EU
POLICY LAB

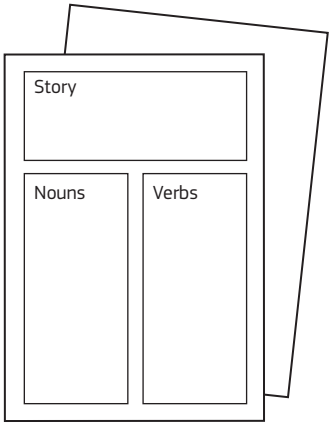
SYSTEM MAPPING TOOL

Joint
Research
Centre

STEP 1
ICE- BREAKER

plenary

30-45 minutes



A4

GOAL

Make participants understand that change is possible, if acting on specific drives.

The ice-breaking exercise consists in a short interview. Each participant receives an interview sheet and interviews a person he/she does not know. Notes are collected on a template.

INSTRUCTIONS FOR FACILITATOR

1. Introduce the exercise and distribute the templates.
2. Ask the participants to choose a person to interview.
3. Make sure that both people working in pairs accomplish the task.

INSTRUCTIONS FOR PARTICIPANTS

1. Once you have chosen your partner, formulate the interview question as: “Have you ever changed someone else’s dietary habits? Tell your story, specifying what helped or what prevented you from doing so”.
2. Listen to the story, take notes on the template and capture all the nouns and verbs. Pay specific attention to countable/uncountable nouns.
3. Exchange roles.

STEP 2
GOAL DEFINITION

plenary

30 minutes

GOAL
Create shared awareness on the system goal.

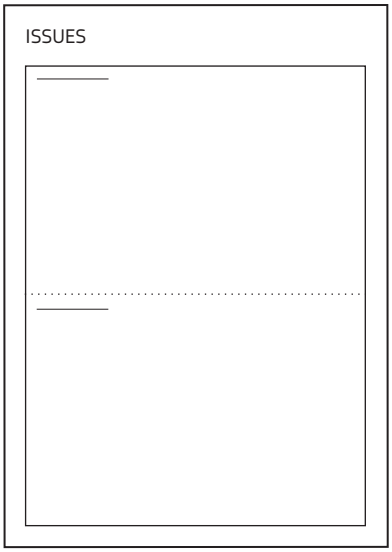
The moderator introduces the idealised goal of the system.

INSTRUCTIONS FOR FACILITATOR
1. Present the already prepared **system goal**.
2. If a goal/strategy is missing or unavailable, start a plenary brainstorming session to define it together.

STEP 3
HARVESTING ISSUES

plenary

30 minutes



A1

GOAL
Identify the draft system map stories.

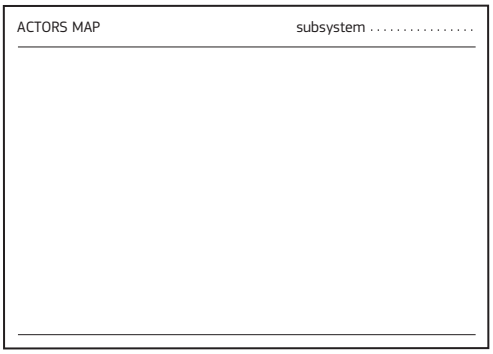
A plenary discussion on the specific, context-related issues. This helps participants develop a common understanding on the issues in the system.

INSTRUCTIONS FOR FACILITATOR
1. Raise a discussion on the main issues in the system, keeping the template on the wall. Do not frame 'issues' as problems: they are relevant topics for debate, observable facts that create instability in the system. Guide the discussion around two areas: firstly, where does the system fail to reach its objectives, secondly, what works in the system.
2. Note down the topics with a title and a short description. Make sure everyone agrees on the points of the debate.

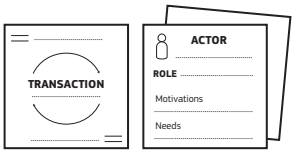
STEP 4
ACTORS MAPPING

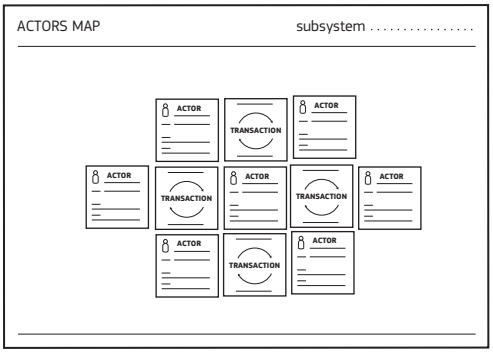
team

45 minutes



A0





GOAL

Identify the structure of each subsystem, composed of its actors and dynamic relationships.

