

Deltas under Pressure, guidelines to facilitate transition pathways

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Report WPR-1121

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Contents

Summary	5
1 Introduction	7
2 Guiding principles	8
2.1 Transition pathways narrative	8
2.2 Elements of the planning process	8
2.2.1 Analyse together: Priority food system challenges and outcomes	10
2.2.2 Understand together: food system mapping	11
2.2.3 Prioritise together: targets for change	12
2.2.4 Explore together: develop and explore transition pathways	12
2.2.5 Strategize together: plan of action for change	13
2.2.6 Act together: implement transition pathways	14
2.2.7 Monitor, evaluate and learn together	14
3 Case Vietnam: Mekong Delta	16
4 Case Bangladesh: Southwest Bangladesh	18

Summary

This short note was initially prepared as an outline for the project team of the research project 'Deltas under Pressure' (DuP) to structure activities and increase impact in the search for possible *transition pathways for food systems in a delta environment*. The overall aim is to present an overarching framework that clarifies the linkages between the different disciplines in analysing such pathways. This work was supported by the 'Transition Pathways' project that is part of the same research programme 'Food and Water Security'.

By placing research in context, the framework helps to increase the impact of research activities as the connections between the different research activities and critical intervention points become evident. The framework might also be helpful for other stakeholders, like policymakers, private sector parties, NGOs, farmers groups, and individuals involved.

1 Introduction

In 2017 the High Level Panel of Experts on food security and nutrition suggested that “a food system gathers all elements (environment, people, inputs, processes, infrastructures, institutions, etc.) and activities that relate to the production, processing, distribution, preparation and consumption of food, and the outputs of these activities, including socio-economic and environmental outcomes¹”. Other studies^{2,3} operationalized the food system approach to understand the interrelationships and identify potential leverage points within the food system to reach pre-set goals. These pre-set goals will depend on local needs and development priorities and may include examples such as food and nutrition security, nutrition/health, climate change, resilience, biodiversity, equity.

The transition pathways *and processes* in the deltas of Vietnam and Bangladesh are connected to ongoing developments and planning processes and concentrate on agriculture in the context of urban development and climate change. For both case study areas, the goal is to examine and build on the current situation and define actions and changes in the food system that support the process towards a sustainable and climate-resilient food system. In more practical terms, in the case studies, we look at combinations of the following topics: a) the institutional, b) organizational, c) economic, d) social, and e) technical changes needed in the food system to support a response to development and climate change-related challenges.

After introducing the basic principles, the generic outline and description of the elements of a planning process, the two case studies are presented. The research activities and the larger picture of the two case studies are presented via a theory of change diagram. The more in-depth food system analysis and detailed results of the case studies will be published in separate reports and publications.

¹ HLPE. (2017). Nutrition and Food Systems: A Report by the High Level Panel of Experts on Food Security and Nutrition of the Committee on World Food Security. Rome.

² UNEP (2016) Food Systems and Natural Resources. A Report of the Working Group on Food Systems of the International Resource Panel. Westhoek, H, Ingram J., Van Berkum, S., Özay, L., and Hajer M.

³ Berkum, S. van, & Ruben, R. (2021). Exploring a food system index for understanding food system transformation processes. *Food Security*, 1–13. doi:10.1007/s12571-021-01192-6

2 Guiding principles

The following principles, partly based on the NAP guidelines⁴, are guiding us in defining actions and changes in the food system. The approach we take will:

- follow a country-driven, gender-sensitive, participatory, inclusive, and transparent approach, taking into consideration vulnerable groups, communities and ecosystems.
- be based on and guided by the best available science and, where and when appropriate, traditional, and indigenous knowledge, aiming to integrate (climate change) adaptation into relevant social, economic, and environmental policies and actions.
- not be prescriptive, nor result in the duplication of efforts undertaken in-country, but rather facilitate country-owned, country-driven action.
- use the food systems approach to analyse and communicate relations (in its broadest sense) as well as identify synergies, conflicts, and trade-offs.
- link to a transition pathway narrative, as developed and used in the project KB35 Motif Transition Pathways.

2.1 Transition pathways narrative

The 'TransPath'⁵ project narrative aims to develop and test an approach for exploring and analysing possible food system transition pathways (TPs) towards more sustainable agro-food systems with a special focus on "Low- and Middle-Income Countries". The identification of TPs starts by consulting stakeholders to develop one or more visions of a future sustainable food system for the area of interest in which the sustainability problems of the present system are addressed. Such a vision may differ considerably from the present system, implying that many parties think it may be very difficult or even impossible to achieve. The next step is to explore which incremental changes might lead the present system to develop into the future vision. Each of these incremental changes should be small enough to be conceivable or plausible. Such a series of incremental changes is called a transition pathway. If each of the small changes is plausible, the TP also becomes plausible, meaning that the vision for the future is also realistic to achieve. Moreover, by describing the TP as a series of incremental changes, it is possible to develop ideas on how to stimulate each of these changes and, hence, the entire transition process.

