Food Policy Challenges and Opportunities 2011 and Beyond

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What Food Crisis?

1. International food price increase and volatility?
2. Starvation in the Horn of Eastern Africa?
3. Hunger, nutrient deficiencies and death among millions of children?
4. Overweight, obesity, chronic diseases and death among millions of children and adults?
5. The earth’s future productive capacity?
International Maize Prices


International Rice Prices

International Rice Prices versus Rice Prices in Delhi, India


International Maize Prices versus Maize Prices in Niger

Maize Weekly Price Minus 12-Month Moving Average

Rice Weekly Price Minus 12-Month Moving Average
Wheat Weekly Price Minus 12-Month Moving Average

Volatility in Weather Patterns

- Drought
- Flooding
- Irregular Rainfall Patterns
- Strong Winds
- Production Volatility
Production Volatility

Supply Responses → Speculation
Government Policy ← Government Policies
Market Information ← Energy Prices

Price Volatility

Policy Response to Food Price Increases

- Maintaining government legitimacy
  - Emphasis on Short-term measures
    - Price controls, export bans, lifting import tariffs, rationing, food distribution
  - Emphasis on short-term transfers to urban lower middle class
    - Continued neglect of the rural poor
- Expanding food production
  - Renewed interest in national self-sufficiency
    - Reserve stocks, acquisition or control of land across borders
The Effects of Export Restrictions on Rice Prices


Stock of Rice, Maize, and Wheat in Percent of Use in China, 2005-2011 (%)
India – Grain Stock
2005/06 – 2011

<table>
<thead>
<tr>
<th></th>
<th>Million Tons</th>
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<tbody>
<tr>
<td>2005/06</td>
<td>15</td>
</tr>
<tr>
<td>2007/08</td>
<td>25</td>
</tr>
<tr>
<td>2009/10</td>
<td>54</td>
</tr>
<tr>
<td>2011</td>
<td>65</td>
</tr>
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Approaches to Managing Food Price Volatility

<table>
<thead>
<tr>
<th>Prevent</th>
<th>Cope</th>
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<tbody>
<tr>
<td>Private</td>
<td>Storage Transportation</td>
</tr>
<tr>
<td></td>
<td>Insurance</td>
</tr>
<tr>
<td></td>
<td>Hedging &amp; Futures Markets</td>
</tr>
<tr>
<td>Public</td>
<td>Buffer Stocks</td>
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<tr>
<td></td>
<td>Import/Export Controls</td>
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<tr>
<td></td>
<td>Financial Market Regulation</td>
</tr>
<tr>
<td></td>
<td>Safety Nets</td>
</tr>
<tr>
<td></td>
<td>Transfers</td>
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What do we want from the food system?

- Food Security and good nutrition
- Efficient and Sustainable Resource Use
- Reasonable incomes for farmers
- Reasonable prices for consumers
- Meeting Non-food Demands
- Support of general economic growth

Food Policy Challenges

- Widespread and increasing hunger and malnutrition
The Triple Burden of Malnutrition

1. Energy and protein deficiencies: Hunger
2. Specific nutrient deficiencies: Hidden Hunger
3. Excessive net energy intake: Overweight & Obesity

Progress Towards Meeting the WFS Goal Globally

Source: FAO 2006
Progress Towards Meeting the MDG Globally

Food Policy Challenges
- Widespread and increasing hunger and malnutrition
- Population growth, diet transition and biofuel
Population Growth Rate

Source: UNICEF 2006

Fertility and Poverty, 2007

Source: PRB, 2007
**Annual Average Population Growth Rate, %**

- **World**: 2.5% (1950-2000), 1.5% (2000-2050), 0.5% (2050-2100)
- **More Developed Regions**: 1.5% (1950-2000), 1% (2000-2050), 0.5% (2050-2100)
- **Less Developed Regions**: 2% (1950-2000), 1.5% (2000-2050), 1% (2050-2100)

**Under-Five Mortality Rate (per thousand)**

- **World**: 250 (1950), 150 (2000), 100 (2050), 50 (2100)
- **More Developed Regions**: 150 (1950), 100 (2000), 50 (2050), 25 (2100)
- **Less Developed Regions**: 250 (1950), 150 (2000), 100 (2050), 50 (2100)
Change in the Contribution of Each Food Group to Energy Intake 1980-2005