Participants identify the main actors/stakeholder groups in each subsystem, inquiring the dynamics of their mutual relationships.

INSTRUCTIONS FOR FACILITATOR

1. Split the participants into teams, according to the number of subsystems in the food value chain. Each team will work on a separate template, in a specific workstation.
2. Make sure each workstation has a set of '**actor** cards' and a set '**transaction** cards'. To support the participants, some of the cards might be pre-filled with the main actors intervening in each subsystem.
3. Explain the exercise, underlining how the actors are connected to each other because of specific transactions and mutual exchanges.
4. Let the teams work on their subsystems. At the end of the exercise, ask the teams to present their results one by one.

INSTRUCTIONS FOR PARTICIPANTS

1. On the poster, write the name of the subsystem you will be working on.
2. Take the pre-filled actor cards and distribute them on the template. Try to understand what transactions occur between which actors: what do these actors exchange (e.g. money, information, processed food, ...)? Through which activity (e.g. buying/selling food, delivery, ...)? Write the information on the transaction card, that you will place between the related actor cards.
3. If some actors are missing, fill the blank actor cards by writing:

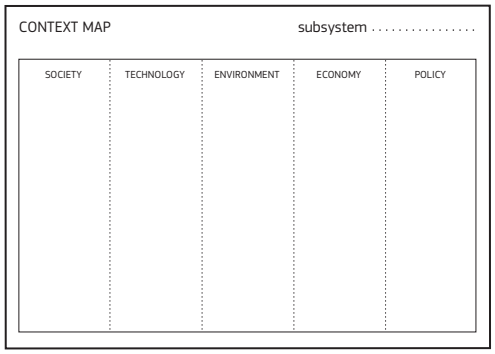
- the name of the actor and his/her role in the system;
- the motivations (what motivates the actor to accomplish his/her role, e.g. good reputation, financial success);
- the needs (tangible requirements to accomplish the role, e.g. trucks, infrastructure).

4. Go on positioning the actors and relative transactions on the poster, until you cover all the subsystem.
5. Present your subsystem structure to the other teams.

STEP 5
CONTEXT MAPPING

team

90 minutes



A0

GOAL

Define the parameters needed to build the subsystem maps.

Participants examine the single subsystems and identify the factors that have a relevant influence within each subsystem.

INSTRUCTIONS FOR FACILITATOR

1. Introduce the exercise, explaining the categories of the context map (**STEEP**: society, technology, environment, economy, policy).
2. Make sure the posters are in different stations, together with markers, post-its and parameters starter pack*.
3. Proceed in rounds:

- Round 1 (30 min). Let each team **brainstorm** within the context map categories of their subsystem. With the help of the starter pack, they will express their ideas in terms of **nouns** (e.g. meat consumption), write them on post-its that they will stick under the specific category;
- Round 2 (30 min). Ask the members of each team to move randomly from one station to the others. One person of the team ('station leader') must stay in the original station: he/she will shortly summarise the first brainstorming to the new team. In each station, the new team will correct the post-its with "**parameter lenses**": the mapped nouns must be parameters that change over time, with a neutral connotation (e.g. 'lack of skilled workforce' becomes 'amount of skilled workforce', 'pesticides' might become 'use of pesticides', 'fertile land' might become 'availability of fertile land'). The parameters might **increase/decrease** quantitatively (e.g. 'number of farmers') or qualitatively (e.g. 'need of balanced diet'). The new team will also add new parameters, in case relevant factors are missing.
- Round 3 (15 min): as in round 2, participants walk around the stations and form new teams, to correct and integrate the context maps. The station leaders maintain their positions.

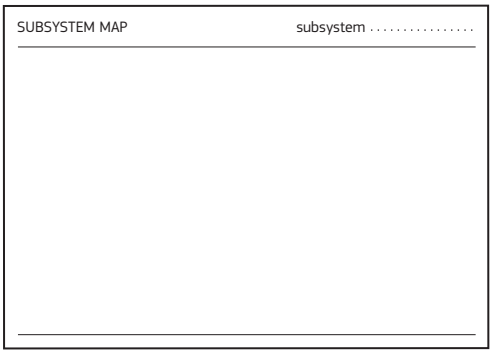
4. Once the rounds are concluded, ask the station leaders to summarise the brainstorming sessions.

