

“Climate change and agricultural challenges: the FAO approach”

IAEA Scientific Forum
Nuclear
Technology
for Climate

Mitigation, Monitoring, Adaptation

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Natalia Alekseeva

**Team Leader for National Climate Change Action
Climate and Environment Division**

Food and Agriculture Organization of the United Nations (FAO)



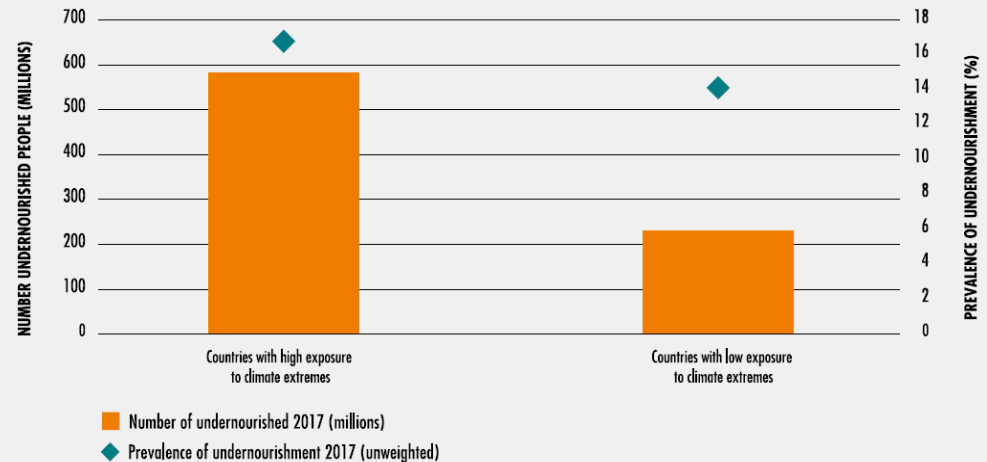
**Food and Agriculture
Organization of the
United Nations**

Climate Change and Agriculture

- 2018 edition of “The State of Food Security and Nutrition in the World” provides new evidence that beside conflicts, climate variability and extremes are also a key force behind the recent rise in global hunger. They are also one of the leading causes of severe food crises.

The majority of people most vulnerable to climate shocks and natural hazards are the world’s 2.5 billion small-scale farmers, herders, fishers and forest-dependent communities, who derive their food and income from renewable natural resources.

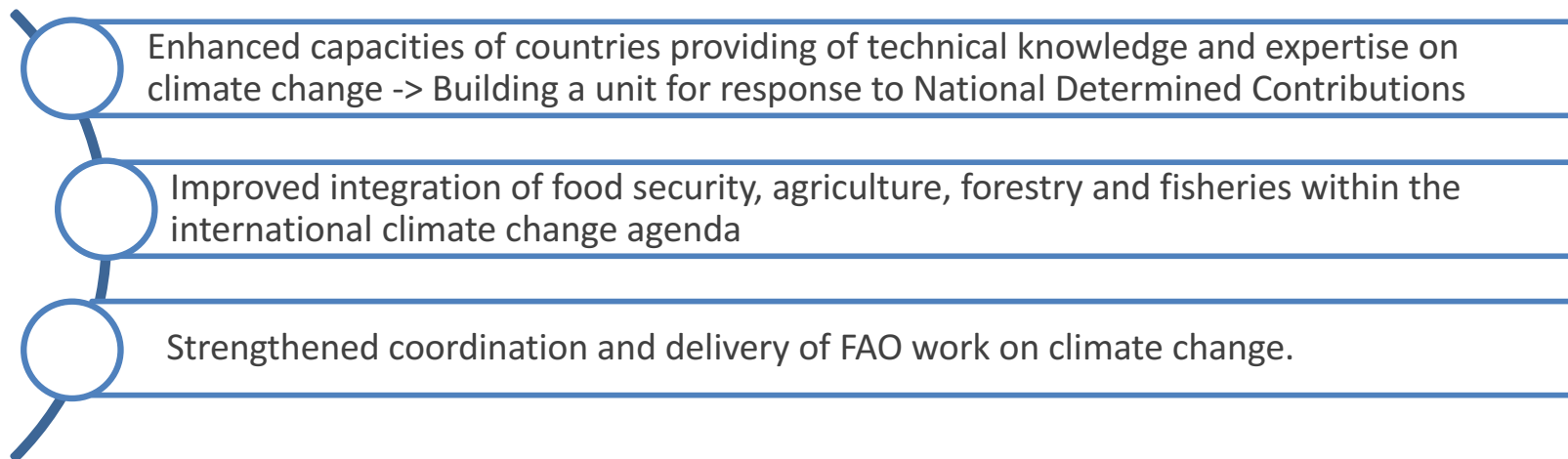
FIGURE 25
HIGHER PREVALENCE AND NUMBER OF UNDERNOURISHED PEOPLE IN COUNTRIES WITH HIGH EXPOSURE TO CLIMATE EXTREMES



NOTES: Prevalence (unweighted) and number of undernourished people in low- and middle-income countries with high and low exposure to climate extremes during the period of 2011–2016. Countries with high exposure are defined as being exposed to climate extremes (heat, drought, floods and storms) for more than 66 percent of the time, i.e. for more than three years in the period 2011–2016; low exposure is three years or less. See Annex 2 for the list of countries with high exposure to climate extremes and methodology.
SOURCE: C. Hallemann, F. Rembold and O. Crespo (forthcoming). *The impact of climate variability and extremes on agriculture and food security: an analysis of the evidence and case studies*. FAO Agricultural Development Economics Technical Study 4. Rome, FAO, for classification of countries with high and low exposure to climate extremes; FAO for data on prevalence of undernourishment.

