Building a resilient global food system

Shenggen Fan
Director General | International Food Policy Research Institute

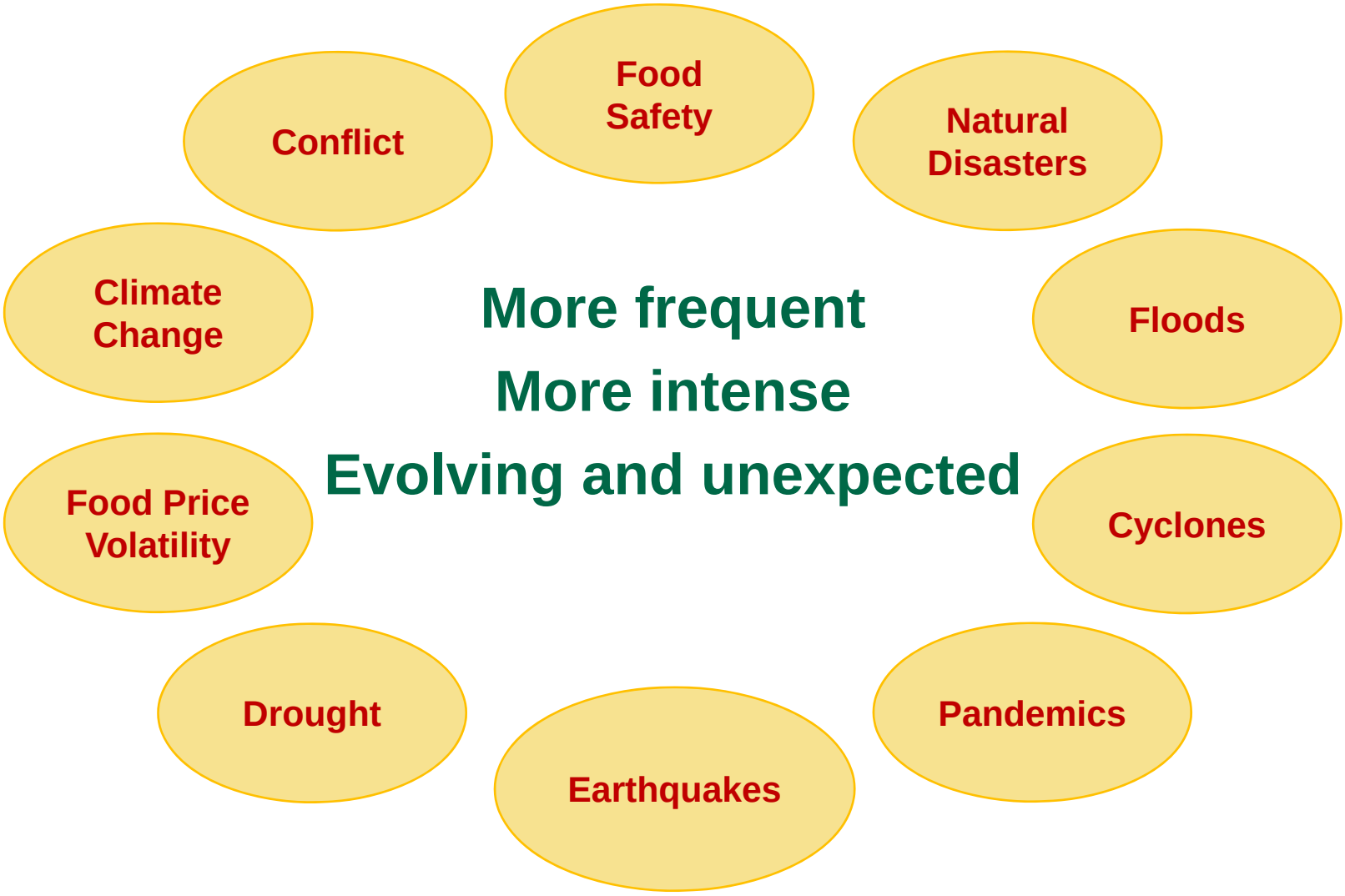
Tropentag Conference
September 16, 2015 | Berlin

