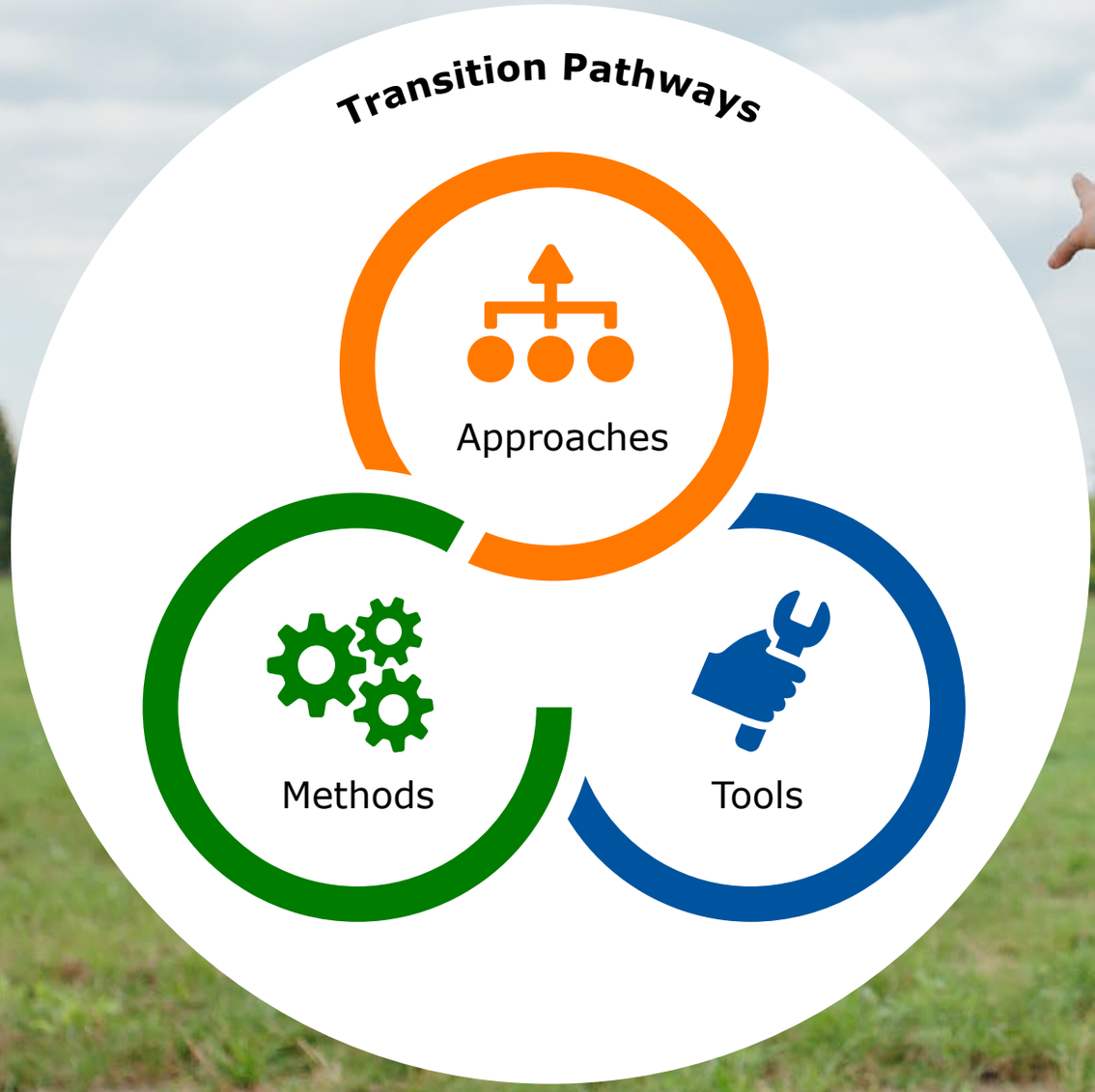
Tools for transition

At the moment, many toolboxes for stakeholder engagement exist. This document describes approaches, methods and techniques that can be applied when involving stakeholders in the process of developing transition pathways to a sustainable food system.



Intro

Principles of Responsible Transitions

Colophon

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Introduction

What is this brochure about?
This brochure describes approaches, methods and techniques approaches, methods and techniques that can be applied when involving stakeholders in the process of developing transition pathways to a sustainable food system. At the moment, many toolboxes for stakeholder engagement exist. Our aim is to indicate the importance of:

- Considering the **principles for responsible transitions**
- Thinking in advance about the **approach**: the role of the researcher and the way that research can contribute

For each approach, a number of inspiring **methods** and tools are described, which are already being used in practice.

What do we mean by transition pathways?
A transition pathway is a narrative that describes how a new or adapted system can evolve out of a previous system. A transition encompasses both technical and non-technical change. The same diversity is reflected in transition pathways, even more so because they play out in different contexts which affect related processes. The term 'transition pathway' can be used retrospectively to describe past transitions, as well as prospectively to assess possible future transitions. Transition pathways come in many forms[1] and can be used either to envision system change or to reflect on it.

Who is this brochure intended for?
The brochure is intended for members of teams of researchers, consultants or experts that support practical, innovative projects to make the food system more sustainable.

Principles for defining responsible transition pathways

Inclusiveness and dialogue: working on transition pathways should be inclusive and reflective, and must promote dialogue
To solve problems in the food system and reveal new opportunities, it is important that all relevant stakeholders be involved. The principle of inclusiveness applies here. Inclusiveness implies not only directly involved individuals, but also those indirectly involved people who may have to deal with the impact of changes in the food system. However, the involvement of stakeholders alone is not enough to ensure development of responsible transition pathways. The approaches, methods and tools should also contribute to a dialogue in which all stakeholders are taken seriously, can provide their own input and can exert influence.

Integrality: working on transition pathways must foster coherence
In many projects the focus lies on value chains, but a chain approach is not suitable for the food system, whose greater complexity calls for a system approach. In the system approach, the methods and tools should be chosen that are applicable to multiple actors, multiple scales and multiple places. The presence of multiple actors implies that not only food producers, retailers or consumers are involved, but environmental organisations or cultural organisations as well. The need for multiple scales signifies that the methods should connect problems and solutions on a local scale with requirements from and impacts on the surrounding regional scale, while the regional scale is connected with the national scale, and so forth. The term 'multiple places' is related to multiple scales but focusses on the tradeoffs from one place to another. For instance, a solution for waste in Europe can cause major environmental problems in a third world country where the waste is processed.

Contextuality: working on transition pathways should take cultural context into account
Not all methods or tools work well in multiple cultural contexts. A method that works very well in the Netherlands will not necessarily work in a country that is part of the same food system but is located elsewhere in the world. This is especially important for methods and tools for the engagement of stakeholders. Methods of communication can differ greatly between countries, as can the hierarchical relationships or the stakeholders' access to the project. Methods should therefore take the cultural context into account.

Long-term orientation: working on transition pathways should anticipate the long term
An important characteristic of transitions is that they last for decades. Transitions such as the introduction of mobile phones went quite rapidly (one decade), while other transitions go much more slowly, such as the introduction of electric cars. Engagement methods and tools need to adhere to either the aspect of time or the aspect of timing. The first aspect, time, relates to the period that a tool is aimed at. When stakeholders are involved in planning, tools should help them to consider the long term. The second aspect, timing, relates to the different phases through which transitions proceed, defined in transition theory as follows: pro-development, takeoff, breakthrough and stabilisation[2]. Each stage requires its own way of working and its own methods and tools.

Tangible actions: working on transition pathways should facilitate concrete actions for change
Methods and tools should be aimed at supporting or facilitating change by means of concrete actions. The envisioning of transition pathways requires an understanding of future situations and of the kind of system change which could lead to such situations. Also, the use of stakeholder engagement tools requires a concept of the stakeholders' role in the transition process. What concrete change do the stakeholders want to achieve? And how can this tool or activity contribute to concrete actions to achieve change? Tools should help stakeholders to understand how they can contribute to the desired transition.

Approaches to defining transition pathways

The term *approaches* refers to the paradigms behind the way research is done. Approaches include broad assumptions on basic concepts like truth, facts or reality; thematic preferences; and preferences for certain methods in which the approach is shown. We distinguish four approaches based on two preliminary choices.

The first choice to be made concerns the *role of the researcher*. Does the researcher play the role of honest broker: a neutral provider of knowledge and information? Or does the researcher play the role of issue advocate who engages himself or herself with a group supporting its interests?

