

The views expressed in this presentation are the views of the author/s and do not necessarily reflect the views or policies of the Asian Development Bank, or its Board of Governors, or the governments they represent. ADB does not guarantee the accuracy of the data included in this presentation and accepts no responsibility for any consequence of their use. The countries listed in this presentation do not imply any view on ADB's part as to sovereignty or independent status or necessarily conform to ADB's terminology.

Agriculture and Food Security in Asia: Future Scenarios

Mark W. Rosegrant, Director

Simla Tokgoz, Research Fellow

Prapti Bhandary, Senior Research Assistant

**Environment and Production Technology Division
International Food Policy Research Institute (IFPRI)**



**Asian
Irrigation Forum**

11-12 April 2012 • Asian Development Bank, Manila, Philippines

ADB

Outline

- Drivers of agricultural growth and food security
- Baseline projections of supply, demand and food security
- Conclusions and policy implications



Drivers of Agricultural Growth and Food Security



Drivers of Agricultural Growth and Food Security

■ Demand drivers

- Population growth: 9 billion people in 2050
- Urbanization: Asia 2008 = 44% urban; 2050 = 64% urban
- Income growth
- Biofuels and bioenergy
- GHG mitigation and carbon sequestration
- Conservation and biodiversity



Drivers of Agricultural Growth and Food Security

■ Supply drivers

- Water and land scarcity
- Climate change
- Investment in agricultural research
- Science and technology policy
- Management and governance reform