TransPath also uses the food systems approach as the analytical framework⁶. The strength of this model is that it identifies the critical elements of a food system although it does not specify the processes by which such systems may change. To also analyze this change process, the TransPath approach builds on a "multi-level perspective" framework designed to explore socio-technical transitions to sustainability. Essential to developing transition pathways is the interaction with stakeholders at various levels *and moments in time* and the combination of top-down policies and bottom-up societal initiatives.

2.2 Elements of the planning process

Deltas are dynamic environments in which change is a constant and disasters are always lying in wait. Development and adaptation processes in deltas will have to find answers to how to deal with combinations of climate change, subsidence, flooding, drought, saltwater intrusion, crop failure, urbanization, lifestyle, and market shocks. Food system transition pathways will have to deal with the interconnected slow and fast changes in biophysical and socio-economic drivers.

⁴ Guidelines for National Adaptation Plans (NAPs), LDC Expert Group, December 2012.

⁵ Boelie Elzen, Wim de Haas, Seerp Wigboldus, Bram Bos, Marijke Dijkshoorn – Dekker 2020. Transition Pathways - Contours of an Analytical Framework. Wageningen University & Research, Report WPR-893. Downloadable from: <https://edepot.wur.nl/525092>

⁶ Van Berkum, S., Dengerink, J., & Ruben, R. 2018. *The food systems approach: sustainable solutions for a sufficient supply of healthy food*. <https://library.wur.nl/WebQuery/wurpubs/538076>

Uncertainty is a sure thing, so avoiding tunnel visions and lock-in processes is vital. Transition pathways of food systems in deltas must be flexible and include mechanisms to learn and adapt to the current or anticipated dynamic situations. By underpinning the process with the best available science, *knowledge, data, and experience, research* can help in the design and evaluation of adaptive systems. The role of the research in deltas under pressure will most likely be limited to providing guidance and assistance for decision-makers on specific systems or locations.

The mandate given to research to take on a specific role is given by the decision-makers, which may include local, national, and regional governments, civil society or even the private sector. Of course, science can also take on a role, but the link with the planning process will probably be more difficult.

In the Deltas under Pressure project the mandate is embedded in long standing bilateral relations between the host countries and the Netherlands, which is also reflected in relations between the different research institutes.



Figure 1 Elements of the planning process

In both countries, the top-down policy processes aim for transitions towards sustainable, market-oriented climate-proof agriculture. Although details may differ, the core of the case studies include primary production, markets, and value chains from a farmer's perspective. In the case of Bangladesh, a regional perspective (provided by Solidaridad) and national perspective (of the government via its Bangladesh Delta Plan 2100) and the behaviour of farmers are also included. In the case studies, besides the overarching food systems approach, various tools and methods are used, including methods to engage with stakeholders, facilitate process analysis, and support developing, designing, and defining strategies for sustainable change. Documentation of these tools and methods can be found in the case study reports.

This section describes the seven (see **Figure 1**) that are used to define the activities in the transition process. These elements are, in essence, not more than an outline for adaptive planning. No single approach applies to both case studies, but the elements provide a common understanding of the planning process. The actual starting point of the process will depend on ongoing national, regional, or local planning processes.

The term 'together' features in each of these elements to stress that, whenever possible, these activities should be carried out in cooperation with the most important stakeholders to commit them to the various required change processes. The general term used for this interactive process is 'co-creation'.

These elements define the key steps in the co-creation transition process, although they are not necessarily followed in a predetermined order. There will be some jumping back and forth between elements and activities in elements in practice. The central element "Monitor, Evaluate, Learn together" feeds the planning process and allows learning and adapting.

Each of these elements is further elaborated below by providing a general description and identifying the main objectives, targeted outputs and necessary activities.

2.2.1 Analyse together: Priority food system challenges and outcomes

The analysis starts with what is at stake and defines the boundaries of the system of interest. For instance, key food system outcomes, relation to income or livelihood, access to healthy food, trade relations, legal aspects, dealing with climate change or focus on environmental or biodiversity, to name just a few. Will the project look at a country as a whole or focus on a specific region? Will it focus on a specific farming community, or will it address (parts of) the broader food system, e.g., consumption patterns? Which sustainability challenges will it address? Answers to these questions define the scope of the research and co-creation activity, the aims, the system analysed, and which stakeholders need to be involved.

Understanding goals and ambitions are the starting point when using the Food Systems Approach as an analytical framework. "Food systems are about a coherent perspective on all processes associated with the ways in which food features in society and affects and is affected by the natural environment. This includes food production and food utilisation: growing, harvesting, packing, processing, transporting, marketing, consuming and disposing of food remains. All these activities require inputs and result in products and/or services, income and access to food, as well as environmental impacts. A food system operates in and is influenced by social, political, cultural, technological, economic and natural environments⁷". The food system approach requires integration and work across borders, landscapes and disciplines. Using a multi-disciplinary approach is expected to be more effective and efficient in working towards goals (see **Figure 2**).