Sh

Key messages

- 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



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

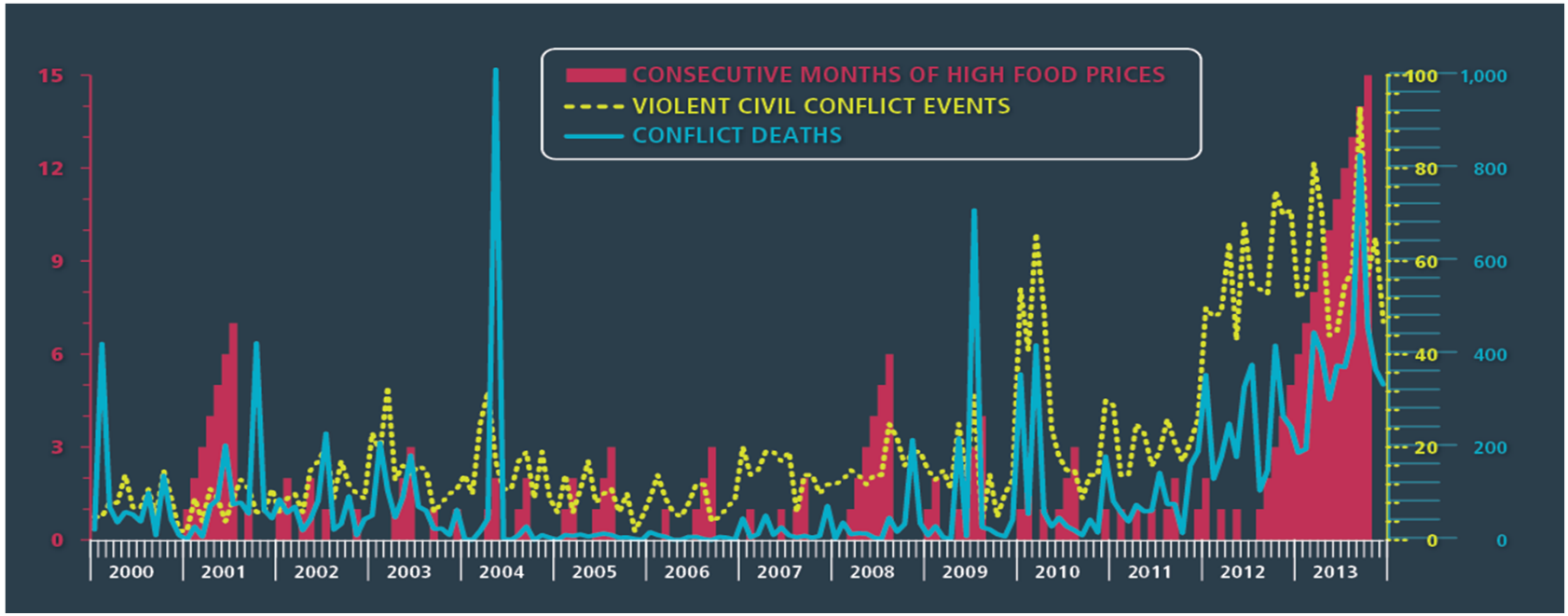
- Deteriorating WASH (water and sanitations) conditions
- Increased disease outbreaks
- Increased hunger and malnutrition

Source: WFP 2014; USAID 2015; UNHCR 2015

Barrage of shocks

Persistent conflicts

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



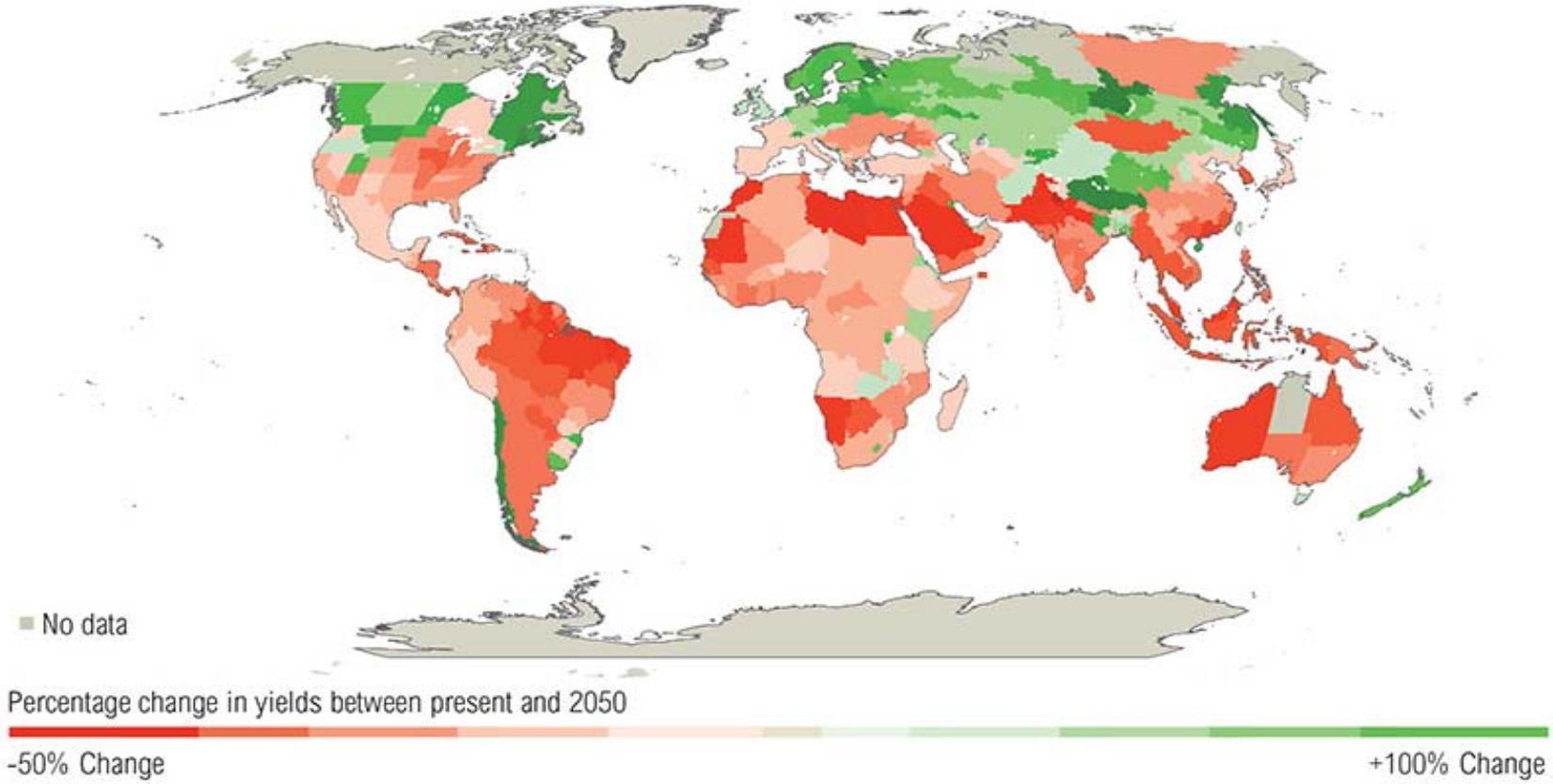
- % of hunger and undernutrition increasingly concentrated in conflict-affected countries
- Food insecurity and lack of nutrition are cause and consequence of conflict
- Climate change, epidemics, and food price spikes increase risk of civil conflict