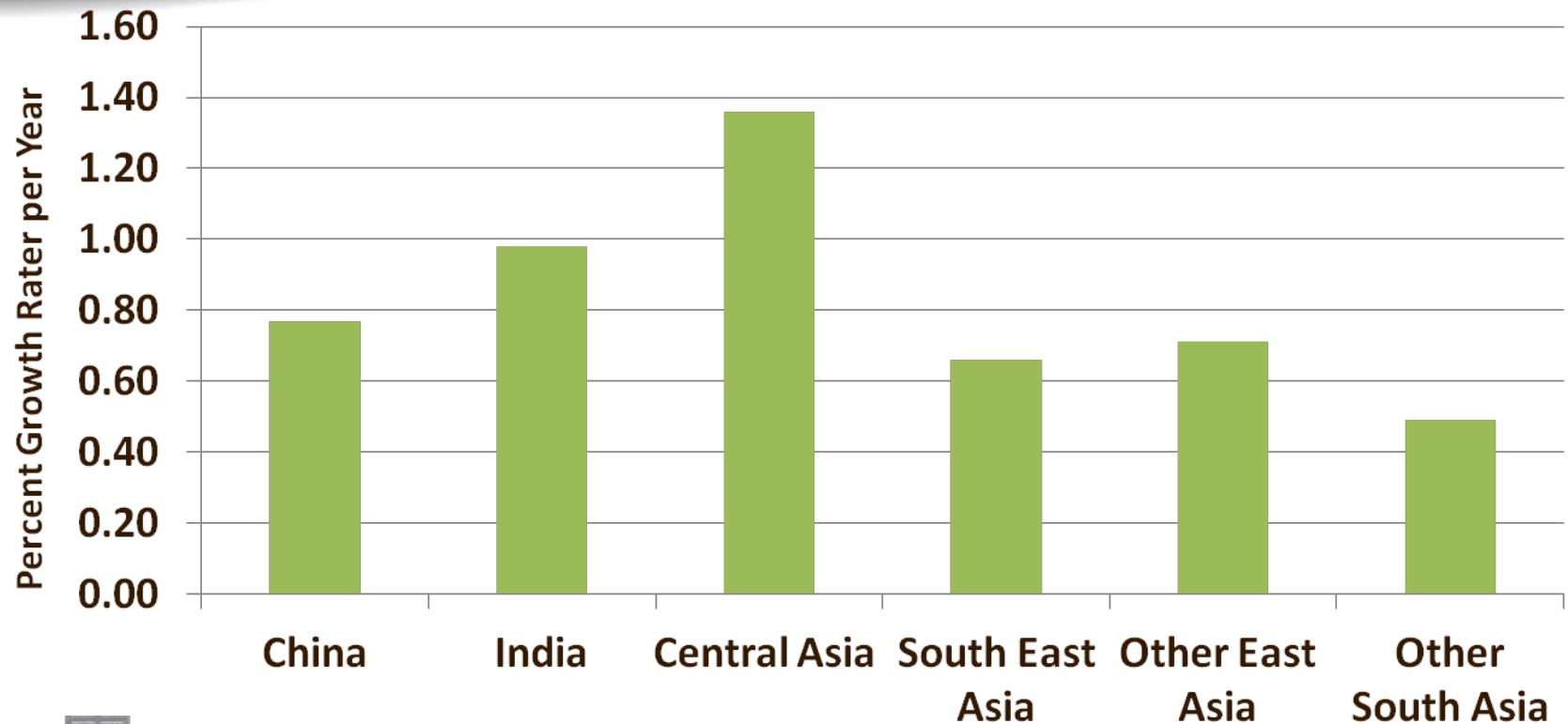


Baseline Projections of Supply, Demand and Food Security



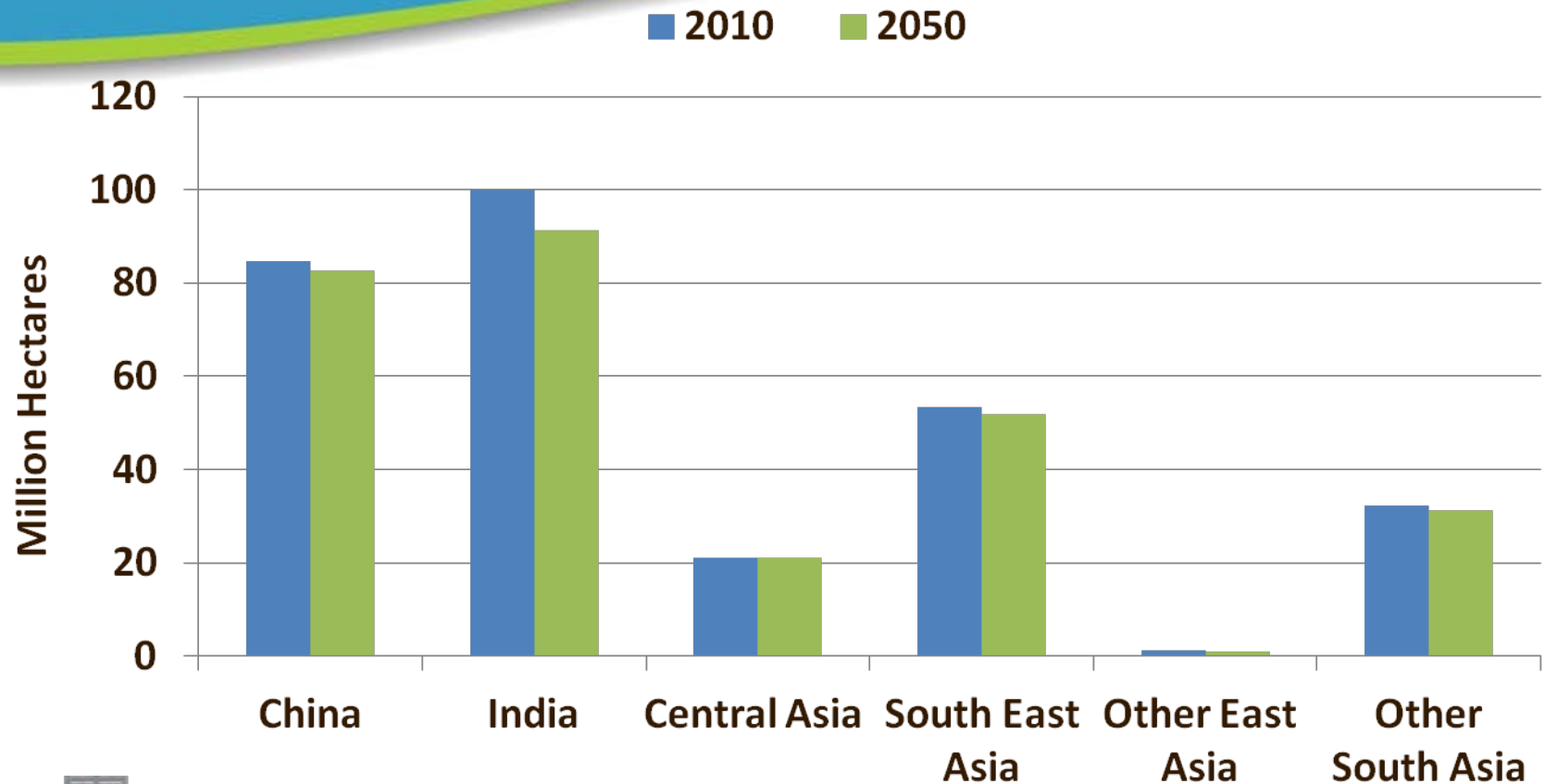
Total Cereals Yields – Asia

Annual Average Growth Rate



Source: IFPRI IMPACT Model, September 2011 simulations

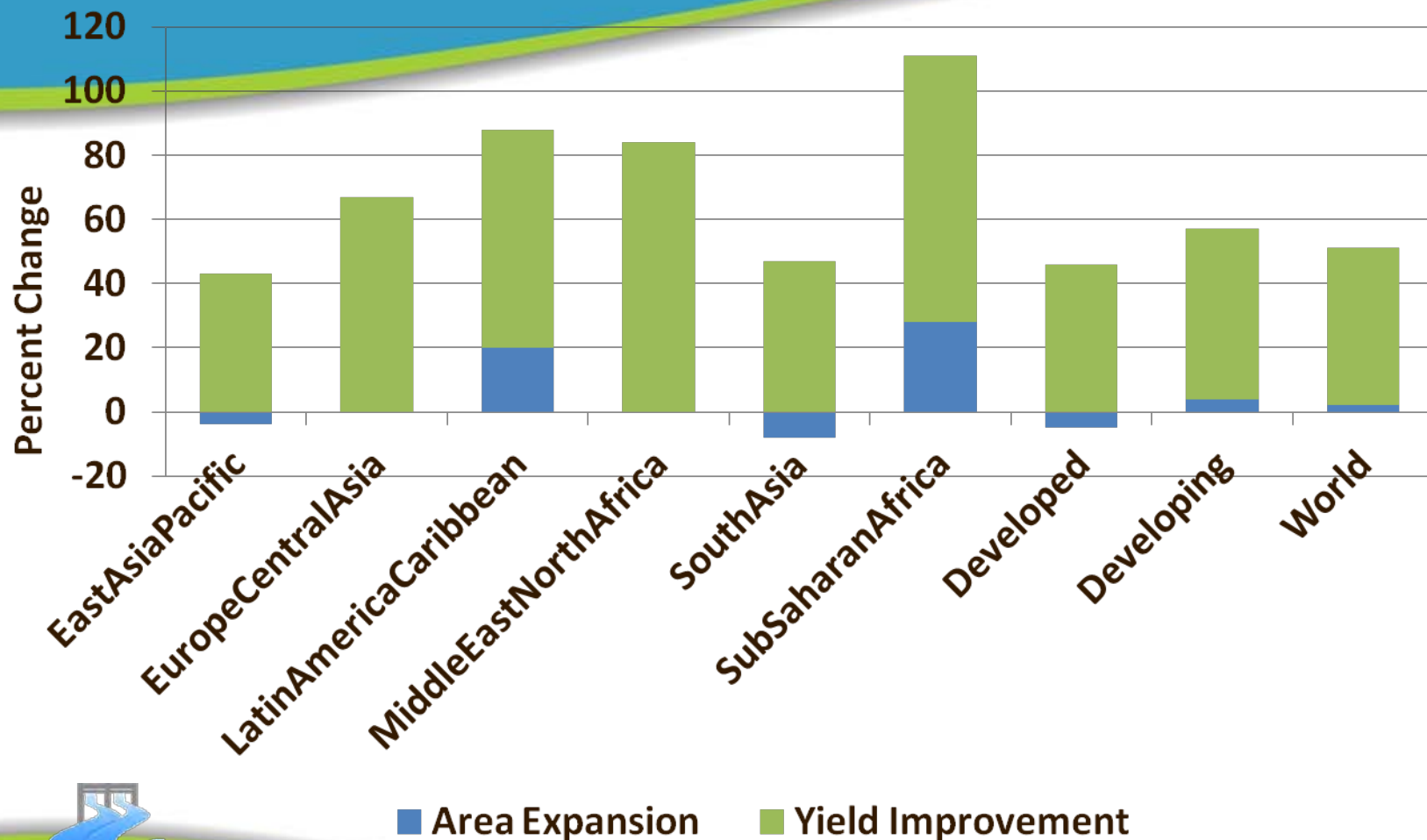
Asia Total Cereal Crop Area- Baseline Projections