The second choice concerns the *type of science* that is used. Is it normal science in the traditional sense, or is it a form of post-normal science which also questions assumptions about value-free knowledge production?

These two choices result in *four approaches*.

Role of researcher > Type of research > Overview approaches

Role of the researcher: knowledge broker or knowledge advocate

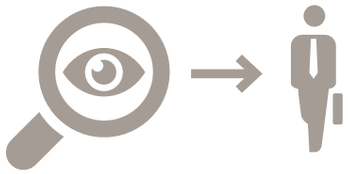
Collaboration with stakeholders in transitions asks more from a researcher than just being the expert. Researchers in transitions can assume several roles, such as advisor, arbiter, mediator, issue advocate or broker[3]. Here we distinguish two roles.

Honest broker of policy alternatives
The researcher engages in the decision making processes in which stakeholders or governments try to find answers together. The aim is to give all involved parties an equal information position. Brokers take a neutral position between stakeholders with different views. For this role, it is important that the brokers are trusted by all parties and do everything possible not to betray this trust.

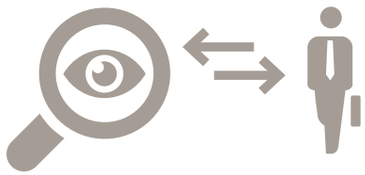
Advocate
The advocate is committed to certain disadvantaged or excluded groups of stakeholders, such as small farmers or residents of deprived neighbourhoods. Advocates try to support such groups with research outcomes which are ignored by decision makers or which contravene data and theories of those in power. These alternative research outcomes (not to be confused with the so-called 'alternative facts') can play a role in contexts such as legal proceedings or political processes.

Type of research: normal or post-normal

The second choice concerns the scientific paradigm. Is the research performed in the tradition of normal science, aimed at objective information and knowledge that can be used in the preparation of transition pathways? Or is it 'post-normal science': research which is open to the influence of the stakeholders, who participate in data collection and the formulation of conclusions?[4]



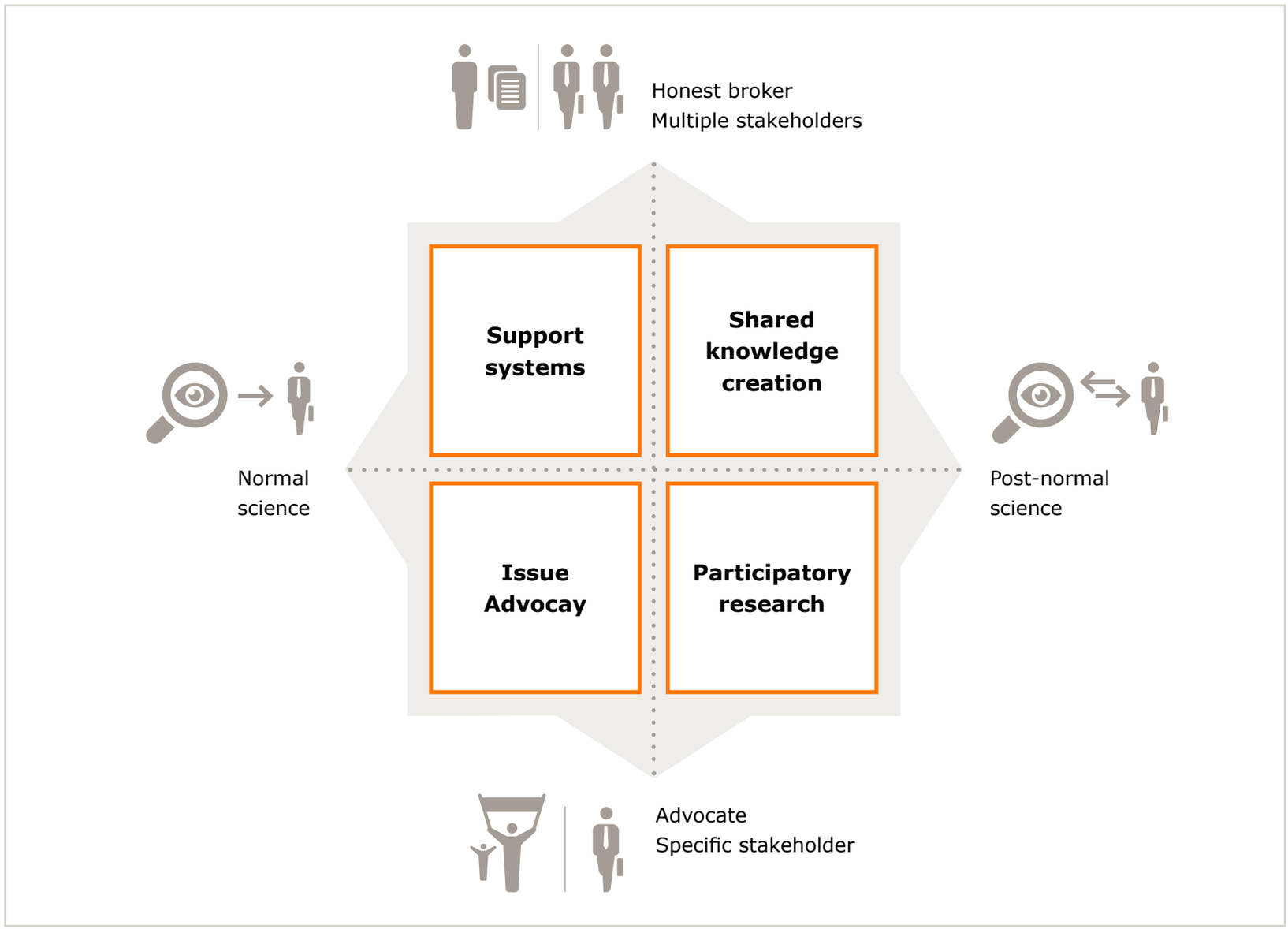
Normal science
In the case of normal science, stakeholders are supported with relevant insights from science and with ideas that stimulate stakeholders' choices, as well as their mutual debate. Activities that fit this purpose include providing information with relevant data and insights, and identifying options for choices and ex-ante evaluations (qualitative or quantitative) of the consequences of different views and potential choices.



Post-normal science
With post-normal science, research is part of a joint process of gaining insights into a situation of uncertainty, including uncertainty about what is uncertain. There are divergent values and interests, and urgent decisions are waiting to be made. Post-normal science introduces new methods and tools: stakeholders are involved in the research process itself, as when reviewing research outcomes

Role of researcher > **Type of research** > Overview approaches

Overview of four approaches



Role of researcher
Type of research
Overview approaches

Support systems

This approach is exemplified by the stepwise procedure described in the Transition Support System approach (TSS)[5]. The TSS approach is characterised by a continuous interaction of researchers with stakeholders, while allowing for a dynamic composition of the group of stakeholders involved. The main aspect is the stakeholder process, in which decision support tools and data are integrated with the consensus of stakeholders. Within the TSS approach, topics of discussion include complex issues such as future projections of food security, as well as the action perspectives and their potential impact. In this regard, the TSS approach facilitates ex-ante evaluation. The TSS consists of five steps, in which stakeholders participate continuously: (1) determination of urgency; (2) scenario analysis; (3) in-depth analysis, in which the models are used as a basis for deliberation; (4) insight into the future, and visual insights into the potential outcomes of different courses of action perspectives; (5) evaluation of impact.

Shared knowledge creation

This approach assumes that relevant knowledge is gained in practice. The relevance of knowledge lies not only in answering research questions, but also in contributing to change.
It also provides significant support for joint learning processes. Relevant knowledge is the result of a continuous process of socialising, explicating, combining and implementing. The researcher is not only an expert on content, but she is also part of the learning process, for instance as a facilitator or innovation broker.
For example, at Wageningen Centre for Development Innovation, there is a great deal of experience in facilitating multi-stakeholder partnerships (MSPs)[6]. This experience has been used to create a guide for the effective partnerships[7].

Role of researcher > Type of research > **Overview approaches**

Issue Advocacy

Issue advocacy is an approach in which facts and scientific insights are gathered to support a citizens' initiative aimed at influencing decision makers. In issue advocacy the implications of research are used for a particular stakeholder group, mostly one without much power to change situations. The role of the researcher is not neutral: she takes sides. It is a form of advocacy which has great faith in facts and figures and assumes that normal science has enough power to bring about change. In many cases, this approach is applied in situations where stakeholders oppose a problem such as industrial pollution. However, this approach can also be aimed at the development of alternative transition pathways, which might serve to enforce participation or strengthen running processes of participation.

