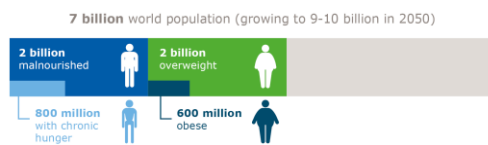


Food systems solutions for global impact

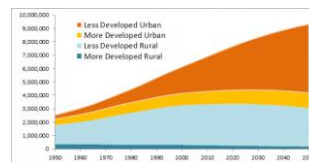


Food security challenges are more and more interlinked..

Nutrition



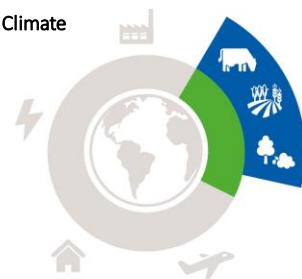
Urbanization



Poverty



Climate



50% of the working population is active in agriculture

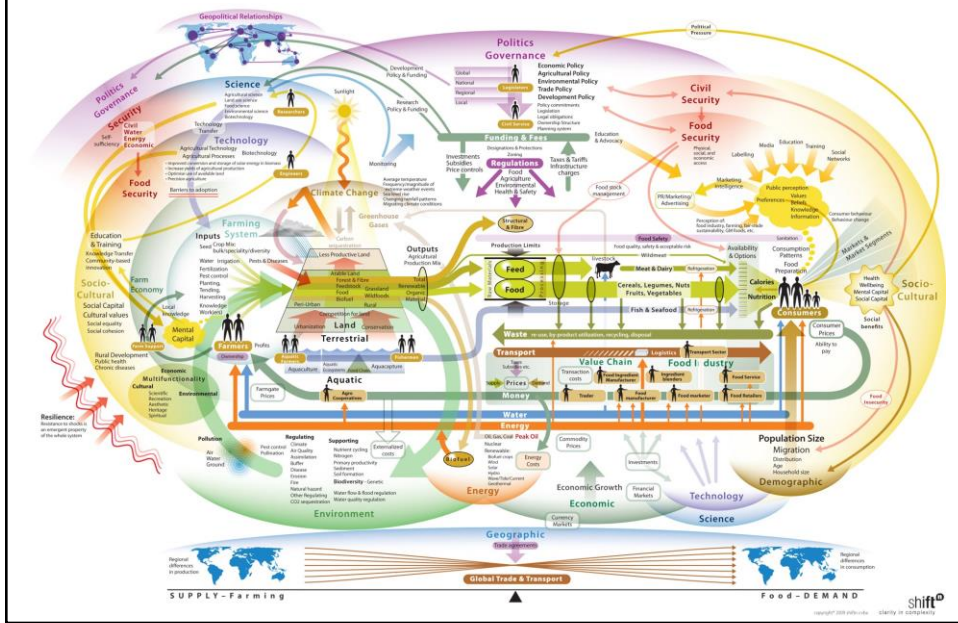
20% of people are very poor

75% of the very poor live in rural areas

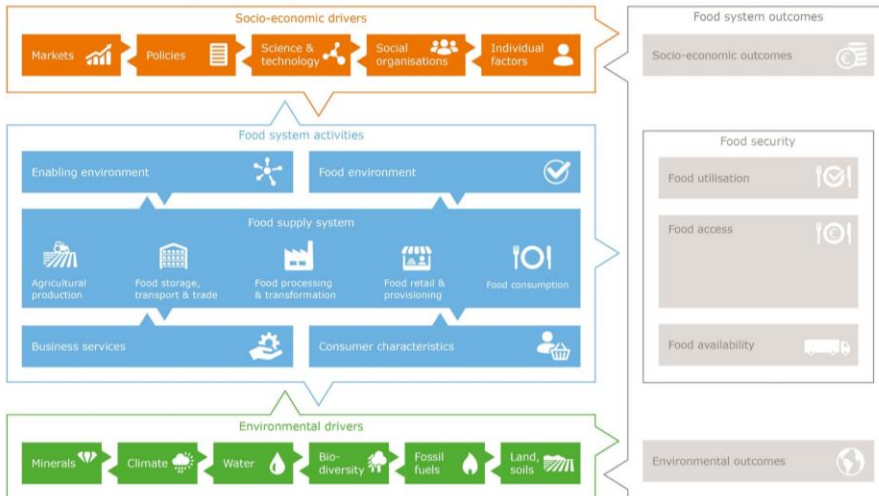
24% of the total global GHG emissions comes from the food system