Source: IFPRI IMPACT Model, September 2011 simulations

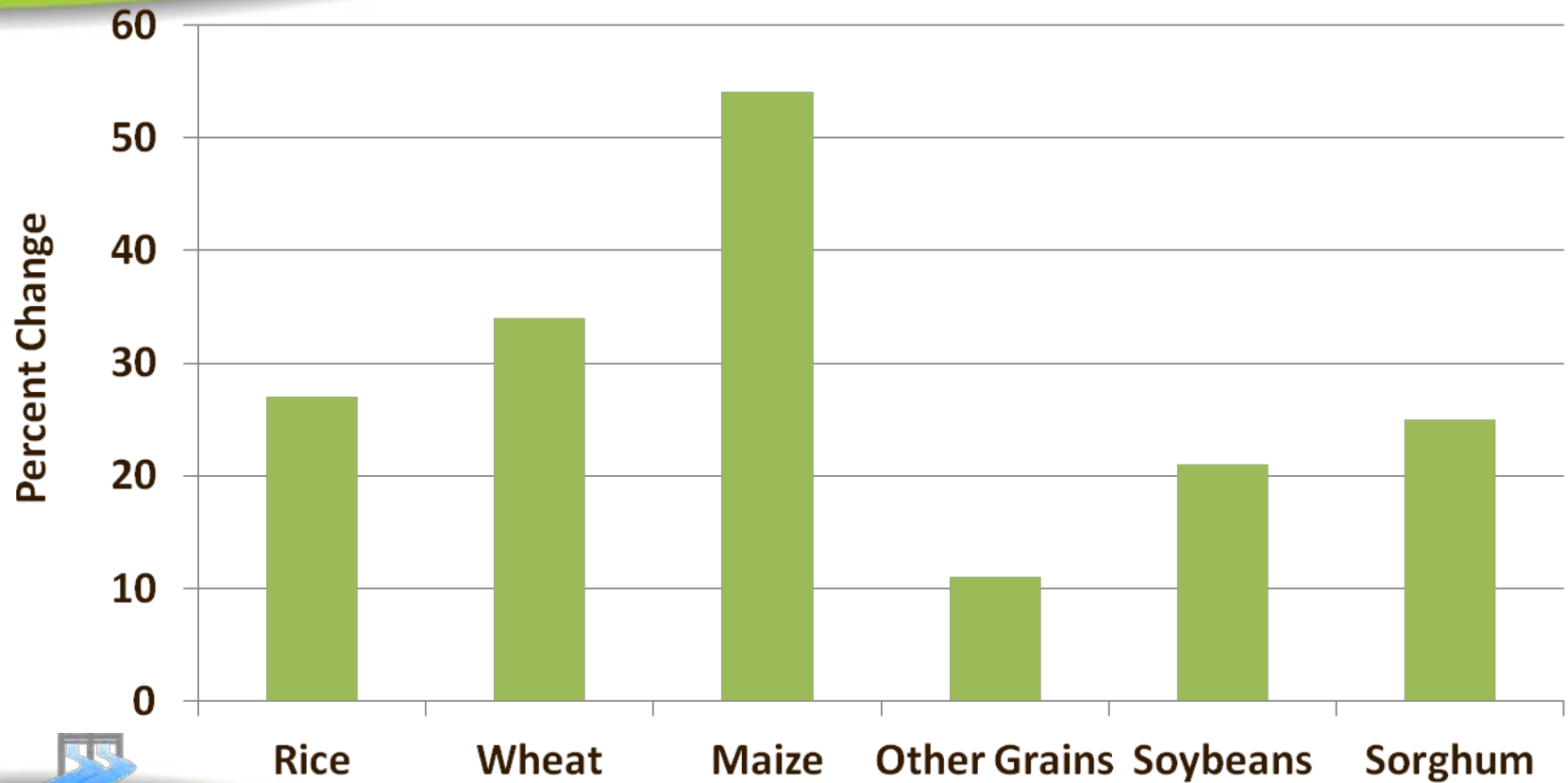


Source of Cereal Production Growth, 2010 - 2050



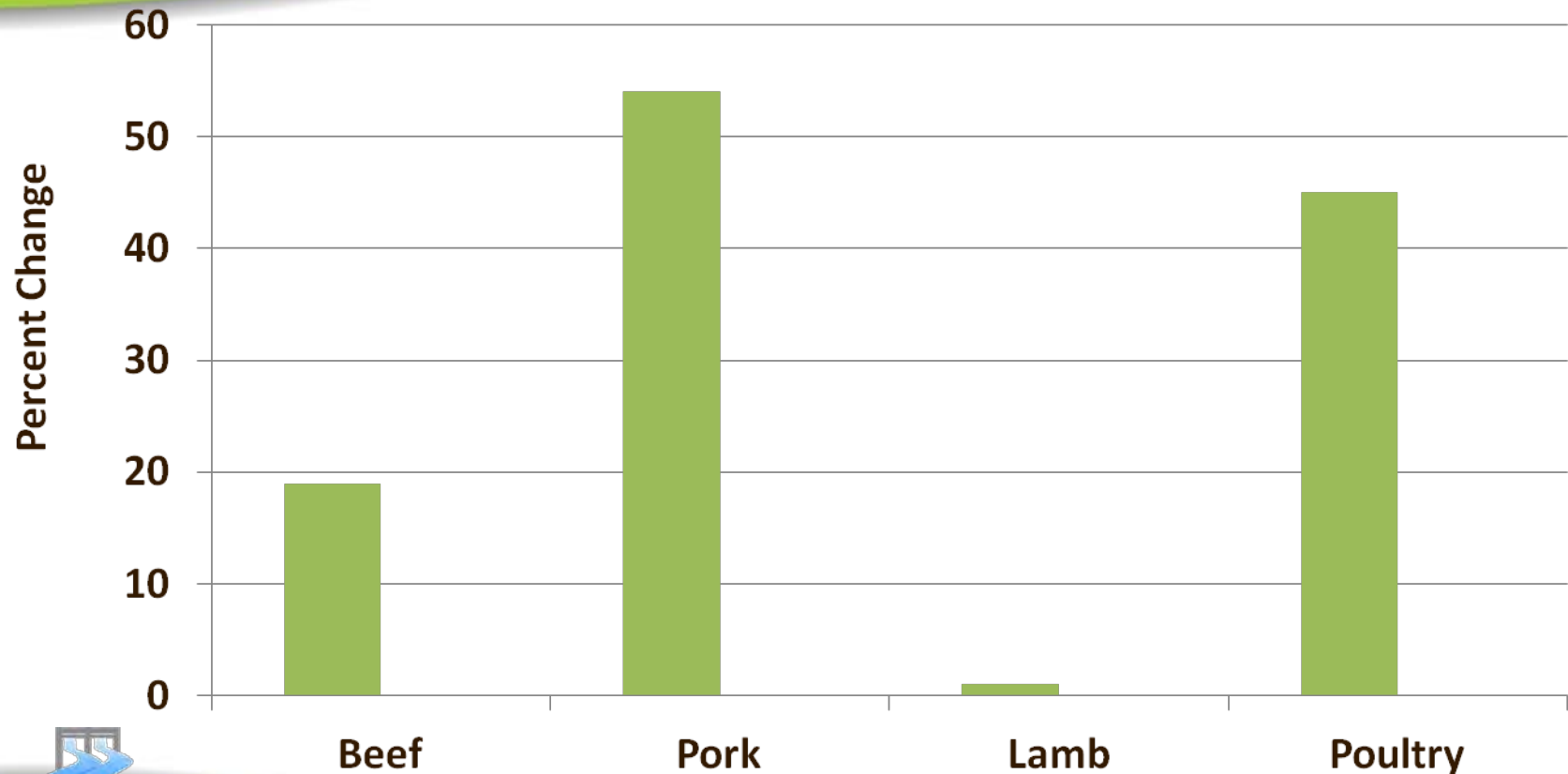