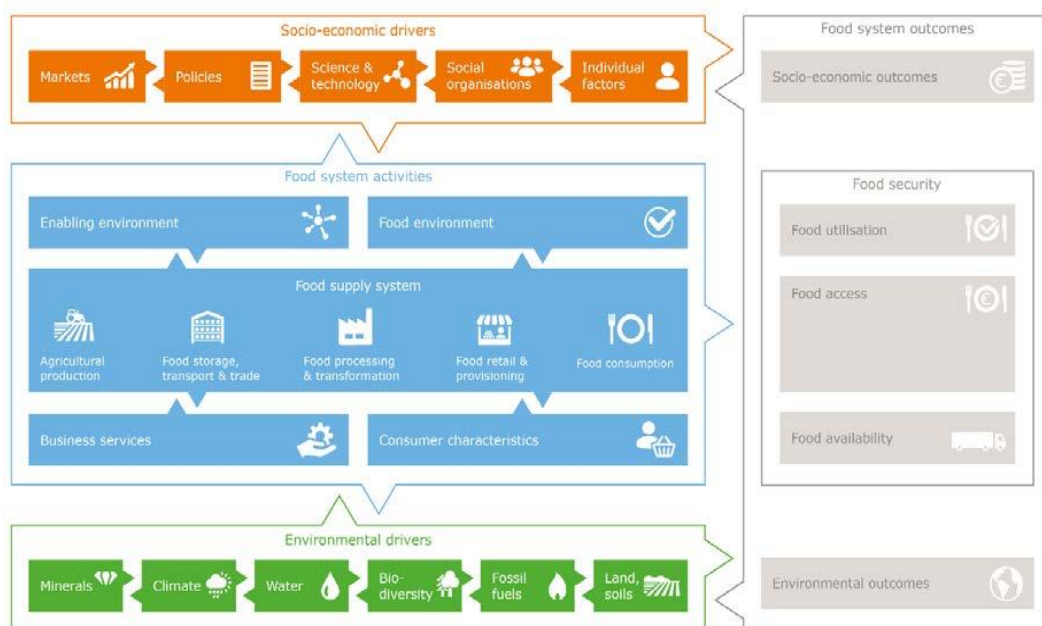


Figure 2 Schematic overview of the food system⁸

⁷ HLPE. (2017)¹

⁸ Van Berkum et al. (2018)⁶

Interaction with national and local stakeholders is critical to reconfirm or realign the goals and ambitions and incorporate recent insights and developments.

For both case studies so-called delta-plans are developed which will serve as a starting point as these are used in the national policy process and bilateral cooperation. The expected impacts of climate change on flooding, drought and salinity are leading in the deltas, urbanisation and its importance for regional development will also require considerable attention. Given the current COVID-19 pandemic and its impact on local and national economies, renewed attention for jobs and income can be expected. Also, a possible green recovery 'post' COVID-19 with a strong focus on healthy diets and sustainable production may need to be considered and incorporated in the design and development of the transition pathways to be developed.

In the following sub-sections, we present the key features of this analysis phase by describing the main objectives, targeted outputs and necessary activities.

2.2.1.1 Food system outcomes for the public and private sector

Objective(s):

Develop a common understanding of priority food system outcomes and objectives aimed for, with long, medium and short-term time horizons. This includes:

- Having a common understanding of current policy trends, objectives, plans and initiatives or public sector priorities.
- Having a common understanding of private sector ambitions and priorities.

Output(s):

- An overview of common understanding of current (public and private sector) goals and ambitions.

Required action/activities include:

- Elaborate on current plans, policies and ambitions relevant for the desired food system outcomes to discover commonalities and differences, especially any areas of conflict in ambitions.

2.2.1.2 Food system challenges based on institutional context and stakeholder analysis

Objective(s):

Develop a common understanding of priority food system challenges to be addressed, which include:

- Insight into the institutional setting.
- Overview of the stakeholder 'arena'.
- Knowledge of the role of different stakeholders in the food system and how much influence they have on the system. Identify who are supportive of change and who will resist.
- Overview of future perspectives, goals and specific objectives as well as possible strategies that are adopted by target groups and other stakeholders.

Output(s):

- Inventory and prioritization of challenges: with which to make the food system more resilient and sustainable.
- Stakeholder analysis describing the key players in the food system (and others in the area of interest, their ambition and their influence on others (to acknowledge the role of 'power')).

Required action/activities include:

- Desk research and interviews.

2.2.2 Understand together: food system mapping

When the overview of what is at stake and the necessary changes are clear, it becomes necessary to systematically identify the relevant characteristics of the food system in the case area. Besides agreeing on the system boundaries and goals, agreeing on the current situation or the point of departure is necessary for designing transition pathways. Describing the current situation forms the starting point for developing

possible transition paths. When combining food system analysis with transition paths, it is crucial that stakeholders have a shared understanding of the relevant elements of the food system in relation to the desired outcomes.

Mapping the relevant elements of the food system

Objective(s):

Develop a common 'picture' of the relevant components of the food system, which includes:

- Based on the joint analysis (taking into account Dutch policy objectives), map the relevant elements of the food system.
- Provide a schematic overview of the underlying root causes and system dynamics.
- Develop an overview of system constraints (i.e., barriers to change) and system 'opportunities' (factors that may stimulate or support change, 'enablers').

