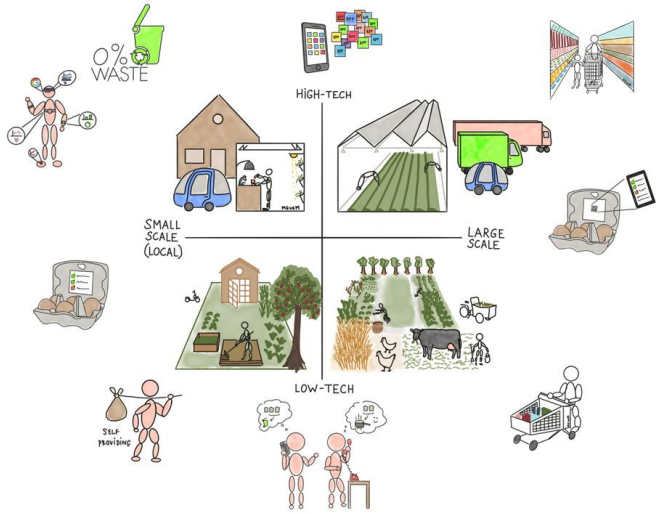
TRAINING AND REFLECTION MODULES FOR PROFESSIONALS AND STAKEHOLDERS

Visioning



In a nutshell

The aim of a food system visioning process is to develop written and visualized statements of long term goals and strategic objectives related to the system or sub-aspects thereof. In a food system visioning process, various stakeholders who can relate to the topic are brought together, making visioning a participatory tool to develop a shared vision of the future.

What for?

- To explore and understand the food system.
- To work with my community on transforming the food system.
- To improve R&I policy coherence and alignment.

How long?

Depending on the number of the (in this manual provided) exercises that are applied, a visioning session ranges between 1 and 4 hours.

For whom?

Policy Makers, Farmers, Students, Businesses, Researchers, Funders, NGOs, Educators

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Something to share?

Leave us a comment about this tool on the platform. You can also contact fit4food2030.beta@vu.nl .

This tool was developed as part of FIT4FOOD2030 project. See this tool and others on the FIT4FOOD2030 Knowledge Hub.

Date of creation: May, 2018

How to cite?

Athena Institute, VU University (2018) *Visioning.* Retrieved on: [website]

This project has received funding from the European Union's Horizon 2020 research and innovation programme under grant agreement No 774088

What will you gain from this?

The aim of a visioning process is to develop written and visualized statements of long term goals and strategic objectives in the field of interest. This document is especially meant to inspire you to shape a participatory session.

- To encourage you to think about your desired future-proof food system.
- To explore to what extent elements of your visions are shared and where you can find each other for further activities.
- To dive deeper into the role of R&I for a future-proof food system.

VISIONING

Visioning about a desired future can be an important stimulus for change. It can be the first step in creating a powerful strategy to achieve a desirable future or a particular purpose. There are several different visioning methodologies and exercises. This document is meant to support intermediaries in designing and organising food system visioning workshops. Since every intermediary operates in a different context, it is not possible to work with a one-size fits all methodology and facilitation script. Therefore, this document is especially meant to inspire you by providing various tools.

Regarding outputs, food system visioning is a method for generating a compelling vision of a preferred food system future. Ideally, the outcome of a food system visioning process includes visualisations that communicate in a very powerful way the preferred food system future and benefits of the future. A food system visioning process can also help to show the interdependencies between different factors that shape the future food system(s). Ultimately, food system visioning can lead to recommendations and even transformations of for instance food system (R&I) policies, priorities, strategies, investments, socio-economic and research and innovation systems, behaviours and attitudes, education, products and services.

"Participants were positively surprised by the possibilities to have such interactive discussions with visioning even in online sessions. Our facilitators used programs as ZOOM and PowerPoint to create interactive online session."

Visioning is typically used after a problem and situation analysis has been completed and before the detailed planning and decision-making process with the involved stakeholders has started. Whereas the results of the problem and situation analysis serve as the definition of State A (Where are we now?), the outcomes of a visioning workshop describe a future State B (Where do we want to be?). Visioning is a process and visioning activities can be organized at any stage a transition process. In any case, the visioning process should be implemented before decisions on e.g. actions or activities are made. It can last one or several days, or be spread out over several months, depending on the complexity of issues faced.

