

# FORESIGHT EXERCISE ALTERNATIVE RURAL FUTURES: HOW TO GET THERE?

## SHERPA DISCUSSION PAPER

**Authors:** Sabina Arcuri and Gianluca Brunori (University of Pisa)

**Contributors:** Elodie Salle (Ecorys) and Michael Kull (NordRegio)

## Introduction

In 2020, the SHERPA project contributed to the debate on the Long-Term Vision for Rural Areas by presenting the key issues identified by the 20 regional and national SHERPA Multi-Actor Platforms (MAPs), and by the EU-level MAP. The MAPs identified their desired visions for 2040, the enabling factors to achieve those visions, the challenges to overcome and the opportunities to be seized. MAPs implemented a Delphi method, which was comprised of desk research and the use of quantitative data (e.g., development indicators, demography etc.), interviews with key informants, and the design, implementation and analysis of online surveys. The outputs of MAP cycle I are MAP Position Papers<sup>1</sup> and one SHERPA Position Paper<sup>2</sup>.

This Discussion Paper provides a methodological guidance for the second MAP cycle on how to implement a foresight exercise, which is the second stage of the work on the vision. The approach builds on an interactive process, with stakeholder engagement in a foresight exercise involving scenarios. This stage of the process is meant as a tool to inform and assist the decision-making process through the creation of a dialogue on the future among civil society, researchers and policy-makers around locally-relevant matters. This is made through a deliberative discussion on what is needed in order to address the challenges, take the opportunities and achieve the change envisaged in cycle I and epitomised in the MAP's vision. For this purpose, MAPs will be invited to hold two scenario workshops, which will rely on knowledge elicited in the stakeholder group, available data from MAPs cycle I and European scenarios provided by Joint Research Centre in the context of the ENRD Thematic Working Groups.<sup>3</sup>

The objective of the foresight exercise is threefold: (i) testing a methodology for prompting more ambitious reflections on the future of their rural area/community and guiding strategic thinking among stakeholders involved, (ii) developing pathways of change which provide inspiration and a basis for decision-making and (iii) producing a MAP Position Paper that enables further analysis and aggregated policy recommendations by the SHERPA consortium. Results will inform SHERPA's contribution to the EU LTVRA initiative and will be documented into MAP Position Papers as well as analysed in one single document, the SHERPA Position Paper. It will also continue feeding the debate on the long-term vision for rural areas initiated in September 2019, which will result in a Communication of the European Commission aimed to be published in summer 2021.

The document presents the SHERPA approach, and logic of, the foresight exercise. The majority of the document provides the main information needed to prepare for and virtually run the workshops, broken down into five main steps. Additional information on methodological aspects is provided in green boxes.

---

<sup>1</sup> All MAP Position Papers are available here: <https://rural-interfaces.eu/publications/?cat=position-paper>

<sup>2</sup> See Chartier, O., Salle, E., Irvine, K., Kull, M., Miller, D., Nieto, E., Vestergård, L.O., Potters, J. and Slätmo, E., Zomer, B., Iadecola, F. (2021). Long-Term Vision for Rural Areas: Contribution from SHERPA science-society-policy platforms. SHERPA Position Paper. DOI: 10.5281/zenodo.4557440. Position Paper available at <https://rural-interfaces.eu/resources-and-tools/rural-policy-papers/>

<sup>3</sup> The four scenarios were presented at the Rural Vision Week (22-26 April 2021) and are available here: [https://enrd.ec.europa.eu/sites/enrd/files/2\\_maciej-krzysztofowicz-ppt2-pl2-day1\\_0.pdf](https://enrd.ec.europa.eu/sites/enrd/files/2_maciej-krzysztofowicz-ppt2-pl2-day1_0.pdf)

## 1. Foresight and scenarios: general presentation

Anticipation processes and practices are increasingly used today to imagine futures, to question assumptions about what futures are possible, and to develop strategies for transformational change [1, 2]. Foresight studies, amongst these, serve as a supporting tool for decision-making in different domains, especially when dealing with cross-cutting and complex issues, such as climate change or food security [2, 3, 4, 5].

The term “foresight” refers to **any process focused on building medium- to long-term futures aimed at influencing present day decisions and mobilising actions** [6]. We can distinguish between two main categories of foresight, according to their purpose: for enquiry and for change [7]. Policy development, in particular, is one major goal of foresight studies, addressed by both private and public actors [5, 8].

