



Saline Agriculture & Research

Complex challenges need integrative approaches

Science policy interface

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13-10-2022



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Introduction

- Climate change will increase the saline areas (higher temp, SLR etc.)
- Salinity influences water quality, food security, water security, biodiversity, soil health and crop health
- To identify all cost-benefits of possible scenarios, an integrated approach is needed.
- We need good research to identify possible pathways and trade-offs that can interact with policy

Typical questions from policy to research

- How will a future agricultural system look like in deltas?
- How will our agricultural transformation take place ?
- How will salinity impact our future agricultural system?
- How will climate change impact salinity?
- What knowledge do we have and are we missing on saline food systems?

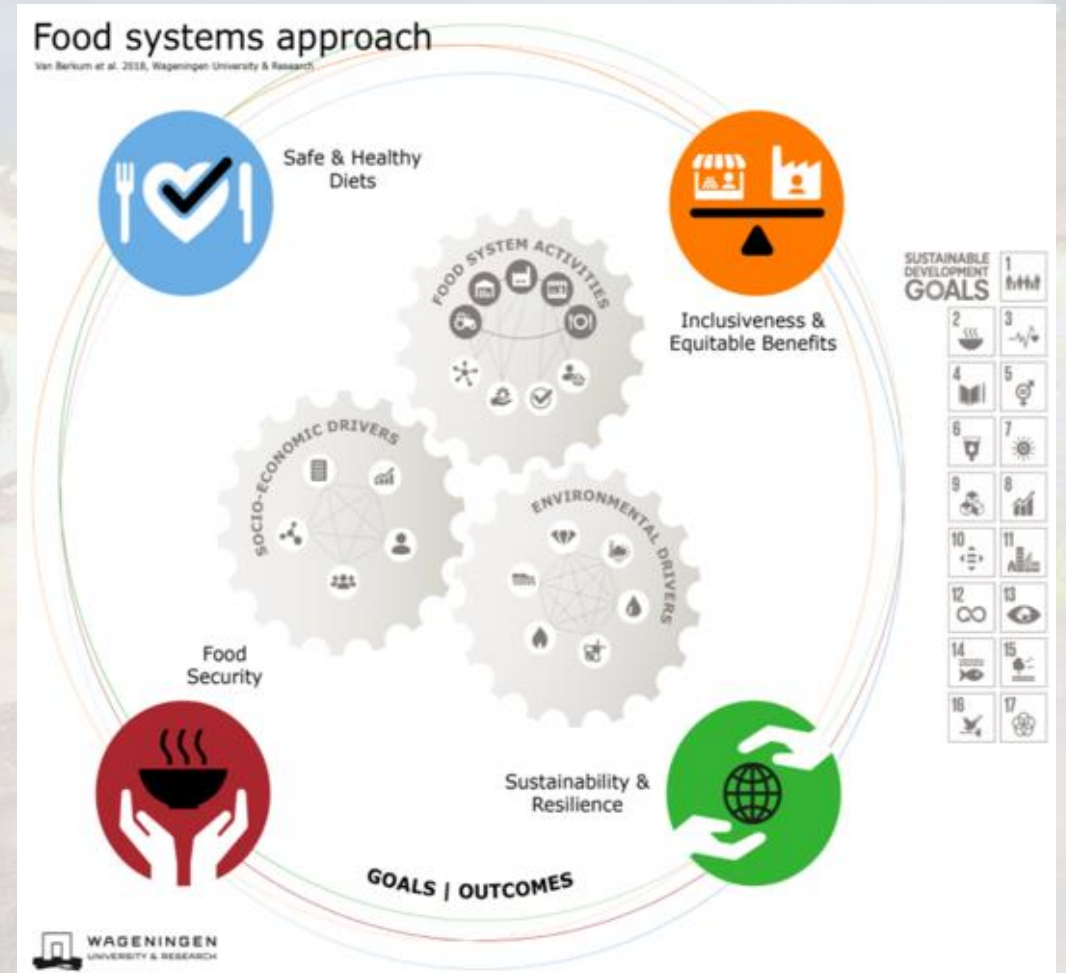
Main characteristics questions:

