

Senior Expert Contributions to OneCGIAR Program Development **Food System Transformation** **Approach** Netherlands-CGIAR Partnership



Prepared by: **Marc Verdegem** and **Peter Oosterveer** (Wageningen University and Research)

The aim of this two-pager¹ is to provide input for the OneCGIAR investment plan. Notably to identify key research challenges within the OneCGIAR impact areas, how these areas interact with Dutch policy priorities and how the challenges could be addressed / strengthened.

Relevance

One-CGIAR embraces a **system-transformation approach for food, land and water systems** to deliver broad access to healthy diets and income opportunities within environmental limits, going beyond its original mission to eradicate hunger. In doing so, CGIAR addresses a wider range of **SDG-goals**, across **five strongly interconnected Impact Areas**: (1) food and nutrition insecurity, (2) poverty, (3) gender inequality, (4) climate change, and (5) environmental degradation. Realizing these ambitions requires reflection on how to contribute to food system transformation. Impact on systems transformation across all five Impact Areas will be measured along three pathways: science-based innovations, targeted capacity development and policy advice.

One-CGIAR will not lead systems transformation efforts, but rather aims to inform global and regional dialogues and decision making, by **filling knowledge gaps** that significantly contribute to meeting national and global targets set for each Impact Area. CGIAR cannot do this alone, especially when it comes to local innovation systems across all regions, **each region requiring specific solutions**. Research will therefore be executed in cooperation with national and international partners and relevant governance actors and local stakeholders need to be engaged in the process.

Key research challenges

Transformation towards sustainable global food, land and water systems and reversing global warming are dual imperatives, requiring a redesign of food, land and water systems. System transformation is needed but despite that some partial solutions have been known for decades, **system transformations** have been minimal. Vested interests, power structures and limited institutional capacity resist transformation to a more sustainable, just and equitable future for all. Despite the sustainable development goals, poverty and hunger and malnutrition are still widespread.

Food, land and water systems are **mutually inter-dependent, multi-functional and multi-dimensional** systems. Transformation requires understanding of what makes these systems sustainable. It also requires identification of strategies that include **technological innovations** and understanding of in the **functioning of the global economy and people's behaviours and motivations**. The latter requires insight in people's everyday practices and how these are steered, including by values about interacting with nature, and what people consider to be a 'good life'. System transformations do not only depend on the quality of the innovation but also on the extent to which it fits into system characteristics. Therefore, **changing political, economic and cultural dimensions of these systems** is often a prerequisite for

¹This two-pager is an initiative of Senior Experts within the NL – CGIAR research programme. This programme is funded by the Ministry of Foreign Affairs of the Netherlands as part of the Strategic Partnership between the Netherlands Government and the CGIAR and it is implemented by NWO-WOTRO Science for Global Development. (January 2021)

opening up systems for innovations. Food, land and water system transformations can only then be successful when the different ideas on what is achievable evolve together. Collaboration through **stakeholder involvement** and **policy coherence** through effective institutions are fundamental in this process.

There is a large consensus that our food, land and water systems should become more sustainable and equitable. Knowledge gaps to tackle by Agriculture Research for Development (AR4D) organisations include:

- How to make **regulatory frameworks and (fiscal) policies** across ministries at national level or across borders at regional level supportive to sustainable and equitable system transformation of food, land and water systems?
- Which **governance arrangements** and National Adaptation Plans in support of innovation systems (capacity development, funding mechanisms, interdisciplinarity incentives, project structure, international cooperation) facilitate meaningful contributions to sustainable and equitable food, land and water systems at local and regional global levels?
- How do **economic and social regimes impact** (positively or negatively) **the adoption of technical innovations**, and how can public and private institutions best interact and cooperate to make food, land and water systems more equitable?
- What is the effectiveness of the (evolving) roles of participants in **multi-stakeholder or innovation platforms** in the process from an innovation idea to wide-scale adoption, leading to system transformation. This requires a **long-term engagement** going beyond present 3–4-year project cycles?
- What is the impact of science-based innovation research on **natural resource use**, and what are the **cascading effects** throughout the biosphere, contributing to a holistic understanding of the role of food, land and water systems in maintaining a healthy planet?
- In what ways do **end-users** appropriate innovations and what guidance does this offer for developing and for implementing innovations?

Approach

Food, land and water system transformation will be one out of three Action Areas specifically addressed along defined impact pathways by One-CGIAR. To do so, CGIAR will capitalize on experiences and knowledge obtained through the SDGs and collaborations between CGIAR institutes and their partnerships with national and international AR4D organisations. Considering this set-up, impact will to a high degree depend on the **quality and involvement of the partners** and to the extent **local policies** in partner countries enable transformation of food, land and water systems.

Food, land and water system transformations should be built on an in-depth understanding of **relevant system dynamics**. In particular, priorities for research, capacity-building and policy advice need to be based on a critical analysis of **the relevant drivers of the systems**. Equitable and sustainable outcomes of the relevant systems can only be achieved when the role of key system drivers is better understood. As system transformation means integrating different objectives, policy decisions need to be informed about **possible trade-offs and synergies** between them. **National food security strategies** need to be combined with **international trade ambitions and development of the rural economy** needs to go hand in hand with **natural resources protection**. **Food and agricultural policies** need to be harmonised with environmental as well as with **economic and infrastructural policies**.

Developing and documenting food, land and water system transformations over a 10-year time horizon, that lead to food security and the provision of sustainable, nutritious, safe, and affordable diets for all, while minimizing inequality, is highly relevant. Therefore, Dutch partners should:

- Preferentially **join innovation system partnerships** which work from a long-term perspective and extensive knowledge of local food, land and water systems.
- Actively engage in a **relevant array of technical, biological and social science disciplines**, defined in consultation with CGIAR and local partners. Selected disciplines preferentially strengthen expertise which is locally weak or lacking. All the five Impact Areas should be covered.
- Provide **research-based capacity building** (MSc, PhD training) of staff in local partner organisations or CGIAR Centres.
- Contribute to a **system-wide approach**, going beyond a conventional focus on technological innovations in the production sector, and include socio-technical innovations in the processing, trade, retailing and consumption sectors as well.
- From the start of the programme, actively establish a **local multi-stakeholder policy-platform** to discuss policy implications of research outcomes and practical impediments to reaching programme targets. The platform will engage with public and private partners at all levels involved in creating an enabling environment for system transformation, including the required institutional capacities to promote coherent, integrated and effective food land and water system transformations.

Synergies

Dutch research partners (WUR, KIT, UU, UG, KIT) and development NGOs (SNV, Solidaridad, ...) can bring in and extend past and ongoing collaborations with CGIAR Centres, including (without being complete) AfricaRice, CIAT, ICRAF, CIFOR, IITA, CIP, CIMMYT, ILRI, IFPRI and WorldFish and past and ongoing collaborations with national and international AR4D partners.