Participatory research

In participatory research, research is not performed by researchers only, but rather by a combination of researchers and stakeholders. Participants can be part of some or all stages of the research process, such as developing research questions, carrying out research activities, analysing research or interpreting research results. The GAP2 project (Connecting Science, Stakeholders and Policy), funded by the European Commission, aimed to consolidate the experiences of fisheries scientists in using the technique into a good-practice guide on participatory research[8]. Participatory research can be used to enable/employ/ promote stakeholder engagement in transition pathway development, for instance when there are scientific questions which can aid in understanding possible transition pathways. In the GAP2 project, main principles for participatory research were formulated.

Role of researcher > Type of research > **Overview approaches**

Methods for defining transition pathways

We define *methods* as the strategies and processes utilised in the development of transition pathways. Some methods and approaches are closely linked. Working on transition pathways requires methods to analyse the system and problems in the system; to envision or design a desired future, specifying general goals like no poverty and zero hunger; to define the pathways between the present and the future, using forecasting, backcasting or a combination of these; and to define interventions. We give examples that emphasise specific aspects of participatory methods but are not limited to them. These aspects are: (new) systems, pathways, interventions. All these methods can be applied in processes with stakeholders.

(New) system	Pathways	Interventions
Participatory mapping	Interactive scenario building	Soft Systems Methodology
Quick Scan	Participatory backcasting	Theory of Change
Participatory design		

Participatory mapping

In transitions with a strong spatial aspect, participatory mapping could be useful. Stakeholders draw maps of their knowledge on the issue, including both qualitative and quantitative information[9]. In the next step, stakeholders could draw a map of their vision of the future, to which a transition pathway could lead. A compilation of the various current and future maps could form the basis of group discussions on how to backcast from the future map to the current map. When stakeholders work together with scientists at modelling the possible outcomes of a transition, participatory modelling could be useful. In participatory modelling, the knowledge of stakeholders is integrated in the development of the model, as well as in the choice of the pathways which will be assessed with the model[10].

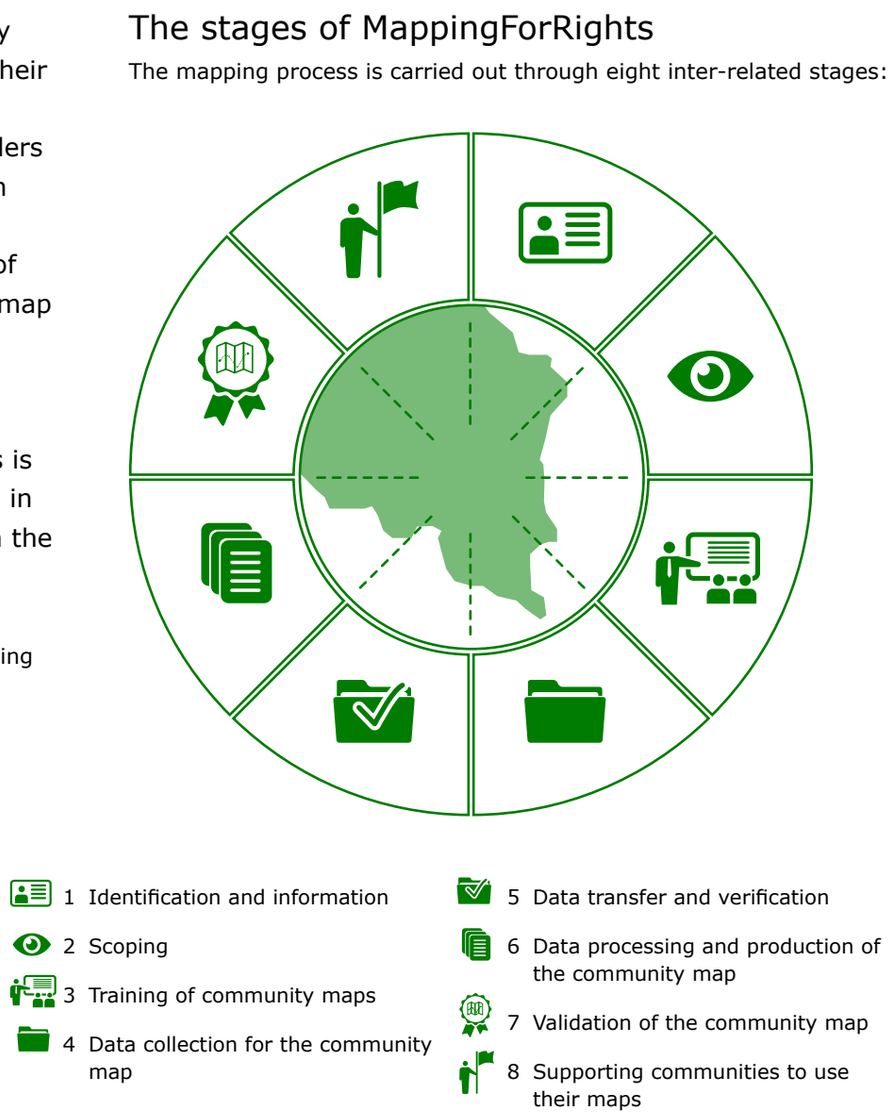


Figure Example of participatory mapping as a method for mapping of rights[11]

Back to overview of methods

Quick Scan

Methodes

QUICKScan is an example of a methodology which combines spatial models and participation. This method can be used to guide participatory processes concerning spatially explicit goals and/or problems[12] (Winograd et al. 2013). In transition pathway development, it can help to model, visualise and assess the impact of different transition pathways. QUICKScan operates by bringing together a wide range of stakeholders in moderated participatory workshops. Here, participants use a spatially explicit tool to create an expert system that models the impact of strategies or policy options, with a strong focus on visualisation of results[13], [14]. The modelling is based on input of the participants, but also serves as input for the discussion between participants[15].

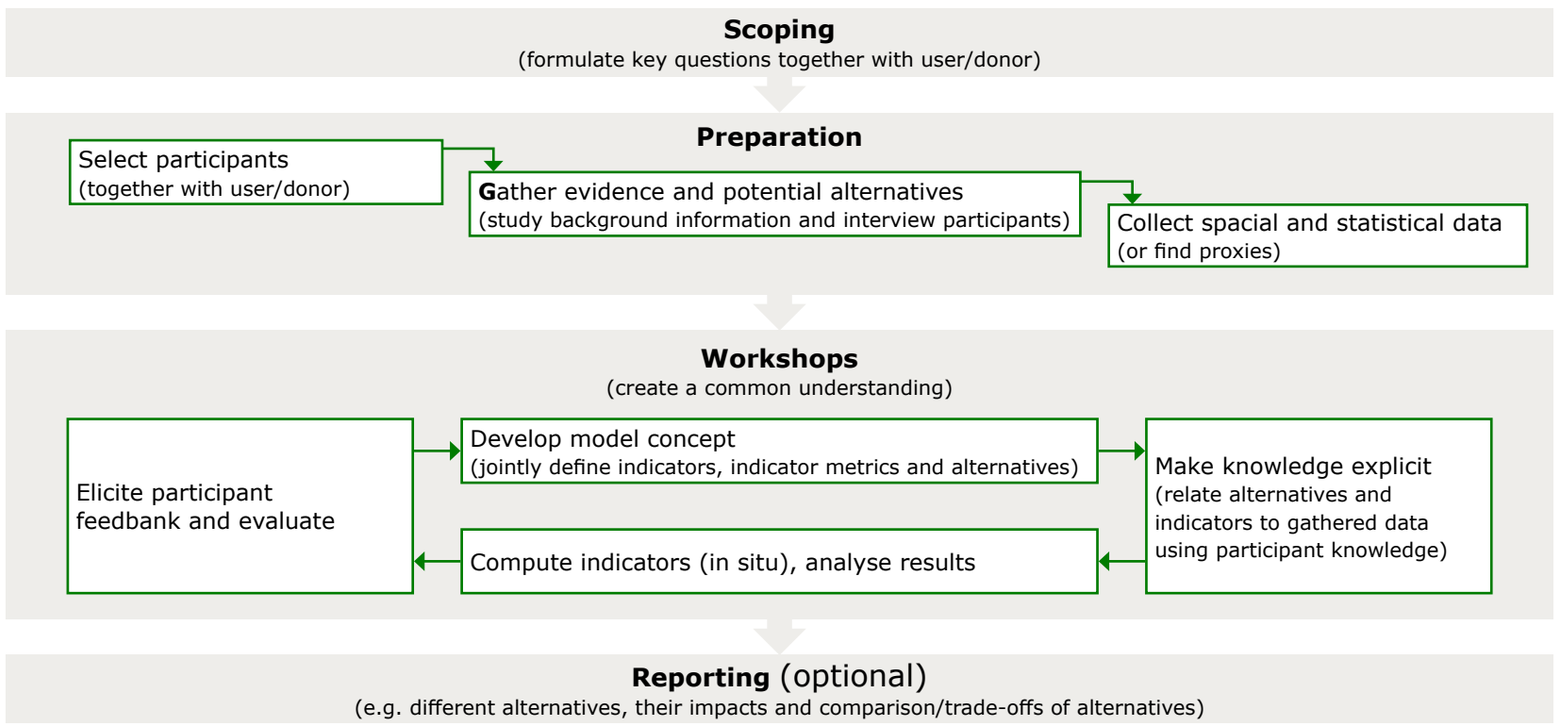


Figure Sequence of phases in the QUICKScan method[16]