Shenggen Fan, September 2015

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

Shenggen Fan, September 2015

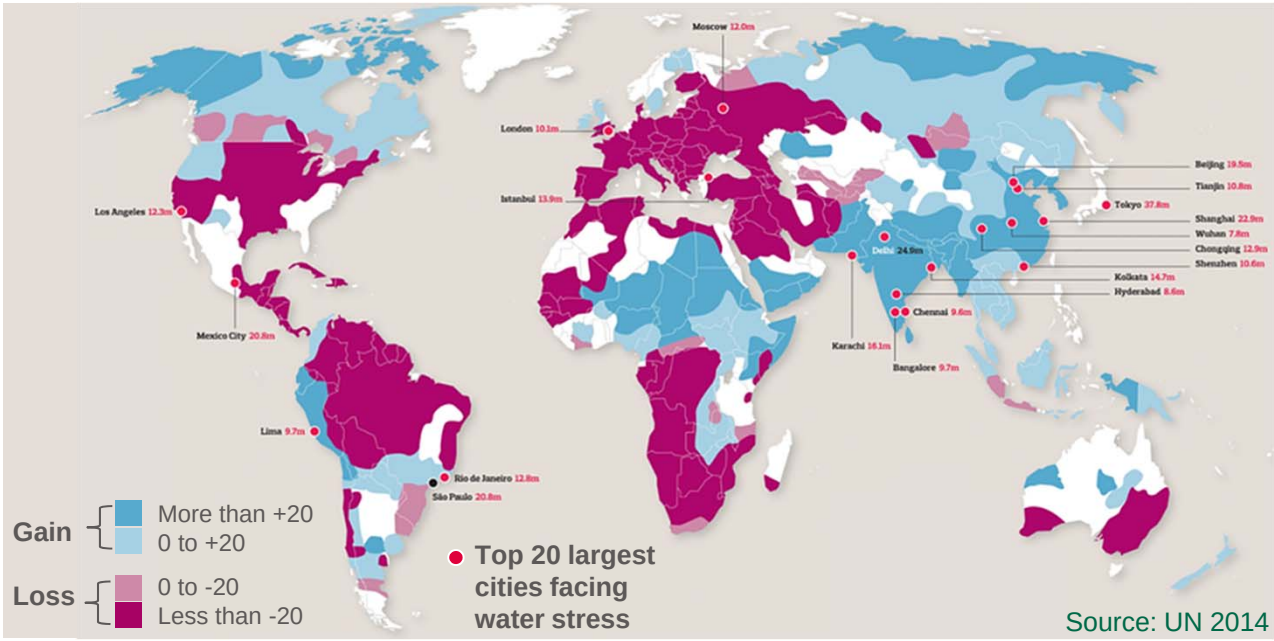
Source: WRI 2013, IPCC 2014, World Bank 2013

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

Shenggen Fan, September 2015

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

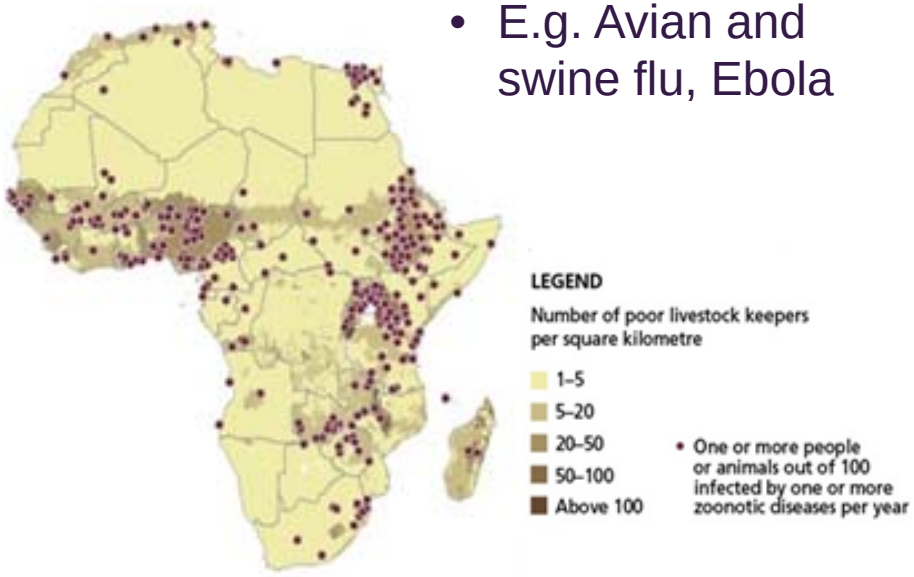
Picture source: Flickr/EC/ECHO

Food safety risks

- Unregulated food production
- Increasing proximity of industrial and agricultural activities
  - *E.g. milk and rice contamination*

