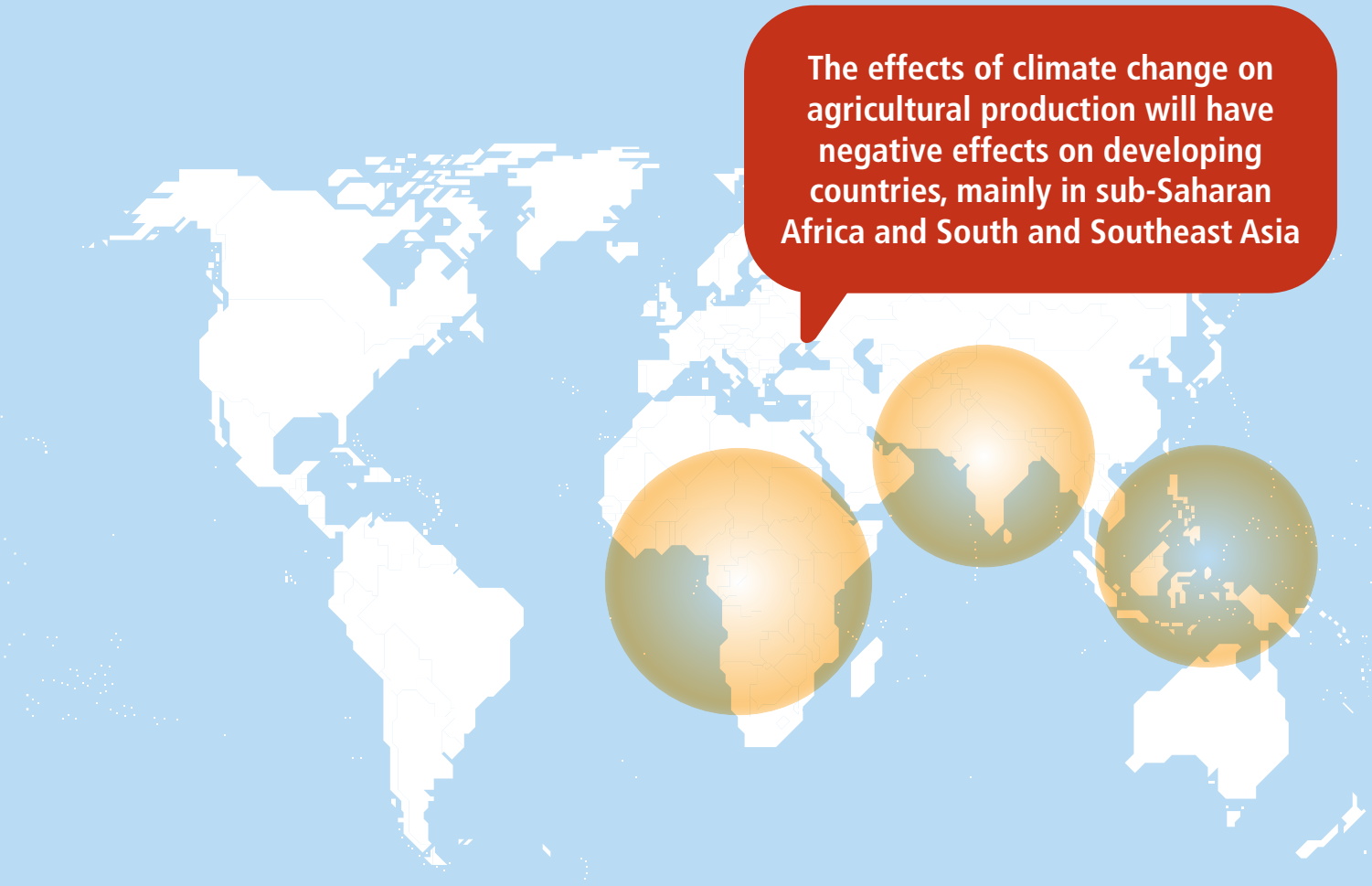


...and agriculture sectors are major contributors to climate change



Taken together, agriculture, forestry and land-use account for at least 20% of total emissions, mainly from the conversion of forests to farmland and from livestock and crop production

Climate change impacts: who is paying the costs?

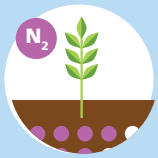


Productivity declines could have serious implications for food security.

Millions of low-income people who are already highly food insecure, are likely to be affected. Smallholder producers are amongst the most vulnerable

Responding to climate change: sustainable agricultural practices

No-till



Cultivating nitrogen-efficient crop varieties

Precision agriculture

Improved pasture management

Integrated soil fertility management

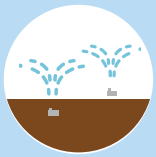
Improved fodder grasses or legumes

Cultivating heat-tolerant crop varieties

Smallholders need support to access the right technologies and to implement them

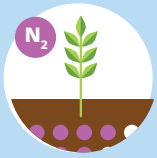
Water harvesting & sprinkler irrigation

Natural predation of pests and reduction of pesticides



Drip irrigation

By 2050 less people could be at risk of hunger if improved agricultural technologies are adopted



Use of nitrogen-efficient crop varieties

-12%

Zero-tillage

-9%

Cultivation heat-tolerant crop varieties

-8%

Precision agriculture

-7%

Integrated soil fertility management

-4%

Protection of crops from disease

-3%

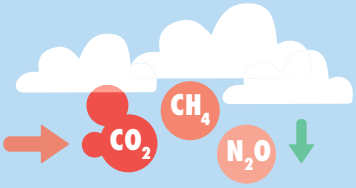
Responding to climate change: mitigation

The agriculture sectors can substantially contribute to balancing the global carbon cycle.

Agriculture

Resource use efficiency

Soil regeneration

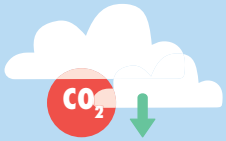


can bind large amount of atmospheric CO_2 and lower emissions of N_20 and CH_4

Forestry

Reducing deforestation

Adopting sustained-yield management



can help mitigate the rise of atmospheric CO_2

Mitigation is key for long-term food security of the world's population

Reducing food loss and waste

improves the efficiency of the food system, reduces both pressure on natural resources and the emission of greenhouse gases (GHGs)

Rebalancing diets towards less animal-sourced foods

Could help reduce GHGs and pressure on natural resources with co-benefits for human health

Challenges

Smallholder producers face major barriers when adopting practices that can make their production systems more resilient and efficient.

Labour availability

Tenure security

Groups/social capital

Risks and shocks

Credit access and resource endowments

Information

Addressing the challenges: aligning climate and development goals

Managing natural resources

Supporting and facilitating collective action

Managing risks

Building institutions and policies for more resilient systems with lower emissions

Addressing transboundary issues

The way forward: strategic use of climate finance

- Addressing the capacity challenge
- Support the enabling environment for climate-smart agriculture
- Mainstreaming climate change in domestic budgets
- Unlocking private capital for climate-smart agricultural investment

Turning political will into action

Commitment

COP* 21 - Paris

Action

COP* 22 - Marrakech

*The Conference of the Parties (COP) is the supreme decision-making body of the United Nations Framework Convention on Climate Change (UNFCCC).

www.fao.org/climate-change

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