Key Findings

"The World Food Situation: New Driving Forces and Required Actions"

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(additional sources included in report are noted below)

Food Demand and Production

- Many parts of the developing world have experienced rapid economic growth in recent years, increasing consumer buying power and changing food preferences from grains and other staple crops to high-value commodities, such as vegetables, fruits, meat, dairy, and fish.

- In South Asia, growth of 5.5 percent per year is projected to decrease the annual per capita consumption of rice by 4 percent between 2000 and 2025, while consumption of milk and vegetables is expected to jump by 70 percent, and by 100 percent for meat, eggs, and fish. (Kumar and Birthal, 2007. Changing composition pattern in South Asia. In *Agricultural diversification and smallholders in South Asi*a)

- Shifting rural–urban populations are also altering the global food scenario. Sixty-one percent of the world's population is expected to live in urban areas within the next three decades. (Cohen, B. 2006. Urbanization in developing countries: Current trends, future projections, and key challenges for sustainability. *Technology in Society)*. Yet, the majority of the world's poor will remain concentrated in rural areas. (Ravallion, Chen, and Sangraula, 2007. *New evidence on the urbanization of global poverty*)

- Rural consumers in China continue to be more dependent on grains than their urban counterparts. However, consumption of meat, fish, and fruits in rural parts of the country has been outpacing that of urban consumption during the past 16 years. (National Bureau of Statistics of China, 2007)

- Wheat, rice, and coarse grains, including maize and sorghum, are staple foods for the majority of the world's population. In 2006, global cereal stocks—especially wheat—were at their lowest levels since the early 1980s, and global cereal production of 2 billion tons was 2.4 percent less than in 2005, due primarily to reduced plantings and adverse weather. (Food and Agriculture Organization on the United Nations (FAO), 2007)

- Unlike cereals, the production of vegetables, fruits, meat, and milk is growing at a fast rate in developing countries. (FAO, 2007)

Climate Change

- As a result of global warming, the world's agricultural gross domestic product (GDP) is projected to decrease 16 percent by 2020, with output falling by 20 percent in developing countries and by 6 percent in industrialized nations. (Cline, W. R., 2007. *Global warming and agriculture: Impact estimates by country)*

- Climate change is estimated to reduce cereal production globally by less than one percent between 1990 and 2080, but regional impacts are likely to differ greatly. South Asia is expected to experience dramatic cereal production declines of up to 22 percent, while developed countries and Latin America are likely to see production gains. Wheat production in Africa may almost disappear due to the effects of climate change. (Tubiello, F. N., and G. Fischer. 2007. Reducing climate change impacts on agriculture: Global and regional effects of mitigation, 2000-2080. *Technological Forecasting and Social Change)*

- Technological innovations are not expected to sufficiently address production losses due to climate change. As a result, meeting global food demand will become increasingly difficult and contribute to higher food prices. Temperature increases of more than 3º Celsius are estimated to increase food prices by as much as 40 percent. (Easterling, W.E., et al. 2007. Food, fibre and forest products. In *Climate change 2007: Impacts, adaptation and vulnerability)*

- More people will become food insecure as a result of climate change in the coming decades, particularly in low-income countries. The number of undernourished people in Sub-Saharan Africa may triple between 1990 and 2080, due in part to the indirect effects of climate change. (Tubiello, F. N., and G. Fischer. 2007. Reducing climate change impacts on agriculture: Global and regional effects of mitigation, 2000-2080. *Technological Forecasting and Social Change)*

Bioenergy

- Since 2000, cereal use for food and feed increased by 4 and 7 percent, respectively, while the use of cereals for industrial purposes increased by more than 25 percent. In the U.S. alone, the use of maize for ethanol production increased by two and a half times between 2000 and 2006. (FAO; Earth Policy Institute 2007)

- IFPRI has modeled the possible price effects of biofuels for two potential scenarios up to the year 2020. In the first scenario, if the actual biofuel investment plans of many countries are implemented and if high-potential countries without plans expand their production of bioenergy, maize prices would increase by 26 percent and oilseed prices would rise by 18 percent. In the second scenario, if biofuel production is expanded to twice the level of scenario one, maize prices would increase by 72 percent and oilseeds by 44 percent.

- In both scenarios, higher crop prices would lead to decreases in food availability and calorie consumption in all regions of the world. Sub-Saharan Africa would suffer the most, with calorie availability projected to fall by more than 8 percent if biofuels expand drastically.

- For every one percent increase in food prices, food consumption expenditure in developing countries decreases three-quarters of a percent. (Regmi, A., et al. 2001. Cross-country analysis of food consumption patterns. In *Changing structure of global food consumption and trade)*

- Biofuel production is responsible for only part of the imbalances in the world food equation. Other forces, such as drought, diversion of food for fuel, and higher income growth, also play important roles.

Agricultural Trade

- According to an IFPRI model of supply and demand changes, cereal prices could increase by 10 to 20 percent by 2015. Higher cereal prices would have uneven impacts across countries and population groups. Net cereal exporters, such as India, would experience improved terms of trade, while net cereal importers would not.

- There are about four times more net cereal-importing countries in the world than net exporters. Even though China is the largest producer of cereals, it is a net importer of cereals due to strong domestic consumption. Almost all countries in Africa are net importers of cereals. (FAO, 2007)

- The majority of poor people, who live in households that are net buyers of food, will face daunting challenges to eating healthy, well-balanced diets because of higher food prices.

- A more open global trade in agriculture could benefit developing countries. IFPRI research shows that opening up and facilitating market access between industrialized and developing countries would bring significant economic gains, although poverty would not be significantly reduced except in certain contexts.