Foresight entails the process of envisioning, inventing and constructing scenarios and scenarios are one such method of exploring the future [12]. In order to test and inform the feasibility of a strategy, plan or policy and bring forward better decisions, scenarios allow a better understanding of external and internal drivers, how they affect or are affected by a specific initiative or area or organisation, the identification of critical uncertainties and how these might unfold. It is important to keep in mind that scenarios do not predict the future: they rather make clear than we cannot either predict nor ignore the future. Scenarios do not, per se, provide a direction for action: they serve as contexts for decision-making, as for planning the future it is necessary to be aware of the contexts in which the plans are made [3, 10].

### BOX 1 – Scenario development: a basic typology

Even though there is no consensus on the scenario typologies [13], we hereby refer to the typology provided by Van Notten et al. (2003) for scenario classification. They start from identifying three main themes – project goal, process design and content of scenarios – which combine and determine a wide variety of different scenarios. The definition of the project goal – on a spectrum between exploration or decision support – determines a variety of scenario characteristics depending on the inclusion/exclusion of norms (descriptive vs normative), the vantage point (forecasting vs back-casting), the subject (issue-, area- or institution-based) and the time and spatial scale.

Other main characteristics of scenarios are related to the process design: for instance, the use of qualitative and quantitative approaches, or a mix of both, is encompassed in scenario development, as well as desk-based studies and participatory, multi-stakeholders’ processes, respectively resulting in more intuitive or formal approaches to the process. Finally, scenario content concerns the composition of the developed scenarios, which might be simple or complex according to the number and nature of variables and dynamics and how they interact. Variables include actors (individuals, organisations such as governments, companies, etc.), factors (i.e., societal themes like environmental damage, inclusion, social cohesion, unemployment, etc.) and sectors (the energy sector, ICT, water consumption, etc.) where the former interact. Dynamics relate to the events and processes that make up the story in a scenario.

For the purpose of the SHERPA foresight exercise, **MAPs will work with a combination of explorative and normative scenarios:**

- Explorative scenarios are used to describe uncertainty and answer questions on *what could happen* in a given context [9]. They are often developed as narratives and are able to incorporate a number of different actors, factors, interactions, allowing for the exploration of multidimensional and multi-level decision-making contexts. The exploratory process is as important as the product and includes goals such as awareness-raising, prompting creative thinking and gaining insights into how societal processes unfold in relation to one another [5, 11];

- Normative (or decision support or intervention) scenarios are meant to answer questions on *what should be*. They are constructed on the basis of various images of the future, which may include either feared or desired futures. Then, one or more paths are portrayed as to how one could arrive at, or avoid, that/those future(s).

To the purpose of considering paths to the future, a common approach is that of **back-casting**, which can eventually generate (the proposal of) strategic actions. A back-casting process starts from (a more or less) desirable future and the analysis goes backwards to the present in order to determine the feasibility of that future, but also to assess the conditions that would be required to reach a desired vision, identify possible obstacles to, and search for decisions (e.g., on policy measures) for, reaching that vision [9].

### BOX 2 – Possible, plausible, probable and preferable futures

Possible futures include everything we can imagine, regardless of how unlikely it may be. May involve the results of knowledge that we do not yet have, but that may be available in the future (e.g., travelling to Mars).

Plausible futures have a reasonable probability of occurring, as they are in line with the current general knowledge and understanding of how the world operates (e.g., insect-based foods become the main source of animal protein). The concept of plausibility allows scenario planners to remain within the realm of realistic developments but to go beyond conventional thinking.

Probable futures are likely to happen, as they are largely extrapolations of the present and the past into the future (e.g., sea-level rise in the Mediterranean Sea).

Preferable futures are not a product of (non-) existing knowledge, but are based on subjective judgments and values, as they describe the outcomes desired by individuals or organizations (e.g., desired futures envisioned by the SHERPA MAPs).

## 2. Strategic foresight: objectives

Strategic foresight can be defined as a deliberate attempt to broaden the “boundaries of perception” and expand the awareness of emerging issues and situations [14]. It can support decision-makers in thinking ahead strategically and encourage future-oriented policies by developing a range of possible ways of how the future could unfold [2, 3].

There are many ways in which foresight can assist the policy process [8, 15, 16] and six main functions of foresight have been identified in particular:

1. Informing policy by generating new insights;
2. Facilitating policy implementation, i.e., enhancing awareness of challenges to be addressed;
3. Embed participation in policy-making;
4. Support policy definition i.e., translating outcomes into specific policy options;
5. Reconfiguring policy systems (so that they are more capable of addressing long-term issues);
6. Having a symbolic function, signalling the need for, for instance, an integrated regional approach.

Foresight not only improves policymaking through concrete products, but also through the participation of stakeholders in the very process of developing foresight. Such engagement is expected to lead to enhanced communication, extended networks, better coordinated preferences, and even changes in thinking that raise the strategic decision-making capabilities of governments [16]. Other long-term advantages are related to

the potential for capacity development to support the creation of policy environments and cultures which are more highly attuned to foresight thinking [5].