Back to overview of methods

Participatory design

Methodes

Participatory design includes the methods to design a plan or specification for the construction of an object or system that invites all stakeholders (customers, employees, partners, citizens, consumers) into the design process as a means of better understanding, meeting, and sometimes preempting their needs.

An example is Reflexive Interactive Design, or RIO (Reflexief Interactief Ontwerpen)[17]. RIO is about designing in a structured manner, based on transdisciplinary principles, researchers together with practitioners. The aim of RIO is not only technical improvement or new technical solutions, but also the creation of ownership for practitioners. RIO is in fact a process, which also leads to new networks, and therefore to new collaborative projects. The core assumption of RIO is that those things that we currently consider as trade-offs in technical design only reflect the societal goals of the past. During the design process, RIO facilitators try to make all underlying assumptions of design choices explicit. The technical workings of the RIO process are difficult to explain but the main aim is to integrate engineering with stakeholder engagement, thus making technical innovations relevant to their future adopters.

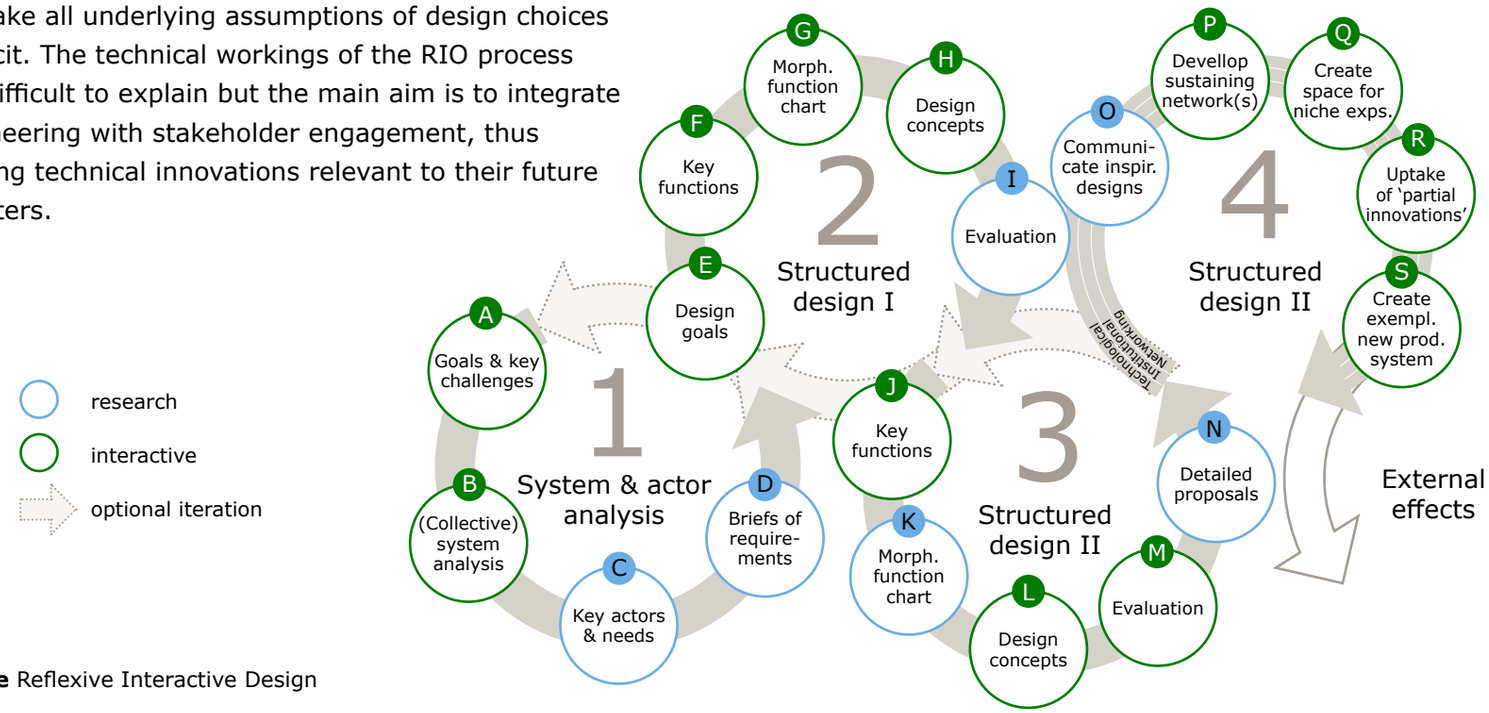


Figure Reflexive Interactive Design

Back to overview of methods

Interactive scenario building

Scenarios are forms of future exploration in which uncertainties are systematically explored. There are different types of scenarios: they can be focussed on desired futures or expected futures, or they can concentrate on possible actions or general developments. Here, we focus mainly on scenarios that are developed in collaboration with stakeholders. In this case, the stakeholders define the problem, appoint the driving forces and choose the scenarios that can be based on it. The development of the storylines behind each scenario can then be worked out in subgroups. Interactive scenario building fits well in an approach with multiple stakeholders and can be combined with a traditional research approach, in which the researchers deliver information on driving forces and use the scenarios as input for model calculations. However, it is also suitable for an open research approach in which all steps are taken together.

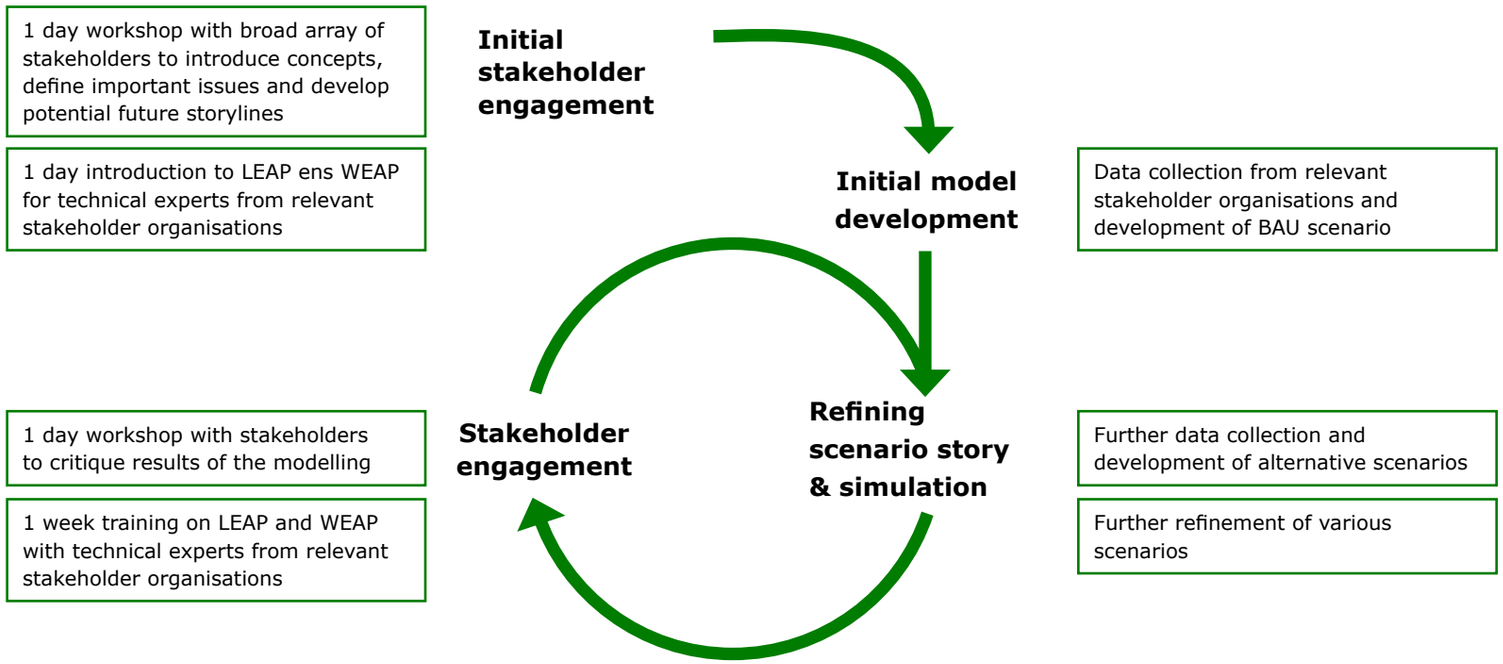


Figure Iterative participatory scenario planning in Ethiopia and Rwanda[18].