TIPS & TRICKS

OPTIONAL: compare the shared characteristics to FOOD2030 (10 minutes)

Depending on the mission of the visioning process organiser, the stage of transformation that is to be supported by the visioning, and available time to organise the visioning process, organisers can combine or choose between the two different visioning levels, that is 1) *a future-proof food-system,* and 2) *Research and Innovation (R&I) that contributes to the realisation of (1).* The relevance of these two visioning levels depends on the group of stakeholders (referring to their interest, expertise, and role within the aspired transformation). Since visioning can be approached as an ongoing process (as described in the introduction), organisers can initiate multiple workshops for these respective visioning levels. Exercises for both levels can also be used in interviews, or even be conducted in sessions with homogeneous groups first. A second step after the visioning, may be to organise a meeting in which the vision is linked up to impact and change.).

Nevertheless, we recommend organisers of food system visioning processes to start with a visioning session on future-proof food systems to make it easier to vision about the role of R&I and the link between visions and impact later on.

Thematic area

Food system transformation, R&I transformation

Target audience

Policy makers, farmers, students, businesses, researchers, funders, and NGOs and educators with certain (self-assigned) interest or curiosity in food system transformation

Age of participants

From 12 years old onwards

Number of participants

6 per facilitator

Number of facilitators

1 per 6 participants

Prior knowledge required for participation

Basic knowledge on food and where it comes from

GETTING PREPARED

Set the scene

To get prepared for your visioning workshop, it is recommend to practice in advance, you can chose to have a pilot workshop. In case of an online workshop test also the appropriate programs (e.g. PowerPoint, Zoom or Skype) Especially to test the duration of the different exercises. Just before the workshop itself make sure you have all the materials ready. In case of a workshop on location chose a table set-up that is inviting to have a discussion.

"We noticed that good preparation and practice of the visioning exercises are essential. Keep the amount of exercises limited so you can have the time for each exercise, it takes always longer than expected."

Materials

- Badges, with name and participant identification number
- Attendees list with: participant identification number, gender, age, sector of work
- Flipcharts
- Pens & Markers
- A6 format papers
- Photos /pictures
- Post-its (5 per person)
- Timer / stop watch on your phone, to signal when time's up for each exercise
- Optional: matrix showed on a screen (Appendix)
- Optional: Action Cards (Appendix)

FLOW

Please find below an option of a time table for the visioning exercises. You can mix and match yourself with the different exercises to create the visioning program suitable for your objectives.

Time-Table	
Introduction	5-15 min
EXERCISE 1 on future-proof food systems (option A or B)	60-90 min
Exercise 2: Visioning the role of Research and Innovation (R&I) in a future-proof food system.	30-40 min
Break	15-30 min
Exercise: Game to get familiar with R&I and RRI. 30 - 40 minutes	30-40 min
Exercise: on role of R&I for future-proof systems.	60-90 min
Closure	5-15 min

"We recommend to take the time for each exercises but we noticed that four hours is the maximum to keep participants focused."





FACILITATOR TIPS

This tool needs to be carried out together with the participants. During multi-stakeholder dialogues you as a facilitator (or moderator) have an important role to play to ensure the active participation of all the participants in the given time frame while also reaching the session goals.

As a facilitator you need several skills and competences, such as verbal and non-verbal skills, negotiating skills, flexibility, and leadership. You will need to create an environment in which all participants feel secure, are able to speak up and give their perspective on issues being discussed. This means that you may have to stimulate some participants to speak more often, while you may have to prevent other participants to speak too often or too long. It also means that you will need to avoid discussions on issues that are not directly relevant.

A brief guide with facilitation tips are provided in this address: **https://knowledgehub.fit4food2030.eu/facilitatorstips**

EXERCISE on future-proof food systems.

60 - 90 minutes

A. Example exercise #1 on future-proof systems.

1. **Facilitator introduces the exercise with a (meditative) story (5 minutes)**
   To spark participants imagination and thinking about future-proof food systems, start with a (meditative) story. The vision of FOOD2030, including the concepts of *Sustainable, Resilient, Responsible, Diverse, Competitive and Inclusive,* is relatively broad. Probably all stakeholders will find these concepts important, although to different extents. Therefore, it is particularly interesting to investigate the **how** of the vision; how do participants think we can reach such a future-proof food system? So, try to introduce the concepts of FOOD2030 in your story and spark their imagination, for example something like:

   ''Please close your eyes. Imagine it is the year 2030. It is a beautiful day. You sit down with some friends and you would like to eat something that is healthy and sustainable. What kind of food is it? What does it look like? Where does it come from? How was your meal produced? Where did you buy it? Who was / were connected to the production and distribution of your food? What role did you play?''