However, to make best use of foresight in relation to policy, there are several recommendations which might be worth taking into account [5, 16]:

- ✓ Alignment with the policy timing is important: foresight exercises should consider tuning into policy cycles.
- ✓ Policy makers' involvement matters: there are higher chances of having an impact on decisions when foresight includes policy makers, even better when it is initiated by policy processes or policy makers.
- ✓ Participation and diversity are crucial: diverse, relevant actors should be very closely involved in foresight processes, whatever their objectives – as co-owners and co-designers as well as participants.
- ✓ Topics matter: relevant topics as subject of analysis are useful in order to encourage the takeover of results.
- ✓ Communicate instrumental rather than just informative goals: the potentially operational nature of the exercise might serve as incentive to enhance active participation.

It is important to keep in mind that there are no given rules about how to structure a process of strategic foresight but the general approach includes three main phases [2]:



**Figure 1.** The main phases of strategic foresight. Source: Authors' elaboration from Habegger (2010)

Considering the three phases as in **Figure 1**, the approach adopted by SHERPA has so far accommodated not only the detection and analysis of information, but also (part of) the generation of foresight knowledge by means of the work carried out under the MAP cycle I. The foresight exercise described in the present Discussion Paper provides guidance to complete the whole process.

### 3. Foresight scenario exercise in SHERPA: what the MAPs need to know

#### What will MAPs be doing in this foresight exercise?

This exercise is a step further to the MAP's vision, that is the desirable future (elicited in MAP cycle I). The MAPs will look for pathways on how to get there, identifying the interventions, instruments, processes and actors responsible for taking action, as well as bottlenecks and obstacles to be overcome.

#### What is the objective of the workshops?

Having participants from a local community engage in deliberative discussion and eventually in taking action. Creating a dialogue on the future among civil society, researchers and policy-makers around locally relevant issues/matters.

#### What kind of scenarios will be used? What are their main differences?

While the vision represents a normative view of how the future should look like (a desired or preferred scenario), explorative-contexts scenarios describe plausible developments for the future, taking into account a number of internal and external drivers. The latter are provided by the JRC and have been developed with the aim to contribute to the development of the long-term vision for rural areas 2040.

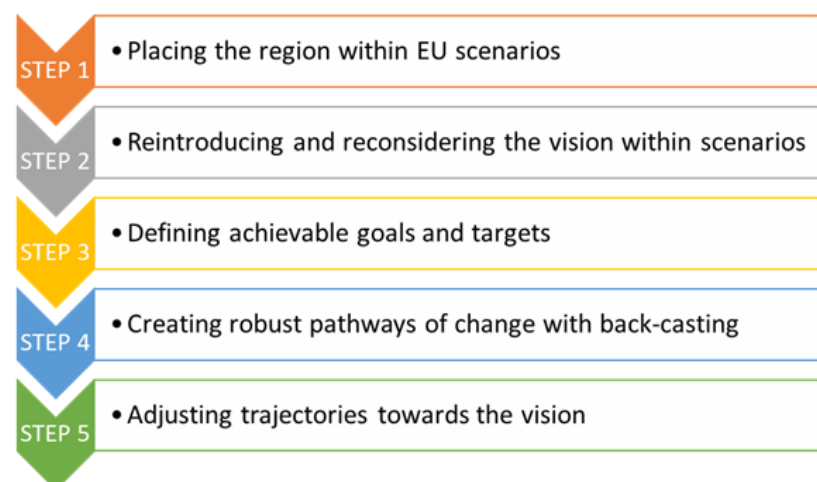
#### What materials do the MAPs need in order to carry out this exercise?

MAPs can count on several sources of materials and data:

- MAP Discussion Papers
- MAP Position Papers
- SHERPA Position Paper
- Online stakeholder engagement support tool
- JRC Explorative EU scenario narratives
- CV Cards (see Annex 2)

#### Is there a specific procedure to follow?

Yes, the foresight exercise delineated in this Discussion Paper is based on two participatory workshops carried out by each MAP and run along five main steps, as illustrated in [Error! Reference source not found.](#):



**Figure 2.** The foresight exercise steps for rural areas.

## How to make best use of EU scenario narratives for stimulating a fruitful discussion?

Scenarios provided by JRC describe detailed stories about four plausible developments of how Europe in 2040 might look like (see **Error! Reference source not found.**). These are based on several both external and internal drivers which have the potential to shape the future, in this case of rural areas. Normally, participatory scenario exercises require two or more days in order to be carried out<sup>4</sup>, while the SHERPA foresight will entail two online workshops, lasting a couple of hours each. Therefore, the MAPs will need to make best possible use of the scenarios provided by the Joint Research Centre.