Source: IFPRI IMPACT Model, September 2011 simulations

Percent Change in World Prices of Cereals 2010-2050, baseline



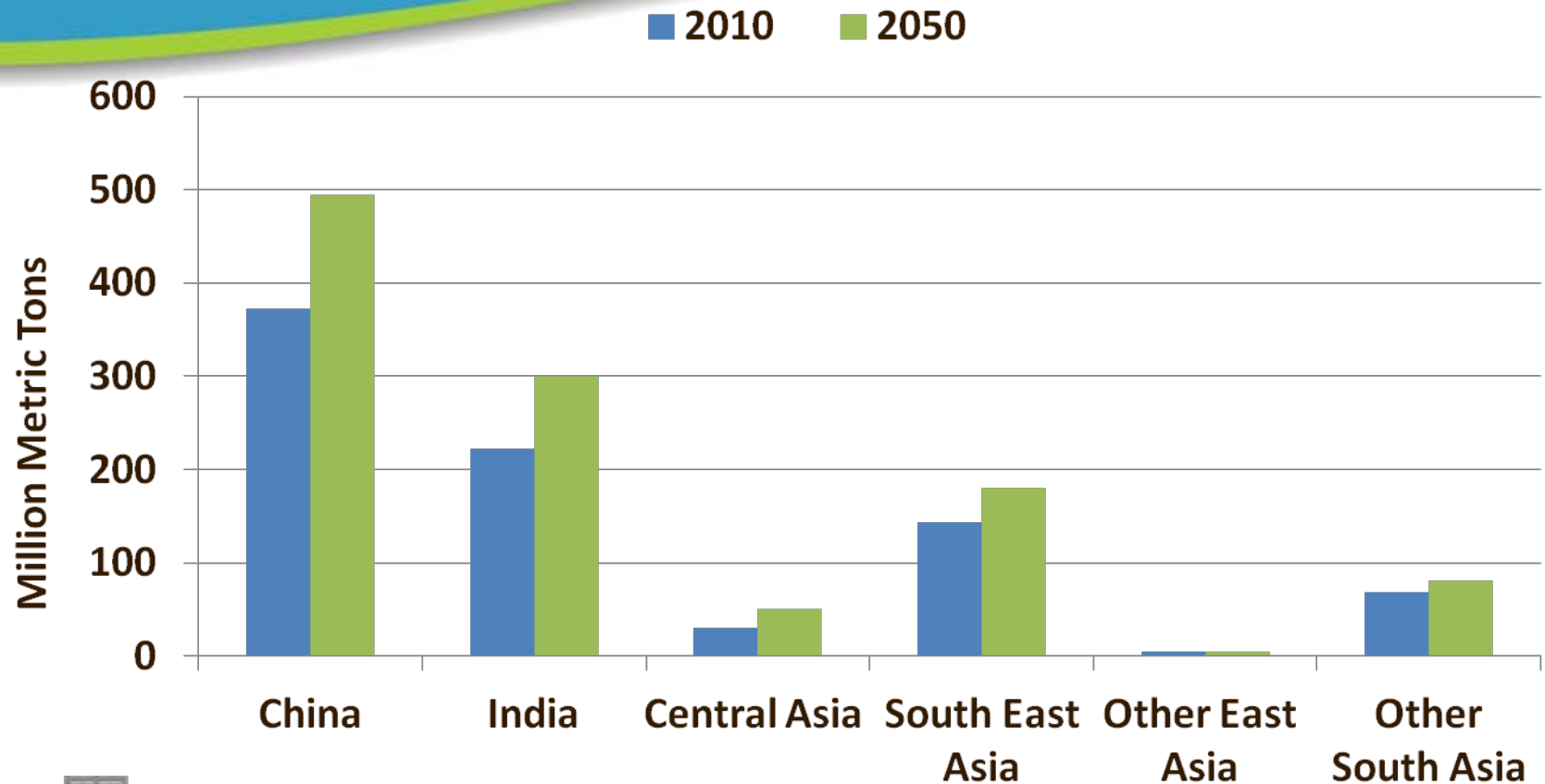
Source: IFPRI IMPACT Model, September 2011 simulations