2. **Ask participants to reflect on the questions on a paper (5 minutes)**
   Hand out papers (e.g. A6 format) and ask participants to draw what they imagined and add keywords where necessary. Emphasize that they can use stick figures or other low threshold techniques in their drawing. Everything is fine (and possible).

   Make sure participants identification numbers are written down on their papers.

3. **Ask participants to divide in subgroups (2 minutes)**

4. **Give a brief introduction and ask participants to discuss their drawings in the subgroup (10 minutes)**
   To incite the group discussions, explain that there are different visions/discourses/perspectives on **how** we can realize a food system that is sustainable and healthy. For instance, mention that there are perspectives in which technology plays the main role, perspectives in which there is a mere focus on an increase of production, perspectives in which there is more focus on local production and alternative food networks, etc.). You can show the matrix of the Appendix on the screen, or a similar kind of matrix or drawings based on different dimensions.

   Alternatively: use the matrix (with the high-tech/low tech large-scale/small-scale, or any other dimensions) as part of your exercise, by asking participants within the subgroups to place their drawings in the matrix to spark the discussion.

5. **Ask participants to write down characteristics of their vision on post-its (5 minutes)**
   Ask participants to write down at least five characteristics based on (1) their own vision of the future (healthy and sustainable) food system and (2), if relevant, the discussion they had in subgroups.

   Make sure participants identification numbers are written down on the post-its.

6. **Ask subgroups to cluster their characteristics (10 minutes)**

One of the participants in each subgroup starts with sharing one of his/her characteristics. Explore whether people have the same characteristics. Cluster them as a group together on a flipchart. Put a circle around the group of post-its and together decide on a name for that cluster and write it next to the circle. Then go to a next person to mention one of his/her characteristics. Again, cluster with others that are similar. Keep going until all post-its are gathered and cluster names are written down (cluster-naming can also happen after all post-its have been placed in groups, as the wrap-up of this exercise). Ask them to write these cluster names down on new post-its.

7. **Plenary: gather everyone's attention and ask subgroups to reflect on what they discussed (15 minutes)**
The aim of this step is to 'cluster the clusters' and to prompt the plenary reflection in step 8 of this exercise.

Start with asking one of the subgroups to mention and explain one of their clusters. Place the post-it with cluster-name on a flipchart/white board. Ask the subgroup to briefly mention which characteristics are within this cluster. Explore if there are different or conflicting characteristics within the cluster. Ask other groups to reflect on the cluster as well as if they do have similar clusters. Group similar post-its with cluster names together. Go on with this process until all clusters are mentioned and placed on the flipchart/whiteboard. Are there any other characteristics that are important to mention, but do not fit within one of the clusters?

8. **Plenary: take the last ten minutes to plenary reflect on the outcomes of the exercise (15 minutes)**
One could choose to find out to what extent there is a shared vision for a future-proof food system among participants (i.e. clusters characteristics that all people agree on) and what the main differences are. However, another option is to choose that this exercise is meant to explore the variation in perspectives, rather than to build consensus. Different participants will have different perspectives; it is this diversity that is actually interesting. Whichever choice on the aim is made (vision-consensus or vision-diversity), try to be transparent about it to the participants in this last plenary step.

Take three coloured markers (put a legend on the flipchart, e.g. red = shared, green = less important, blue = disagreement). Start with the shared clusters (i.e. those that have many post-its) and check whether indeed this would be a characteristic of a shared vision according to participants. Why? Why not? Mark the shared clusters with red. Then move to the smaller groups and ask whether they are smaller because they are less important, or because people don't agree on them? Ask for explanation (ask multiple people to remark) and mark with green or blue, until all is covered.


TIPS & TRICKS

OPTIONAL: compare the most commonly shared characteristics to FOOD 2030 (10 minutes)

Ask participants to compare the shared characteristics of their vision with e.g. the FOOD 2030 cyclic food system figure, the four FOOD 2030 priority areas (Appendix), to reflect on how holistic their vision is. Let participants create specific links between their clusters and the figure or the priority areas.

