

# Parallel Thematic Session on Food Security

**Chaired by Lidia Brito, UNESCO**



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## **Speakers**

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David Stuart, University of Oxford

Rob Lokers, Alterra, Wageningen UR

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## **Rapporteur**

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# Objectives

- To identify challenges on increasing food production and food security globally
- To identify research gaps and the needs on research infrastructure
- To share best practices and recommend actions to address the identified issues, including how to improve the existing infrastructures and networks

# Questions asked

- 1. Can we improve the impact of research on food security through research infrastructures?**
  - Do we need building research capacity and creating stronger links between research infrastructures at the International level? What are the gaps and needs for infrastructures?
  - Perspectives and lessons learned from Africa and Europe
  
- 2. What practical steps do we need in order to step up the effort?**
  - What tools are useful and how are partnerships developed, e.g. scientific exchanges, access to infrastructures and knowledge, new technology and virtual networks?
  - Which critical data in Food Security should be more readily available, in which form should they be available and which would be the actors to make this happen?

# Issues (1)

- **World is under pressure** due to increasing population, climate change, more extreme events, crisis (food, water, economical, energy...) and inequality (within countries and between countries)
  - The food production challenge needs actions in many fronts as reduction demand, reduction waste, reducing over-consumption, rebalancing livestock...
- **World is unequal** in terms of production of knowledge and access to scientific knowledge
- Globalized world requires a **shared responsibility**, and **strong commitment towards scientific collaboration**
  - Collaboration frameworks can improve the production of knowledge
  - Knowledge distributed over the world, how to capture it?
- Food production can not be looked only from **increasing productivity**, it is necessary to consider the **nutritious value of food**

# Issues (2)

- **Cross-links to other domains** are missing: water, energy and society, how can we bring all this together?
  - Multi-disciplinary networks are needed in order to come up to solutions for global challenges
- Research in food production and food security lacks the capacity to **fully use basic sciences** and the **potential of new technologies** (including structural cell biology, genetics, NMR, ICT, geospatial...)
- **Big data** are being produced, however to **access** and to **process** them is not an easy task
- **Geopolitics of food**, changing food prices worldwide, may destabilized countries
- **Finance** is a **barrier** (Financial resources will be less for farmers with an increased risk of climate change)

# Recommendations (1)

- Enhanced **human** and infrastructure **capacity** is a must to address all these issues
- **Global cooperation** in research is needed connecting local to regional to global-; coordinated efforts for distributed knowledge production –; fund international networks and money that bring these infrastructures together around a research question
- A system approach is needed to bring **transdisciplinary** and **co-design and co-production approach**- including supporting in-farming and large research trials
- New models are needed to **address climate change** and **uncertainty**, e.g. research infrastructures should support modeling
- **Science communication** needs to be part of the research agenda
  - Communicating scientific discoveries and knowledge to society, farmers, industries, financial organizations and governments is a priority

# Recommendations (2)

- **Several** and **different** infrastructures are required to deal with the different issues that food policy is facing
- There is an **important number** of existing **infrastructures** large and small, but they need to be connected:
  - To map existing infrastructures and programmes and promote, through funding, more collaborative research programmes
  - To fund smaller initiatives to provide support to those aspects that bigger infrastructures can not address
  - Funding is also necessary to promote better cross-links to other domains of science in particular research on nutrition
- More research is needed on **urban agriculture**
- Quality of information from the field requires a **bigger involvement of practitioners and capacity**

# Recommendations (3)

- **Industry**, in particular food industry, has to be brought into the infrastructures, including their knowledge and data on markets and consumers' preferences in the infrastructures
- **Further strengthened links** between research in food security and the practices of the **food processing industry** are needed, including enhanced food processing technologies from a nutrition point of view
- Research infrastructure for food security needs to be a **long-term investment of multi-partners** with a strong political will and capacity to influence public policies
- More research on **diversifying food crops** is needed and should be coupled with **research on nutrition** value and diet and their impact on public health
- More research on **semantic tools** and how to improve **IT infrastructure** is needed to handle big data