Percent Change in World Prices of Meat between 2010 and 2050



Source: IFPRI IMPACT Model, September 2011 simulations

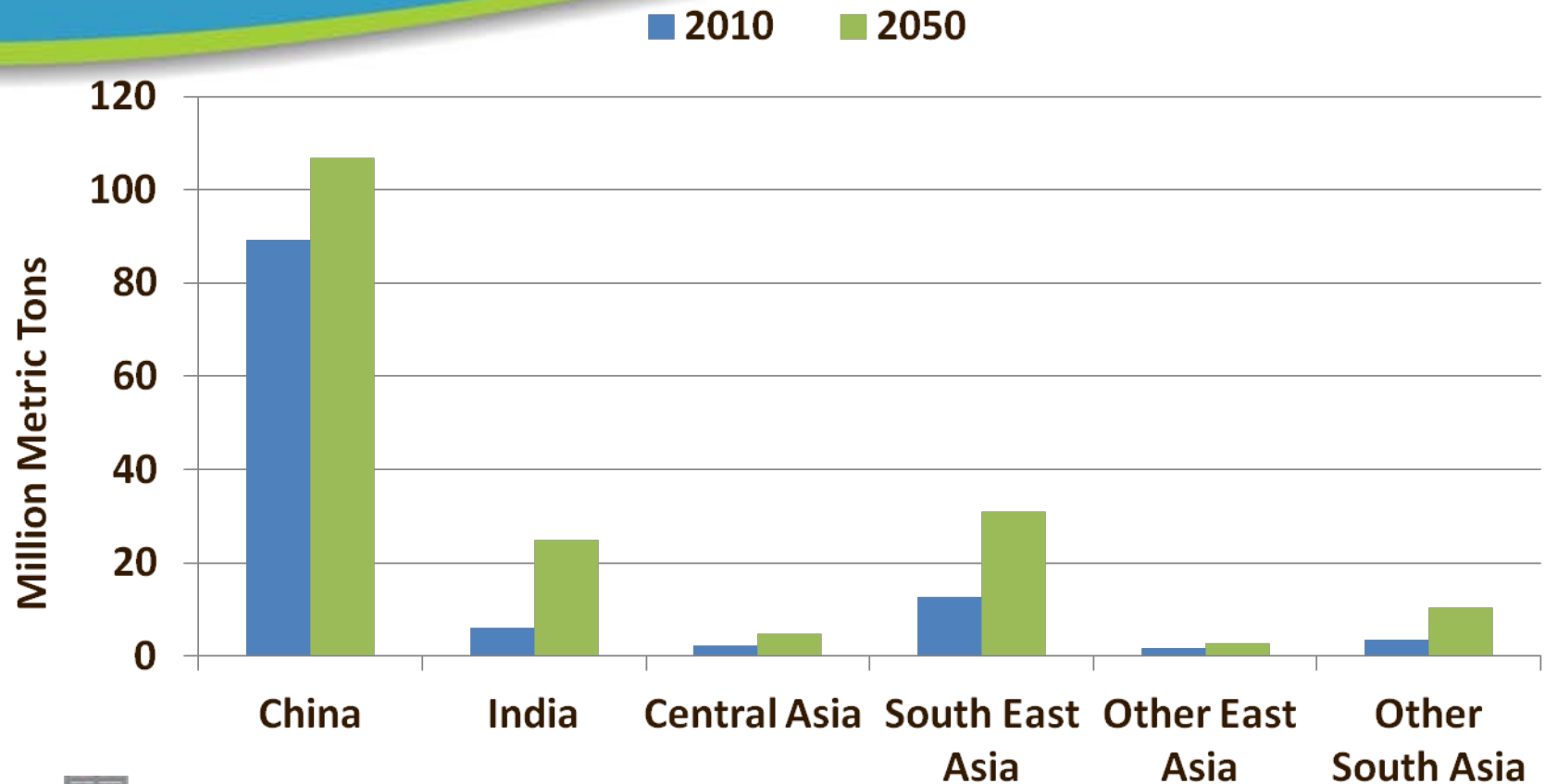
Asia Cereal Production- Baseline Projections