Animal-borne diseases

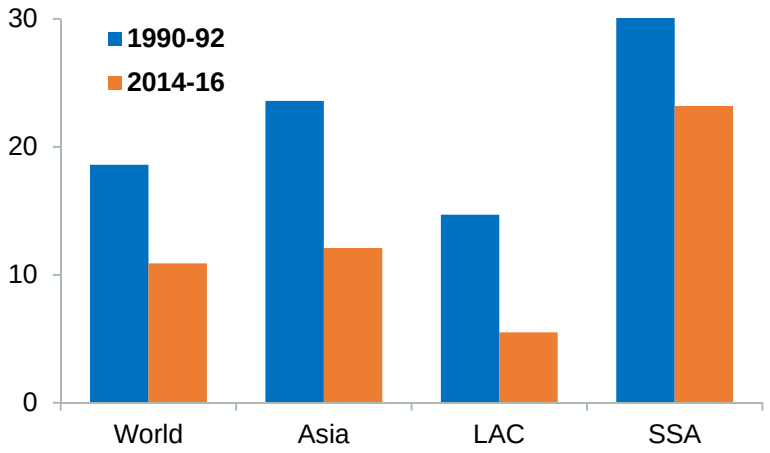
- E.g. Avian and swine flu, Ebola



Source: ILRI 2012

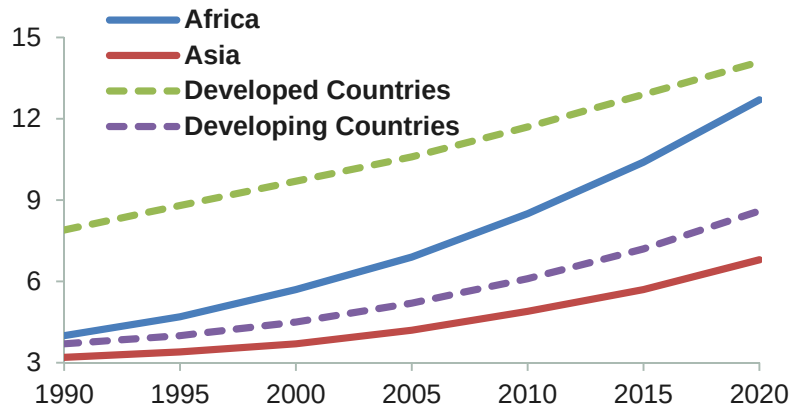
Hunger and malnutrition persist in the midst of increasing shocks

Prevalence of undernourishment (%)



Source: FAO 2015

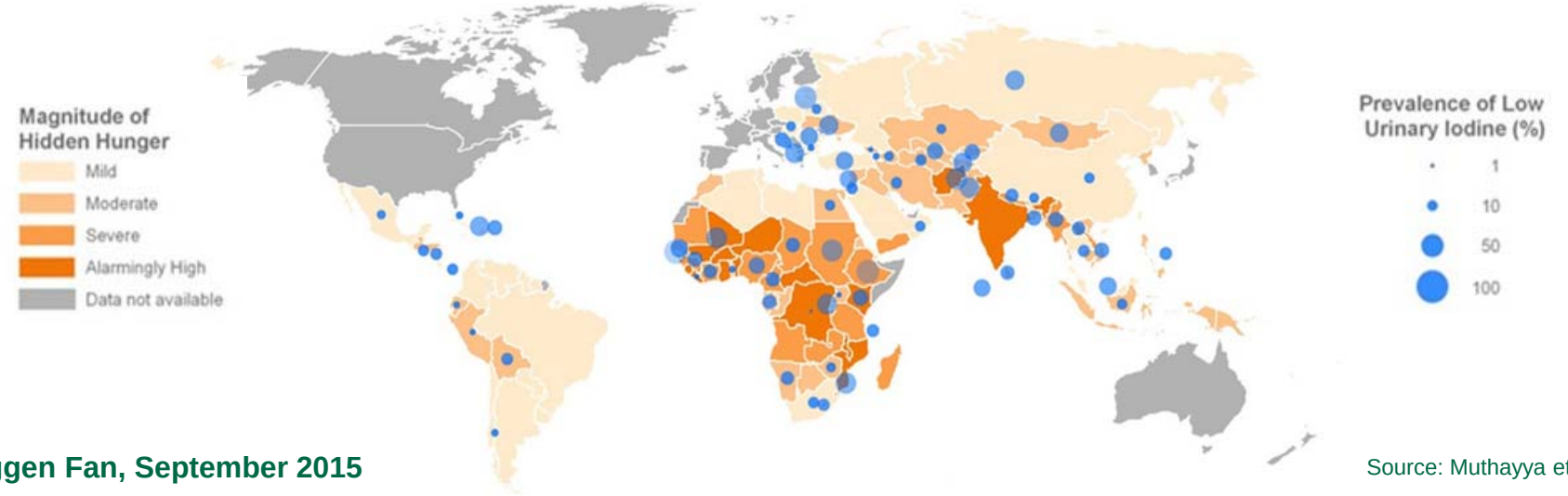
Prevalence of overweight and obese children under-5, 1990-2020 (%)



Source: de Onis, et al. 2010

Note: Asia excludes Japan; Developed Countries includes Japan

Hidden Hunger Index (micronutrient deficiencies)



