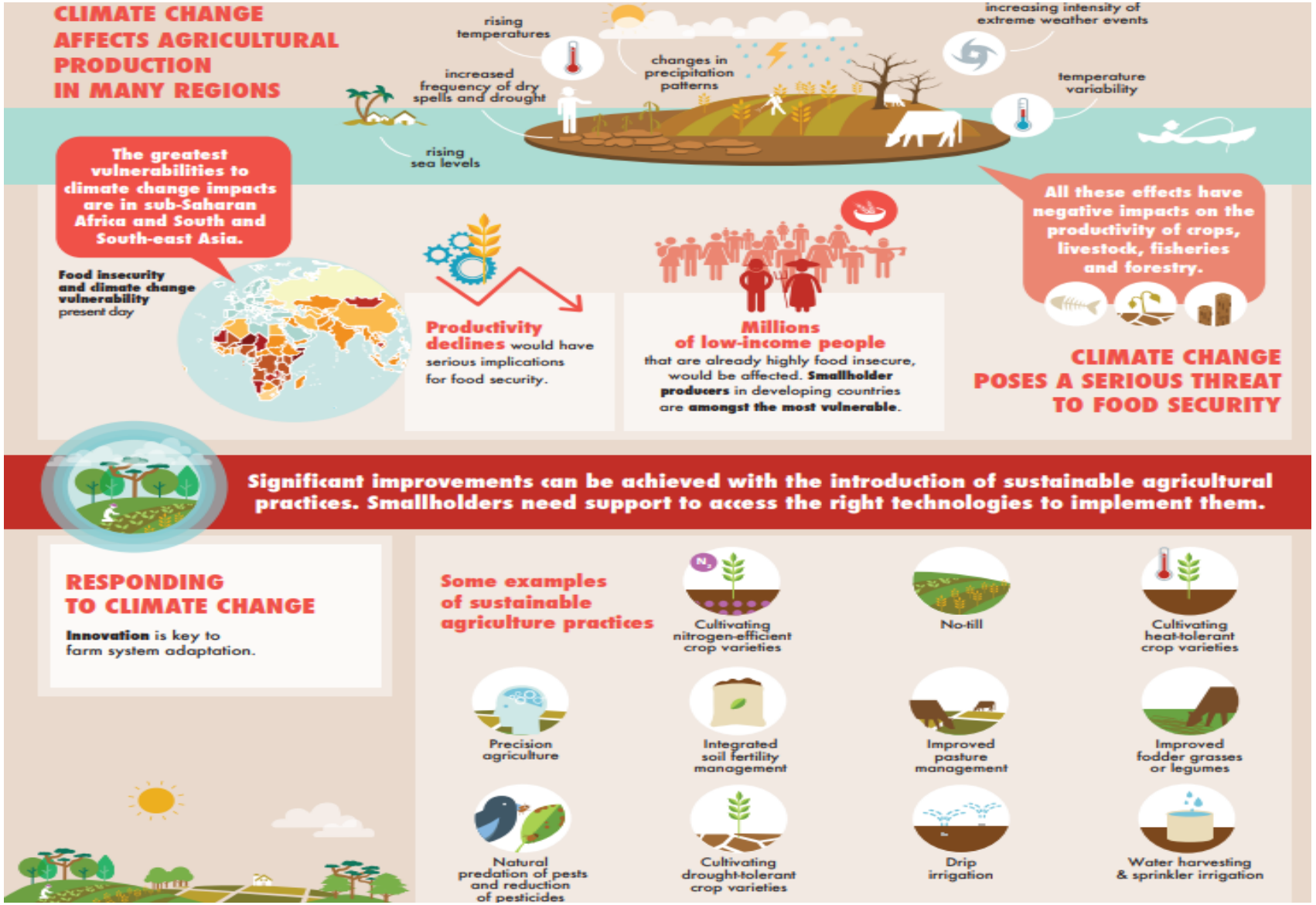
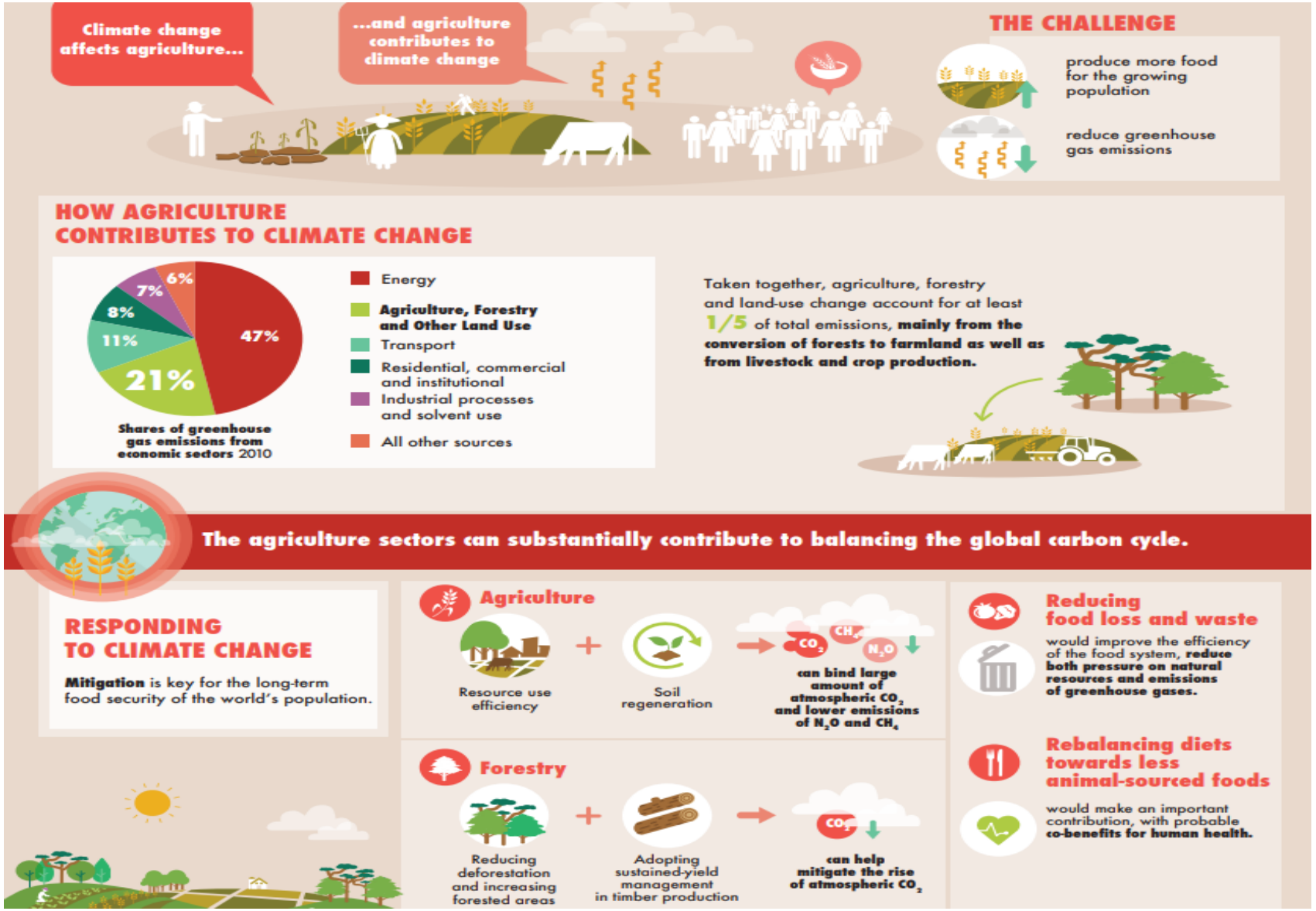

CLIMATE CHANGE AFFECTS AGRICULTURAL PRODUCTION IN MANY REGIONS
rising temperatures
increased frequency of dry spells and drought
rising sea levels
changes in precipitation patterns
increasing intensity of extreme weather events
temperature variability
The greatest vulnerabilities to climate change impacts are in sub-Saharan Africa and South and South-east Asia.
Food insecurity and climate change vulnerability present day
Productivity declines would have serious implications for food security.
Millions of low-income people that are already highly food insecure, would be affected. Smallholder producers in developing countries are amongst the most vulnerable.
All these effects have negative impacts on the productivity of crops, livestock, fisheries and forestry.
CLIMATE CHANGE POSES A SERIOUS THREAT TO FOOD SECURITY
Significant improvements can be achieved with the introduction of sustainable agricultural practices. Smallholders need support to access the right technologies to implement them.
RESPONDING TO CLIMATE CHANGE
Innovation is key to farm system adaptation.
Some examples of sustainable agriculture practices
Cultivating nitrogen-efficient crop varieties
No-till
Cultivating heat-tolerant crop varieties
Precision agriculture
Integrated soil fertility management
Improved pasture management
Improved fodder grasses or legumes
Natural predation of pests and reduction of pesticides
Cultivating drought-tolerant crop varieties
