Conducting the CGRA: Proposed Roles for the ILSI Research Foundation

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ILSI Research Foundation

ILSI™ Research Foundation

International Life Sciences Institute (ILSI) & the ILSI Research Foundation

- ILSI is a nonprofit, worldwide organization with a mission to provide science that improves human health and well-being and safeguards the environment
  - Member-funded, includes major food & ag companies
  - Multisectoral and collaborative
  - Proven leader in fostering effective public-private partnerships worldwide
- ILSI Research Foundation
  - A distinct, complementary, non-membership component of the ILSI network
  - Funded through grants and donations from public and private sector sources
  - Uses same global, multi-sectoral approach as ILSI's other entities to advance its mission

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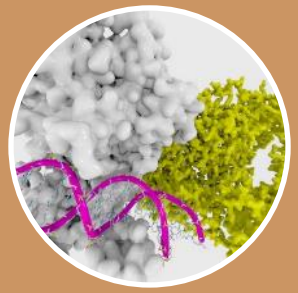
ILSI Thematic Areas

Food & Water Safety



Toxicology & Risk Science

Nutrition, Health & Wellness

Sustainable Agriculture & Nutrition Security

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ILSI is a Global Network

ILSI
Research
Foundation

ILSI Research Foundation Centers

cimsans

Center for Environmental Risk Assessment

Center for Safety Assessment of Food & Feed

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CIMSANS: Governance & Work

- CIMSANS Advisory Council

Marisa Caipo (FAO)
Martijn Gipmans (BASF)
Mark Howden (CSIRO)
James Jones (U Florida)
Josette Lewis (UC Davis)
Marilia Nutti[2] (EMBRAPA)
Mark Rosegrant[1] (IFPRI)
Anne Roulin (Nestlé)

[1] Chair
[2] Vice-Chair

- Recent Collaborative Publications
  - "Climate adaptation imperatives: untapped global maize yield opportunities," *Int. J. Agric. Sustain.* (2014).
  - "Sustained assessment: a new vision for future U.S. assessments," Chapter 30 in: *The Third National Climate Assessment*, (2014).
  - *Extreme weather and resilience of the global food system (2015)*. Final Project Report from the UK-US Taskforce on Extreme Weather and Global Food System Resilience, The Global Food Security Programme, UK. (see next slide)

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EXTREME WEATHER AND RESILIENCE OF THE GLOBAL FOOD SYSTEM

- **Isolated crises have occurred before:** for example, in 1988/89 there was a significant drought related impact on the yields of maize and soybean, and in 2002/03 drought impacted wheat in Europe, Russia, India, and China; rice in India
- **The level of risk is growing:** evidence suggests that the risk of a 1-in-100 production shock is likely to increase to 1-in-30 or more by 2040
- **Current models have limits:** extreme events not possible to forecast accurately – but extremes are where the greatest impacts will occur

	2016 …	… by 2026 ?
OPERATING CONTEXT	• Escalating demand for food • Trade volume and interdependencies amplify shocks • Crop production concentrated in global regions, increasing exposure to extreme weather risks • Reduced self sufficiency in China for cereals • Increasingly inelastic demand	• Key Food import states, economically and politically unstable • Greater interdependencies • Production struggles to keep pace with demand • Underinvestment in exporting region infrastructure • Recovery of oil prices

MULTIPLE BREADBASKET FAILURE

EXTREME WEATHER disrupts production

- Poor Indian monsoon, reduces wheat crop in India and China
- Early Spring thaw-freeze in Black sea area affects wheat crop
- Summer drought in N. America affects maize and wheat forecasts
- Heat wave and drought in Europe affects wheat crop
- Indian monsoon second failure, causes rice harvest concerns

ESCALATING PANIC exacerbates crisis

- As cereal prices climb, export bans are imposed
- Countries impose tariff reductions or consumption subsidies
- China and Argentina raise export taxes on Soybean and Maize
- The US does not waive the ethanol mandate
- Hoarding and further export restrictions in SE Asia
- Further export bans are imposed
- Low stock to use ratio raises concerns of availability

PRICE volatility
EXPORT bans
Import Restrictions

IMPACTS: the hardest economic, social and political impacts are likely to be felt by import dependent countries, particularly in Sub-Saharan Africa. Major economy impacts would likely be muted.

POLITICAL

- Social unrest experienced; Middle east and North Africa particularly vulnerable.