Output(s):

- A description and schematic overview of food system trends, outcomes, food system activities, environmental drivers, socio-economic drivers and food systems mechanisms (trade-offs and synergies).
- Identification of causal processes and system dynamics; this includes symptoms, trade-offs, synergies.
- An overview of system constraints and potential leverage points for change.

Required action/activities include:

- Describe food system trends, outcomes, food system activities, environmental drivers, socio-economic drivers and food systems mechanisms (e.g., trade-offs and synergies).
- Identify causal processes.
- Summarise the top system constraints and opportunities.

2.2.3 Prioritise together: targets for change

When the specifics of the food system are clear, it is possible to identify more precisely what needs to change, i.e. to identify the 'targets for change'. This step may render a list of general and more specific targets. This element, therefore, has two sub-elements, viz. 1) to make an inventory of targets and 2) to set priorities within this inventory.

Objective(s):

- Develop a common view of targets for change.
- Prioritise these targets and reach a shared understanding of which ones are key.

Output(s):

- A prioritised overview of targets for change.

Required action/activities include:

- Stakeholder discussion on what needs to change, and which priorities should be set.

2.2.4 Explore together: develop and explore transition pathways

In this element, stakeholders explore how agreed priorities can be realised, who needs to be involved and the necessary process. The transition pathways analysis is done in two steps.

- Develop one or more visions of a future sustainable food system (based on the earlier identified targets).
- Explore how these visions can be realised through several but plausible smaller steps.

The future vision describes a food system in which the targeted changes are realised, i.e., it outlines a sustainable food system. Participants may either seek to agree on one preferred food system or outline more food systems to reflect differences of opinion or different macro-level assumptions on future developments. They also set a timeframe for the future system (e.g., 2030 or 2050), which seems realistic given the required changes.

The future vision may radically differ from the present system and may appear unrealistic to achieve. By breaking the transition path into smaller steps towards the future shared vision by defining successive leaps as possibly aided using back-casting, a transition that initially seems difficult or even impossible to achieve becomes more plausible. If participants agree that each of the smaller steps is plausible, then the new system's outcomes also become easier to believe.

Given the desired future and planned activities to achieve the ultimate goals, the next step is to evaluate the gaps and barriers towards reaching those goals. The analysis looks at what is needed to close the major gaps to strengthen the food system, and this can be done for different actors (e.g., farmers, policymakers, businesses, consumers) or different subsystems (livestock, aquaculture, infrastructure, research). This element also requires a self-assessment to find the appropriate role and entry point for each actor to contribute most effectively to achieving the goals. The gaps could be related to the enabling environment or available skills. Examples are access to or availability of technology, finance, the legal and institutional setting, knowledge, capacities and skills needed for the task.

Each TP sketches concrete activities from various stakeholders that can help to overcome the barriers identified in preceding steps, overcome resistance by '*blockers*' by using the initiatives of '*movers*' and the opportunities for change that are also present. This activity results in one or more transition pathways. The transition pathway analysis thus provides clues for specific activities which can subsequently be used as input for a strategy for change.

Mapping Transition Pathways

Objective(s):

Co-develop and explore potential/recommended transition pathways. These include:

- An outlook on medium- and long-term futures (based on plans, initiatives and ambitions).
- An overview of gaps, weaknesses and barriers, but also strengths, opportunities and options to achieve targeted changes.
- Develop one or more transition pathways, i.e. a succession of smaller steps that could lead from the present system towards the more sustainable long-term futures.
- Based on the TP, identify leverage points, or what is needed to overcome gaps and/or reinforce strengths to enhance the food system in the short and longer-term.
- A draft workplan for the implementation of actions and activities that include all stakeholders.
- Strategies for stakeholder engagement.
- Identify roles of key actors in resisting or supporting change.
- Reflection on the above, to identify potential change strategies for various stakeholders.

Output(s):

- One or more visions of a sustainable future food system.
- One or more plausible transition pathways (a development process) that lead from the present agro-food system towards one or more of the more sustainable future systems.
- Specific suggestions for specific stakeholders and a realistic view on what we are able to stimulate (based on our mandate).

Required action/activities include:

- Workshop (or workshops) with stakeholders to develop future visions and transition pathways.
- Exploration of the gaps and barriers to reach the set goals and identification of ways in which these might be overcome.
- Identify supporting factors that enable the reaching of goals.

2.2.5 Strategize together: plan of action for change

Developing an implementation strategy requires insights, and ideas on opportunities for change and how to overcome barriers, including resistance from stakeholders. These form the basis for defining the building blocks for change. A feasible strategy needs to be sensitive to the context provided by ongoing changes and dynamics.

Identifying actors who can form a change alliance that can take up sub-processes, a specific subsector, or specific topics (e.g. supply chain, farmers, water management) can help embed the strategy in communities and relevant processes and overcome barriers and resistance.