Report on all cluster names per group in the monitoring template, as well as on a few characteristics per cluster name to report on whether there are conflicting characteristics.

B. Example exercise #2 on future-proof systems.

*The exercise below is a combination of the exercise described above and the exercise described in **Deliverable 1.1. Tools and training for setting up a transformative network, Module 4 'Transformative Skills Building'**.*

In advance: Take a range of photographs/pictures depicting elements of the food system and its challenges and opportunities. Alternatively, ask people to bring photographs / pictures of food system elements, challenges and opportunities to a meeting (preferred picture size: ± 4 pictures on an A4).

1. **Facilitator introduces the exercise (5 minutes)**

The exercise below allows people to intuitively analyse the food system, its challenges and its opportunities, and the required transformation. It will also spark their own ideas about how a future-proof food-system looks like and how we can contribute to the transition towards a future-proof food-system.

2. **Ask participants to cluster the photos/pictures (10 minutes)**

3. **Ask the following questions to participants (10 minutes)**

- What are the relations between the different elements?
- Is anything missing or underrepresented?
- Where (in) do you see the current food system 'dying'? Use the pictures/photos of challenges in food systems to collectively depict the answer.
- Where (in) do you see 'new seeds' being planted, which (would) result in a rebirth of the food system?

TIPS & TRICKS

Note: The visioning is not necessarily about 'positioning pictures on a table and clustering them', but more about the conversation and exchange of ideas that arise while doing the exercise. So frequently ask one another WHY particular pictures are positioned in a particular spot, and what the picture means to everybody. Ask a rapporteur to take notes of this exercise to report on the main thoughts that are being shared.

Use the pictures/photos of challenges in food systems to collectively depict the answer.

4. **Once done, go on with steps 5 – 9 of the exercise described above.**

'' You can prepare scenario's for the exercises based on the current knowledge so you can dive immediately deeper in the topics. Some."

EXERCISE: Visioning the role of Research and Innovation (R&I) in a future-proof food system.

30 - 40 minutes

In case participants are not familiar with R&I and/or RRI, we recommend undertaking one or more of the following steps to get the discussion on R&I and RRI started:

- **Give a presentation**: introduce the participants into the principles of Responsible Research and Innovation (RRI) and Open Science (OS). Emphasize that RRI is an approach to R&I that stimulates transdisciplinary and participatory research and citizen science approaches, knowledge sharing and co-creation, whereby researchers, farmers, fishers, industry, policy makers and civil society collaborate with a view of achieving R&I outcomes of greater societal relevance and acceptability. In other words, to realize a future-proof food system, the R&I system needs start operating more thematically in line with the needs that come along with working towards a future proof food system. This requires from R&I to collaborate across disciplines and really 'open up' (to step down from the 'ivory tower') to non-R&I actors, engaging them in R&I processes in various ways (R&I agenda-definition, technology assessment, knowledge co-creation, etc.).

- **Show a video:** for example the video on RRI and FOOD, produced by the HEIRRI-project.

- **Invite an expert:** engage in a conversation with participants to see what questions there are. To support this conversation, it can be useful to invite an RRI-/OS-expert that can help to explain the further details of the approach.

- **Play a game**: to get familiar with R&I and RRI via RRI tools. For example have a look at the RRI Self-Reflection Tool. This tool is aimed to help you reflect on RRI principles that can improve your research and innovation practices. The game provides you with questions around five RRI Policy Agendas, including: *Ethics, Gender Equality, Governance, Open Access, Public Engagement,* and *Science Education*[1]. Another example is to play a game with cards. See the example exercises below which is adapted from the HEIRRI project.

[1]RRI Self-Reflection Tool – how it works: https://www.rri-tools.eu/documents/10184/94414/SRT-HowItWorks.pdf/06e0ff71-897c-41cb-887f-6074decbc307

EXERCISE: Game to get familiar with R&I and RRI.

30 - 40 minutes

1. **Facilitator introduces the exercise (5 minutes)**

Explain that this is a card game, meant to get familiar with R&I and RRI in a more playful way. The cards include statements related to RRI dimensions (see the Appendix for all card statements). Cards from 1 to 13 correspond to issues related to diversity and inclusion, cards from 14-27 to openness and transparency, cards from 28-36 to anticipation and reflection and cards from 37 to 40 to responsiveness and adaptive change. Explain that the group will divide in subgroups (around 6 persons per group, depending on the number of people present), and that each group receives the 40 cards. Ask them to pick a card (individually) with which they do not agree and one with which they agree, so that they can discuss this within their subgroups.