ECONOMIC

- FAO food prices hit 250 and prices of affected grains go up 3x.
- Country level budgetary pressures experienced
- Poverty rates increase
- Inflation and deterioration in the balance of payments

SOCIAL

- Deterioration in nutritional security
- Government intervention (e.g. in China) may protect some poor food consumers

Reduced Resilience

- Intensification and extensificaton of agriculture
- Degradation of biodiversity, soil and water resources
- Increase in GHG emissions and degradation of landscape carbon
- Destabilisation of governments
- Increase in regional migration (internal and external)
- Reduction in global stocks

Increased Vulnerability

KEY RECOMMENDATIONS	• Adapt agriculture to account for climate extremes • Better understand the risks by improving climate, economic and crop modelling tools • Better coordinate risk management • Do not impose export restrictions	• Better understand how responses can amplify shocks • Improve function of international markets • Bolster national resilience to market shocks • Make biofuel mandates more flexible • Implement mechanisms to protect low income, fragile countries

- The above visualisation represents a fictional, but plausible 2016 scenario outlined in the Resilience Taskforce summary report.
- **Text in red** indicates how the scenario could develop further in a 2026 situation and the recommendations which could be used to mitigate this.
- The scenario originated from the isolated crises outlined above in 1988/89 and 2002/03, occurring simultaneously.

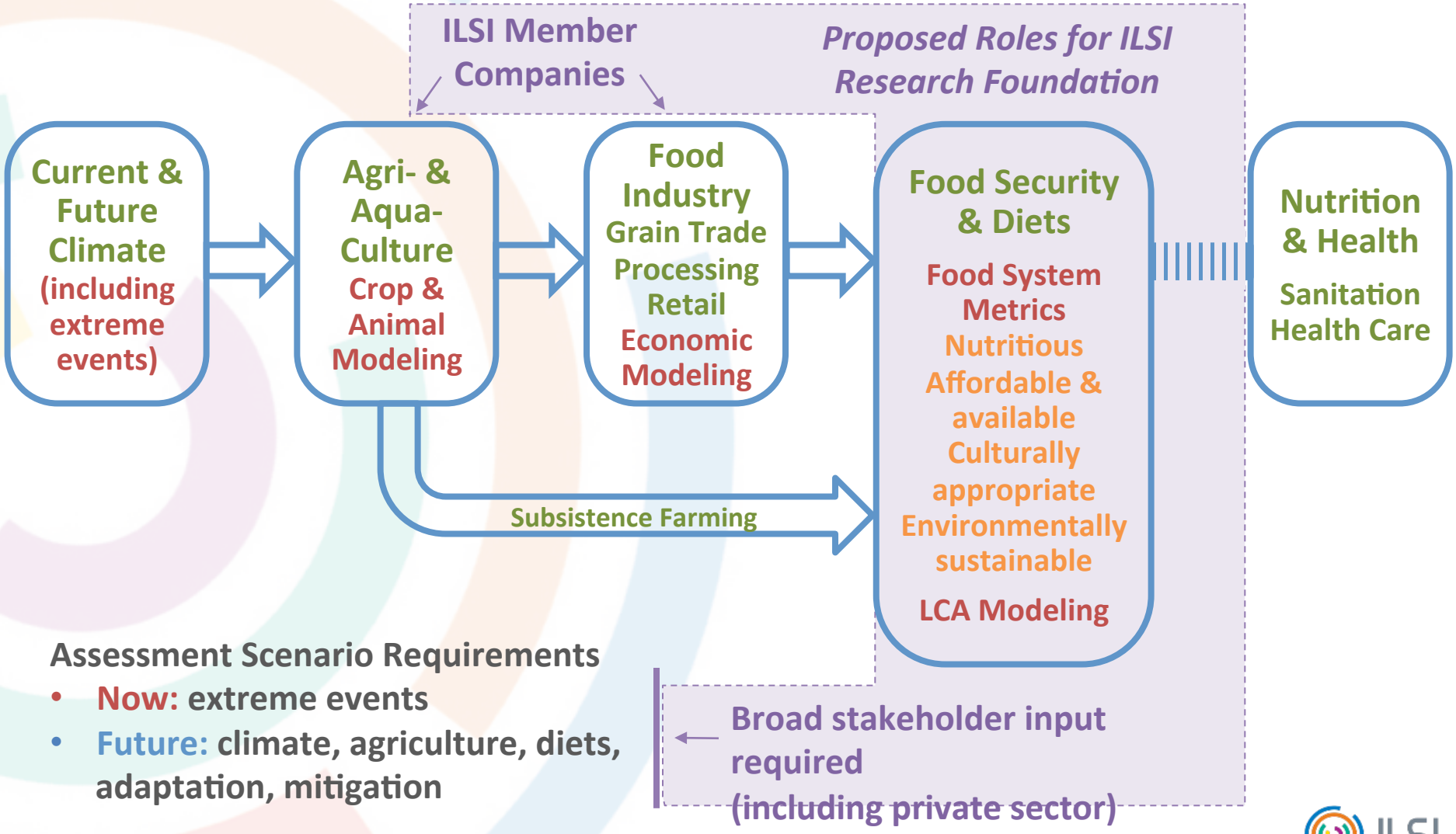
Infographic from UK/US Taskforce on Extreme Weather and Global Food System Resilience Released on August 14

Global Food Security – Sustainable, healthy food for all

UK Science & Innovation Network

Foreign & Commonwealth Office

CGRA Process & Scope



Assessment Scenario Requirements

- **Now:** extreme events
- **Future:** climate, agriculture, diets, adaptation, mitigation

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