Source: Muthayya et al. 2014

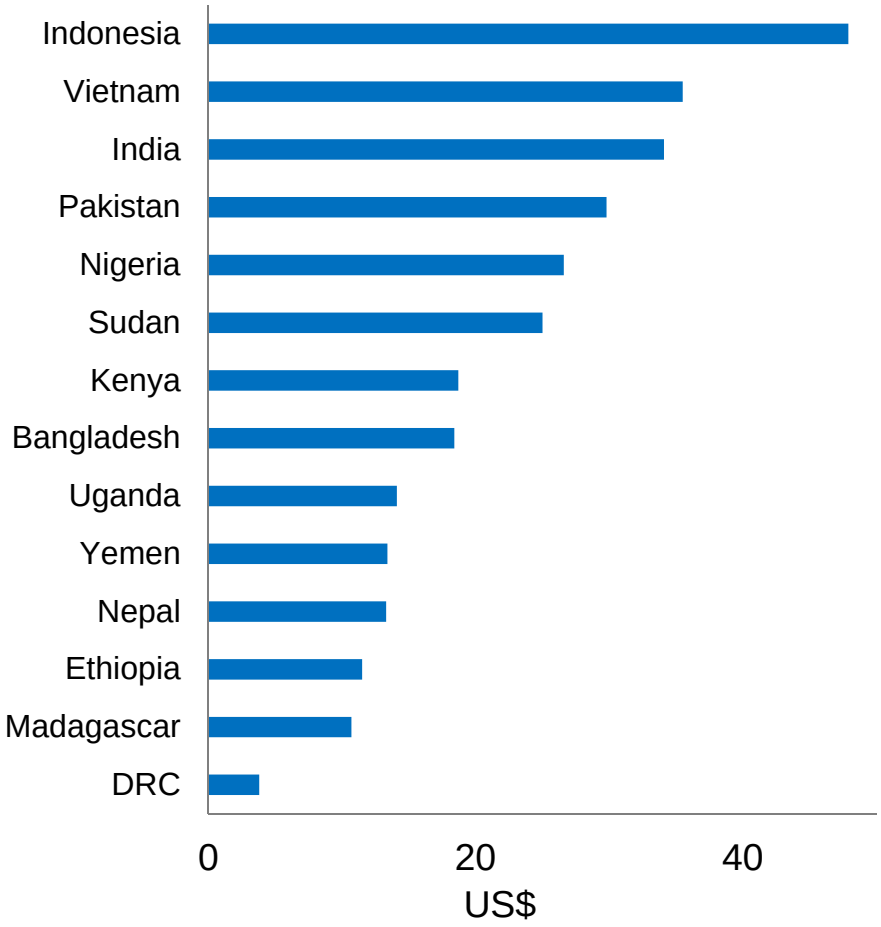
Shenggen Fan, September 2015

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

Source: FAO 2013; McKinsey Report 2014

Economic returns to US$ 1 invested in reducing stunting

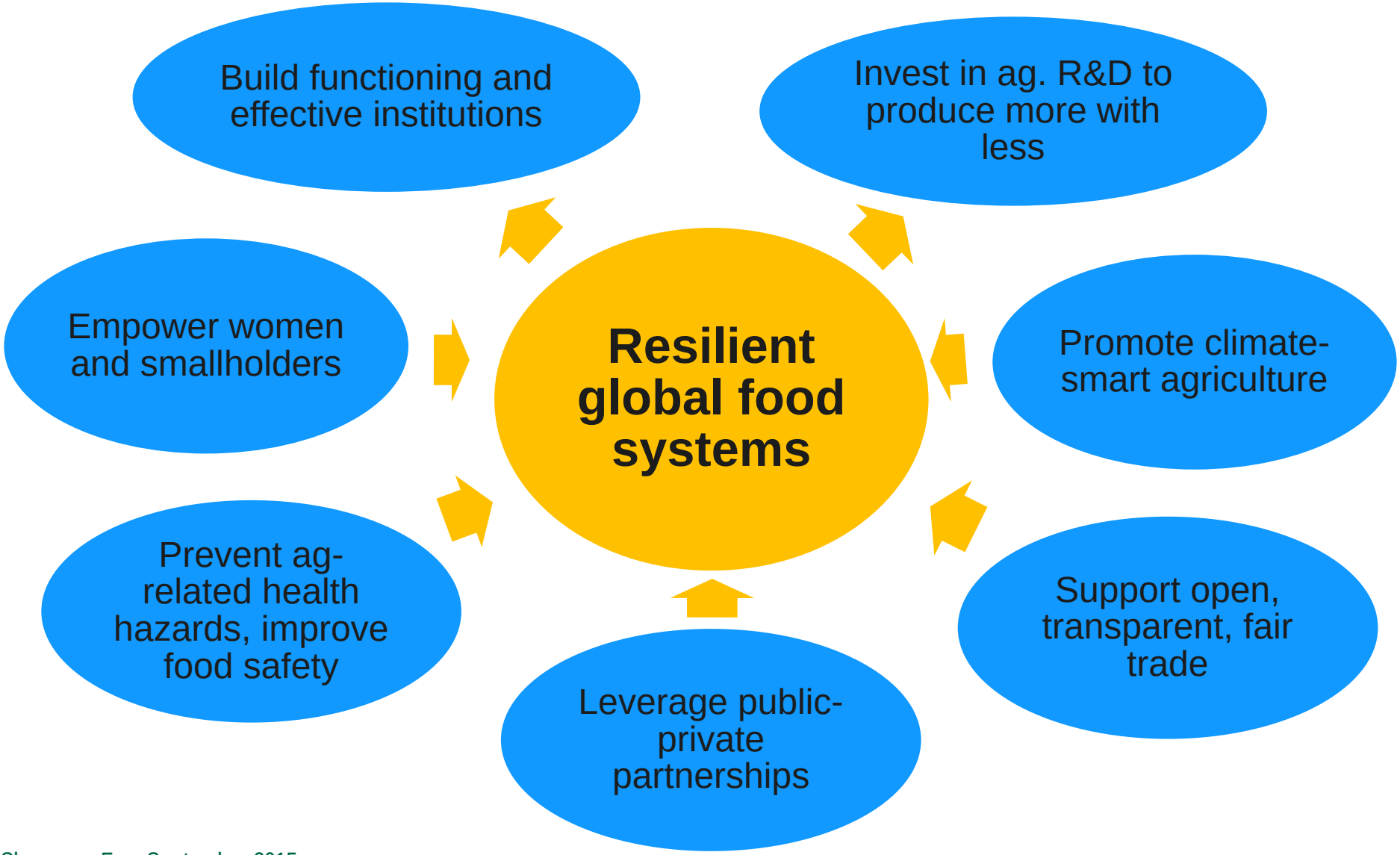


Source: Hoddinott et al. 2013

Building a resilient global food system is critical

Shenggen Fan, September 2015

Building a resilient global food system is critical



2020 Resilience Conference (May '14)

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

Lessons learned

Resilience is more than just a buzzword

"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"