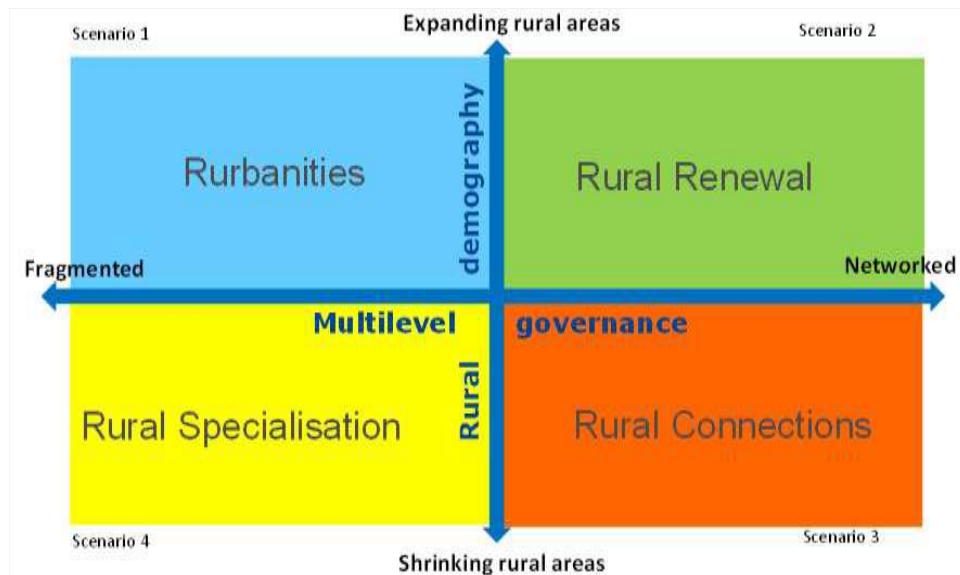


Figure 2. JRC scenarios, 2021.

To this purpose, it is necessary that all teams read carefully through scenario narratives in advance of the workshops and translate the two-axis matrix to be used at the outset of workshop 1. Teams will get back to scenarios in workshop 2 and, by then, they will have the time to summarise the content of the scenario narratives (e.g., with a short text or a few bullet points or scenario vignettes) to show in a slide and to select the CV cards which identify the variables most relevant to their own MAP case (i.e., depending on the themes, priorities, challenges and enablers included in their own vision and worth examining in depth). To ensure that the summaries of the four scenarios are not misleading, it is recommended to refer to the STEEP analysis. STEEP (or PESTE) stands for Social, Technological, Environmental, Economic and Political. It provides a simple checklist method to ensure that drivers are selected across multiple domains. It avoids focusing too much on, for instance, environmental drivers and neglecting economic drivers, and so on.

Facilitators to specify the four scenarios depict what the world might look like in the future. More detail is provided in the next section.

## What is the expected output of the foresight exercise?

There are at least two outputs that can be expected:

- For your MAP members: identified interventions, instruments, processes and actors responsible for taking action, as well as bottlenecks and obstacles to be overcome.
- At project level: a MAP Position paper.

<sup>4</sup> See for instance the foresight exercise run under the TRANSMANGO framework and discussed in [a previous paper](#) by Galli et al. (2016).

## 4. The foresight exercise step by step

Both facilitators and monitors have a role in preparing and running the workshops. Even if tasks assignment between facilitators and monitors is left to each MAP's internal decision, it is recommended that each team counts on at least two people. In each team, (at least) one person will be responsible for driving the process and guiding the discussion during the workshops and (at least) one person will be responsible for providing technical support, notetaking and monitoring the whole process. The use of visual tools – boards, platforms – is highly recommended. A detailed list of desk-based tasks to be completed before/in between the workshops is provided in the Annex 1. The workshops are designed for groups of up to 20 participants. For groups larger than 20 participants, it is suggested to split into breakout groups (N.B. this would imply the need for additional facilitators).

- Workshop 1 will encompass a light touch on scenarios and a re-elaboration of the MAP'S vision.
- Workshop 2 will ideally follow about one month apart, to allow for analysis and desk-based elaboration by each team in between. Activities in workshop 2 will revolve around the elaboration of pathways of change towards the vision, with awareness of challenging contexts provided by JRC scenarios.

For each of the five steps, guiding questions and facilitation tips are provided. The former might be complemented with additional questions selected by each team in order to stimulate the discussion and to reflect the particular needs of the MAP and its area. General tips for facilitation are available [here](#). In general, facilitators write everything down on a virtual blackboard, e.g., Miro, Jamboard.