Back to overview of methods

Participatory backcasting

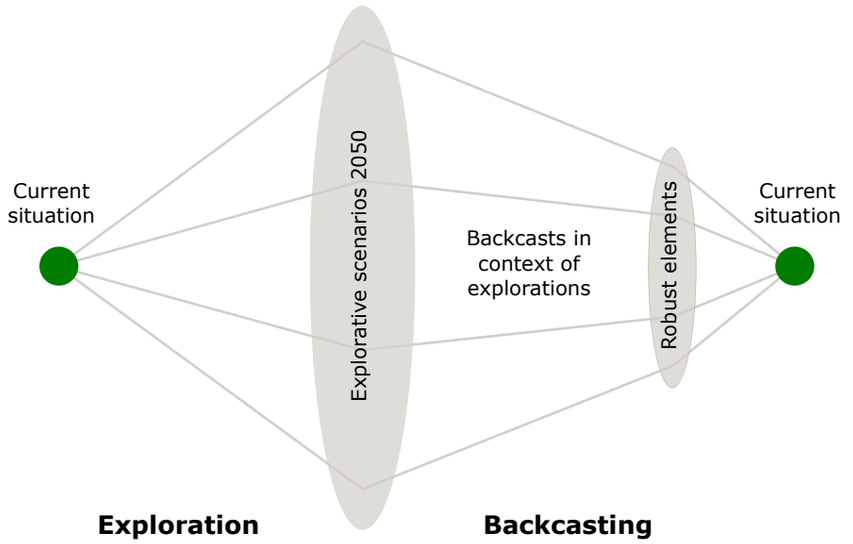
Methodes

Backcasting is a method for creating transition pathways which starts by describing a desired future and then defines the ways by which the transition to this future can be achieved.

When a transition has a strong technical element, socio-technical scenario building can aid in exploring potential transition pathways. Socio-technical scenarios (STSs) are based on transition theory and consider the interactions between niches, regimes and socio-technical landscapes. Within the STS method, two contrasting scenarios are formed, a 'business-as-usual' scenario in which new technologies diffuse in an expected way, and a scenario with a great deal of social change. The aim is to analyse the factors that will lead to one scenario or the other[19]
The STS method uses three general steps:

- 1 Vision building
- 2 Backcasting
- 3 Reflection

Kok et al. (2011)[20] studied the combination of forecasting and backcasting and concluded that 'it is conceptually appealing, methodologically feasible, and practically useful to combine exploratory scenario development and back-casting analysis' (p. 835).



Back to overview of methods

Soft Systems Methodology (SSM)

Soft Systems Methodology (SSM) was developed by Peter Checkland. SSM aims at improving situations in which wicked problems make it impossible to choose for a simple solution[21]. By developing problem definitions and debating and discussing changes that would be possible, relevant and desirable to the stakeholder groups, SSM can aid in understanding what changes are needed to achieve a transition. During the SSM process, researchers conduct two studies, which are interlinked. In the first of these, a researcher studies the perceptions of stakeholders and the issues they identify. In the second study, the researcher investigates the role of social interactions, power relations and politics within the identified problems and the transition process[22].
A diagram of the possible steps in a SSM process is presented in the figure.

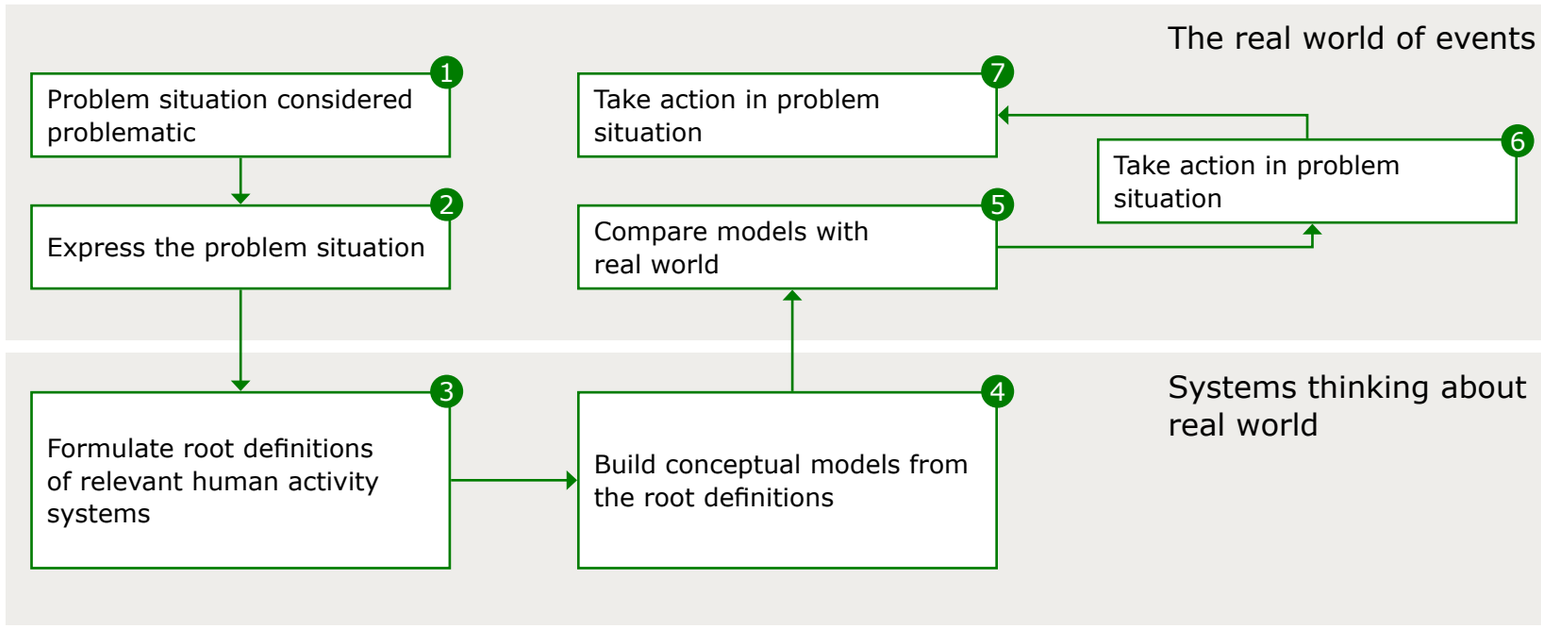


Figure Soft systems methodology[23]

Back to overview of methods

Theory of Change

Theory of Change (ToC) is a well-known method which can be used to develop interventions in a system[24]. ToC is a description of how and why a desired change is expected to happen in a context. ToC can be used to study and evaluate the theory which forms the basis for a specific intervention or developmental program, or it can be used to develop a certain program or intervention, in which case it is more of an approach than a research method. By studying and analysing a program, its ToC and how it is put into practice, one can systematically assess whether failures are a failure of theory because the logic behind the ToC does not make sense, or a failure of practice because the program has not been correctly conducted. This analysis can be performed ex-ante, as a tool in planning interventions, but also ex-post, as an evaluation. For a researcher, assessing a ToC ex-ante can help in co-creation of the goal of the intervention/ transition and in developing the intervention itself, together with the client.