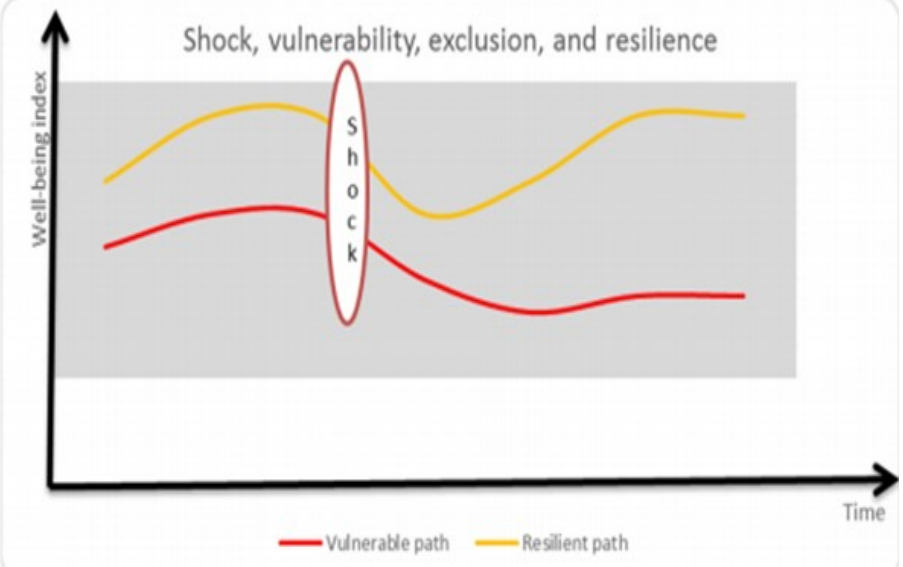
IFPRI 2020 Consultation definition

- 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

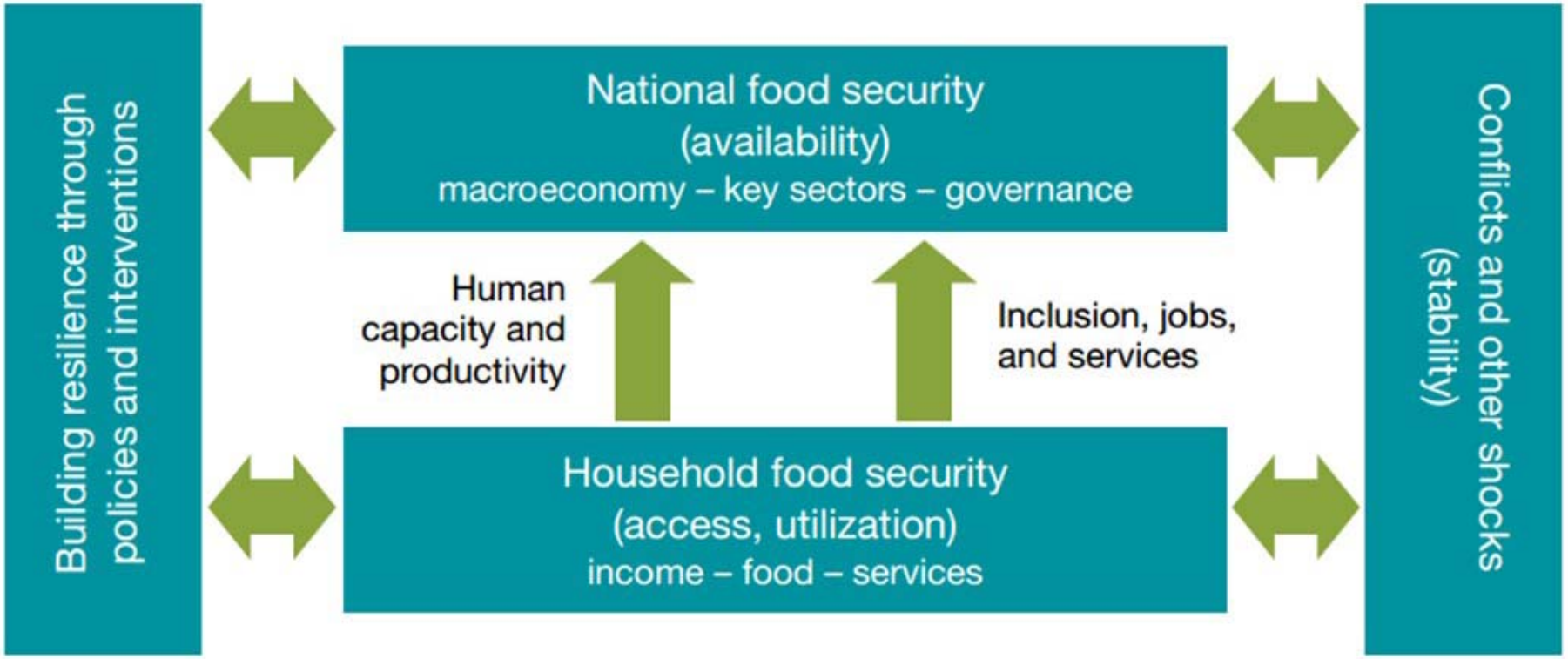


Source: von Braun and Thorat 2014

- 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

Lessons learned

Building resilience to conflict



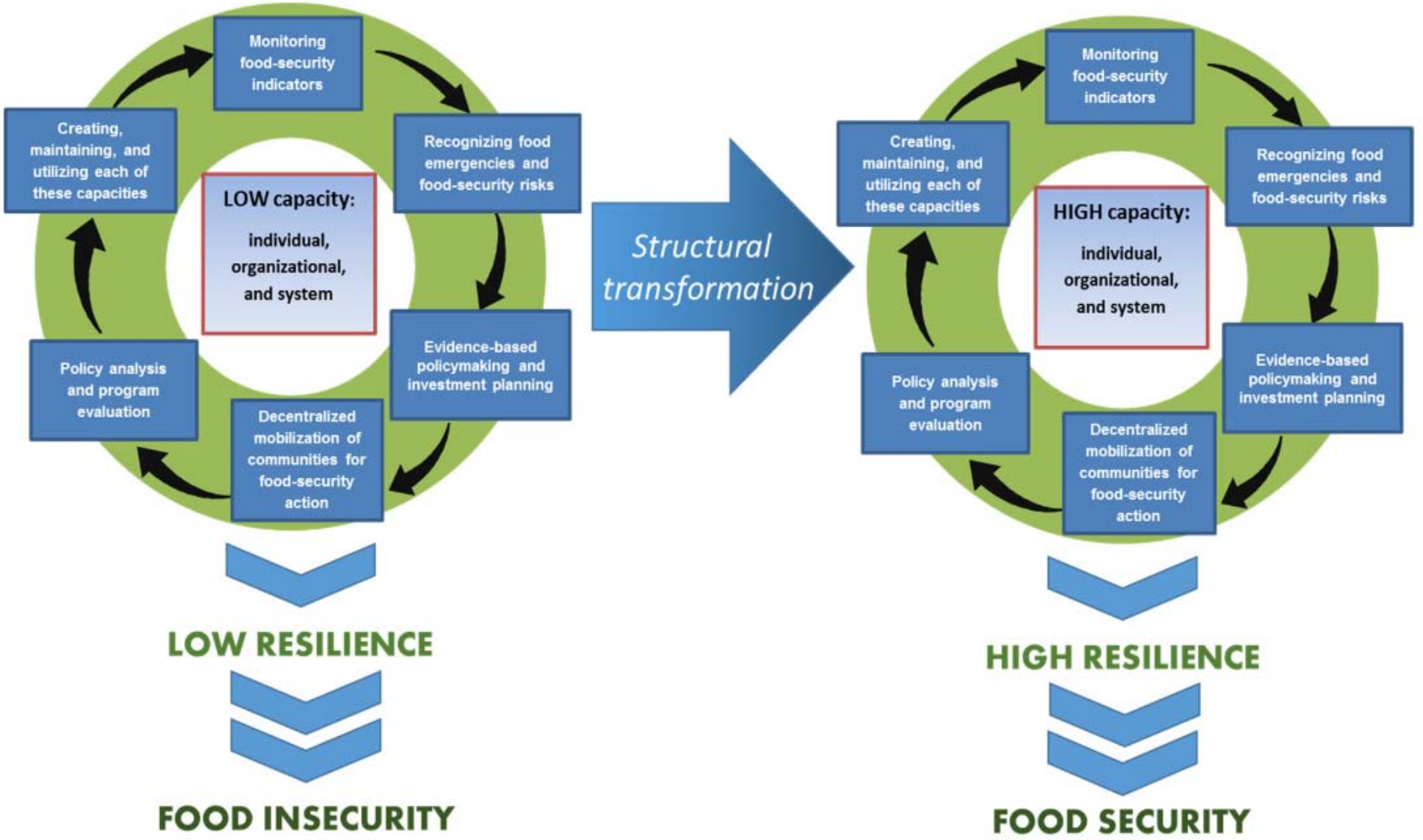
