

Participatory scenario planning

Participatory research methods for sustainability – toolkit #3

Achieving sustainable and equitable futures requires a sense of what those futures might look like, and how to get there. Participatory scenario planning (PSP) explores diverse future scenarios in a stakeholder-engaged process of knowledge co-production. PSP makes use of different methods to identify relevant stakeholders, create a set of scenarios, and explore ways to connect those future visions to the present.

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Participatory scenario planning. Participatory research methods for sustainability – toolkit #3

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Sustainability is inherently a future-oriented quest. Actions taken now have far-reaching, almost entirely unpredictable consequences, and many different futures are possible. Scenarios are vignettes or narratives of possible futures, and when used in a set, usually depict purposefully divergent visions of what the future may hold (Hichert et al. 2021).

The point of scenario planning is not to predict the future, but to explore its uncertainties. Scenario development has a long history in corporate and military strategic planning, and is commonly used in global environmental assessments to link current decision-making to future impacts (Pereira et al. 2021). Participatory scenario planning (PSP) extends scenario development into the realm of stakeholder-engaged research and transdisciplinary knowledge co-production (Oteros-Rozas et al. 2015). PSP is often used in the early phases of a project to promote stakeholder engagement and discussion, and to build a shared understanding of the system or problem under consideration. It can be part of a transdisciplinary process to identify the most pressing needs of a group of stakeholders and their desires for the future. Scenarios created can then be explored further, for exam-

ple through quantitative modelling or policy analysis, and help identify key intervention or leverage points for change.

Procedure

Within PSP, there are many different methods for developing scenarios (Hichert et al. 2021). Usually, the process broadly follows three phases:

1 Identifying stakeholders and setting the scene. Stakeholder analysis can be used to identify a relevant and diverse set of participants. Selecting the participants, and creating a safe and inclusive space for PSP requires an awareness of and mitigation against power imbalances, as well as an acknowledgment and celebration of differences in perspectives. To create a shared understanding of the system, historical timelines and other methods for scoping social-ecological systems can be used. It is important to prepare stakeholders to think creatively and collaboratively about the future, which may be assisted by arts-based practices (e.g., Pereira et al. 2018) and tools designed to challenge deeply-held assumptions, such as *Causal Layered Analysis*.

2 Creating scenarios. Typically, scenarios are prepared as sets that articulate meaningful alternatives to one another. A common method is the 2x2 double uncertainty matrix, in which participants identify two high-uncertainty drivers of change and their extremes (e.g., weak versus strong economy and weak versus strong governance). These drivers are then juxtaposed in a matrix, creating four combinations of driver extremes from which divergent scenarios are deduced. Other approaches include the use of scenario archetypes (Sitas et al. 2019), or more inductive methods like *Mānoa* scenario building (Schultz 2015), or combinations thereof. In addition, many futures and foresight tools exist that can support the development of scenarios. For example, *Futures Wheels* encourage participants to think through po-

In this series, we aim to alert GAIA readers to useful toolkits for participatory research methods for sustainability. If you would like to contribute a toolkit description, please contact gaia@oekom.de.

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tential consequences of current innovations and future disruptions (Glenn 2009) (box 1). Other exercises, such as the creation of newspaper headings, fictional statistics, and artistic expressions can help participants develop future worlds that feel more tangible and real (Pereira et al. 2018).

3 Connecting the future to the present. Once scenarios have been created, tools like the *Three Horizons Framework* help participants understand how to get from the present to those future worlds (Sharpe et al. 2016). The *Three Horizons Framework* encourages deep dives into scenarios to help answer questions such as: What needs to happen to achieve preferred futures? What are key intervention points? Where do conflicts and opportunities lie? The scenarios can then be used to identify concrete actions that need to be taken in the present to achieve desired futures, and who is responsible for implementing those changes. It is also at this stage that participants can reflect on how they feel about the scenarios created, what stood out to them, and what they learned.

Skills and resources needed

Participants do not usually require specific skills, beyond a willingness to be open to new experiences and think creatively about the future. However, language may be a barrier for some stakeholders, and translation services should be offered where necessary. Many tools, such as *Futures Wheels* and *Causal Layered Analysis*, can be adapted to online settings with the help of virtual collaboration platforms like *Miro*. However, these kinds of applications require a certain level of familiarity with and access to technology, which can be a limiting factor for some participants.

The facilitator's role is to navigate power dynamics and create a generative environment, where all participants feel heard

and free to think “outside the box”. The facilitator should therefore be experienced in group work, and have at least a basic understanding of the local context and focal system being addressed. To encourage creativity and cooperation, it is beneficial to hold PSP processes in stimulating and comfortable environments (e. g., venues with access to natural spaces).