2. **Ask the group to divide in subgroups (2 minutes)**

3. ***Group discussion (10 minutes)***

Subgroups discuss their chosen card statements. One person begins with the card-statement he/she agrees with. After the explanation, group members will react. Go on until everyone has explained and reflected on the card they agreed with. Repeat this procedure for all cards people do not agree with.

4. **Reflect plenary (10 minutes)**

Ask each subgroup to reflect on what they discussed.

If you feel participants are familiar with R&I and RRI sufficiently, continue (during the same or a follow-up session) with a visioning exercise on the role of R&I in a future-proof food system, see the example exercises below.

EXERCISE: on role of R&I for future-proof systems.

60 - 90 minutes

1. **Facilitator introduces the exercise (5 minutes)**
   When participants of this visioning session/event did not engage in the future-proof food system visioning, present the outcomes of this visioning session (characteristics mentioned and which of them are shared/not-shared among different stakeholders):

   *''The following visioning exercise is meant to dive deeper into the role of R&I in a future proof-food system. We will use the aspired vision of the first exercise as starting point'' (*make sure the list of shared and not–shared characteristics on the flipchart is visible for all participants, and - if possible - show them on a screen as well).

2. **Ask participants to think about R&I (10 minutes)**
   Ask them to come up with at least five post-its related to the following two aspects of R&I:

   1) The knowledge gaps associated with the aspired vision;
   2) How R&I can help us to get there.

   Say that everything which comes up in their minds is good.

3. **Ask participants to form groups of four persons and to place post-its to create a mind map (15 minutes)**
   Ask participants to compare their post-its and to place the post-its on a flip-chart to create a mind-map. Ask them to try to make connections, relations, clusters, etc.

   OPTIONAL: If you experience this is difficult for people, share some **'Action Cards'** with them, which they can use for inspiration.

4. **Reflect plenary on the four mind maps (15 minutes)**
   This part needs to be audio-recorded (preferably) or meticulous notes need to be taken by a rapporteur (so that quotes can be taken from it).

   Ask each group give a brief presentation of their mind map. Which knowledge gaps did they identify? And which roles did they envisage for R&I? Write down aspects/characteristics of each presentation on a flipchart, and ask them whether there is agreement or disagreement regarding the knowledge gaps and the role for R&I. If so, ask why they did or did not agree. Also indicate the stakeholder groups who are proponents of the action and the stakeholder groups who are not. Check with the group whether the most important knowledge gaps and roles for R&I are included and whether all information is correct. Finally, ask how they experienced the exercise, was it interesting, any striking aspects? Why?

TIPS & TRICKS

OPTIONAL: ask people to vote on which knowledge gaps and roles for R&I they think are most important.

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APPENDIX A: FOOD 2030 PILLARS

Characteristic	Explanation
Sustainable	with respect to natural resource scarcity and in respect of planetary boundaries.
Resilient	with respect to adapting to climate and global change, including extreme events and migration.
Responsible	with respect to being ethical, transparent and accountable.
Diverse	with respect to being open to a wide range of technologies, practices, approaches, cultures and business models.
Competitive	with respect to providing jobs and growth.
Inclusive	with respect to engaging all food system actors, including civil society, fighting food poverty, and providing healthy food for all.

APPENDIX B FOOD 2030 FOUR PRIORITY AREAS

1. NUTRITION for sustainable and healthy diets

''Ensuring that nutritious food and water is available, accessible and affordable for all. It involves reducing hunger and malnutrition, ensuring high levels of food safety and traceability, reducing the incidence of non-communicable diet related diseases, and helping all citizens and consumers adopt sustainable and healthy diets for good health and wellbeing.''

Challenges	R&I Priorities
○ Malnutrition and hunger ○ Obesity and the rise of non-communicable diseases ○ Food safety issues and crises ○ Rising protein demand ○ Unhealthy and unsustainable diets	○ Sustainable and healthy diets ○ Personalised nutrition ○ Alternative proteins sources ○ Sustainable aquaculture for greater seafood uptake ○ Nutrient enriched foods ○ Public health systems, societal awareness, consumer behaviour ○ Food safety and traceability

2. CLIMATE smart and environmentally sustainable food systems

''Building climate smart food systems adaptive to climate change, conserving natural resources and contributing to climate change mitigation. It seeks to support healthy, productive and biodiverse ecosystems. Ensuring diversity in food systems (including production, processing, distribution and logistics) including in terms of cultural and environmental diversity. Natural resources (water, soil, land and sea) are used sustainably within the planetary boundaries and available to future generations.''

