Building a resilient global food system

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The world is facing a barrage of shocks that affect the global food system

Building a resilient global food system is critical

A systems approach can ensure nutritious food for all at all times, without damaging the planet

Effective global agric. and food governance is needed
The world is facing a barrage of shocks

- Conflict
- Food Safety
- Natural Disasters
- Climate Change
- Food Price Volatility
- Drought
- Cyclones
- Floods
- Pandemics
- Earthquakes

More frequent
More intense
Evolving and unexpected
Barrage of shocks
The refugee crisis

The numbers

- 12.2 million in need of humanitarian assistance in Syria
- 9.9 million food insecure Syrians
- 7.6 million Syrian IDPs (internally displaced persons)
- 4+ million Syrian refugees in neighboring countries
- 40,000 tons of food needed each month to feed IDPs
- 40 million USD needed each week to assist Syrian IDPs

Food security issues

- Deteriorating WASH (water and sanitations) conditions
- Increased disease outbreaks
- Increased hunger and malnutrition

Source: WFP 2014; USAID 2015; UNHCR 2015
Barrage of shocks
Persistent conflicts

Nigeria: Food price hikes and intensity of civil conflict, 2000-2013

- % of hunger and undernutrition increasingly concentrated in conflict-affected countries
- Food insecurity and lack of nutrition are cause and consequence of conflict
- Climate change, epidemics, and food price spikes increase risk of civil conflict

Source: Breisinger, Ecker and Trinh Tran 2015
Barrage of shocks
Increasing challenge from climate change

Impact of climate change on mean crop yield

Needed: **14%** in crop yield per decade

Happening: **20%** in global cereal yields by 2050

Source: WRI 2013, IPCC 2014, World Bank 2013
Climate change affects water and land availability

Water stress

% change in water availability
1990-2050
Based on IPCC Climate Change scenario A1

Land degradation

- Climatic stresses account for 63% of land degradation in Africa
- 12 million hectares of productive land become barren every year
  - Due to desertification and drought
  - Lost opportunity to produce 20 million tons of grain

Source: UN 2014

Source: UNCCD 2014
Barrage of shocks
Rising agriculture-related risks to health

Human health increasingly affected by intense food production
Affects smallholders’ ability to undertake more productive and innovative activities

Food safety risks
• Unregulated food production
• Increasing proximity of industrial and agricultural activities
  • E.g. milk and rice contamination

Animal-borne diseases
• E.g. Avian and swine flu, Ebola

Picture source: Flickr/EC/ECHO
Source: ILRI 2012
Hunger and malnutrition persist in the midst of increasing shocks

Prevalence of undernourishment (%)

Source: FAO 2015

Prevalence of overweight and obese children under-5, 1990-2020 (%)

Source: de Onis, et al. 2010
Note: Asia excludes Japan; Developed Countries includes Japan

Hidden Hunger Index (micronutrient deficiencies)

Source: Muthayya et al. 2014
Hunger and malnutrition are costly. Investments in reduction have high returns.

- **Malnutrition**
  - 5% loss of global GDP or US$3.5 trillion per year

- **Undernutrition and micronutrient deficiencies**
  - 2-3% loss of global GDP or US$1.4–2.1 trillion per year

- **Obesity**
  - US$2 trillion in 2012

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**Economic returns to US$ 1 invested in reducing stunting**

- Indonesia
- Vietnam
- India
- Pakistan
- Nigeria
- Sudan
- Kenya
- Bangladesh
- Uganda
- Yemen
- Nepal
- Ethiopia
- Madagascar
- DRC

Source: FAO 2013; McKinsey Report 2014

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Source: Hoddinott et al. 2013
Building a resilient global food system is critical
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- Build functioning and effective institutions
- Invest in ag. R&D to produce more with less
- Empower women and smallholders
- Promote climate-smart agriculture
- Prevent ag-related health hazards, improve food safety
- Support open, transparent, fair trade
- Leverage public-private partnerships

Resilient global food systems

Shenggen Fan, September 2015
Outcomes

- Identified key emerging shocks to food security & nutrition
- Drew lessons from past experiences in building resilience
- Recognized key approaches & tools to build resilience
- Set priorities for action
- Identified knowledge & action gaps

Snapshot

- Over 800 attendees
- Over 140 speakers
- 24 plenary and parallel sessions
- 19 briefs; 9 papers
“Helping people, communities, countries, and global institutions prevent, anticipate, prepare for, cope with, and recover from shocks and not only bounce back to where they were before the shocks occurred, but become even better-off”

**IFPRI 2020 Consultation definition**

- Bridging the gap between **short-term relief** and **long-term development goals**
- Systems way of thinking—healthy, sustainable global food system that can provide **nutritious foods for all at all times** without damaging the planet
- Integration of **multi-disciplinary studies** to reach high equilibrium AND **benefit vulnerable communities**
Lessons learned

Invest efficiently, target weakest nodes

- Research community lags behind NGOs re knowledge and application of resilience strategies that already exist

- To scale up successes, **social capital** has a key role to play

Exclusion increases vulnerability and reduces resilience

- Optimize resources and efforts

- Efforts to enhance resilience should not crowd out strategies that already work well

- Social protection critical for vulnerable and excluded groups

Source: von Braun and Thorat 2014
Lessons learned
Building resilience to conflict

- Short run: Humanitarian aid BUT must pave way for development efforts
- Long run: Investments that transition toward development, e.g. improve infrastructure; foster trade with refugees’ countries of origin

Source: Breisinger et al. 2014
Source: Mabiso et al. 2014
Lessons learned

Strengthen capacity

LOW capacity: individual, organizational, and system
- Monitoring food-security indicators
- Recognizing food emergencies and food-security risks
- Evidence-based policymaking and investment planning
- Decentralized mobilization of communities for food-security action

HIGH capacity: individual, organizational, and system
- Monitoring food-security indicators
- Recognizing food emergencies and food-security risks
- Policy analysis and program evaluation
- Decentralized mobilization of communities for food-security action

LOW RESILIENCE
FOOD INSECURITY

HIGH RESILIENCE
FOOD SECURITY

Source: Babu and Blom 2014
Lessons learned

Measure resilience

- Improved understanding of risks
- Standardized but context-specific indicators
- High frequency measurement in hot spots
- Modern technologies for data collection
- Better use of existing data
- Surveys that capture multidimensional complexity of shocks


Demand for stronger measurement and coordinated research needed
A resilient global food system is key to achieve multiple SDGs

Sustainable Development Goals (SDGs)

Many goals require a resilient global food system
Compact2025
Supporting knowledge and innovation

- Global and national champions
- Knowledge and innovation hub
- Evidence-based, country-led approach
- Established networks and new players

Launch on November 18, 2015