Adapting Food Security Portal to Better Support Africa: Policy Options for Action

Maximo Torero
m.torero@cigar.org
World Bank

“Food and Nutrition Security Convention: Learning Across Borders”

Monday 11th and Tuesday 12th September 2017, Livingstone, Zambia
On the Short term
Introduction: Real Price Evolution in US$ 2015

- Soybeans (US$/mt)
- Maize (US$/mt)
Introduction: Periods of Excessive Food Price Volatility

Introduction: A continuous trend towards internationalization of food markets

Share of produced calories crossing an international border:
- 1975: 12.3%
- 1985: 13.9%
- 1995: 16.1%
- 2005: 18.2%
- 2015: 19.1%
Introduction: Important problems at country level

There is high probability of 4 famines instead of 1 occurring every 10 years:

- **South Sudan:** Conflict and restricted humanitarian access make Famine a possibility (01/18/2017)
- **Somalia:** Severe drought, rising prices, continued access limitations, and dry forecasts suggest Famine is possible (01/16/2017)
- **Yemen:** Famine possible if food imports drop and conflict further restricts markets and humanitarian access (01/04/2016)
- **Nigeria:** Famine likely occurred in Bama LGA and may be ongoing in inaccessible areas of Borno State (12/13/2016)
On the Medium and Long Term
Introduction: Climate Variability and Risk

- Moderate consensus that temperate regions will have increased variability in temperature and rainfall.
- No consensus on tropical regions (IPCC AR4).
- But increased mean temperature increases risk.

Source: Torero, (2016). SCENARIOS ON CLIMATE CHANGE IMPACTS FOR DEVELOPING APEC ECONOMIES.
Introduction: On Agriculture: Climate Change Price Impacts - Scenario Results

Impacts of climate change on global yields, area, production and prices of the 5-crop aggregate relative to baseline values in 2050 for each Shared Socioeconomic Pathway (SSP) and Representative Concentration Pathway (RCP) compared across five models.

Note: ENV = ENVISAGE, FAR = FARM, IMP = IMPACT, MGN = MAGNET, MGP = MAgPIE.
Source: Work in progress by IFPRI, LEI-WUR, PIK, Purdue, USDA-ERS, IDS

Source: Torero, (2016). SCENARIOS ON CLIMATE CHANGE IMPACTS FOR DEVELOPING APEC ECONOMIES
Introduction: Over the next decades the World will suffer enormous pressures

- World economy is expected to grow 2-3x by 2050
- BAU will imply needs for:
  - 40% more food
  - 55% more water
  - At least 2x increase in infrastructure [Currently $1.5tn is invested annually by developing countries in infrastructure]
  - 80% increase in electricity production
  - 1bn additional cars on the road

- Cost of solar power fell by 80% in the last 6 years; wind power by 50%
- Installed capacity of solar energy grew 40 times and that of wind 6 times in the last 10 years
- Cost of smartphones has decreased 5% per year (2008-2013)
- Concerns of inequitable access to technology, privacy and security
- Loss of jobs due to automation could reach 50% in some countries/sectors

- 50% degradation in agricultural land by 2050
- 72% Urban Global Population in 2050 (50% now)
- Well over 60% of the global poor expected to live in fragile states by 2030
Introduction: Our natural resources are in peril

**Water**
- By 2035 half the world will face water shortages with rising demand from population growth, greater consumption and agricultural production outstripping water supplies.

**Climate**
- Melting ice in the Arctic and Antarctica will accelerate sea level rise, threatening coastal cities, low lying areas, causing saline infusion into aquifers.

**Fisheries**
- 90% of fisheries are either fully-fished, over-fished, or depleted.

**Environment**
- 87% of urban dwellers are exposed to air pollution that exceeds WHO limits.
- Air pollution is the fourth leading risk factor for deaths worldwide.

**Land**
- More than 30% of the world’s soil is currently degraded.
- By 2050, arable land per person will only be 25% of level in 1960.
- Soil degradation, the loss of soil productivity due to human induced changes, is occurring at rates as much as 40 times faster than new soil formation.

**Oceans**
- Many marine ecosystems, particularly coral reefs, will face critical risks from warming and acidifying oceans.
- Plastic trash is found in 90% of sea birds.

**Forests**
- 30% of forests cleared, 20% degraded.
- 13-20m ha/yr are lost per year affecting water, climate, livelihoods.