Challenges	R&I Priorities
○ Food systems not resilient to changing climate ○ Ensure food quantity and quality in a changing climate ○ Ensure food systems also contribute to mitigating GHG emissions ○ Food scarcity and poverty induced migration ○ Protect biodiversity	○ Climate Smart food systems that mitigate and adapt to climate change, while ensuring environmental sustainability ○ GHG mitigation via good soil management and demand-side approaches ○ Drought and flood resistant crops ○ Pest management in a changing climate ○ Biodiversity conservation ○ Bio fertilizers ○ Agro ecological intensification ○ Soil, water and land remediation ○ Healthy plants and animals

3. Circularity and resource efficiency of food systems

''Implementing resource-efficient circular economy principles across the whole food system while reducing its environmental footprint. Circularity is applied for sustainable and resource-efficient food systems and food losses and waste are minimized throughout.''

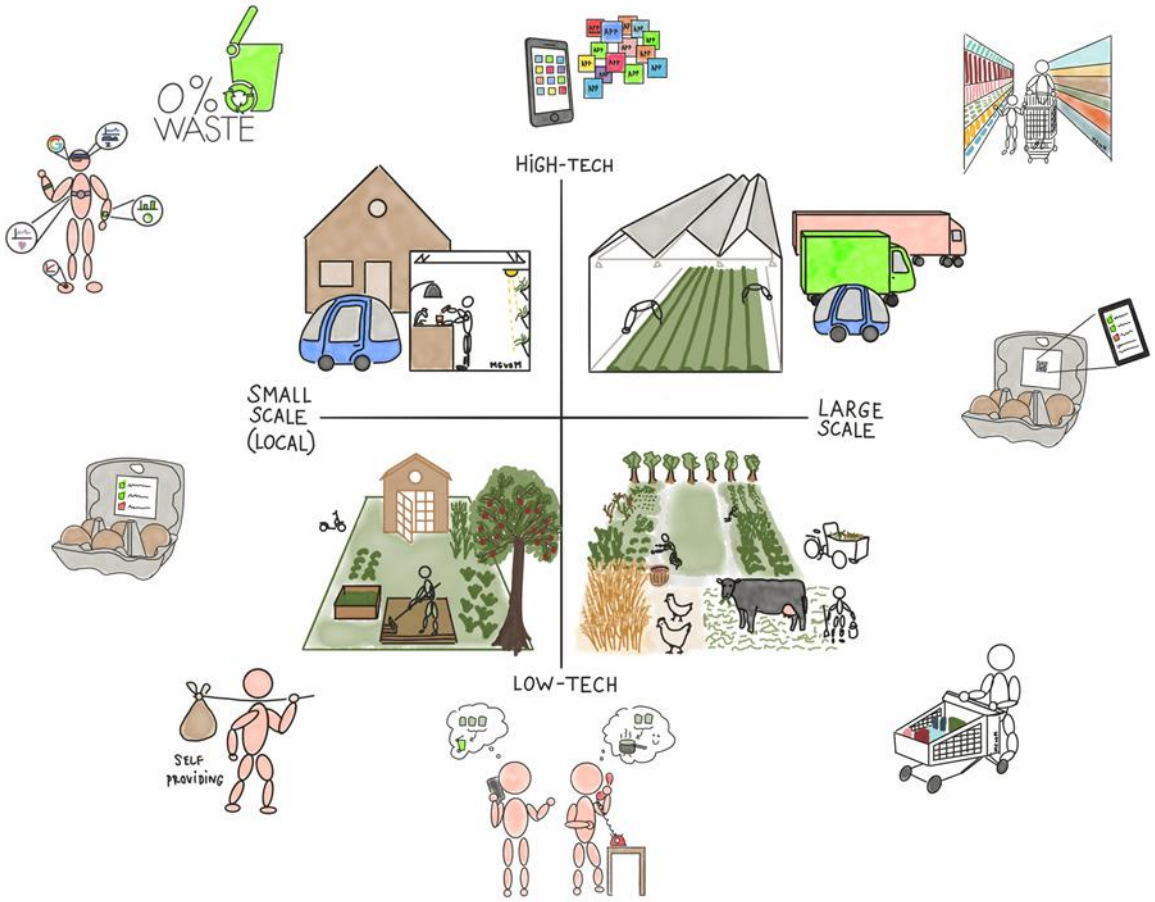
Challenges	R&I Priorities
○ Resource efficiency in food systems ○ Environmentally sustainable food systems ○ Healthy ecosystems to provide sustainable ecosystems services for food production ○ Polluted ecosystems suffering from intensive production practices ○ Limit or reuse food waste for multiple uses	○ Increase resource efficiency and circularity (land, water, energy, soil, fertilizers, etc.) across the food system ○ Reduction and multiple uses of food losses and waste ○ Reuse of fish discards ○ Reuse of fodder for enhancing soil organic matter and reducing soil erosion ○ Smart precision farming to reduce agricultural inputs