20% of the total global GHG emissions comes from agricultural production

... which means navigating change becomes increasingly complex

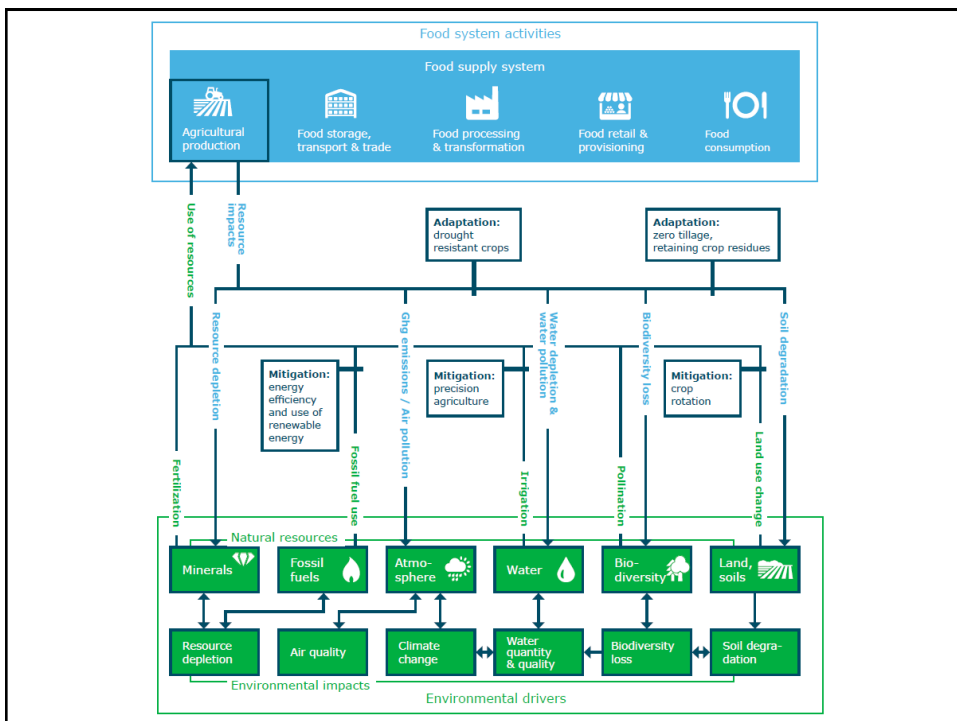


Food systems thinking can help to navigate this complexity..



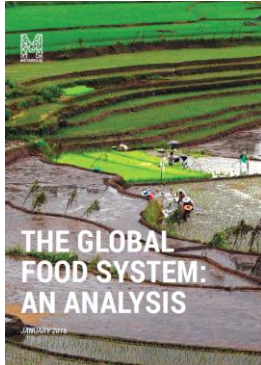
... and offer new perspectives for food & nutrition security

1. The food systems approach shifts the attention from the **activities** in the food system to its socio-economic, environmental and health **outcomes**.
2. The approach sheds light on **interdependencies** between **subsystems**: production, consumer behaviour, food security and the environment
3. Moreover, food systems thinking points to **non-linear processes**, **feedback loops** and **tipping points** in the food system.
4. It helps to shed light on **root causes** and **trade-offs** between different intervention strategies towards improved food & nutrition security

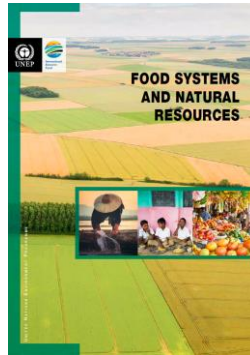


While the concept of food systems receives increased attention..