- Longer term questions
- Impacting various domains of the (food) system

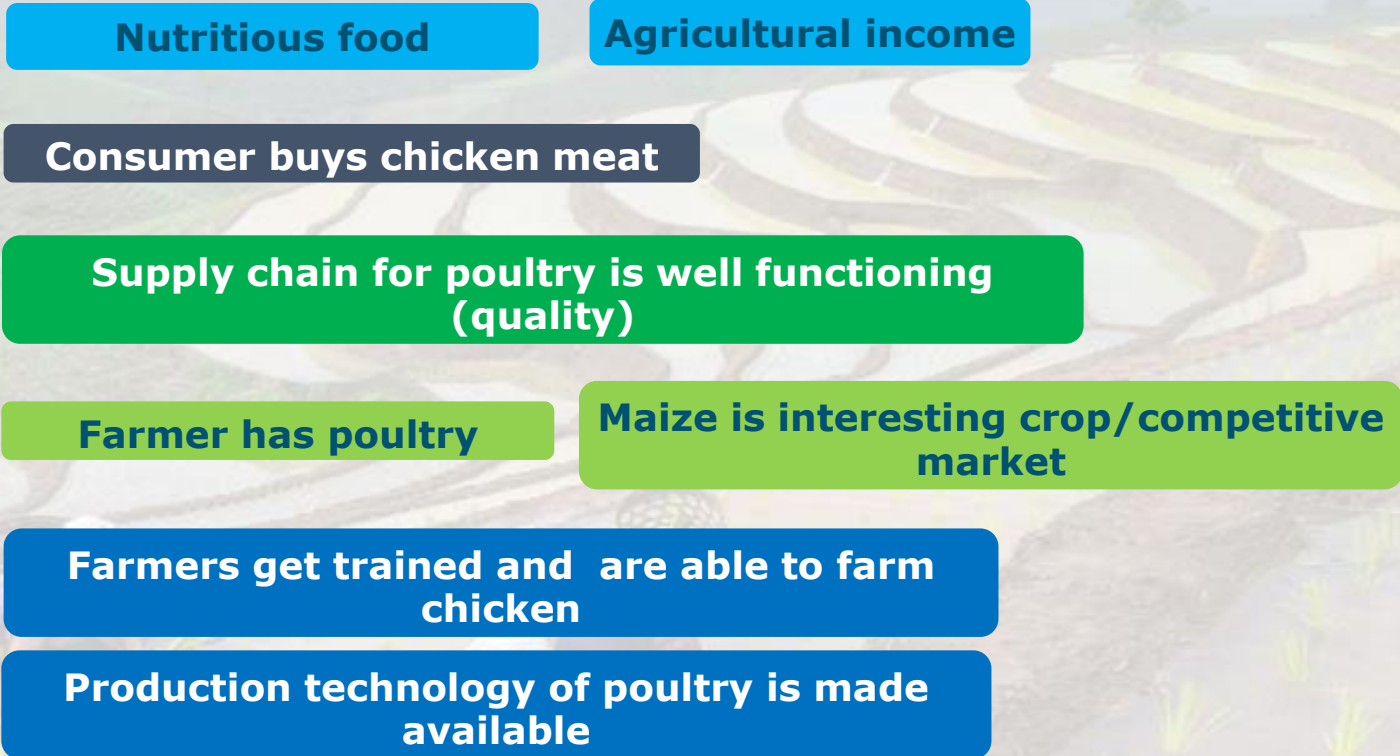
Complex problems need integrative approaches

Method: Food systems approach

- Addresses complex matters in long-term perspective
- Addresses uncertainties
- Often multiple output goals and thus integrative
- Identify trade-offs for scenario evaluation



Example 1: Agricultural Transformation Pathway: Crops to Livestock



Example 2: Deltas under pressure knowledge program

Bangladesh

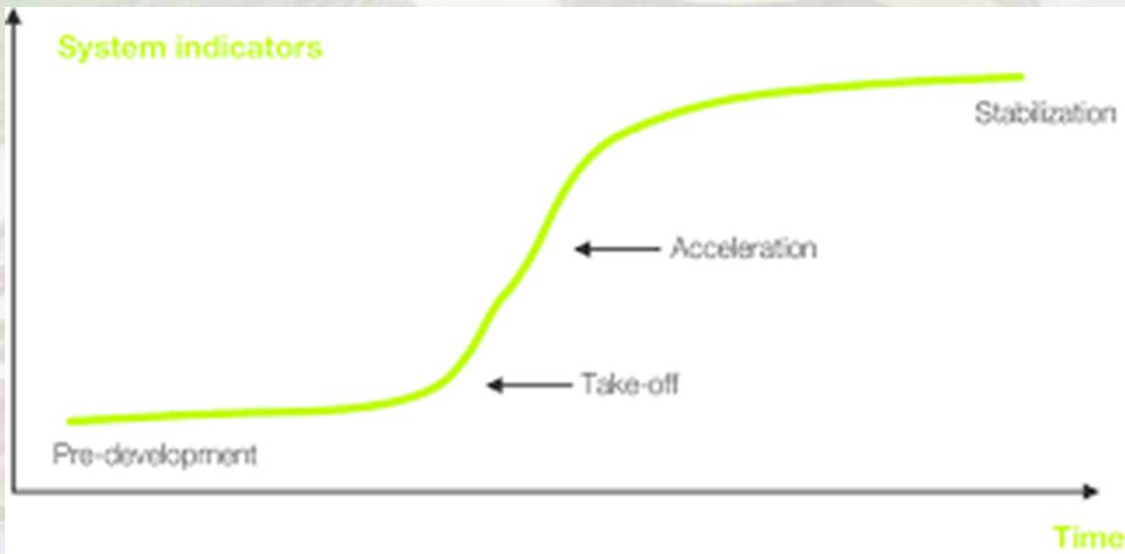
- Delta country already dealing with salinity
- Delta Plan present (long-term)
- Complex agriculture transitions in future, clear link to water

Vietnam

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Output: Guidelines on Transformative Systems

- Transitions are complex
- Helpful for people looking at transition
- Future, water and salinity are complex matters



Please scan to
get the DUP
Guidelines



Specific Output Bangladesh

- Investigating on relationship between livestock and salinity
- Paper modelling choices and social interactions on investment decisions (pump) in a polder in Bangladesh (ABM)
- Research on growing shrimps in pond with mangrove



Specific Output Vietnam

- Salt and whitefly resistance of chili pepper: showing variation for, and an interaction between, both traits
- Experimental work, on-station and on-farm
- Collection of baseline data: water management, salinity thresholds crops
- Development of data collection tools (i.e. household survey, farmer diary, experimental set-up)



Overall Output knowledge program

- Transition pathways for resilient and sustainable food systems in deltas.
- Food System and Water Food nexus at the field, farm, regional and national levels in deltas.
- Guidelines for transition pathways in food systems in deltas.
- Specific plant/livestock combinations, salinity/livestock, and shrimp/mangrove options, potential futures of specific food systems in deltas



Steps forward and final messages

- We need a clear picture (vision/scenarios) on what transition pathways in agriculture within the context of saline conditions will look like
- Facts are needed– we need research informing us on complex settings in such future conditions.
- Formulate the transition pathways together with stakeholders.
- We need supportive policy measures and an interactive dialogue between science and policy



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