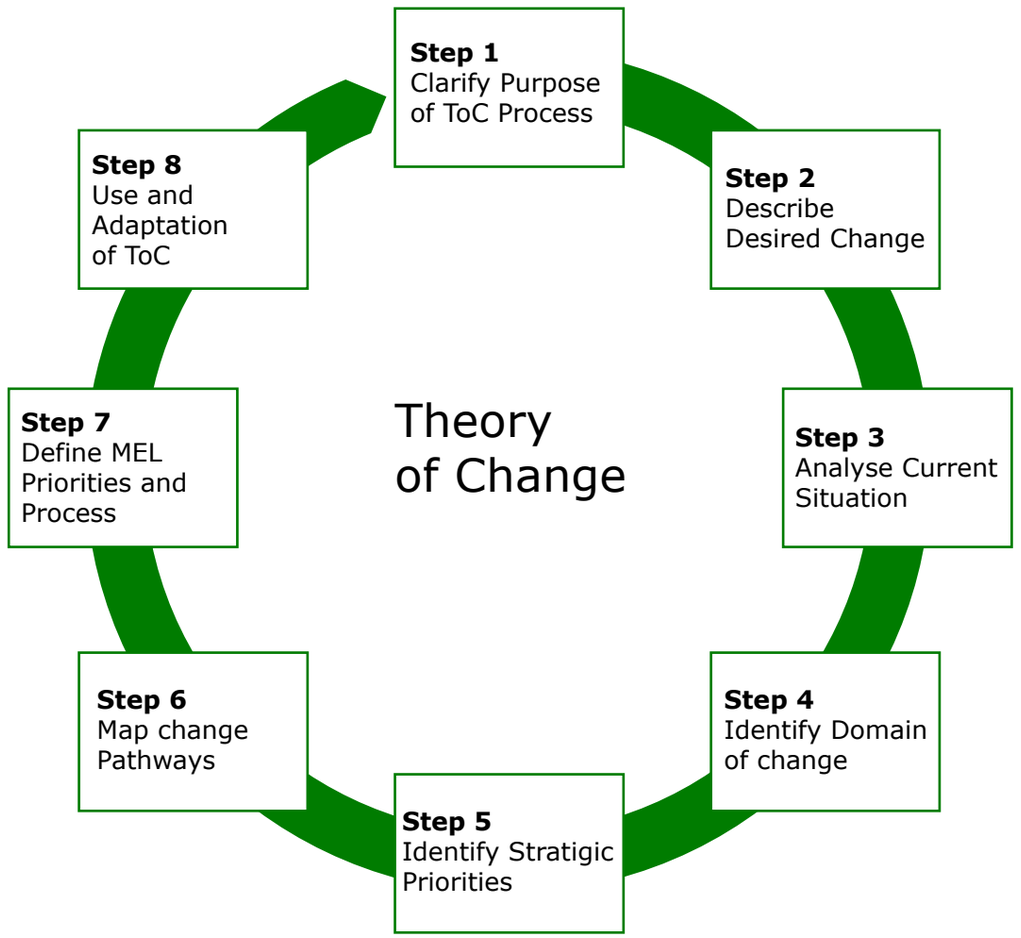


Figure Theories of Change[25]

Back to overview of methods

Tools for defining transition pathways

Tools are the means that help to fulfil a specific task in a project to define transition pathways, for instance for collecting, analysing or presenting information. The number of tools is endless. We have chosen some relevant and inspiring examples which can be specifically used for pathway development in the food system: tools for stakeholder analysis, for system analysis, and for envisioning different options or forecasting alternative futures.
There is another category of tools to facilitate focussed conversations and discussions on a micro level. These include clustering sticky notes, brainstorming, mind mapping and role playing, among others. This category is beyond the scope of this brochure.

System	Stakeholders	Envisioning
Food system decision support tool	Stakeholder analysis tools	Plan Intégré du Paysan
SWOT analysis	Four quadrants of change	Map Table
Rich picture		

Food system decision-support tool

Tools

A tool which is more specifically aimed at analysing food systems and using this analysis to develop effective policy measures is the food system support tool. The food systems decision-support tool is based on the food system approach and aimed at aiding policy makers in the development of effective policy measures for food and nutrition security (FNS). The support tool describes the steps involved in a thorough food systems analysis, while focussing on underlying mechanisms and archetypical behaviour of the system. The support tool consists of seven steps, which start and end with the policy goals regarding FNS (see Figure). By understanding the mechanisms of the system and identifying leverage points, effective policy measures can be identified. Input for the tool is based on literature as well as on policy and expert workshops[26].

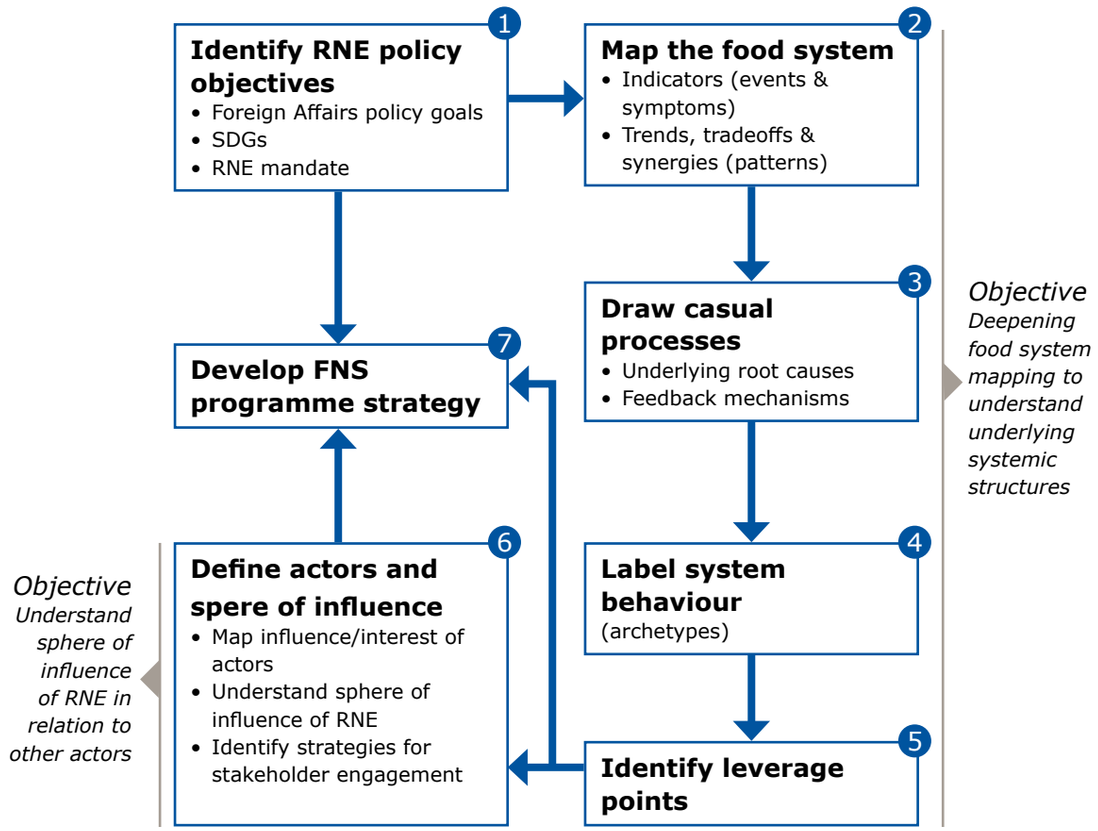


Figure The Food Systems Decision-Support (FSDS) Tool[27].

Back to overview of tools

SWOT-analysis

A classical but useful way of starting the transition pathway development process is to conduct a SWOT analysis of the food system. After a vision or goal has been established, the current system can be evaluated and strengths, weaknesses, opportunities and threats can be identified. A SWOT analysis can easily include different types of stakeholders, for instance through facilitated workshops[28].

Strengths

Examine strengths internal to the food system. Strengths are the parts of the food system that function well and can be related to tangible and intangible assets of the system like structure, people, products, etc.

Strategy: *strengths can play a role in the mitigation of external threads.*

Weaknesses

Examine weaknesses internal to the food system. Weaknesses are the parts of the food system that do not function well.

Strategy: *weaknesses need to be identified for a realistic strategy.*

Opportunities

Opportunities are possibilities external to the food system. Can contribute to turn identified weaknesses into strengths.

Strategy: *need to be prioritised.*

Threads

Threads are factors external to the food system that may negatively affect the system.

Strategy: *distinguish between influenceable and non-controllable threads.*

Figure Food System SWOT analysis

Back to overview of tools

Rich picture

Within the Soft Systems Methodology, rich pictures are often used to visualise the problems identified during the SSM process. The rich picture is therefore based on a thorough study of the different perceptions and viewpoints on the problems of a specific system, as well as the social and political context of that system. A researcher can use a rich picture to structuralise his analysis of the situation and the apparent problem[29]. This rich picture not only assists in the analysis, but can also enhance communication with stakeholders[30]. The figure shows an example of a rich picture, in this case about the ecosystem management and restoration of a watershed in Indonesia.