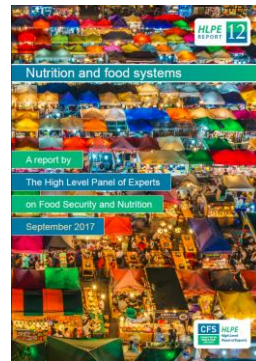
WWF (Metabolic, 2016) The Global Food System: An Analysis



UNEP (2016) Food systems and natural resources



FAO/HLPE (2017) Nutrition and food systems



... WUR has been active to apply the approach in practice

1. Wageningen-led flagship 'Food systems for Healthier Diets' that forms part of the CGIAR program Agriculture for Nutrition & Health.
2. EU research collaboration, e.g. SUSFANS: pathways for aligning balanced diets, equity, viable business, environmental protection in EU food system.
3. Organization of workshop "The Future of Food Systems" on November 4, 2016 with 100 experts from private sector, government and civil society.
4. Contribution to Global Food Systems Index together with IFPRI, World Bank, Rabobank, Landesa and World Economic Forum.
5. Policy brief for LNV: "The food systems approach: sustainable solutions for a sufficient supply of healthy food"
6. Start of case study research "Food systems – from concept to policy and intervention" focused on developing a food systems tool for Ethiopia.
7. Novel WUR professional course "Food systems for healthier diets".

Thom Achterbosch
Wageningen Economic Research

Positioning RRI research activities in food systems transformations

* RRI : Responsible Research and Innovation

9

Role of Research and Innovation (R&I) in transforming food systems

• ***From Analysing the System, to Envisioning the Future, and Exploring Pathways ...***

1. Understanding food system complexities and challenges
2. Exploring and designing innovation and policy options for overcoming food system challenges

=> traditional roles for systems researchers: observe/explain what the eye does not see

• ***...to Experimenting, Assessing and Translating.***

3. Supporting interventions and evaluation of the evidence on impact
4. Anchoring and scaling: Galvanize action, scale, and enable transformation

=> additional roles for systems researchers: co-creation, catalysing, learning



Multi-scale food systems

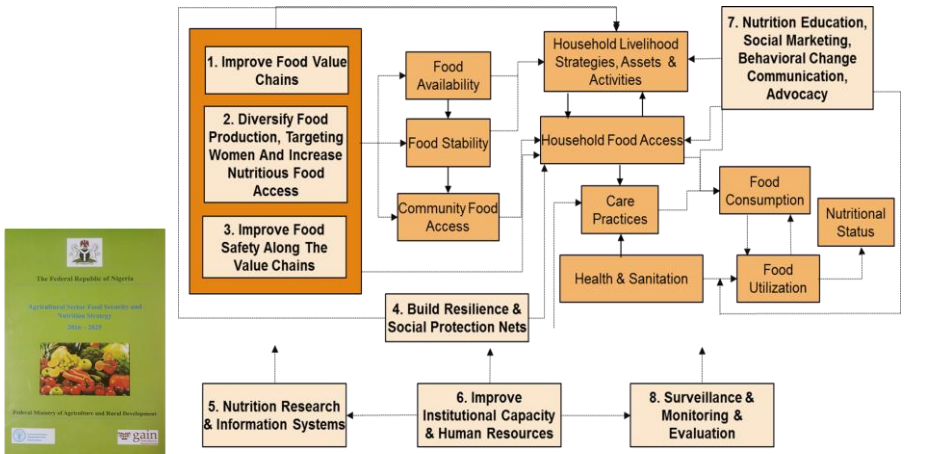
Macro level realities in Nigeria

Food systems challenges in Nigeria

- 40% of people food insecure, 50% malnourished
- Overweight rising, disease burdens
- Urban centers booming, logistical stress
- Small-scale farmers use low inputs, fertilizers
- Farmers, pastoralists compete for access to land
- Erosion, water pollution
- Food import bill
- Etc. etc.

So let's fix it!

Pathways to Improved Nutrition



The Federal Republic of Nigeria, The Agricultural Sector Food Security and Nutrition Strategy 2016-2025

What happens in the background?



(c) spectator

Perspective from a researcher who studies the macro-level food system (1)

- The Nigeria (agri-fish-) food system is undergoing substantial change under the influence of global and domestic drivers
 - From rags to riches? 6% GDP growth per annum.
 - It's getting crowded. 2% population growth per annum
 - No land to grab. 5-7% of farm land unused
 - A bank run? R&D 0.5% of agricultural GDP
 - Etc. etc.

Smeets-Kristkova and Achterbosch. Data based on scenario set SSP2 and GTAP9 (O'Neill et al., 2017). technical stakeholder workshop, 2/3 July 2018, Abuja

16

Perspective from a researcher who studies the macro-level food system (2)

- Model projections suggest system complexities:
 - The intensification of agriculture in combination with land transformation appears critical for the evolution of food and nutrition security
 - Without transformation...the growth in consumption will be sourced through the harbours and "footloose" production systems depending on international commodity markets
 - With transformation...demand pull may benefit the rural development and nutrition agenda.