### 4.1. Preparing workshop 1

**Desk-based work** – Teams need to get acquainted with the four JRC scenarios in advance. Annex 2 includes the four detailed scenario narratives. The discussion will not engage in depth with EU scenarios at this stage. Later on, these will provide contexts to be used to trigger the reflection and challenge the feasibility of policy/actions. The aim, at this stage, is to have participants get familiar with the two main variables of uncertainty around which the scenarios are built, i.e., 1) Governance: fragmented/networked; 2) Demography: shrinking/expanding. Each quadrant represents a different future. Translation of the two axis-matrix is needed.

In preparation for workshop 1, teams are also invited to get back to their position/discussion papers and recap macro-themes, enablers and challenges emerged during the 1<sup>st</sup> MAPs cycle. It can be useful to distil this earlier version of MAP's vision into a tree diagram, a table, a statement, a mind-map or a picture, to have participants see it at a glance during the workshop.

### 4.2. Running workshop 1

Workshop 1 is foreseen to last at least two hours. The table below presents its outline with an indicative each session.



**Table 1:** Suggested agenda for Workshop 1

Session	Estimated time
<b>Welcome and introduction of the day – aim of the day, instructions on tools, etc</b>	10-15 minutes
<b>Placing the region within EU scenarios (step 1)</b>	45 minutes
<b>Reintroducing and reconsidering the vision within scenarios (step 2)</b>	45 minutes
<b>Closing remarks</b>	10-15 minutes

### STEP 1 – Placing the region within EU scenarios

**Aim** – To explore uncertainty by introducing the four EU scenarios (N.B. only the two-axis main variables at this stage) and select the most relevant (in relation to the MAP) EU scenario to consider more extensively in workshop 2. It is important that the exploration of uncertainty is not linked to the desired vision, at this stage (next step will entail the vision instead).

**Expected outcome** – A “picture” of the current context wherein the rural area considered is placed, in relation to the two main scenario variables (i.e., governance and demography).

**During the workshop** – Participants are invited to reflect upon their own region/country in relation to the two variables considered in the scenarios and to place their region into one of the four quadrants. Facilitators may use the material collected in forehand to foster the debates through providing data (demography, economy etc.) that helps WS participants to place their MAP on the axes. Implications of such combination of variables are discussed, especially in terms of governance, in order to examine reasons behind current circumstances.

Facilitators write everything down on a virtual blackboard, e.g., Miro, Jamboard.

#### Guiding questions

*Considering the four scenarios, where would you place the (rural) context where you live/work in? Can you explain why you would locate your area in the scenario X?*

*Is this a satisfactory situation? If not, what can be improved?*

*Have measures been taken to address the problems? (especially for governance, it requires some explanation),, e.g., in which fields governance is fragmented? at political level? At the administrative level?*

*What implications does it have on the vision for the future development? on services? on productive activities? on wellbeing? on planning? Etc.*

Alternative option: if icebreaking is needed, facilitators may themselves suggest to place the region into one of the four quadrants and explain why they would do so based on their knowledge of the case.

#### Bridging question

*So far, you have reflected upon where your region/area is in the four quadrants. Let's now think where you would like to be in 2040? Where would you place your vision?*

## STEP 2 – Reintroducing and reconsidering the vision within scenarios

**Aim** – To figure out how the trajectory to the desirable future (vision) could look like and explore implications and potential challenges to its realisation.

**Expected outcome** – A clearer portrait of the MAP's desirable future, developed as a narrative, with macro-themes, priorities, challenges and opportunities highlighted. It provides a basis for the back-casting, representing the desired end-state of the back-casting process carried out in workshop 2.

**During the workshop** – Participants get re-acquainted with the vision developed during MAPs' cycle 1, which facilitators show in an easy-to-grasp form and describe shortly, along with enablers and challenges identified and all elements that might be useful to portray a desirable future. A first, short round of discussion has participants change/add any contested/missing elements. This can either be made on virtual post-its by the facilitator or by sharing an Excel Spreadsheet that each participant can fill in by themselves.

### Guiding question 1

*What is missing/would you add in this description of the vision? What would you change and how? Would you delete something? Why?*

Participants are then asked **to reconsider the vision in the light of scenarios**. Together with facilitator and monitor, they will discuss and identify which of the four scenarios the vision trajectory seems more aligned with and what are the implications for the vision.

### Guiding question 2

*Considering the four scenarios, where would you place your vision?*

*To which scenario would you say that your vision aligns more?*

*Considering we start from scenario X [the quadrant selected for the current situation], what elements of the vision could be easily achievable in the current scenario?*

*What will be needed/changed to get there? Think in terms, for instance, of regulation, investments, technology, role of civil society, education, governance, ...*

A discussion upon priorities emerging from the refined vision might follow. Diverging priorities can be addressed by voting and ranking the different options. The elaboration of such priorities provides the starting point for workshop 2. Facilitators might ask participants to assign a title to summarise the revised version of the vision.