Food Policy Challenges

- Widespread and increasing hunger and malnutrition
- Population growth, diet transition and biofuel
- Lack of government commitment, policy failure
Food Policy Challenges

- Widespread and increasing hunger and malnutrition
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- Increasing water scarcity and soil degradation

Food Policy Challenges

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- Climate change

Greenhouse Gas Emissions per Kilogram of Food Item

<table>
<thead>
<tr>
<th>Food Item (1 kg)</th>
<th>Emissions (kg CO₂e)</th>
<th>Driving distance equivalent (km)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Potato</td>
<td>0.24</td>
<td>1.2</td>
</tr>
<tr>
<td>Wheat</td>
<td>0.80</td>
<td>4.0</td>
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<tr>
<td>Chicken</td>
<td>4.60</td>
<td>22.7</td>
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<tr>
<td>Pork</td>
<td>6.40</td>
<td>31.6</td>
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<tr>
<td>Beef</td>
<td>16.00</td>
<td>79.1</td>
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Food Policy Challenges

- Widespread and increasing hunger and malnutrition
- Population growth, diet transition and biofuel
- Lack of government commitment, policy failure
- Increasing water scarcity and soil degradation
- Climate change
- Falling productivity growth rates, large losses

- Poor rural infrastructure
Food Policy Challenges

- Widespread and increasing hunger and malnutrition
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- Falling productivity growth rates, large losses
- Poor rural infrastructure
- Poorly functioning markets

Projected Growth in African Food Systems, 2010-2050

<table>
<thead>
<tr>
<th>Category</th>
<th>Growth Multiple: 2050 value/2010 value</th>
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<tbody>
<tr>
<td>Consumption</td>
<td></td>
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<tr>
<td>Distribution</td>
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<tr>
<td>Packaging</td>
<td></td>
</tr>
<tr>
<td>Processing</td>
<td></td>
</tr>
<tr>
<td>Marketing</td>
<td></td>
</tr>
<tr>
<td>Farming</td>
<td>3X</td>
</tr>
<tr>
<td>Inputs</td>
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**Food Policy Challenges**

- Widespread and increasing hunger and malnutrition
- Population growth, diet transition and biofuel
- Lack of government commitment, policy failure
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- Climate change
- Falling productivity growth rates, large losses
- Poor rural infrastructure
- Poorly functioning markets
- **Food price volatility**

**Food Policy Opportunities**

- Attention of policy-makers to food crisis
- Application of modern science
- Expanding investment in public goods
- Internalizing environmental costs into private costs
- Improving policies and institutions
Suggested Priority 1

- Large-scale investments in rural infrastructure, domestic markets and Human Resources
  - Feeder roads
  - Appropriate institutions
    - Farmer associations
    - Public sector institutions (contract enforcement, weights and measures, etc.)
  - Market information
  - Water management infrastructure
  - Primary education, health care and improved sanitation

Suggested Priority 2

- A doubling of public investment in agricultural research and technology
  - Improved water management to enhance use efficiency
  - Increased sustainable land and labor productivity and reduced production risks
    - Biotic and abiotic stresses: drought tolerance, resistance to insects and diseases
    - Sustainable production methods, biodiversity protection
  - Mitigation of impact of climate change and adaptation to changes that will occur
**Suggested Priority 3**

- Enhanced policy incentives for the private sector to invest in sustainable agriculture
  - Savings and credit institutions for farmers
  - Risk management tools for farmers and traders (for market and production risks)
  - Public goods investments
  - Strengthen the purchasing power of small-holders
  - Establish competitive funds for technology development
  - Assure incentives for private sector innovation

**Suggested Priority 4**

- Remove international trade distortions (both import and export restrictions)
- Regulation of Land Grabbing
- Clarity on water and land tenure
- Full Costing
- Pursue multiple-win solutions
Environmental Kuznets Curve

Hypothetical Relationships Between Income and Deforestation/Soil Mining
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Concluding Questions

- Can future generations be well fed?
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- Is environmental degradation necessary to meet future food needs?
- Is the food price increase since 2005 the beginning of a long-term trend of increasing food prices?
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- Can future generations be well fed?
- Is environmental degradation necessary to meet future food needs?
- Is the food price increase since 2005 the beginning of a long-term trend of increasing food prices?
- Will biomass be an important source of energy?
- Will everybody get access to the food they need?