Drip irrigation
Water harvesting & sprinkler irrigation


Climate change affects agriculture...
...and agriculture contributes to climate change
THE CHALLENGE
produce more food for the growing population
reduce greenhouse gas emissions
HOW AGRICULTURE CONTRIBUTES TO CLIMATE CHANGE
47%
21%
11%
8%
7%
6%
Shares of greenhouse gas emissions from economic sectors 2010
Energy
Agriculture, Forestry and Other Land Use
Transport
Residential, commercial and institutional
Industrial processes and solvent use
All other sources
Taken together, agriculture, forestry and land-use change account for at least 1/5 of total emissions, mainly from the conversion of forests to farmland as well as from livestock and crop production.
The agriculture sectors can substantially contribute to balancing the global carbon cycle.
RESPONDING TO CLIMATE CHANGE
Mitigation is key for the long-term food security of the world's population.
Agriculture
Resource use efficiency
Soil regeneration
can bind large amount of atmospheric CO_2 and lower emissions of N_2O and CH_4
Forestry
Reducing deforestation and increasing forested areas
Adopting sustained-yield management in timber production
can help mitigate the rise of atmospheric CO_2
Reducing food loss and waste
would improve the efficiency of the food system, reduce both pressure on natural resources and emissions of greenhouse gases.
Rebalancing diets towards less animal-sourced foods
would make an important contribution, with probable co-benefits for human health.