Systemic risks and challenges for food and agriculture

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Systemic risks in food and agriculture

1. In general terms, the risk of failure (or serious disruption) of an entire system, which jeopardizes its capacity to deliver expected outputs.

2. In food and agriculture, risks can be perceived as systemic or not.

3. But generally, for food and agriculture, systemic risks jeopardize the sustainable delivery of goods and services, thus challenging the different dimensions of food security.
Trends impose risks for food and agriculture

- Global population and income growth fuel agricultural demand
- GHG emissions exacerbate climate change and natural resource stress
- Employment prospects look challenging
- Poverty, hunger and malnutrition persist
- Between-country inequality has increased ... and LMIC are not “catching-up” with HIC
- Food systems are becoming more concentrated
- Investment in agriculture is skewed towards HIC
Population and income growth fuel agricultural demand

Source: FAO GPS unpublished, based on UN Population division projections and FAOSTAT
GHG emissions exacerbate climate change and natural resource stress

Source: FAO Global Perspectives Studies, unpublished
Dietary transition exacerbates pressure on already limited natural resources

Source: FAO Global Perspectives Studies, unpublished
Employment prospects look challenging

Figure 10.4: Estimates of the population aged 15-24 years, 1950–2050

Source: FAO Global Perspectives Studies
Poverty, hunger and malnutrition persist

Source: FAO Global Perspectives Studies, unpublished
Between-country Inequality has increased...

Source: FAO Global Perspectives Studies, unpublished
... and LMIC are not “catching-up” with HIC

Source: FAO Global Perspectives Studies, unpublished
Food systems are becoming more concentrated

Source: FAO Global Perspectives Studies, based on Nielsen, 2015
Investment in agriculture is skewed towards HIC

Figure 5.3  Averages of agricultural research intensity, by country income group

Source: FAO Global Perspectives Studies
What challenge do these trend bring about?

Challenges for food stability and availability

1. Sustainably improving agricultural productivity to meet increasing demand
2. Ensuring a sustainable natural resource base
3. Addressing climate change and intensification of natural hazards
4. Preventing transboundary and emerging agriculture and food system threats
Challenges for access and utilization

5. Eradicating extreme poverty and reducing inequality
6. Ending hunger and all forms of malnutrition
7. Improving income earning opportunities in rural areas and addressing the root causes of migration
8. Building resilience to protracted crises, disasters and conflicts

Overall challenges

9. Making food systems more efficient, inclusive and resilient
10. Addressing the need for coherent and effective national and international governance
From all the above emerges that “Business as usual” cannot be an option but transformative changes require “Intelligence”

**FAO’s foresight analyses**

- Explore possible pathways for future developments
- Based on past and current trends
- Can help identify critical and emerging issues
- Provide insight into the feasibility of alternative pathways
  - What if there is a break in ongoing trends
  - What if there are breakthroughs in policy or technology
More on:
“The future of food and agriculture”:

Trends and Challenges
http://www.fao.org/3/a-i6583e.pdf

Alternative pathways to 2050
(Forthcoming)

FAO Global Perspectives Studies