Objective(s):

- Develop an overall strategy for change.
- Build trust and commitment via partnerships with relevant stakeholders based on existing structures and communities.
- With them, make the overall strategy more specific and concrete.

Output(s):

- Plan or plans of action for change.
- Community of trust to share data, information and define actions.
- Stakeholder teams to implement defined actions.

Required action/activities include:

- Workshop(s) with stakeholders to develop and build ownership of action plans. Or workshops to identify existing actions and place them in the context of transition pathways in food systems.

2.2.6 Act together: implement transition pathways

Implementation of transition pathways is not straightforward or done in a blueprint fashion. A flexible execution of activities based on continuous monitoring and learning is needed to accommodate the transition process and acknowledge socio-economic dynamics and environmental changes during the implementation.

Objective(s):

- Implement and execute committed actions; also reflect on and redirect ongoing and planned activities.

Output(s):

- Actions and plans are rolled out, adjusted, further specified.

Required action/activities include:

- Wide variety of specific activities in accordance with the plans.

2.2.7 Monitor, evaluate and learn together

For goal-oriented processes, evaluating or monitoring progress and allowing for interventions to correct, stimulate or stop activities is essential. Generally, this is done via indicators, which in their most basic form can provide a check whether an action is completed or not (e.g., training has been given, or a road has been constructed). Indicators can be quantitative or qualitative. Generally, policymakers, industry and farmers already register progress, and in this project, the starting point is to align to the existing monitoring schemes and add necessary indicators. For each element discussed above, the appropriate indicators will have to be defined.

Monitor, report and evaluate progress and make learning explicit

Objective(s):

- Develop consensus on what to measure and how to measure this. Also, agree on reporting, signifying progress, and making lessons learnt explicit.
- Implement a 'flexible action strategy' in a 'learning by doing' fashion.

Output(s):

- Regular reporting on progress on the process.
- Data collection plan for specific metrics.
- Documentation of progress on specific metrics.
- Reports (of progress) to stakeholders.

Required action/activities include:

- Monitor and analyse the effect of various activities.
- With various relevant parties, assess monitoring findings.
- Adapt strategies and activities when needed.
- Disseminate information to stakeholders.

3 Case Vietnam: Mekong Delta

In 2019 a Memorandum of Understanding on the Mekong Delta Agricultural Transformation Program was signed by the Vietnamese (VN) Prime Minister Nguyen Xuan Phuoc and the Netherlands (NL) Prime Minister Mark Rutte. This Memorandum started the next phase of the VN-NL strategic partnership in the Mekong Delta. The Agricultural Transformation Program aims to facilitate and support the Vietnamese Government to assist in the agricultural transformation. towards a viable modern sustainable, market-oriented agricultural sector that provides fair opportunities to all relevant actors (from farmers to consumers) in the food system. The Mekong Delta is a major agriculture and seafood production hub in Vietnam. The delta is a major rice exporter and a significant exporter of aquaculture and fish. Fruit and vegetable exports are rising.

Agriculture in the low-lying area of the Mekong River Delta will have to cope with climate change. The low-lying delta is particularly vulnerable to sea-level rise and associated saltwater intrusion. Not only will coastal erosion and flooding pose more significant safety risks, combined with changing rainfall patterns, the upper and middle delta will also face more frequent and severe flooding. Arable farming, livestock husbandry and freshwater aquaculture will have to find answers to, for example, changes in rainfall, floods, droughts, saltwater intrusion and pests and diseases. The activities related to the steps as outlined in Chapter 2 for this case study are presented in **Figure 3**.