Smeets-Kristkova and Achterbosch. A4NH foresight process on Nigeria's national food system. technical stakeholder workshop, 2/3 July 2018, Abuja

17

Projections to 2050

Input for an A4NH foresight process on Nigeria's national food system, based on scenario set SSP2 (O'Neill et al., 2017) and projections with MAGNET

Zuzana Smeets-Kristkova
Thom Achterbosch

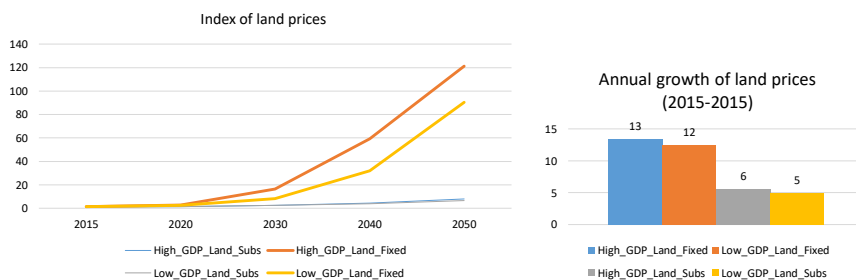
technical stakeholder workshop, 2/3 July 2018,
Abuja

Preliminary results!

18

Land prices may escalate if no input intensification

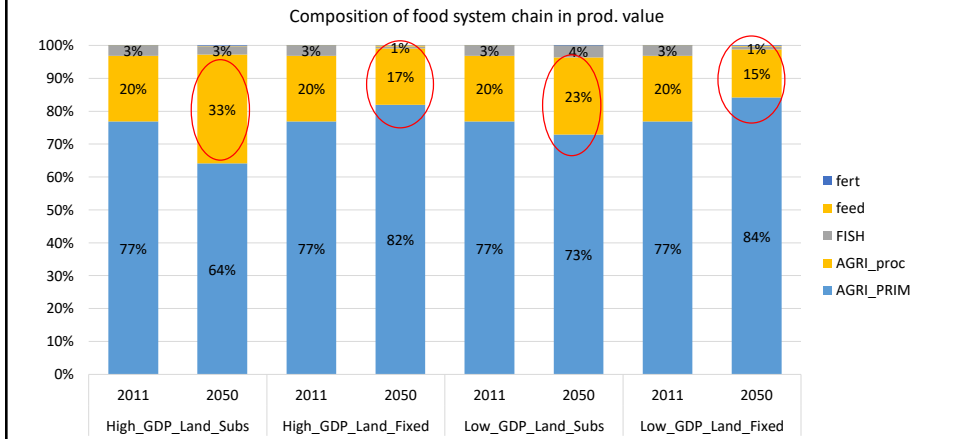
- After 2030, no available agricultural land left, fueling land prices high



19

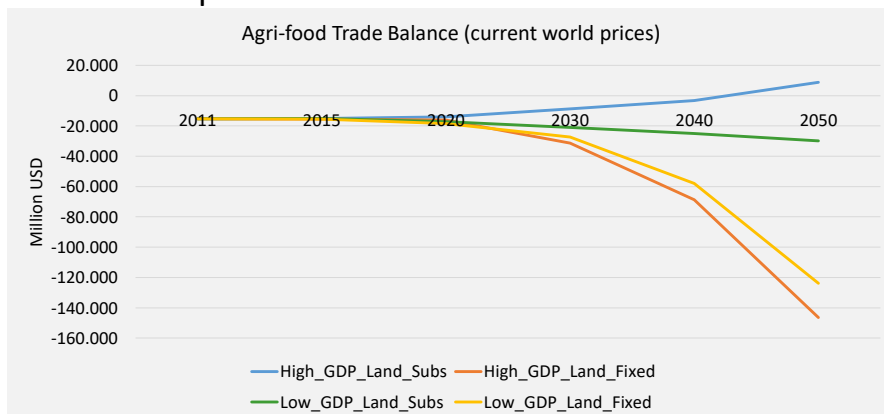
Composition of food system value

- Food system: primary agri, food processing, wild fish, aquaculture, fish processing and fish meal, fertilizer and feed
- Primary agriculture share under land constraint grows, whereas food processing is stimulated by higher substitution of land for other factors