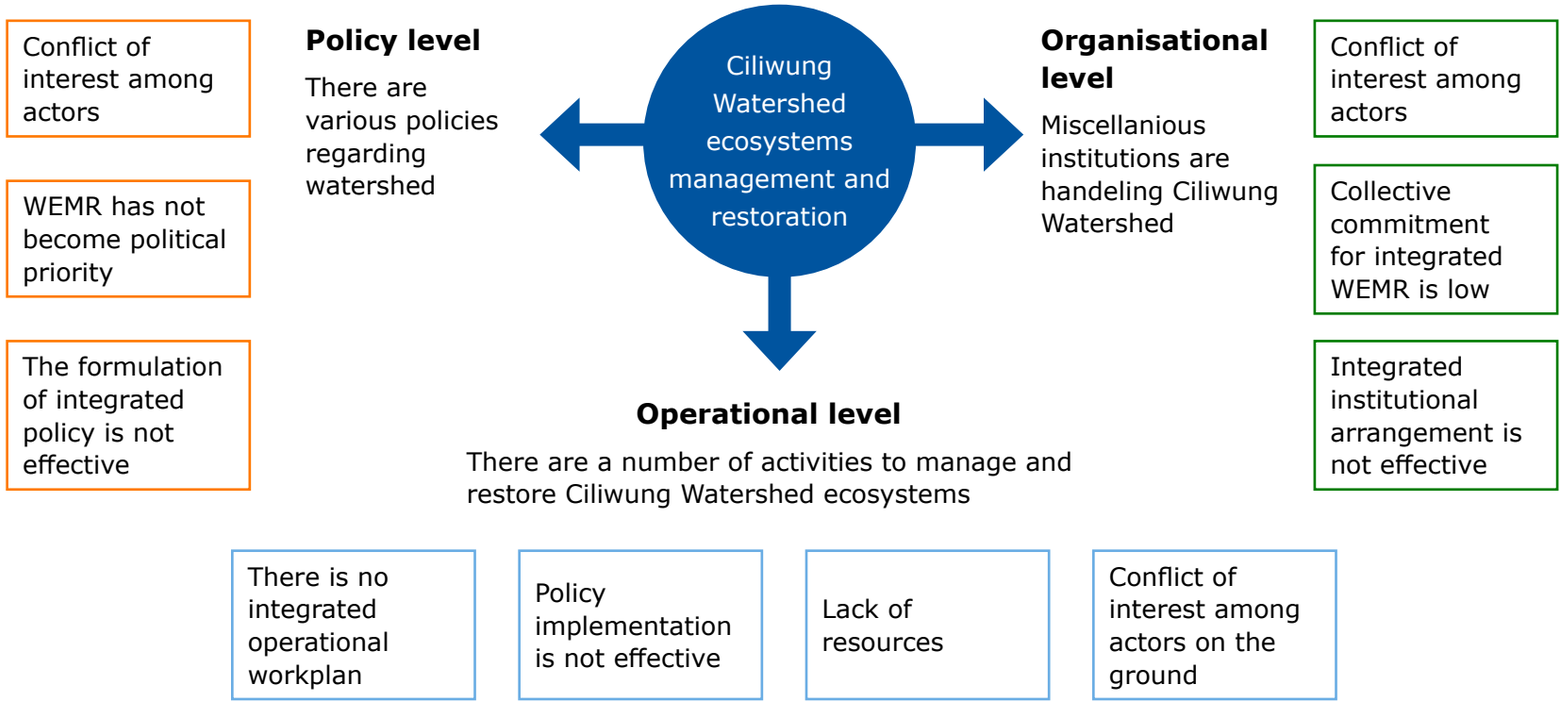


Figure Rich picture example[31]

Back to overview of tools

Stakeholder analysis tools

One difficult but crucial task in the development of transition pathways is deciding which stakeholders should be involved. To prepare this decision, it is beneficial to perform a stakeholder analysis. Stakeholder analysis is a tool to identify relevant stakeholders and evaluate their current or potential position. It is thus an effective method for preparing one's research before actual stakeholder engagement takes place. Since stakeholder analysis is a tool in many project management methods, it follows that there are many ways of performing it. These include the Q methodology, stakeholder-led stakeholder categorisation and social network analysis[32]. A relatively simple but useful approach is the interest-power grid, which is a top-down analytical approach. To do the analysis, interviews, questionnaires or focus groups can be used. Interest is positioned on the Y axis and represents interest in a political sense. Power is positioned on the X axis and represents power in the sense of influence, specifically the power that the stakeholder has to influence the issue at stake. By dividing both axes into low and high, four categories of stakeholders emerge: players (high interest and power), subjects (high interest but little power), context setters (little interest but substantial power) and the crowd (low interest and power)[33]. When choosing participants, it is important to consider stakeholder groups that have high interest and/or high power, as these people are affected by or determine the success or failure of a food system transition.

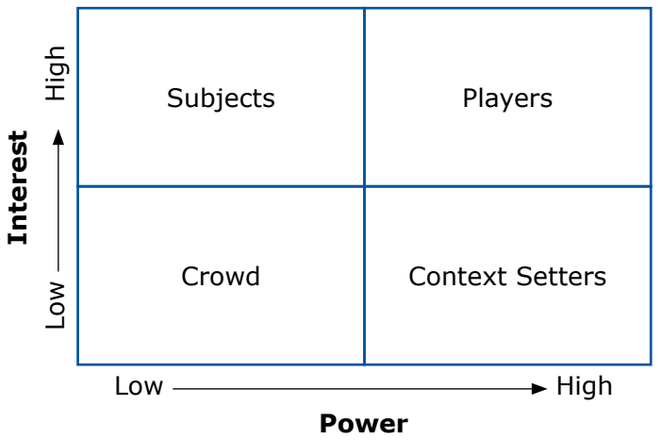


Figure Example of a stakeholder analysis tool: power versus interest grid[34]

Back to overview of tools

Four quadrants of change

When discussing strategies for change, or transition pathways, with stakeholders, the ‘four quadrants of change’ can aid reflection on why stakeholders opt for certain strategies and which strategies might be overlooked. The four quadrants can facilitate dialogue with stakeholders. The basis assumption is that, to bring about change in complex systems, there must be a change in four dimensions (see Figure):

1 Spiritual-psychological
2 Inter-personal
3 Social and cultural
4 Structural and systemic

A lack of change in one of the four dimensions can hinder development in the other dimensions. Therefore, the quadrants of change can help both stakeholders and researchers to explore and reflect on possibly effective strategies for change.

Back to overview of tools

	Interior	Exterior
Individual	**1. Spiritual – Psychological** Concerned with changing one's own sense of being **Broad change theory:** It's all a question of individual perceptions and capacity. **Focus** • Deepening self-awareness • Developing one's knowledge, skills, competencies • Describing one's assumptions, values, mind sets, beliefs **Methods** • Meditation • Personal reflection and inquiry • Personal development of mastery through courses and apprenticeships	**2. Inter–Personal** Concerned with changing one's own behaviours in interaction with others **Broad change theory:** It's all a question of how individuals interact. **Focus** • Showing trust, respect, mutual understanding • Shifting behaviours to demonstrate interdependence • Reaching conciliation of inter-personal differences **Methods** • Diversity training • Learning journeys into other people's worlds • Group encounters/retreats for exploration • Mediation/negotiations training
Collective	**3. Social and Cultural** Concerned with collective values of fairness and justice **Broad change theory:** It's all a question of collective values and beliefs. **Focus** • Collective goals and aspirations • Underlying values and beliefs • Implicit 'rules' and assumptions • Discourse language **Methods** • Collective goal-setting and strategy creation • Developing value statements and processes for actualisation • Ongoing media programmes	**4. Structural and Systemic** Concerned with governance, decision-making processes, and institutions **Broad change theory:** It's all a question of processes, institutions, and power. **Focus** • Polices, legislation • Institutions, procedures • Allocation of resources **Methods** • Building political structures, agreements, frameworks, systems • New accounting/reporting/measurement systems

Figure Four quadrants of change[35]

Back to overview of tools

Plan Intégré du Paysan

Tools

Plan Intégré du Paysan (PIP) is a tool which fits in a participatory research approach[36]. This tool is especially useful in processes with stakeholders who are not outspoken about their position. The core of the tool is 'drawing the future'. Here, people are asked to draw a future vision as answer to a question. For instance: what should your farm look like? Stakeholders can do this first on their own, after which the process can be scaled up to family and village levels. PIP is based on making two drawings that visualise the current farm situation and the families' desired future situation. These are drawn by all family members together and express their personal aspirations and needs. This triggers discussion and reflection in a family or a village concerning their future, the role of the land and its resources. The product of this discussion is a common vision with a concrete plan of action, and a resolve to invest jointly in creating a more resilient farm. PIP has the potential to change the food system, from farmer to farmer, and from village to village. In addition to vision building, another important part of the PIP approach is knowledge exchange. Farmers visit each other and share new knowledge and innovations with each other. Photography can also be used. When discussing change, one might ask stakeholders to take pictures of what they think characterises the current system (for instance, the farming practices) and let them discuss their pictures with their peers. In this way, people are invited to reflect on the current system, which can help them to understand the possibilities for change[37].