* The starter pack supports the correct definition of the parameters: it might include printed labels as *degree/rate/level/number/amount of, availability of, quality of, cost of, pressure/weight of, opportunities for, reliance on, tendency/predisposition to, demand for, exposure to, risk of, concentration of, ...*

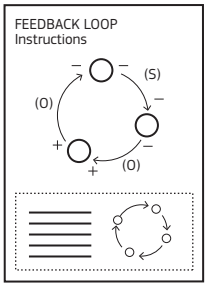
STEP 6
SUBSYSTEM MAP

team

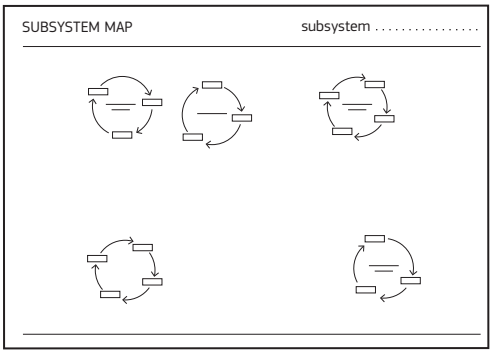
75 minutes

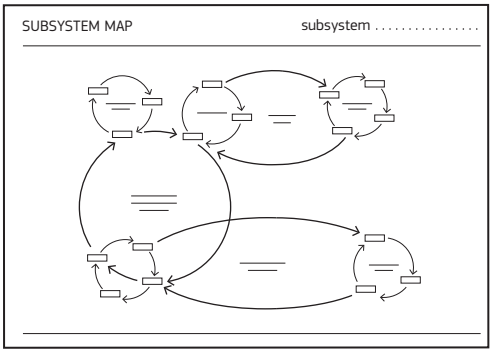


A0



A4





GOAL

Identify the dynamics of the subsystem: how the different parameters influence each other.

Participants map the subsystem by identifying its loops and influencing parameters.

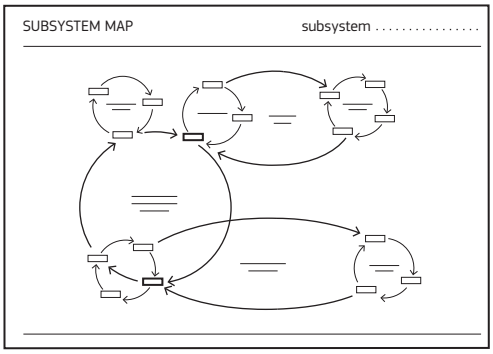
INSTRUCTIONS FOR PARTICIPANTS

1. Report on the poster the name of the subsystem you are working on.
2. Look at the context map, take the parameters related to your subsystem and spread them on the poster. You can already start clustering them into themes: to this aim, look back at the issues identified in step 3.
3. Read carefully the A4 provided by the moderator to understand how to tell a story through a feedback loop. As first step, you want to identify the feedback loops in your subsystem.
4. Look at your set of parameters and try to understand how they are related. Pick one parameter which you think is important, then work downstream from that parameter. What does it cause? And what does that cause? Keep looking at the downstream effects. Ultimately, if it is a loop, it will have an effect on the original parameter.
   Once you identify a **loop**, stick the related parameters on the poster, trace the arrows connecting the parameters and write its name in the center of the loop. A loop is a story, so its name will be the **title of the story** you are telling.
5. Find the other loops in your parameters: do not hesitate to include parameters you have already used (do not duplicate them: just draw crossing loops). When you get to the point in which you cannot close any loop, do not worry: leave the "unfinished" loops on the poster. If there are single parameters that, although influencing your loops, are not part of any loop, stick them on the poster and draw an arrow to indicate what they are influencing. Indeed they might be **influencers** belonging to other systems.
6. Try to understand how the loops link to each other: draw **connections** between parameters in different loops, always thinking 'circularly', in terms of loops. Make sure your connections are meaningful facts and not assumptions.

STEP 7
LEVERAGE POINTS

team

45 minutes



GOAL

Identify the “leverage points”, specific parameters which have the greatest potential for system change.

Participants look at the subsystem map and select the most relevant parameters.