**Closing remarks** – Wrap up, announcing workshop 1 and further information needed.

## 4.3. Preparing workshop 2

**Desk-based work** – Teams will need to elaborate the refined version of the vision and extract the main priorities (this might have already been done at the end of workshop 1).

Teams will get back to EU scenarios, which they will need to read carefully and summarise in the preferred manner: with a short text, a few bullet points displayed in each quadrant, with the help of scenario vignettes. The aim is to put them in a few slides and show those which have been selected in workshop 1 (re. quadrants: where we are and where we would like to be). When summarising scenarios, teams will need to make sure that a complete picture of the four futures emerges and that summaries are not misleading. A useful tool to prevent over focusing on certain drivers at the expense of others is the STEEP, or PESTE, analysis. STEEP stands for Social, Technological, Environmental, Economic and Political. It provides a simple checklist method to ensure that drivers are selected across multiple domains. It avoids focusing too much on, for instance, environmental drivers and neglecting economic drivers, and so on. It might be useful to specify that the four scenarios depict what the world **might look like** in the future.

In addition to scenarios, the teams will have to prepare the CV cards which identify the variables most relevant to their own MAP case (i.e., depending on the themes, priorities, challenges and enablers included in their own vision and worth examining in depth). A set of CV cards is available in Annex 2. Their aim is to have some of them displayed during the discussion, to draw attention upon the Critical Variables which might, in each scenario, influence the pathway (robustness analysis).

#### 4.4. Running workshop 2

As in Workshop 1, Workshop 2 is foreseen to last at least two hours. The table below presents its outline with an indicative time estimate for each session.

**Table 2:** Suggested agenda for Workshop 2

Session	Estimated time
<b>Welcome and introduction of the day – recap workshop 1, objectives of the day, etc.</b>	10-15 minutes
<b>Defining achievable goals and targets (step 3)</b>	20 minutes
<b>Creating robust pathways of change with back-casting (step 4)</b>	60 minutes
<b>Break</b>	10 minutes
<b>Adjusting trajectories towards the vision (step 5)</b>	20 minutes
<b>Closing remarks – Wrap up and next steps (SHERPA project and MAP PP)</b>	10-15 minutes

#### STEP 3 – Defining achievable goals and targets

**Aim of this step** – To make the refined version of the vision more realistic, by translating into concrete objectives, generate awareness on what needs to be changed and consensus over the whole process.

**Expected outcome** – A set of 2-3 achievable goals and targets.

**During the workshop** – When participants reconvene in workshop 2, their refined vision is provided with emerging priorities highlighted, as they provide the starting point for the identification of a set of 2-3 achievable goals. Goals are then written on post-its and elaborated further (they might be detailed in sub-goals, if needed).

### Guiding question 1

*Considering the vision, what goals would contribute to that future and/or would have been achieved with the realisation of that vision? How can we measure the achievement of these goals?*

With the help of facilitators, participants define possible targets (key indicators) to measure the achievement of the goals.

## STEP 4 – Creating robust pathways of change with back-casting

**Aim of this step** – To develop pathways of change working backwards from the future.

**Expected outcome** – Detailed pathways with milestone initiatives (e.g., policy actions), taking into account for each the future drivers, barriers, opportunities, and trade-offs, all is needed to get prepared to bring about deliberate change.

**During the workshop** – Facilitators need to guide this process and at the same stimulate the discussion by introducing critical variables taken from scenarios. Taking the priority goals identified earlier as a starting point, facilitator guide participants' discussion around what is needed and/or stands in the way of attaining those goals. Working on a timeline from 2040 to the present, necessary actions/initiatives are identified, along with necessary resources, actors to be involved, current infrastructural and immaterial barriers, trade-offs and all the elements that could arise during the implementation phase should be figured out. Winners and losers, as well as opponents and proponents should be also identified for each initiative. Thinking about available or potentially available instruments (e.g., Regulation/legislation, incentives) is highly recommended.

N.B. A back-casting approach is applied at this stage, i.e., this process starts from the desirable future (the goals have been reached) and works backwards to connect that future to the present. This approach is meant to focus on people's agency in achieving their envisioned objectives and overcome obstacles. Whereas working onwards from the present people were bounded by current limitations and difficulties, working from the future allows to think about options which would not be available otherwise [5].