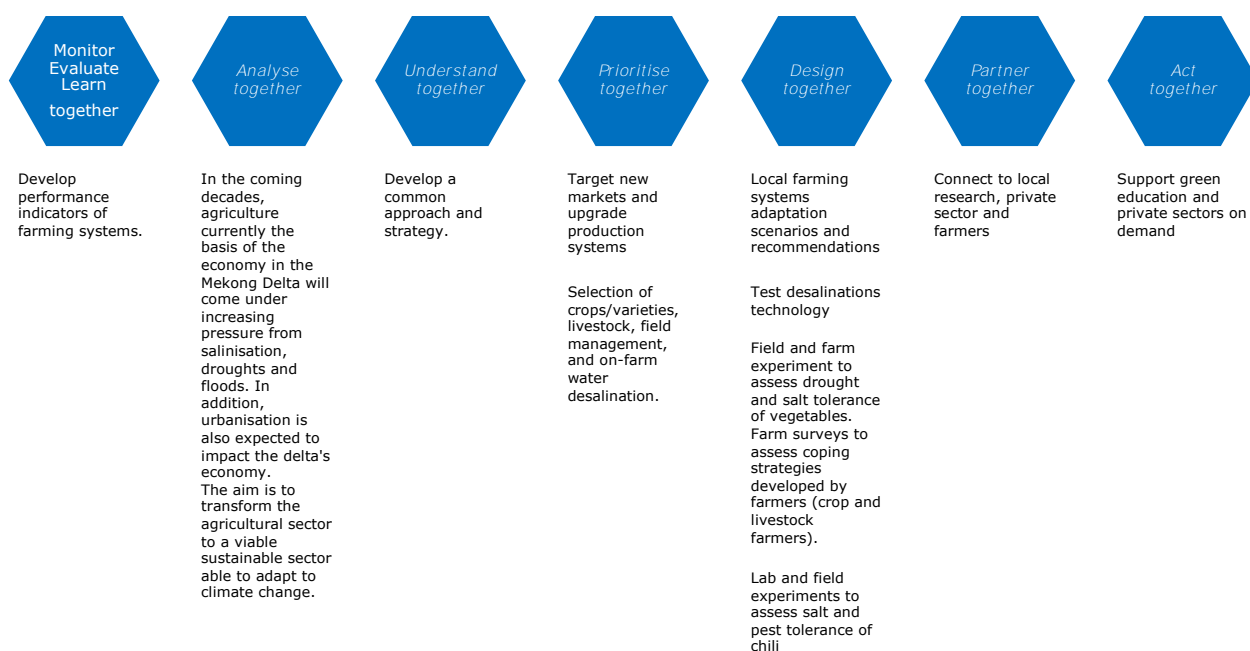


Figure 3 Outline steps case: Vietnam

The Vietnam case study is part of the overarching programme "Food Security and Valuing Water"⁹ (KB 35). The overall targeted impact of the KB 35 programme is to contribute to zero hunger while acknowledging the other UN sustainable development goals. **Figure 4** shows the relations and contributions of the Vietnam case study to KB 35.

⁹ <https://www.wur.nl/nl/Onderzoek-Resultaten/Onderzoeksprojecten-LNV/Expertisegebieden/Kennisbasis-onderzoek/KB-projecten-lopnd-2019-2022/Voedsel-en-waterzekerheid.htm>

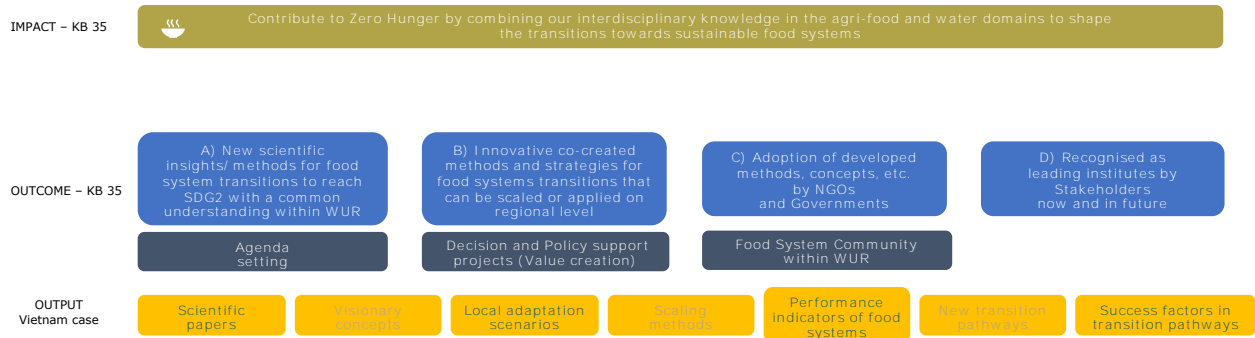


Figure 4 Relations between KB 35 and the Vietnam case study

In the Vietnam case study, we focus on the climate impacts that farmers will face. Climate change is expected to exacerbate existing stresses and have a high impact on production via salinisation, drought and pests. The study aims to increase resilience and improve the production systems of local farmers to make them future proof. Via targeted field and laboratory experiments with local researchers, the private sector and farmers, we strive to find viable solutions.

The key stakeholder is the farmer whose livelihood depends on production and the relation with the value chain. In food system terms, the goal will be to provide a livelihood to farmers via agricultural production systems that can adapt to the impacts of climate change. The outline of the steps and related activities are presented in Figure 5.