4. INNOVATION and empowerment of communities

''Boosting innovation and investment, while empowering communities. A broad innovation ecosystem leading to new business models and value-added products, goods and services, meeting the needs, values and expectations of society in a responsible and ethical way. More and better jobs across the EU, fostering thriving urban, rural and coastal economies and communities. Through closer partnerships with industry and food producers, markets that function in a responsible manner thereby fostering fair trade and pricing, inclusiveness and sustainability. Scientific evidence and knowledge from a wide diversity of actors underpinning the development and implementation of FNS relevant policies, at all geographical scales (Local to Global). FOOD 2030 builds of this intention and is a timely EU research and innovation policy response to the recent international policy developments including the SDGs and COP21 commitments.''

Challenges	R&I Priorities
○ Make food systems sustainable, resilient, responsible, diverse, competitive and inclusive ○ Empower and engage communities, civil society and consumers in food systems ○ Strengthen rural, urban and coastal communities around food and nutrition security ○ Increase the level of food and nutrition literacy of consumers ○ Unsustainable and unhealthy consumer behaviour ○ Boost new skills, jobs and business models for better functioning food systems	○ Boosting innovation ○ Empowering communities and consumers in FNS ○ Food in cities: water, energy, health nexus. Short circuits ○ Boosting investment in public and private sector R&I FNS ○ Encouraging Responsible Research and Innovation in food systems ○ Open Science and access to data and information in FNS ○ Quadruple helix innovation, multi-actor and public engagement in food systems ○ Education, skills development and capacity building in FNS and food science ○ New sources of income for farmers and fishers ○ New business models and inclusive/open/eco/sustainable innovation ○ FNS start-up financing

APPENDIX C: MATRIX ABOUT POSSIBLE DIRECTIONS FOR A FUTURE PROOF SYSTEM (FOR VISIONING EXCERCISES)[7].



APPENDIX D: STATEMENTS-CARDS

The cards below are extracted from the document "Facilitating reflection on Responsible Research and Innovation", developed by the HEIRRI project[2].

CARD 1	CARD 2	CARD 3
Public should be involved in decision-making processes of the development of emerging technologies	Public is not educated enough to be involved in decision-making processes of the development of emerging technologies	If we consider the values and needs of society in the research and innovation process, the research results are of a higher quality
CARD 4	**CARD 5**	**CARD 6**
Considering the needs and values of society in the research and innovation process can limit or divert the development of scientific knowledge	Public cannot participate in scientific research because it does not understand scientific language	Society's opinion on research can be consulted, but not considered when deciding what should be investigated and how
CARD 7	**CARD 8**	**CARD 9**
Before starting a research process, it is necessary to consult with the actors that are affected, to find out their opinions and needs	Researchers should implicate themselves in the scientific education of citizens, for example they could include as an objective the creation of educational material in their research projects	Citizen science projects should be encouraged, in which anyone can participate, collecting or analyzing data