INSTRUCTIONS FOR PARTICIPANTS

1. Look at the system map, and indicate the parameters which have the highest number of connected arrows. These parameters are the **leverage points**, and they might be recurrent (appearing in different loops). Reflect upon why such parameters are important, by looking at the parameters they link.
2. Present the **subsystem map** (its stories) and the **leverage points** to the other teams.

STEP 7.1
FORMALISING

facilitators

nd

GOAL

Digitalise the subsystem maps.

After the first workshop session, the facilitators digitalise the subsystem maps, which will serve as material for the following workshop session.

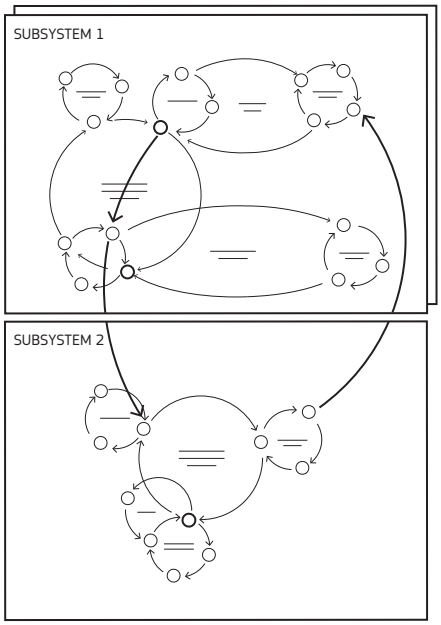
INSTRUCTIONS FOR FACILITATOR

1. Reproduce the subsystem maps in a digital environment: to this aim, you can use softwares as Kumu (https://kumu.io/). Represent the different subsystems using different color codes, and highlight the leverage points identified during the workshop.
2. Export the maps in a printable format: print multiple copies of each subsystem poster.

STEP 8
SYSTEM MAP

team

60 minutes



GOAL
Build the actual system map.

Participants identify and trace the relationships between the different subsystems.

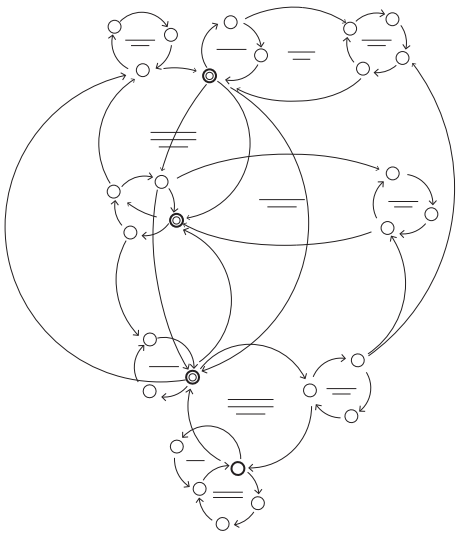
INSTRUCTIONS FOR FACILITATOR

1. Prepare different workstations: provide a copy of all the subsystem posters, along with markers, for each workstation.
2. Ask the participants to discuss, identify and trace meaningful connections between different parameters distributed throughout the subsystems. Invite them to think 'circularly', in loops, and to prioritise quality rather than quantity. A team leader from each group will need to be able to report the traced connections.

STEP 8.1
SYSTEM MAP

plenary

60 minutes



GOAL
Build the actual system map, verify the leverage points.

In a plenary session, inputs from the participants are connected to build a final map of the system.

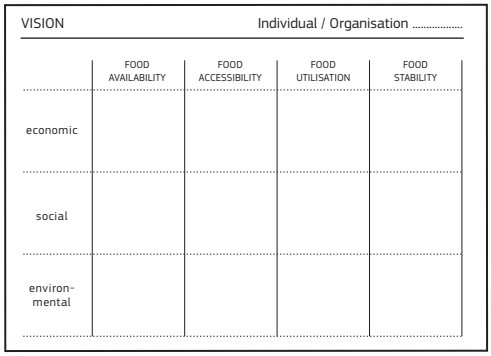
INSTRUCTIONS FOR FACILITATOR

1. Make sure the digital subsystem maps, modeled within the software, are visible on a large screen.
2. Ask the team leaders to report the connections they traced and, if everyone agrees, draw the arrows directly on the digital map. Collect the inputs from the team leaders and finish modeling the system map.
3. Together with the participants, identify the new leverage points for the whole system.

STEP 9
VISION

team

60 minutes



A1

GOAL

Create convergence on a common, desired future state.