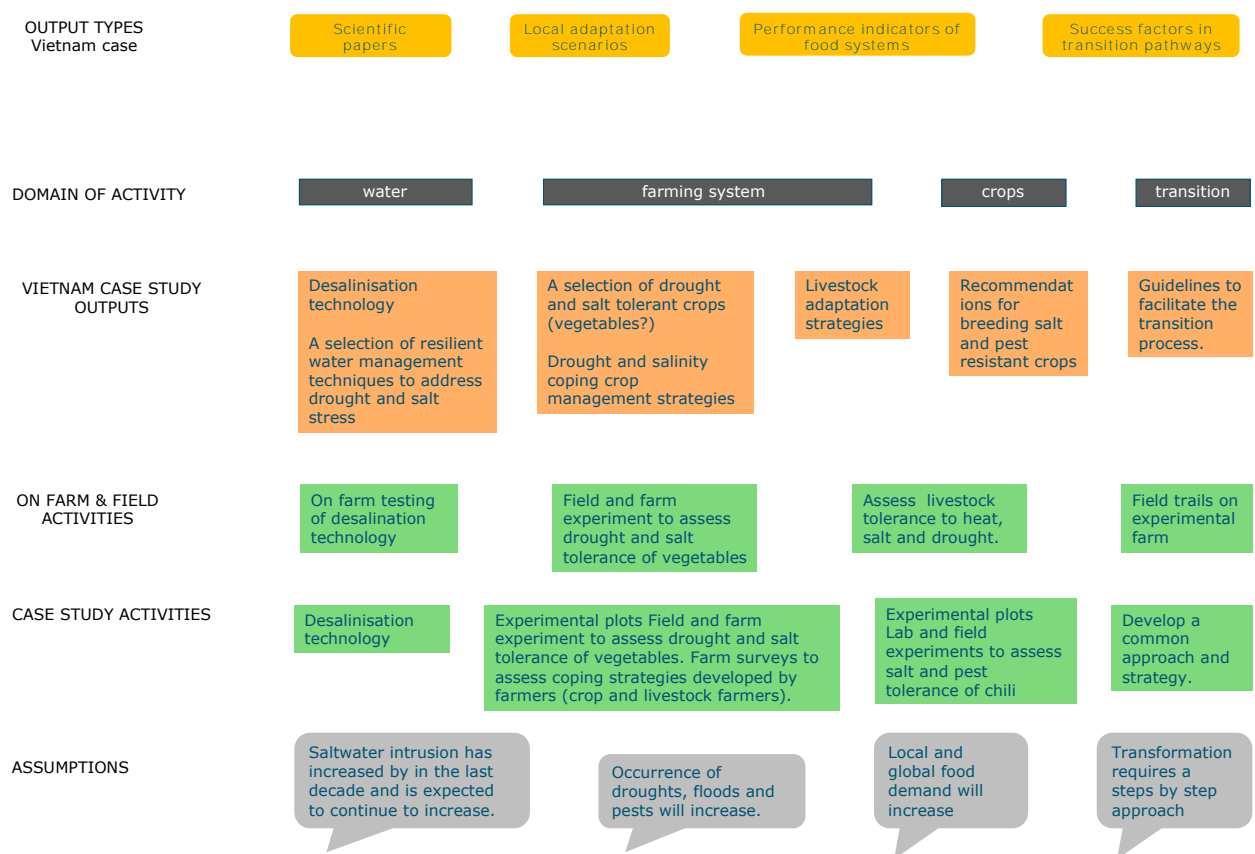


Figure 5 Theory of change for the Vietnam case study

4 Case Bangladesh: Southwest Bangladesh

Since its independence in 1971, Bangladesh has faced challenges feeding its population. Although large scale famine no longer occurs and substantial progress is made, the challenge remains large, mainly driven by an increasingly urbanising society and hampered by climate change. Therefore, the government has worked hard to increase food production. The government initially stressed attaining grain self-sufficiency, starting with rice, the nation's main staple crop. In recent years, in response to the changing diets of an urbanising population, the focus shifted to include nutrition security. Undernutrition remains a problem, as fruit and vegetable consumption is below recommended levels for most people. Substantial Food system opportunities arise related to moving out of poverty: increased GDP enhances protein intake. Food production is affected by the scarcity of good-quality agricultural land, sufficient freshwater resources, tightening of the agricultural labour market, climate variability and long-term climate change, and drainage problems.

The government of Bangladesh, in cooperation with the government of the Netherlands, aims to implement Bangladesh Delta Plan 2100 to address, amongst others, the food system supply and demand challenges. The Delta Plan integrates planning from all relevant sectors to arrive at a holistic plan for the Bangladesh Delta. Implementation of the Delta Plan is grounded in a long-term vision of the Delta's future. The southwestern part of the Delta, specifically the districts Satkhira, Khulna and Bagerhat, provides a case to transition to sustainable agriculture with efficient and fair market linkages. We connect to the international NGO Solidaridad that is implementing the SAFAL programme, with the objective to strengthen food production, provide a fair income for farmers without further stressing the environment.

The WUR team, based on the Bangladesh Delta Plan 2100 in consultation with Solidaridad and other stakeholders, subdivided the work on the case study Bangladesh into four themes.

- i) Water and salinity. The objective is to understand how the salinity changes over time by considering flooding, drought, sediment accretion, and subsidence and how this interacts with water availability and water management. It will allow a better understanding of the effects of the changes in the water system on food production. A mechanistic, deterministic model will be developed based on existing models to capture these water and food production interactions.
- ii) Livestock. The objective is to understand the possibilities to improve the national diet with more proteins by increasing livestock (cattle, sheep and poultry) production towards climate-resilient adaptation and sustainable animal production in the delta.
- iii) Mangrove and shrimp. The objective is to determine the most socio-economically beneficial practices of the shrimp/mangrove system for farmers' livelihoods.
- iv) Human behaviour. The objective is to analyse "human behaviour" to aid the understanding of different strategies used by farmers and provide insight into how the foreseen transitions can be aligned with farmer behaviour.