Source: Breisinger et al. 2014

- **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: Mabiso et al. 2014

Lessons learned

Strengthen capacity



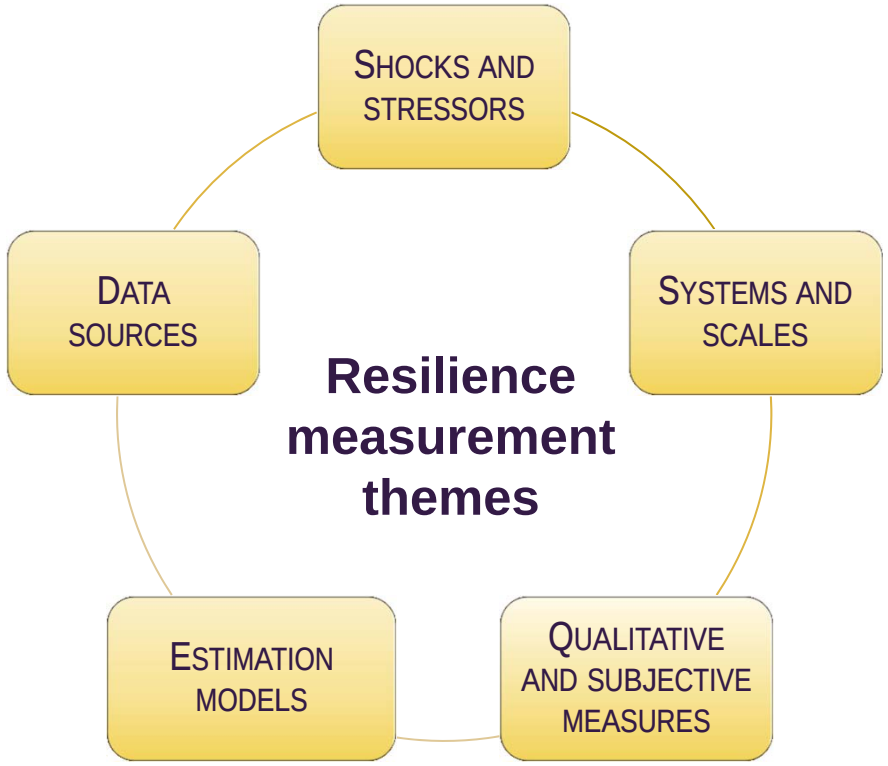
Shenggen Fan, September 2015

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



Source: Resilience Measurement Technical Working Group 2014