FAO Climate Change Strategy

- Climate change links with the full spectrum of FAO's work on hunger, sustainability, poverty, agricultural and food systems, and resilience across all agricultural sectors and natural resources.
- The Strategy for FAO's work on Climate Change builds on FAO's Strategic Framework to strengthen the Organization's work on climate change in the context of FAO's international climate and sustainable development agenda.
- **Strategy outcomes:**



What do we do

GREENHOUSE GAS EMISSIONS from Agriculture, Forestry and Other Land Use
in Africa

GREENHOUSE GAS EMISSIONS from Agriculture, Forestry and Other Land Use
in Asia

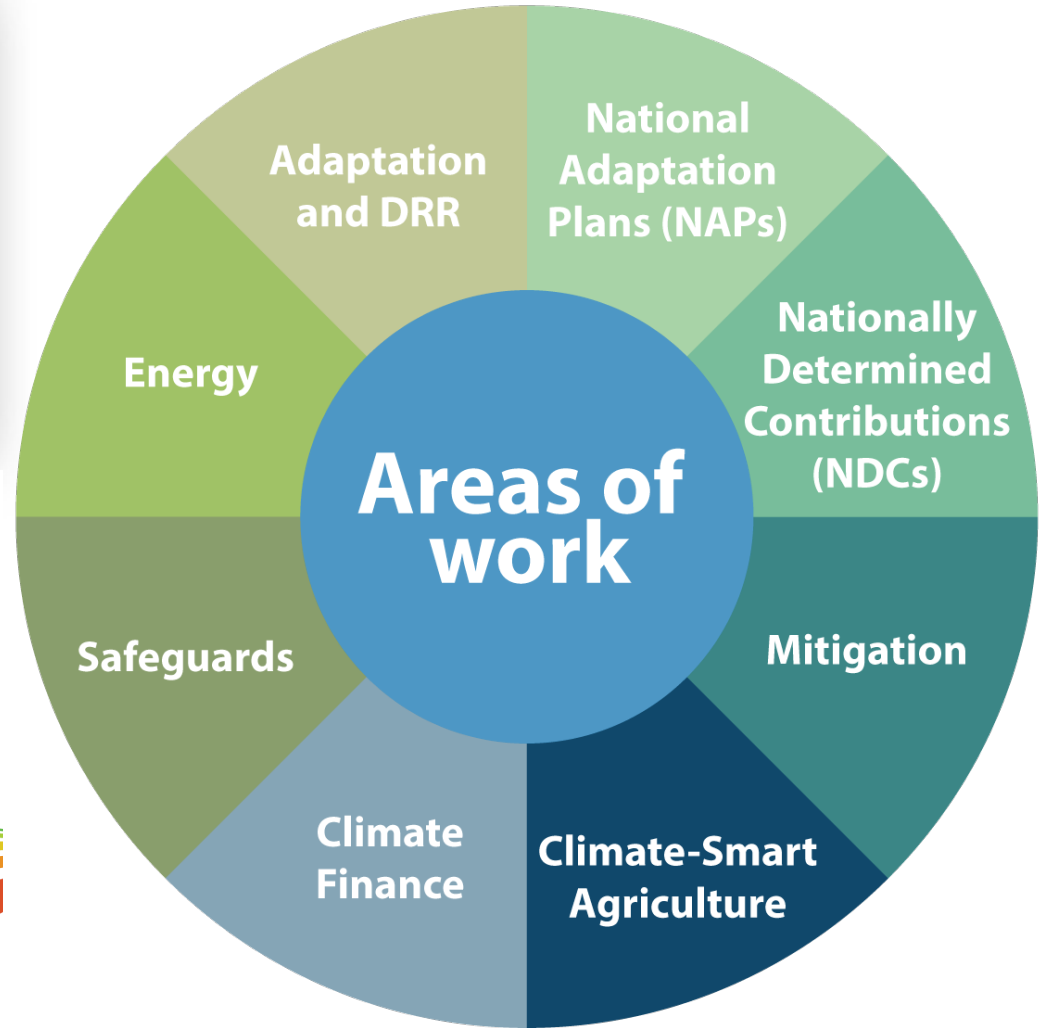
Disaster Risk Management Plan for the Agriculture Sector 2013 – 2018
Cooperative Republic of Guyana

GREENHOUSE GAS EMISSIONS from Agriculture, Forestry and Other Land Use

Tracking adaptation in agricultural sectors
Climate change adaptation indicators

Energy

Food and Agriculture Organization of the United Nations



Climate-Smart Agriculture (CSA)

Climate-Smart Agriculture is an approach for developing agricultural strategies to secure food security under climate change. CSA aims to tackle three main objectives:

- (i) sustainably **increase agricultural productivity** and incomes;
- (ii) **adapt and build resilience** to climate change; and
- (iii) **reduce and/or remove greenhouse gas emissions**, where possible.



Nuclear Applications for CSA

- Assessment/evaluation of:
 - *Impact of climate change on agriculture*
 - *Impact of agricultural practices on climate change*
- Development of technologies for adaptation and building resilience to climate change
- Improvement of agriculture practices for potential mitigation of climate change

