

## **Research Priorities for Food Security, Nutrition Adequacy and Climate Justice for 9 Billion People in 2050**

The Food Security Futures conference convened in Dublin April 11-12, 2013 by CGIAR and FAO addressed the challenges of feeding 9 billion people in 2050. Participants from academia, the private sector, national agricultural research systems, and civil society organizations joined CGIAR and FAO to assess the challenges and identify priority areas for research.

FAO estimates that global agricultural production in 2050 will need to increase by at least 60 percent relative to 2006, a growth rate of just less than 1.2 percent annually. The challenge lies both in the amount of additional food needed, and in the conditions under which it must be produced, processed, and utilized. To address persistent hunger, growth will have to be fastest in the parts of the world that have until now experienced the greatest difficulty in translating scientific and technical solutions into higher productivity and improved resource health. To address nutrition, farmers and processors will need to offer healthier and safer foods, and consumers will need to modify diets and behavior. To address climate change with justice, the poorest farmers, fishers, and pastoralists who are disproportionately affected will need knowledge and resources to adapt. The increased frequency of droughts, floods, and pests and diseases causing locally acute failures will put pressure on the logistics and infrastructure that underpin our trading system. Much is already known about how actors in food systems can and are doing things differently. Much remains unknown, however, about how elements of complex food systems interact. Agricultural research by the public and private sectors will be required to develop new approaches to meet the simultaneous challenges. Key conclusions from participants follow.

### **The challenges**

- Increasing weather variability is likely at least as important as changes in weather averages.
- Pests and disease pressure will likely become more serious threats to productivity.
- The ability of natural resources to deliver critical services is under increasing threat.
- Providing enough macro- and micronutrients is still key but obesity is a rising problem everywhere.

### **The priorities**

#### *Better information*

- Better understanding is needed of how climate change responses can contribute to justice for the poor.
- The contributions of natural resource systems management must be better assessed.
- Better metrics for evaluating food systems and natural resources are required.
- An emphasis on gender serves both agricultural and nutritional objectives.
- More collaboration is needed to improve models, from crops to the macroeconomy, to identify research investment priorities.

#### *Better policies and programs*

- The public and the private sectors should collaborate to share data and models.
- Increased production and utilization of non-staples are important for dietary diversity and food security.
- Mineral and vitamin content of staples should be objectives of breeding, along with yields.
- Better nutrition requires joint efforts in ministries of agriculture, health, sanitation, and finance.
- Barriers to adoption of responses to climate change must be identified and reduced.

FAO, CGIAR, private firms, national research systems, and other participants in the conference will follow up to design joint research programs and to build partnerships for implementation.