In the DUP project, various activities are carried out under each of these themes. These activities seek to achieve a set of outputs, outcomes and impacts that are shown in the theory of change diagram (see **Figure 6**).

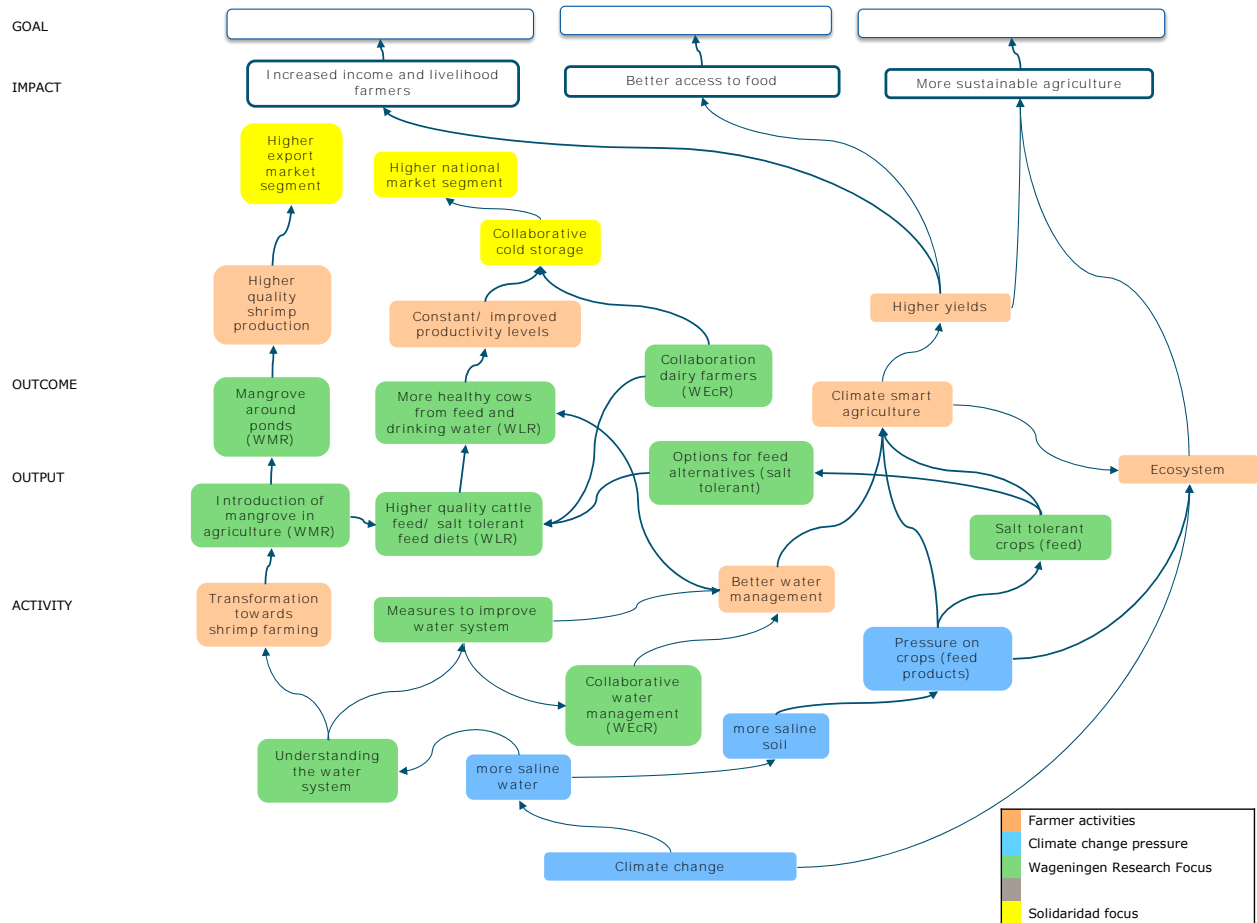


Figure 6 Theory of change for the Bangladesh case study

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The mission of Wageningen University & Research is "To explore the potential of nature to improve the quality of life". Under the banner Wageningen University & Research, Wageningen University and the specialised research institutes of the Wageningen Research Foundation have joined forces in contributing to finding solutions to important questions in the domain of healthy food and living environment. With its roughly 30 branches, 6,800 employees (6,000 fte) and 12,900 students, Wageningen University & Research is one of the leading organisations in its domain. The unique Wageningen approach lies in its integrated approach to issues and the collaboration between different disciplines.

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Report WPR 1121

The mission of Wageningen University & Research is "To explore the potential of nature to improve the quality of life". Under the banner Wageningen University & Research, Wageningen University and the specialised research institutes of the Wageningen Research Foundation have joined forces in contributing to finding solutions to important questions in the domain of healthy food and living environment. With its roughly 30 branches, 6,800 employees (6,000 fte) and 12,900 students, Wageningen University & Research is one of the leading organisations in its domain. The unique Wageningen approach lies in its integrated approach to issues and the collaboration between different disciplines.