Demand for stronger measurement and coordinated research needed

A resilient global food system is key to achieve multiple SDGs

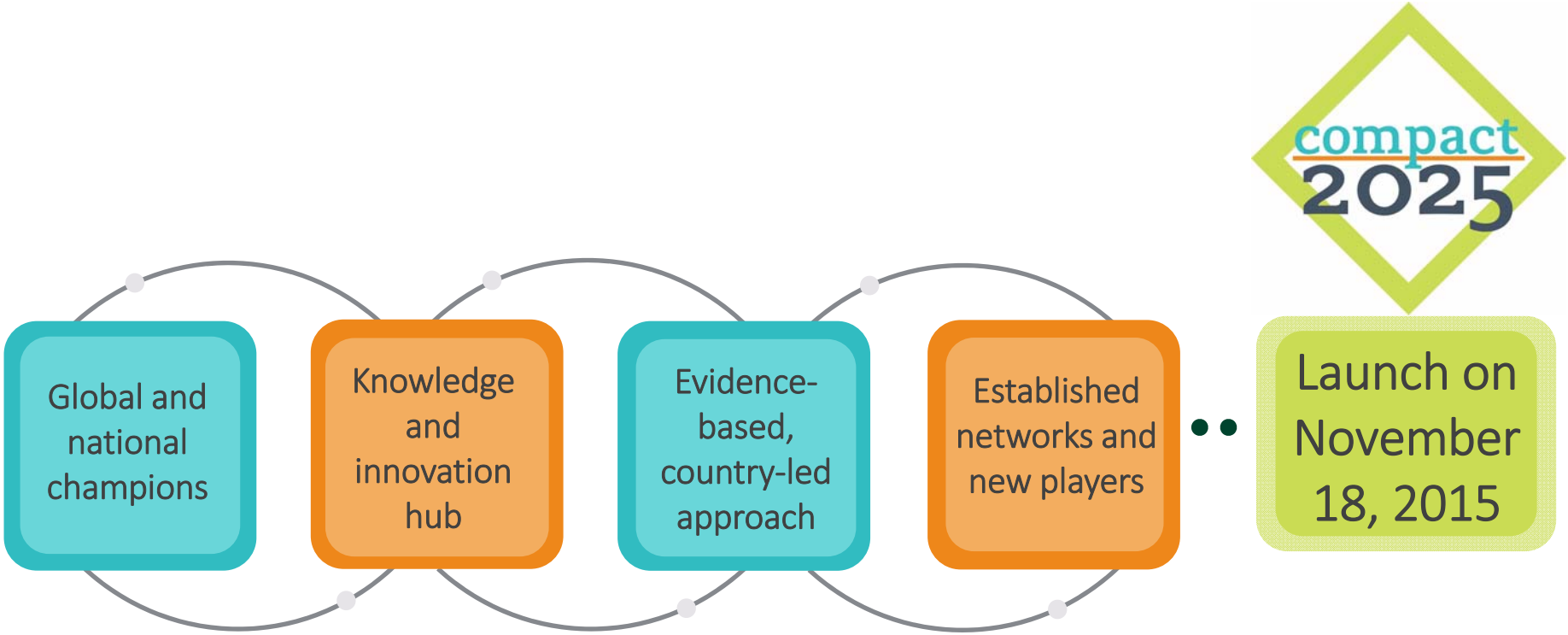
Sustainable Development Goals (SDGs)

Many goals require a resilient global food system

Shenggen Fan, September 2015

Picture source: UN

Compact2025
Supporting knowledge and innovation



Shenggen Fan, September 2015