



IMPACT

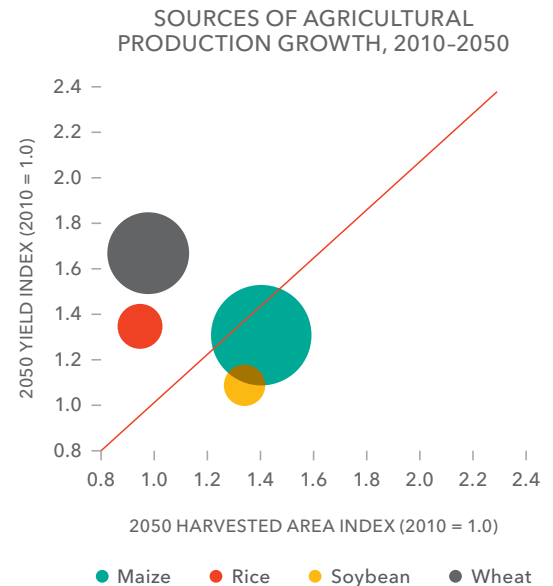
PROJECTIONS OF FOOD PRODUCTION, CONSUMPTION, AND HUNGER

Trend 1

SOURCES OF GROWTH ARE PROJECTED TO VARY FOR FOOD AND FEED CROPS

Demand and supply for major crops are projected to continue increasing through midcentury, but sources of growth will vary. For crops consumed directly as food, such as rice and wheat, rising demand will be met primarily through yield increases ranging from 30 to 60 percent by 2050, while area devoted to those crops will remain roughly constant at the global level. By contrast, demand for feed crops, such as maize and soybean, will require expansion of harvested area by about 40 percent. Total global supply of these four major crops is projected to expand by over 1.3 trillion metric tons, dominated by maize and wheat.

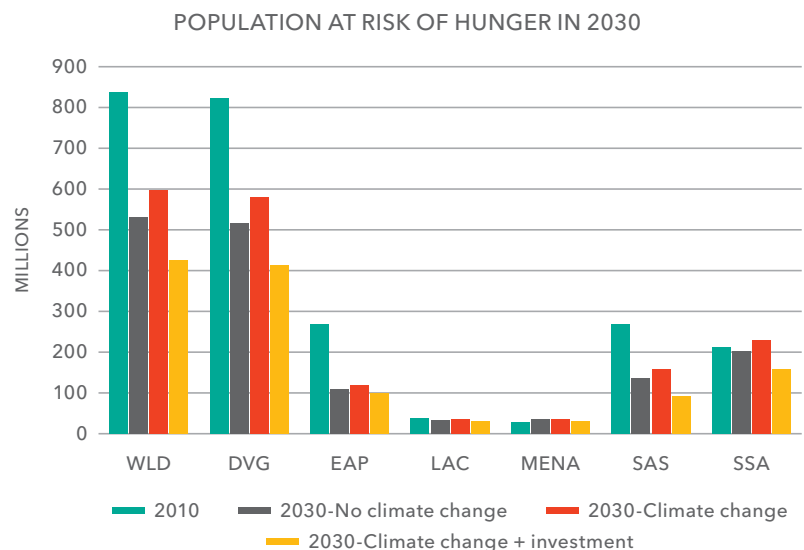
Note: Graphic shows indexed values for changes in yield and area harvested from 2010 to 2050. The circle sizes are scaled to show the relative increase in total global supply for each crop from 2010 to 2050, in million metric tons. The center of each circle is aligned with the indexed values for growth in area harvested and yield for each crop from 2010 to 2050. Projections are from the "Comprehensive" investment scenario modeled in Rosegrant et al. (2017), which posits a relatively optimistic but feasible expansion in R&D investments in yield growth, irrigation and water use, and value-chain efficiency in developing countries.



Trend 2

INCREASED INVESTMENT CAN REDUCE HUNGER, DESPITE SETBACKS DUE TO CLIMATE CHANGE

IMPACT model projections indicate that the Sustainable Development Goal of eliminating hunger will not be achieved by 2030 globally, but important progress is being made. Climate change hinders progress, but key investments in the agriculture sector can more than overcome the negative effects. With increased investments to enhance agricultural productivity, water use, and value-chain efficiency, most regions of the world can reduce the share of the population at risk of hunger in 2030 to below 5 percent. But persistent challenges will keep the hungry population in Africa south of the Sahara at about 12 percent.



Note: WLD = World; DVG = Developing countries; EAP = East Asia and Pacific; LAC = Latin America and Caribbean; MENA = Middle East and North Africa; SAS = South Asia; SSA = Africa south of the Sahara. "Climate Change" shows one realization of future climate change for the Representative Concentration Pathway 8.5 modeled by the HadGEM general circulation model. "Climate Change + Investment" is a scenario with increased investments in agriculture sector R&D, as modeled in the "Comprehensive" scenario from Rosegrant et al. (2017).

Source: M. Rosegrant et al. "Quantitative Foresight Modeling to Inform the CGIAR Research Portfolio," project report for USAID, International Food Policy Research Institute, Washington DC, 2017.