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CARD 10	CARD 11	CARD 12
Methods of citizen participation in scientific or technologic topics should guarantee that all social groups are represented (gender, population, social class, religion, politics, sexual orientation, etc.)	Research methods should contemplate diversity, for example when working with animal models, to not only work with male models, or when doing research with people, to represent different cultures	Stakeholders must be able to participate in the research process from start to finish, from the definition of what is being researched and how it is being researched to the assessment of results and possible applications
CARD 13	**CARD 14**	**CARD 15**
Research teams should be gender balanced because they work better	Any person should be able to consult and understand which research projects are under development	The information on research projects should only be available to the scientific community
CARD 16	**CARD 17**	**CARD 18**
The information on research projects should only be published once these have finished	Both positive and negative results of research projects should be published	The digital laboratory notebooks that scientists use in their research should be able to be consulted on a public platform

CARD 19	CARD 20	CARD 21
Only positive results from research projects should be published, as negative results are not of interest to society	Peer-review process should guarantee that the only people assessing if research is of quality or not are other researchers from the same field	Research and innovation results should be assessed by experts from different areas of expertise, to make the knowledge more valid
CARD 22	**CARD 23**	**CARD 24**
The uncertainties of a research project should not be shared with the persons implicated because these could generate mistrust towards science	It is important to share uncertainties of a research project with the interested parties	If the results of a research project imply negative consequences, the researcher should be held responsible
CARD 25	**CARD 26**	**CARD 27**
Research projects should include various disciplines to be more relevant	For an R&I Project to be considered of excellence, the team must be made up of the most prestigious scientists	Research teams that include scientific and non-scientific personnel (such as NGOs, stakeholders etc.) tend to have more socially relevant results than those that are formed solely by scientists

CARD 28	CARD 29	CARD 30
Before starting a research project a study should be conducted on the possible mid-term and long-term risks and impacts	It is not necessary to study the long-term risks of a research project or technological innovation because they are impossible to predict	All research or innovation implies certain risks and researchers should assume responsibility of those
CARD 31	**CARD 32**	**CARD 33**
If it is found out that a researcher has carried out ethically unacceptable practices, such as plagiarism or publication of false data, they should be forbidden to work as a researcher again	If a research project has important environmental impacts, it shouldn't be carried out even if it has obvious benefits	Researchers should predict the possible misuses of their research results and assume responsibility for them
CARD 34	**CARD 35**	**CARD 36**
Researchers are not responsible for how their research results are used in the future	If the organization that finances my research asks me to rewrite the project conclusions to make them more convincing, I should accept so as to continue investigating	Scientific excellence should be measured according to the number of publications in prestigious scientific journals

CARD 37	CARD 38	CARD 39
During the progress of a research project, if it is detected that there is not a good response from the interested parties, the course of the research should be changed	If a large portion of the population does not agree with a technological innovation, for example the use of genetically modified organisms, research should not be continued	When a research project is started, the planning should be followed strictly, even if circumstances change, such as the appearance of a competing research group or a change in legislation that affects the results

CARD 40
The reasons to do research should be purely of scientific interest and not for the prestige of the researcher as an individual

APPENDIX E: EXAMPLE ACTION CARDS

The Action Cards below are based on the document of the EC on Open Innovation and Open Science[3].

Example Action Cards Researchers (R)	Example Action Cards CSOs/Citizens/Consumers (C)	Example Action Cards Public sector/Policy makers (P)	Example Action Cards Business/Industry (B)
Produce knowledge (R)	Create demand for innovation (C)	Shapes regulatory environment for innovation (P)	Funding of technical innovation (B)
Co-create, generate skilled human capital (R)	Act as source of innovative ideas (C)	Puts in place rules and tools (P)	Funding of social innovation (B)
Promote absorption of knowledge within business and industry (R)	Have a say in what research is meaningful to them and can impact their lives (C)	Fostering faster market access and development (P)	Funding of research social sciences (B)
Work with citizens and consumers (e.g. 'participatory action research) (R)		Coordinates actors, encourages actor cooperation and coordination (P)	Funding of fundamental sciences (B)
Seek collaboration between social and life sciences (R)		Creates demand for innovation (P)	
Inspire other researchers to work in more inter- and transdisciplinary ways (R)		Procures innovative solutions (P)	
		Fostering and creating incentives for Open Science (P)	
		Developing research infrastructures for Open Science (P)	
		Removing barriers to Open Science (P)	
		Mainstreaming and further promoting open access policies (P)	

[3] Open Innovation, Open Science, Open to the World – a vision for Europe (2016): http://www.openaccess.gr/sites/openaccess.gr/files/Openinnovation.pdf

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This project has received funding from the European Union's Horizon 2020 research and innovation programme under grant agreement No 774088