Before planning strategies to intervene in the system, participants define the individual and organisational benefits they want to bring by intervening in the system.

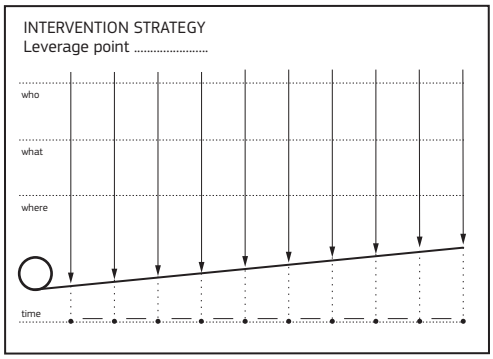
INSTRUCTIONS FOR PARTICIPANTS

1. Introduce the exercise, making sure that participants have sticky notes and markers. In this step, you will receive multiple templates, on which you specify the categories you will be working on (individuals/organisations and relative names). Use one template per individual or organisation.
2. First, reflect on what the **goal** of the system means for your **individual/organisation**: write your answer on the top of the poster.
3. Brainstorm collectively on the economic, social, environmental aspects of **food security** (availability, accessibility, utilisation and stability).
4. Once the brainstorming session is completed, present your findings to the other teams.

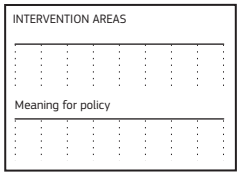
STEP 10
DEFINING INTERVENTIONS

team

3 hours



A1



A4

GOAL

Define a strategy for intervening in the system.

Before planning strategies to intervene in the system, participants define the individual and organisational benefits they want to bring by intervening in the system.

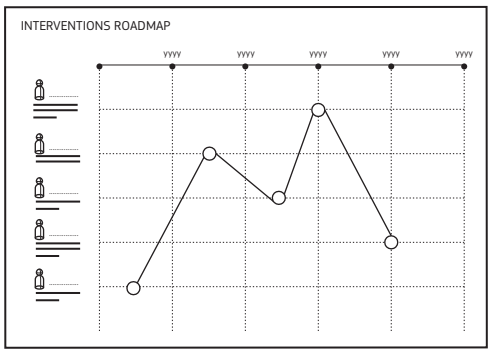
INSTRUCTIONS FOR PARTICIPANTS

1. Look at the leverage points identified in step 8. These crucial factors have influence in different areas of the system: by working on them, you might achieve high impact on the whole system.
2. Look at the intervention areas in the poster. These are generic areas where you can intervene in every system. You might choose to act upon:
   - **Taxes and subsidies**. Constants and parameters such as subsidies, taxes, standards, pricing schemes;
   - **Capacity**. The "volumes" that the system can contain;
   - **Digital/physical infrastructures**. Digital systems or physical infrastructures, and their nodes of intersection;
   - **Timing and coordination**. The duration of changes relative to the rate at which the system changes;
   - **Information Flows.** The structure of who does and does not have access to information;
   - **Rules**. Incentives, punishments, constraints, regulations;
   - **Governance and Self-Organisation**. The possibility of local actors to organize by themselves so as to add, change, or evolve the system structure;
   - **Goals**. The purpose or function of the system or subsystem, which is shaped by the values, goals, worldviews of the actors;
   - **Paradigms**. The mindset out of which the system—its goals, structure, rules, delays, parameters—arises.
3. Now analyse the leverage point: how can you intervene on this parameter? Brainstorm on the areas of the canvas and see what measures you might take, what you might need to change. Help yourself with the Intervention areas explanatory sheet.
4. In the timeline, write the expected time that your interventions need in order to become impactful.
5. Mark with a circular sticker the interventions you need to prioritise.

STEP 11
INTERVENTIONS ROADMAP

plenary

1,5 hours + presentation



A0

GOAL

Summarise the intervention strategy.

Participants create consensus on the set of interventions which are needed to reach the envisioned future state.

INSTRUCTIONS FOR FACILITATOR

1. Make sure the Interventions Roadmap and the Intervention Strategy posters are on the wall.
2. Let the teams summarise the interventions they agreed upon: report them on the poster.
3. Ask the participants when the interventions need to be implemented. Use circular stickers to indicate the intervention in the timeline.
4. Specify who is supposed to implement the intervention, by writing the actor near each intervention.
5. Connect the interventions in the timeline and synthesise the whole strategy.