Strengths and weaknesses

- PSP provides a platform for multiple perspectives and values to be voiced and heard (Harmáčková et al. 2022). This may lead to more equitable decision-making, and improve the legitimacy and support of policy or management recommendations that result from such processes (Oteros-Rozas et al. 2015).
- The more diverse the voices and types of knowledge that feed into the PSP, the more linkages across scales, disciplines, and sectors are revealed within the focal system. This can improve dialogue and collaboration among stakeholders, and result in rich and boundary-pushing narratives of the future that are more robust in the face of uncertainty (Hichert et al. 2021).
- PSP tends to increase participants' understanding of the complexity of sustainability challenges, and typically represents a significant learning process for those involved. Participants gain futures literacy, and often remark on the profound impact that thinking about the future in systematic and creative ways has had on their own outlook (Pereira et al. 2018).
- Well-run PSP processes take a lot of time and resources to plan and execute. If the process does not sufficiently take into account and mitigate against power asymmetries, it can entrench existing power hierarchies and narratives about the future (Hichert et al. 2021).

G wie Gestalten

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BOX 1: Scenarios of Good Anthropocenes in southern Africa

The *Scenarios of Good Anthropocenes in southern Africa* workshop aimed to develop visions for positive futures that are socially and ecologically desirable, just, and sustainable (Hamann et al. 2020). It formed part of the *Seeds of Good Anthropocenes* initiative led by McGill University in Canada, the Stockholm Resilience Centre in Sweden, and the Centre for Sustainability Transitions in South Africa.^a The workshop based scenario development on “seeds”, which are existing initiatives or technologies that represent current, local-scale innovations for sustainability. Drawing on the *Mānoa* method of scenario planning, the impacts and interactions of these seeds were explored during a facilitated visioning

process, undertaken with a diverse group of participants in Cape Town, South Africa. Participants included scientists, practitioners, social entrepreneurs, and artists. To build the scenarios, participants used tools like *Futures Wheels* (figure 1) and the *Three Horizons Framework*. Scenarios were shared through creative role-playing, using props, dancing, and lighting (figure 2). This PSP process highlighted the central role of the imagination for transformative thinking, the need for diversity to push conceptual and experiential boundaries, as well as the importance of creating a safe and comfortable space that allowed participants the freedom to grapple with emotions, deeply held assumptions, and complexity (Pereira et al. 2018).

FIGURE 1: *Futures Wheels* help build scenarios by developing connections between emerging changes and their consequences for society. A current “seed” or innovation lies at the centre of each wheel (purple). Each layer of notes surrounding the central seed represent 1st (yellow), 2nd (green), and 3rd (orange) order impacts of the seed being adopted as a mainstream “way of doing” in the future. Connections between impacts are drawn between the different wheels.



^a www.goodanthropocenes.net

FIGURE 2: Scenarios were presented through creative role-playing. Here, participants act out a scene from one of the scenarios, illustrating an important moment of collective decision-making in the narrative. Arts-based approaches help connect participants to the scenarios on an emotional level and make envisioned futures feel more real.



- It is notoriously challenging to connect PSP to concrete impacts or actions “on the ground”, in terms of improved outcomes for sustainability. In part, this is due to the difficulty of formally evaluating often intangible outcomes over long time periods (Oteros-Rozas et al. 2015). Usually, the scenarios themselves are not the most important outcome of PSP – more often, the collaborative process is the key objective.

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References

Glenn, J. 2009. The futures wheel. In: *Futures research methodology – version 3.0*. Edited by J. Glenn, T. Gordon. Washington, D. C.: The Millennium Project. Chapter 6.
 Hamann, M. et al. 2020. Scenarios of Good Anthropocenes in southern Africa. *Futures* 118: 102526. <https://doi.org/10.1016/j.futures.2020.102526>.

Harmáčková, Z. et al. 2022. Linking multiple values of nature with future impacts: Value-based participatory scenario development for sustainable landscape governance. *Sustainability Science* 17/3: 849–864. <https://doi.org/10.1007/s11625-021-00953-8>.
 Hichert, T. et al. 2021. Scenario development. In: *The Routledge handbook of research methods for social-ecological systems*. Edited by R. Biggs, A. De Vos, R. Preiser, H. Clements, K. Maciejewski, M. Schlüter. London: Taylor & Francis. 163–175. <https://doi.org/10.4324/9781003021339>.
 Oteros-Rozas, E. et al. 2015. Participatory scenario planning in place-based social-ecological research: Insights and experiences from 23 case studies. *Ecology and Society* 20/4: 32. <https://doi.org/10.5751/ES-07985-200432>.
 Pereira, L. et al. 2018. Using futures methods to create transformative spaces: Visions of a Good Anthropocene in southern Africa. *Ecology and Society* 23/1: 19. <https://doi.org/10.5751/ES-09907-230119>.
 Pereira, L. et al. 2021. Advancing a toolkit of diverse futures approaches for global environmental assessments. *Ecosystems and People* 17/1: 191–204. <https://doi.org/10.1080/26395916.2021.1901783>.
 Schultz, W. 2015. *Mānoa: The future is not binary*. *APF Methods Edition of Compass*: 22–26.
 Sharpe, B. et al. 2016. Three horizons: A pathways practice for transformation. *Ecology and Society* 21/2: 47. <http://dx.doi.org/10.5751/ES-08388-210247>.
 Sitas, N. et al. 2019. Exploring the usefulness of scenario archetypes in science-policy processes: Experience across IPBES assessments. *Ecology and Society* 24/3: 35. <https://doi.org/10.5751/ES-11039-240335>.