**Guiding question** (to be asked over and over again from the future until the present is reached)

*If we were to attain [each step] what would we need to do/have in place for that to be possible? What obstacles/limitations/dilemmas would we need to overcome at each step?*

## STEP 5 – Adjusting trajectories towards the vision

**Aim of this step** – To reassess initial priorities and the current situation in the light of trajectories emerged from the process.

**Expected outcome** – More robust and shared trajectories of change. Possibly, a commitment to action.

**During the workshop** – The discussion gets back to the present and engages more in depth with the current situation and rapidly addresses the consistency of the present situation with the aims expressed in the process, that is, if the current situation a good starting point.

**Guiding question**

*How well is the area positioned to start walking the outlined path? Is the current situation in line with the trajectories identified in the process? If not, why? If yes, how to stay on track?*

## 5. References

1. Muiderman, K., Gupta, A., Vervoort, J., & Biermann, F. (2020). Four approaches to anticipatory climate governance: Different conceptions of the future and implications for the present. *Wiley Interdisciplinary Reviews: Climate Change*, 11(6), e673.
2. Habegger, B. (2010). Strategic foresight in public policy: Reviewing the experiences of the UK, Singapore, and the Netherlands. *Futures*, 42(1), 49-58.
3. Vervoort, J., Helfgott, A., Lord, S., Arteaga, L., Mmachukwu, O., Curtis, J., Torres, P., Ramadhani, D. C. and Mangalagiu, D. (2015). Deliverable D3.1 FOOD FUTURES AND EFFECTS ON EUROPEAN POLICIES AT NATIONAL AND EU LEVELS, 31 October 2015. TRANSMANGO, KBBE.2013.2.5-01, Grant agreement 613532.
4. Vervoort, J. M., & Gupta, A. (2018). Anticipating climate futures in a 1.5 °C era: The link between foresight and governance. *Current Opinion in Environmental Sustainability*, 31(January), 1–22. <https://doi.org/10.1016/j.cosust.2018.01.004>
5. Vervoort, J. M., Thornton, P. K., Kristjanson, P., Förch, W., Ericksen, P. J., Kok, K., ... Jost, C. (2014). Challenges to scenario-guided adaptive action on food security under climate change. *Global Environmental Change*, 28, 383–394.
6. Gavigan, J., M. Zappacosta, K. Ducatel, F. Scapolo, and P. d. Pietrogioacomo. 2001. Challenges and priorities for European research: a foresight review. *Foresight* 3:261-271.
7. Bourgeois, R., Ekboir, J., Sette, C., Egal, C., Wongtschowski, M., & Baltissen, G. (2012). The state of foresight in food and agriculture and the roads toward improvement: Part 1-Foresight Report to GCARD II.
8. Havas, A., D. Schartinger, and M. Weber. 2010. The impact of foresight on innovation policy-making: recent experiences and future perspectives. *Research Evaluation* 19:91-104.
9. Verkerk, P. J., Lindner, M., Pérez-Soba, M., Paterson, J. S., Helming, J., Verburg, P. H., ... & van der Zanden, E. H. (2018). Identifying pathways to visions of future land use in Europe. *Regional environmental change*, 18(3), 817-830.
10. Gordon, A. V. Scenario Building Workshop - How to Build and Use Scenarios. World Future Society Executive Seminar 2008. SlideShare Presentation available at: <https://www.slideshare.net/adgo/scenario-building-workshop-how-to-build-and-use-scenarios>
11. Van Notten, P. W., Rotmans, J., Van Asselt, M. B., & Rothman, D. S. (2003). An updated scenario typology. *Futures*, 35(5), 423-443.
12. Pérez-Soba, M., & Maas, R. (2015). Scenarios: tools for coping with complexity and future uncertainty?. In: *The Tools of Policy Formulation*. Edward Elgar Publishing.
13. Börjeson, L., Höjer, M., Dreborg, K. H., Ekvall, T., & Finnveden, G. (2006). Scenario types and techniques: towards a user's guide. *Futures*, 38(7), 723-739.
14. Major, E., D. Asch, and M. Cordey-Hayes. 2001. Foresight as a core competence. *Futures* 33:91-107
15. Da Costa, O., Warnke, P., Cagnin, C., & Scapolo, F. (2008). The impact of foresight on policy-making: insights from the FORLEARN mutual learning process. *Technology Analysis & Strategic Management*, 20(3), 369-387.
16. Könnölä, T., Scapolo, F., Desruelle, P., & Mu, R. (2011). Foresight tackling societal challenges: Impacts and implications on policy-making. *Futures*, 43(3), 252-264.