**4 of 9 planetary boundaries have already been crossed**
What we have been doing?
Introduction: Different problems but same policies
Introduction: Effects on world prices of trade policy reactions for selected countries

“Natural” Shock

- Exogenous demand increase [initial perturbation]
- Effects of increases in export taxes to mitigate the shock on domestic prices
- Effects of decrease in import duties to mitigate the shock on domestic prices
- Interaction effects between import and export restrictions

Source: Bouet and Laborde, 2009. MIRAGE simulations
Four Key Messages to be taken by the Food Security Portal
Message 1: Physical reserves as buffer stocks

- Determination of optimum stock, which is politically loaded,
  - Predicting supply and demand and where the potential shortfalls in the market may be can be extremely difficult
  - Reserves are dependent on transparent and accountable governance

- Level of costs / losses
  - Reserves cost money and stocks must be rotated regularly
  - The countries that most need reserves are generally those least able to afford the costs and oversight necessary for maintaining them
  - The private sector is better financed, better informed, and politically powerful, putting them in a much better position to compete

- Uncertainties that strategic reserves can bring about in the market place.
  - Reserves distort markets and mismanagement and corruption can exacerbate hunger rather than resolving problems
Message 1: Physical reserves as buffer stocks

Regional reserves as an alternative emergency mechanism and not as a mechanism to stabilize prices (ex. ASEAN, ECOWAS)

Benefits:
– Better mechanism to cope with risk at the regional level
– Has a strong potential to reduce costs compared to national approaches

Risks
• Still requires important cooperation and avoid capture of bigger countries in the region
• Requires clear trigger definition
• Requires clear rules of pricing and delivery
• Requires clear strategy for replenishment
Message 2: Trade Facilitation

• Pro-trade policies:
  • Improve Availability of food products (quantity). Trade allows to rely on world supply (large and stable);
  • At a low price;
  • Of improved quality.

• But trade openness generates winners and losers. It can increase inequalities!
  • Role for redistributive policies and safety nets
  • And some conflicting issues. FDI in land vs “land grabbing
Import tariffs on food products: a heavy burden for the poor

<table>
<thead>
<tr>
<th>Country</th>
<th>Average Tariff on Calories</th>
<th>Average Tariff on Proteins</th>
</tr>
</thead>
<tbody>
<tr>
<td>Bermuda</td>
<td>70.00%</td>
<td>10.00%</td>
</tr>
<tr>
<td>Central African Rep.</td>
<td>60.00%</td>
<td>20.00%</td>
</tr>
<tr>
<td>Chad</td>
<td>50.00%</td>
<td>30.00%</td>
</tr>
<tr>
<td>Congo</td>
<td>40.00%</td>
<td>40.00%</td>
</tr>
<tr>
<td>Cyprus</td>
<td>30.00%</td>
<td>50.00%</td>
</tr>
<tr>
<td>Equatorial Guinea</td>
<td>20.00%</td>
<td>60.00%</td>
</tr>
<tr>
<td>Iceland</td>
<td>10.00%</td>
<td>70.00%</td>
</tr>
<tr>
<td>India</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Ireland</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Israel</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Japan</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Kenya</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Malta</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Morocco</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Nigeria</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Norway</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Pakistan</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Portugal</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Rep. of Korea</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Romania</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Saint Kitts and Nevis</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Serbia and Montenegro</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Seychelles</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Solomon Isds</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Switzerland</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Thailand</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Tunisia</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Turkmenistan</td>
<td></td>
<td></td>
</tr>
<tr>
<td>United Kingdom</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Source: Deason and Laborde (2010)
Message 3: Information transparency
Regulation of Future exchanges

Should we reform commodity exchanges by:

- limiting the volume of speculation relative to hedging through regulation;
- making delivery on contracts or portions of contracts compulsory; and/or
- imposing additional capital deposit requirements on futures transactions.

**Answer**: Requires several conditions to be effective

Problem 1: not binding regulation - we have seen triggers were not activated and also not clear incentives. On option is to use the excessive volatility measure as a trigger.

Problem 2: Inter-linkages between exchanges requires significant coordination across exchanges to harmonize regulation
Message 3: Information Transparency
Empowering AMIS

- Better information of reserves for key staples.
- The Agricultural Market Information System (AMIS) still has important room for improvement
- Early warning system of prices and excessive volatility
- Modeling and better forecasting prices and volatility
- Understanding price transmission to consumers and producers
Message 4: Increase resilience to risk: risk coping instruments

Forecasts
- Keep improving forecasts
- Analytical data like the one for el Niño (weather, crop, soil)
- Market intelligence

Insurance
- Substantial amounts of uninsured risk in rural areas specially small farmers
- How can we create insurance products that:
  (i) Smallholder farmers want
  (ii) Protect farmers in bad years and that allowing them to increase agricultural investment
Thanks!