Figure Example of a PIP drawing from Burundi[38]

Back to overview of tools

Map Table

In food systems, the spatial dimension is often of high importance[39]. Using a map table to draw plans, scenarios, visions during brainstorm and evaluation sessions makes it possible to use interactive geo-information, to improve usability of maps and to detect and overcome knowledge gaps between different stakeholders. A map table can therefore effectively aid/enhance participation of stakeholders when working with small groups of two to six people[40].

Figure Map Table

Back to overview of tools

References

[⬅1] Geels, Frank W., and Johan Schot. 2007. "Typology of Sociotechnical Transition Pathways." *Research Policy* 36(3): 399–417.

[⬅2] Rotmans, Jan, Kemp, Rene, & Van Asselt, Marjolein. 2001. "More evolution than revolution: transition management in public policy". *Foresight-The journal of future studies, strategic thinking and policy* 3(1): 15-31.

[⬅3] Pielke Jr, Roger A. 2007. *The honest broker: making sense of science in policy and politics.* Cambridge University Press.

[⬅4] Funtowicz, Silvio O., Ravetz, Jerome R. 1993. "Science for the post-normal age." Futures 24:739–755.

[⬅5] Dijkshoorn-Dekker, Marijke, Vincent Linderhof, Thomas J.M. Mattijssen, and Nico Polman. 2020. "Food Secure Metropolitan Areas: The Transition Support System Approach." *Sustainability* 12: 13.

[⬅6] Brouwer, Herman, Minu Hemmati, and Jim Woodhill. 2019. "Seven Principles for Effective and Healthy Multi-Stakeholder Partnerships". ECDPM Great Insights Magazine 8 (1).

[⬅7] Brouwer, Herman, Jim Woodhill, Minu Hemmati, Karèn Verhoosel, Simone van Vugt. 2015. *The MSP guide. How to design and facilitate multi-stakeholder partnerships.* Wageningen: Wageningen Centre for Development Innovation.

[⬅8], [⬅9], [⬅10] Mackinson, Steven, S. Raicevich, M. Kraan, R. Magudia, and K. Borrow. 2015. Good Practice Guide: Participatory Research in Fisheries Science.

[⬅11] Rainforest Foundation. 2015. The mapping for rights methodology. A new approach to participatory mapping in the Congo basin. London: Rainforest Foundation UK.

[⬅12], [⬅15] Winograd, Manuel, van Eupen, Michiel, Verweij, Peter J. F. M., Perez-Soba, Marta, Bastrup-Birk, Annemarue, Cugny-Seguin, Marie, & Fons, J. 2013. *Land changes scenarios - Towards an operational Quick Scan. Targeted application using Quick Scan toolbox*. European Environment Agency.

[⬅13], [⬅16] Verweij, Peter, Sander Janssen, Leon Braat, Michiel van Eupen, Marta Pérez Soba, Manuel Winograd, Wim de Winter, Anouk Cormont. 2016. "QUICKScan as a quick and participatory methodology for problem identification and scoping in policy processes". *Environmental Science & Policy* 66: 47–61

[⬅14] Verweij, Peter. 2020. QUICKScan – Gezamenlijk Milieuproblemen En Oplossingen in Een Participatieve Omgeving in Kaart Brengen. Wageningen: Wageningen University & Research.

[⬅17] Bos, Bram. 2010. *Reflexief Interactief Ontwerpen* (RIO). Wageningen University & Research.

[⬅18] Johnson, Oliver & Karlberg, Louise. 2017. "Co-exploring the Water-Energy-Food Nexus: Facilitating Dialogue through Participatory Scenario Building." *Frontiers in Environmental Science* 5: 24.

[⬅19] Elzen, B. E., Geels, F. W., Hofman, P. S., & Green, K. 2002. Sociotechnical scenarios as a tool for transition policy: an example from the traffic and transport domain. In *International workshop on system innovation*. Enschede: Twente University, 4-6 July 2002.

[⬅20] Kok, Kasper, M. van Vliet Mathijs, I. Bärlund Ilona, Anna Dubel, and Jan Sendzimir. 2011. "Combining Participative Backcasting and Exploratory Scenario Development: Experiences from the SCENES Project." *Technological Forecasting and Social Change* 78 (5): 835–51.

[⬅21], [⬅22] Lewis, Patrick. J. 1992. "Rich Picture Building in the Soft Systems Methodology." *European Journal of Information Systems* 1 (5): 351–60.

[⬅23] Checkland, Peter. 2002. *System Thinking, System Practice. Includes a 30 Year Retrospective.* Wiley, Chichester.

[⬅24] Morra Imas, Linda G., and Rist, Ray, 2009. *The road to results: Designing and conducting effective development evaluations.* The World Bank.

[⬅25] Es, M. van, Guijt, I., Vogel, I. 2015. *Theory of change thinking in practise: a stepwise approach.* Den Haag: HIVOS.

[⬅26], [⬅27] Posthumus, H., J.M. Bosselaar, H. Brouwer. 2021.*The food system decision support tool – a toolbox for food system analysis.* Wageningen University & Research and KIT Royal Tropical Institute.

[⬅28] Rimmer, Michael A., Ketut Sugama, Diana Rakhmawati, Rokhmad Rofiq, and Richard H. Habgood. 2013. "A Review and SWOT Analysis of Aquaculture Development in Indonesia." *Reviews in Aquaculture* 5(4)4: 255–79.

[⬅29], [⬅31] Sani, Rasio Ridho, Eko Prasojo, and Andrereo Wahyudi Atmoko. 2017. "A Rich Picture of the Problem and Value Chain of Integrated Ciliwung Watershed Ecosystems Management and Restoration." Development and Society 46 (3): 427–49.

[⬅30] Durrant, A., Moncur, W., Kirk, D., Trujillo Pisanty, D., and Orzech, K. 2016. On presenting a rich picture for stakeholder dialogue, in Lloyd, P. and Bohemia, E. (eds.), *Future Focused Thinking - DRS International Conference 2016*, 27 - 30 June, Brighton, United Kingdom.

[⬅32] Reed, Mark S. Anil Graves, Norman Dandy, Helena Posthumus, Klaus Hubacek, Joe Morris, Christina Prell, Claire H. Quinn, Lindsay C. Stringer. 2009. "Who's in and why? A typology of stakeholder analysis methods for

natural resource management." *Journal of Environmental Management* 90, 5:1933-1949.
[⬅33], [⬅34] Bryson, John M. 2004. "What to Do When Stakeholders Matter: Stakeholder Identification and Analysis Techniques." *Public Management Review* 6 (1): 21–53.
[⬅35] Waddel, Steve. *Global Action Networks. Creating our future together*. London: Palgrave Macmillan.
[⬅36], [⬅38] Kessler C.A., van Reemst L., Nsabimana F. 2020. *PIP Manual; A step-by-step explanation of the PIP approach.*, Wageningen NL: PAPAB & Wageningen Environmental Research.
[⬅37] Kessler, C.A. & van Reemst, L.I. 2018. *PIP Impact report*. Wageningen: Wageningen Environmental Research.
[⬅39] Berkum, Siemen van, Jan Broeze, Marion Herens, Bertram de Rooij, Katrine Soma, and Lotte Roosendaal. 2020. *Urbanisation, Migration and Food System Transformations.* Wageningen: Wageningen University & Research.
[⬅40] Lammeren, Ron J.A. van. 2020. Map Table. Wageningen University & Research. 2020.

Colophon

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Introduction | Principles of Responsible Transitions | References