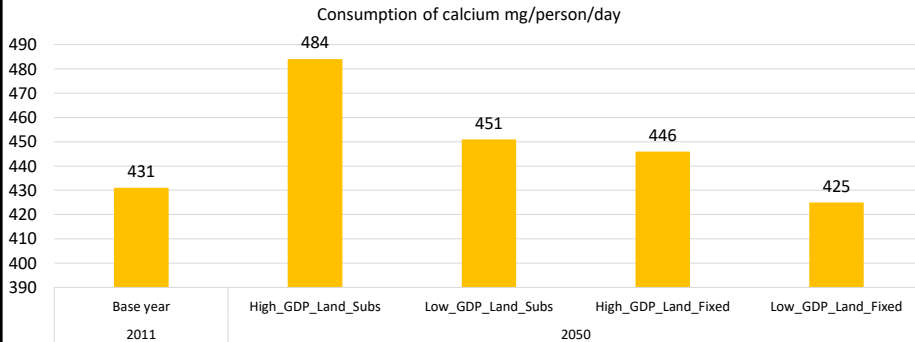
Trade balance in agri-food shows diverging outcomes

- All but one scenario (High GDP and Land Subs) project a deterioration of food balance
- Decline up to minus 160 million USD



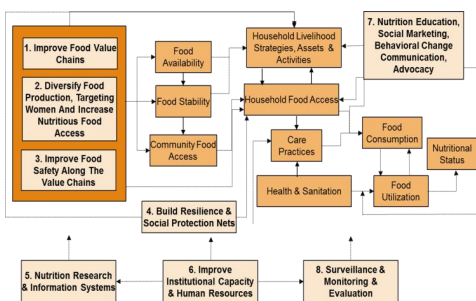
Expected calcium available for consumption by 2050

- The evolution depends on the drivers, under high GDP growth and land substitution, calcium consumption may grow by 13%
- One scenario also projects a decline in calcium cons.



22

Fixing it in Nigeria? A reflection



- Structural change in agriculture, and food system transformation important elements in food security and diet-related disease

- Overcoming lock-in in socio-technological systems

- Food systems interventions need to work at micro scale AND macro scale

- Coherence & Synergies



Thank you

Questions?



24

**Reflection Geert
Westenbrink (LNV)**

25

Programme Case Study Groups

Organization	Case study	Case Owner / Facilitator
HIVOS	Sustainable Diets for All (SD4ALL) programme , aims to make more sustainable, diverse, healthy, nutritious food available for low-income citizens in Indonesia, Uganda, Zambia and Bolivia.	Case owner: Nout van der Vaart (Hivos) Facilitator: Ruerd Ruben (WEcR)
ECDPM	Sustainable Agrifood Systems Strategies (SASS) , a research and dialogue project, using food systems analysis as basis for multidimensional sustainability solutions in the indigenous vegetable value chain in East Africa.	Case Owner: Francesco Rampa (ECDPM) Facilitator: Thom Achterbosch (WEcR)
SNV	The Kenya Market-led Dairy Programme: (KMDP): How can a food systems approach help to solve bottlenecks to scale up quality improvements and inclusive business models in the dairy sector	Case Owner: Nico Janssen (SNV) Facilitator: Nicole Metz (FBKP)
CDI	Sesame Business Network (SBN) support programme – the challenge of improving the performance of the Ethiopian sesame sector.	Case owner: Judith Jacobs (CDI) Facilitator: Just Dengerink (WEcR)

Programme Case Study Groups

10 minutes	<p>Short introduction of the case study (by the case owner)</p> <ul style="list-style-type: none"> • Background of the project: objectives, duration, funding, organizations involved • Role of food systems approach in development and implementation of project
20 minutes	<p>Mapping the role of the case study in the food system (with the group)</p> <ul style="list-style-type: none"> • What were the food system challenges the project aimed to address? • How did the food systems approach help to address these challenges? • Any other opportunities for applying food systems thinking in this case?
10 minutes	<p>Defining two take-aways for the plenary feedback round (with the group)</p> <ul style="list-style-type: none"> • One quick-win: an element of applying a food systems approach in practice that can immediately be applied in other initiatives. • One strategic entry point for longer term food systems change: what can (Dutch) policymakers do to enable the application of food systems approaches in practice?