Source: IFPRI IMPACT Model, September 2011 simulations

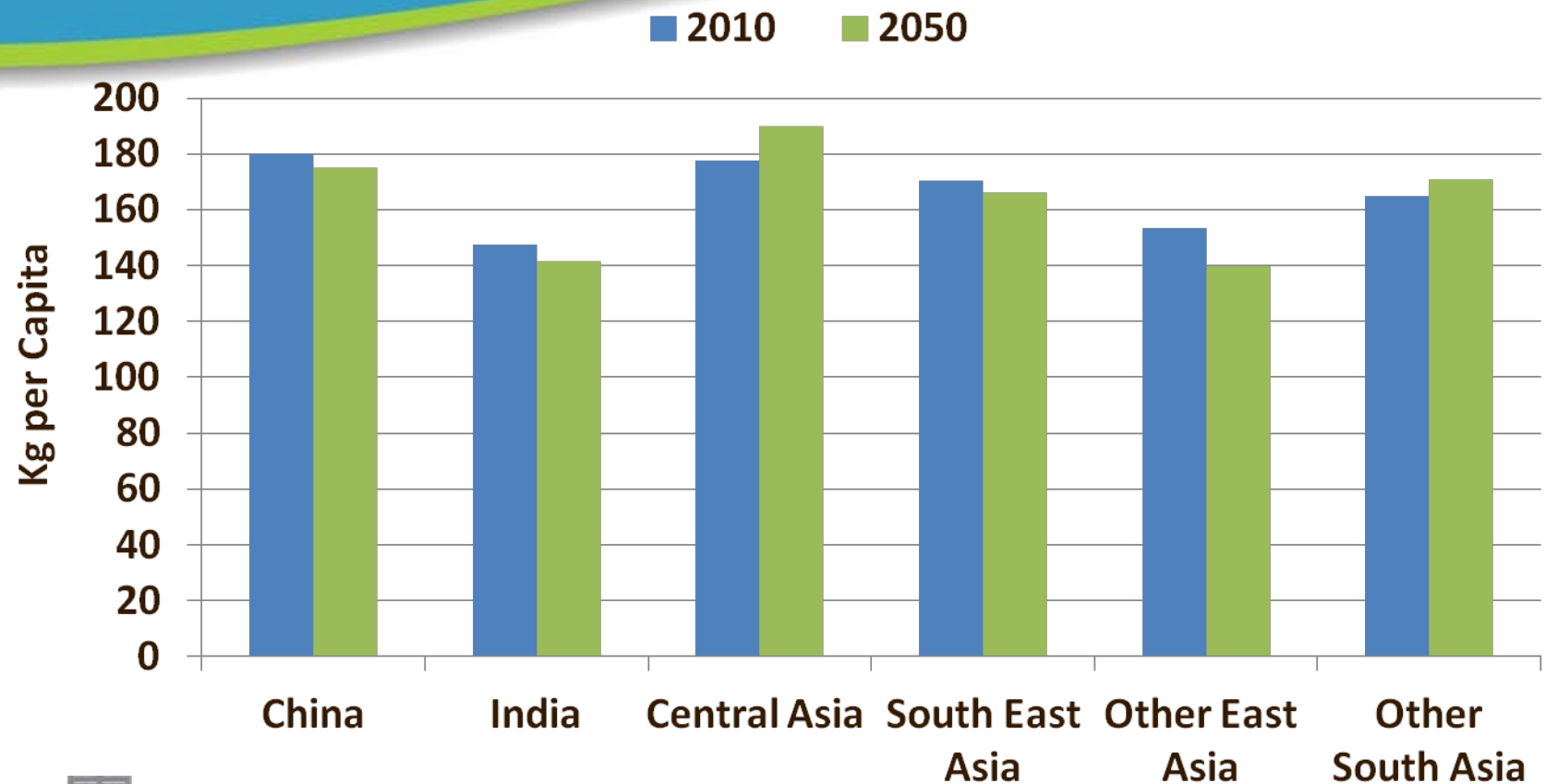


Asia Meat Production- Baseline Projections



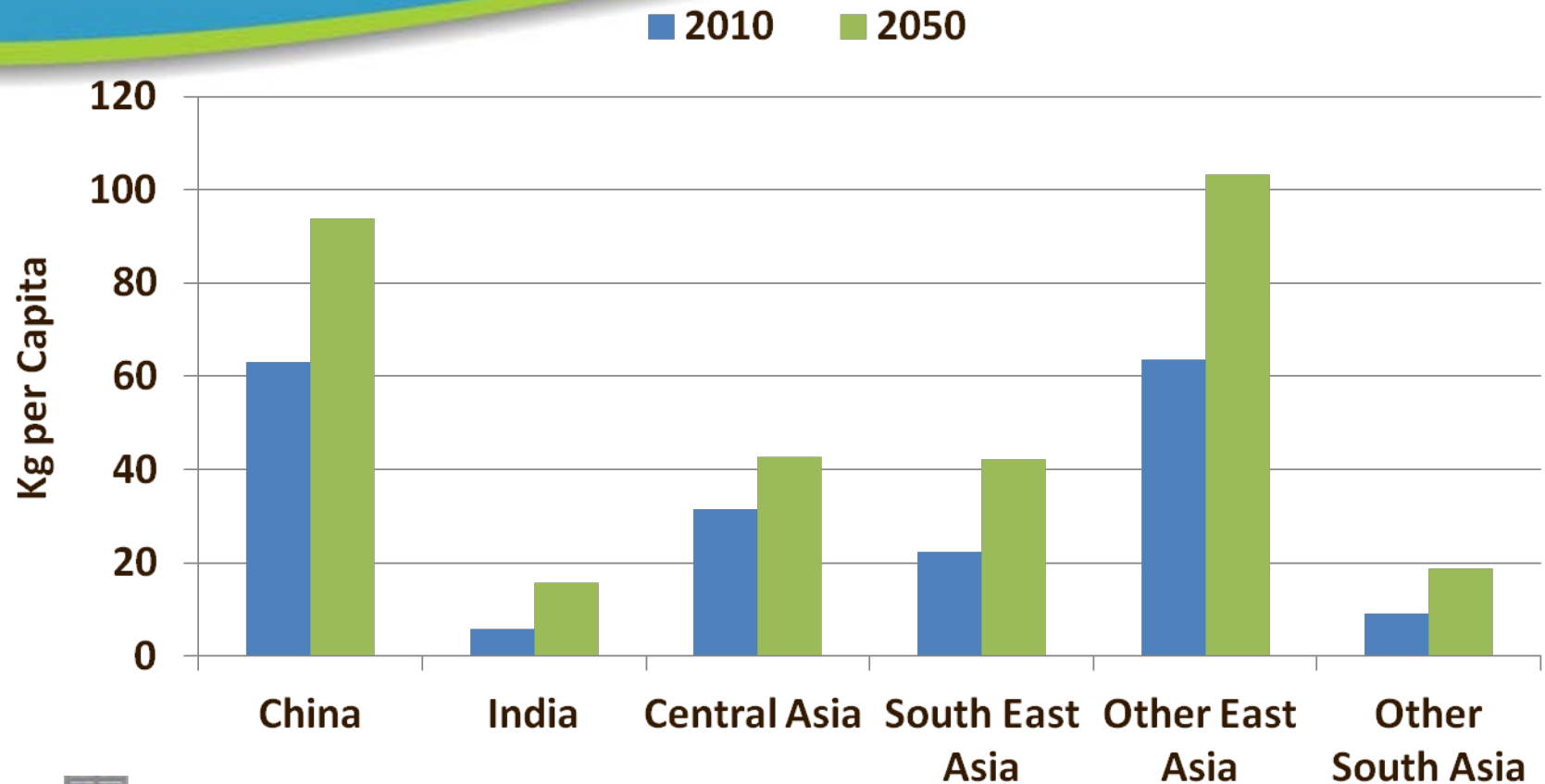
Source: IFPRI IMPACT Model, September 2011 simulations