## Annex 1: Check-list for facilitators and monitors

Before and in-between the workshops:

- ✓ Share the Discussion Paper with the MAP members prior to the workshop.
- ✓ Create a virtual repository with all necessary document (e.g., desk research from cycle I, MAP Position Paper on the vision, JRC scenarios).
- ✓ So send a summary / bullets of the main issues from WS 1 prior to WS 2.

During the workshops:

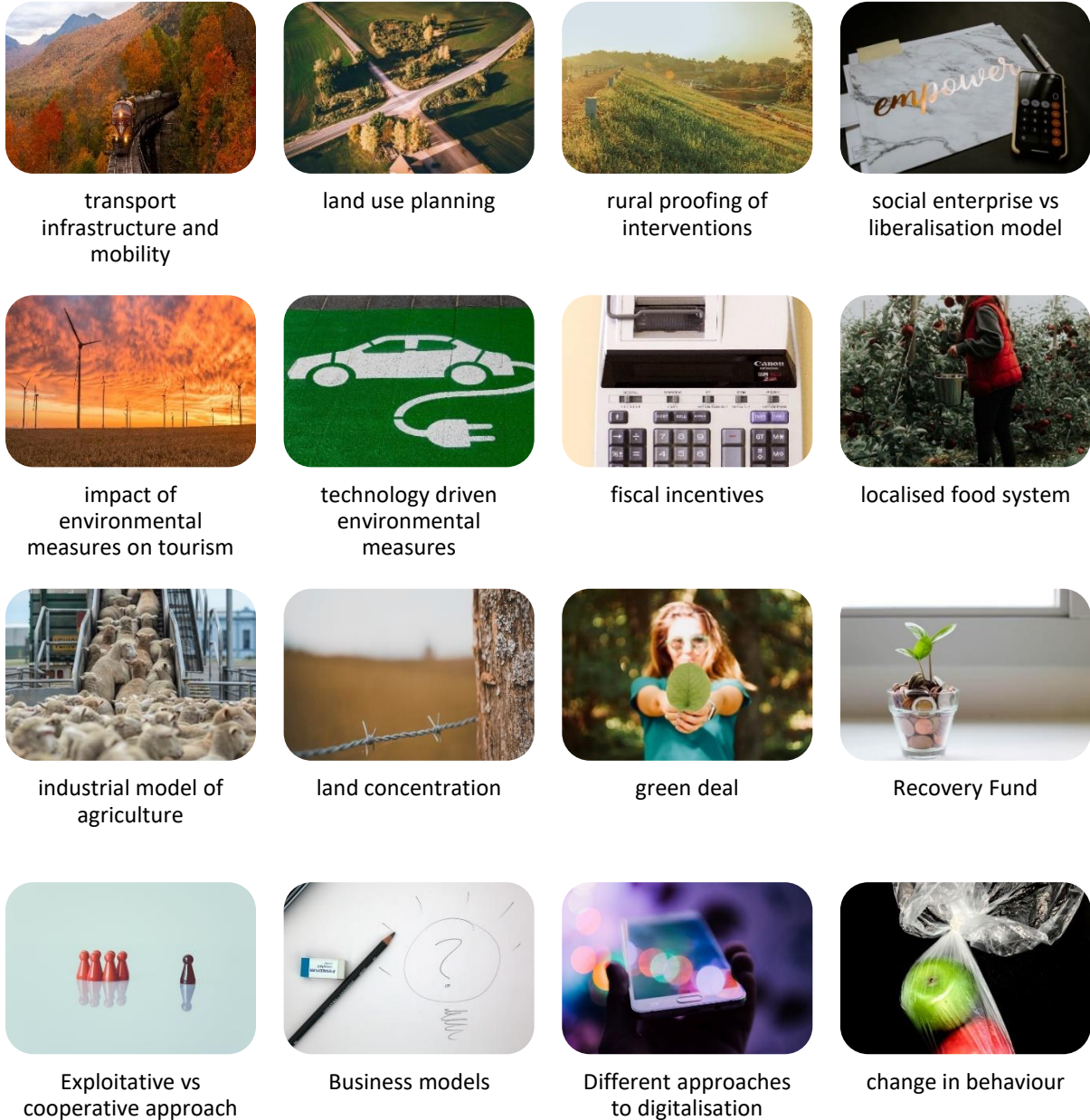
- ✓ Present the objective(s) of the workshop at the beginning of the workshop.
- ✓ Regularly check that the process is clear for all MAP members.
- ✓ Ensure equal speaking time from all participants.
- ✓ Don't hesitate to record the meeting.

After the workshops:

- ✓ Try to quickly follow-up with a memo/report with the results of the workshop – this will ensure transparency while avoiding any misunderstanding.



## Annex 2: EU scenario narratives and Critical Variables cards



**Figure 3.** Examples of critical variables from scenarios to use in the workshops.