Asia Per Capita Cereal Food Demand- Baseline Projections



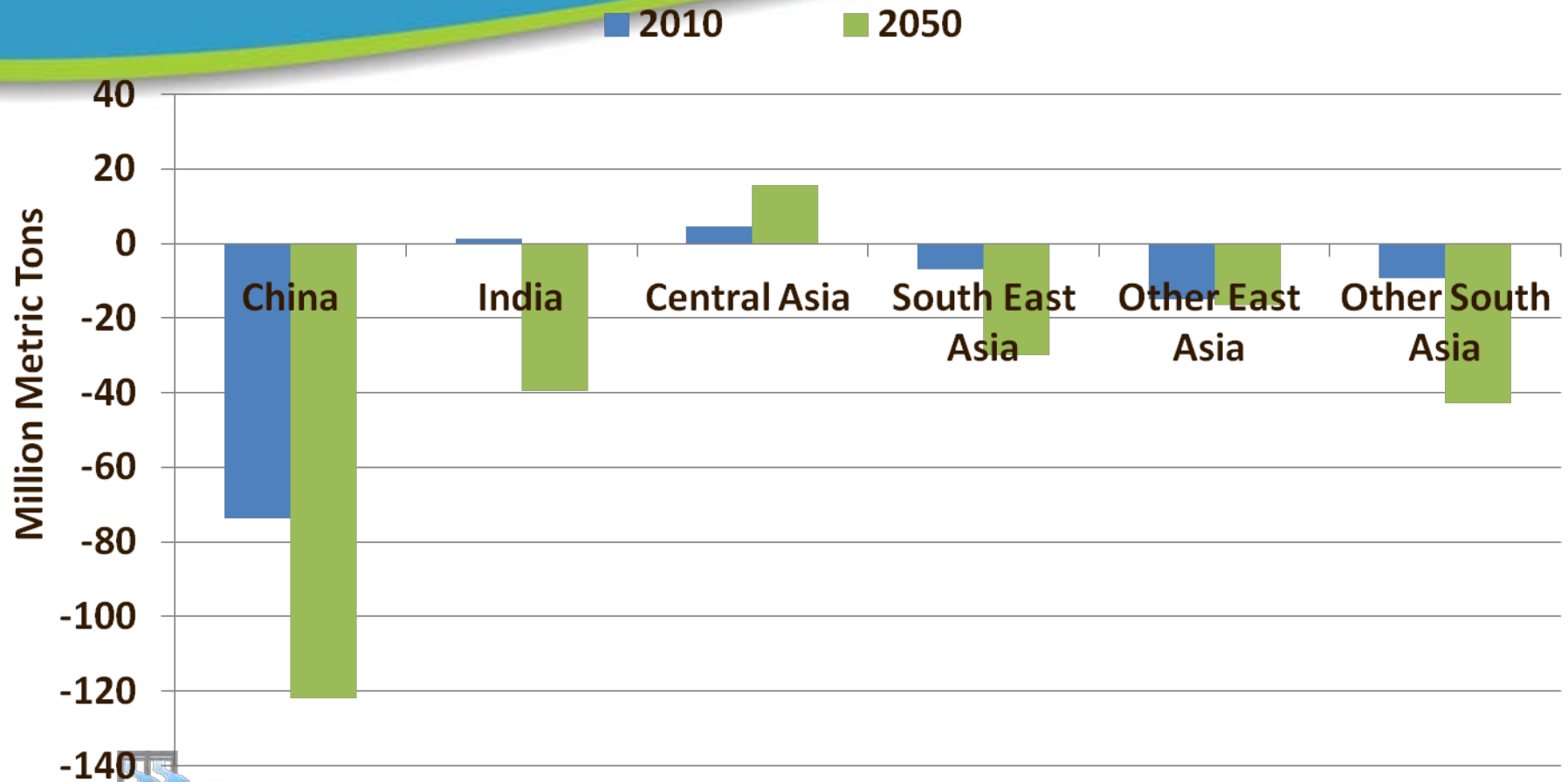
Source: IFPRI IMPACT Model, September 2011 simulations

Asia Per Capita Meat Demand- Baseline Projections



Source: IFPRI IMPACT Model, September 2011 simulations

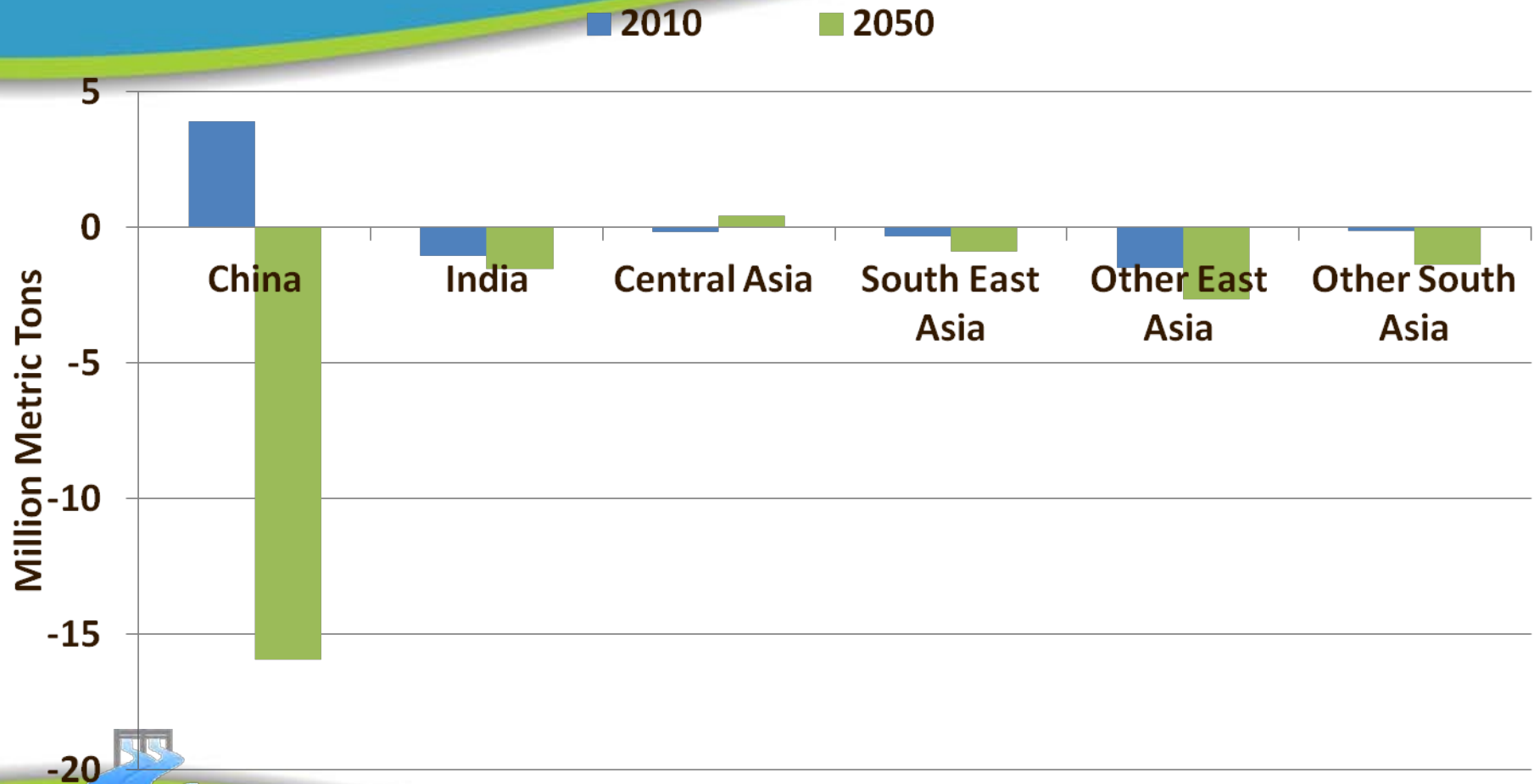
Asia Net Trade Cereals- Baseline Projections



Source: IFPRI IMPACT Model, September 2011 simulations



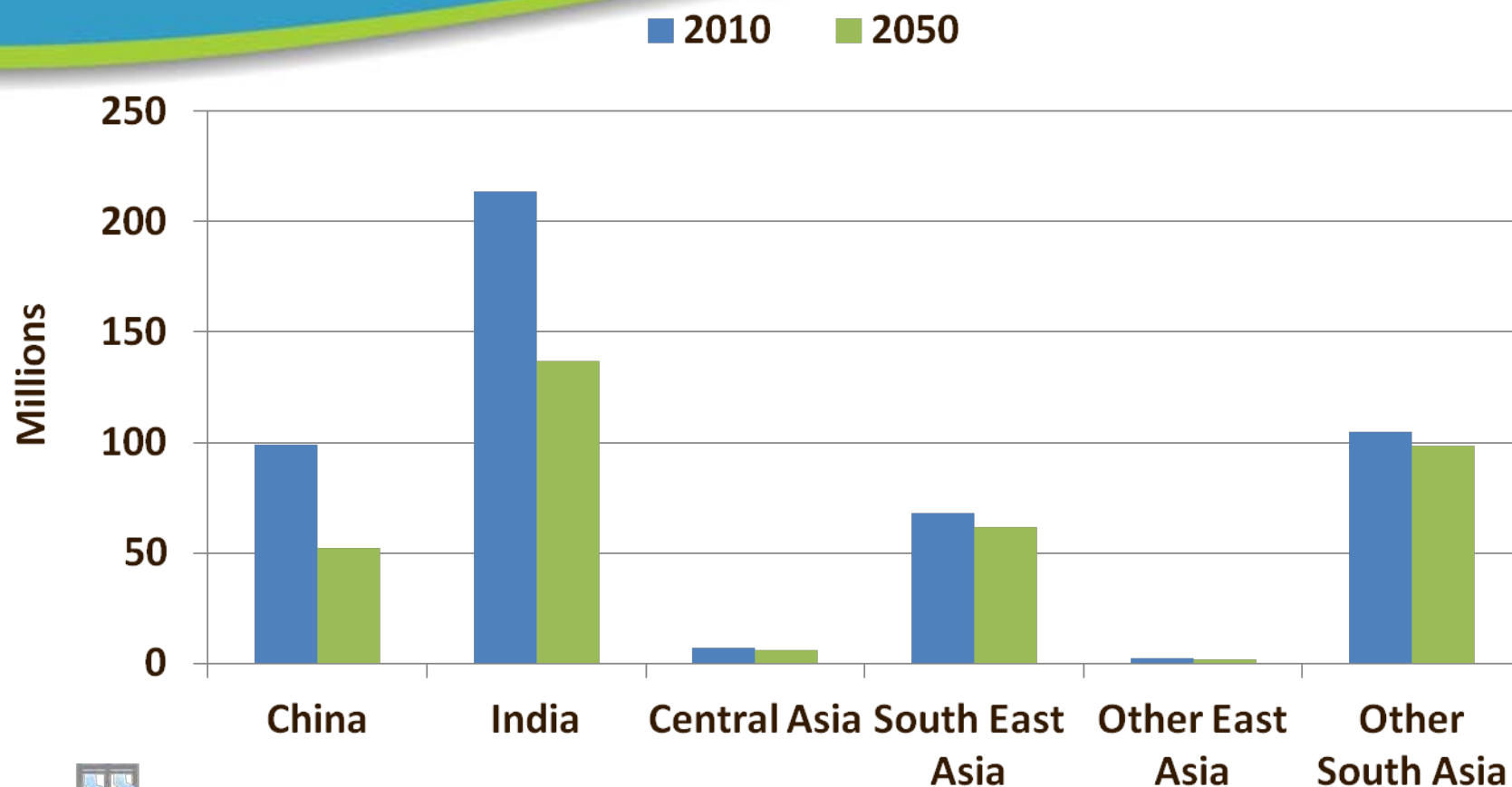
Asia Net Trade Meat- Baseline Projections



Source: IFPRI IMPACT Model, September 2011 simulations



Population at the Risk of Hunger - Asia



Source: IFPRI IMPACT Model, September 2011 simulations

Conclusions and Policy Implications





Agricultural Productivity

- Increasing crop productivity: agricultural research, on-farm management, and rural investment
 - Emphasis on crop and livestock breeding (including biotechnology) targeting abiotic and biotic stresses
 - Water harvesting, precision agriculture, minimum tillage, integrated soil fertility management, integrated pest management, reduce post harvest losses
 - Rural infrastructure investment to improve access to markets, information, credit, inputs, mobile phone towers

