Title of presentation: Participatory foresight for testing policy relevant R&I findings for EU resilience and future preparedness
Name of presenter: Charlotte Freudenberg (Fraunhofer ISI)

Participatory Foresight for Societal Resilience. *Evidence from the FutuResilience Project.*

Charlotte Freudenberg, Philine Warnke

Objective and contribution of the paper
In our paper, we argue that Foresight activities can make substantial contributions to societal resilience of regional and local communities. Part of this argument is already well established; The proposition that Foresight helps actors to be better prepared for the future and thereby increases system resilience is one of the widely accepted standard rationales for Foresight (Wilkinson 2017). In our paper, however, we go deeper by reviewing the different aspects of societal resilience as they have been brought forward by social science literature. We then analyze if and how Foresight activities could address these aspects.

Our hypothesis is that Foresight activities have the potential to make specific contributions to each of the different capacities that underpin societal resilience in local or regional communities. We furthermore argue that such a contribution cannot be taken for granted. Rather, the resilience impact must be explicitly considered in the design of a Foresight process in order to unlock the full potential of Foresight for resilience.

Methods and approach
The theoretical foundation of our hypothesis is derived from societal resilience literature on the one hand and Foresight & Futures body of research on the other. We then test the hypothesis using cases from a recent EU-funded research project FutuResilience. The FutuResilience project has developed innovative, science-based co-creation labs ("Future Resilience Labs") to test policy-relevant research and innovation (R&I) findings that contribute to strengthening societal resilience and future preparedness in dealing with crises. Through ten geographically distributed pilot cases across Europe, various stakeholders discussed and tested evidence-based strategies tailored to their specific contexts and local needs. The goal was to reduce vulnerabilities and enhance capacities to handle different types of crises. Supported by experienced foresight experts and equipped with a foresight toolbox, the ten pilot cases applied various participatory foresight methods, such as the scenario methodology, one of the most established and widely used foresight approaches.
These ten pilot cases which can be compared relatively well due to the similar approach across Labs serve as the empirical basis for testing our hypothesis.

Structure of the paper
We first give a short introduction into Foresight and in particular scenario building, then provide a brief overview of key elements of societal resilience emerging from our review of social science literature. We then introduce three examples from FUTURESILIENCE Foresight

processes. For each lab we extract potential contributions to societal resilience from the Labs own reporting. Finally, we draw conclusions on the contribution of Foresight to resilience and its dependance on the Foresight design.

Scenario development in the context of strategic Foresight

Scenarios are coherent and plausible images of the future (van der Heijden 1997; Spaniol and Rowland 2019; Cairns and Wright 2018; Schwartz 1991). They serve as mental models of alternative possible developments, enabling reflection on future opportunities and risks and supporting robust strategy building and decision-making in the present. In the case of FutuResilience we applied a morphological scenario approach in three main phases: (1) identification of change factors, (2) development of future projections, (3) composition of scenarios from consistent bundles of projections. The scenarios were used to test the robustness of strategies (windtunneling) (Ringland 1998; van der Heijden 1997).

Foresight, in its broadest sense, is a systematic futures dialogue among stakeholders with diverse perspectives. It helps actors to explore, anticipate, and shape the future, allowing the structured and systemic use of collective intelligence (Da Costa et al. 2008; Rosa et al. 2021; Miller 2018).

Foresight acknowledges the inherent uncertainty of short- to long-term future developments and facilitates reflection on various possible future trajectories. By integrating multiple perspectives and methodologies, it fosters creative and long-term thinking beyond conventional forecasts and linear extrapolations. Foresight dialogues provide both product and process benefits. They generate distributed anticipatory intelligence, offering insights into potential threats, opportunities, and options for action, which support future-oriented and resilient decision-making. Moreover, the interactive dialogue strengthens a system's ability to adapt to a changing environment and unlock its full potential by fostering connections and shared understanding among diverse actors and domains. Ultimately, systems gain "futures literacy" the ability to use the future to gain a richer understanding of the potential of the present (Miller 2007, 2018)

Societal resilience

Societal resilience refers to the intrinsic ability of a social system (e.g. families, organisations, communities, regions, or nations) to manage and respond to shocks and adverse events while avoiding system failure, i.e. the inability to provide the functions expected by its members (Lorenz 2013). Societal resilience is greatly shaped by pre-existing societal conditions and relies on the contribution of the entire range of system actors and citizens' participation (Cutter et al. 2008; Burton 2015).

Social science literature (i.e. Lorenz, 2013) highlights three main aspects of societal resilience:

Coping or Absorptive Capacity is the ability to absorb an unexpected shock. This includes:

- Preserving system identity in the face of a crisis, to integrate it into sensemaking practices and link the past and the future in a new way that preserves inner continuity
- Constructively dealing with the experience of the system not providing the expected functions
- Accepting uncertainty, unpredictability, and change in the environment

Adaptive Capacity is the ability to respond to changing framework conditions through incremental adaptations. Important aspects are:
- Adopting new practices and, whenever required, reforming institutions
- Adapting narratives to new situations

Transformative Capacity is the ability to implement changes in the system's primary structure and function in response to a major external challenge. This involves aspects such as:
- Imagining fundamentally new and worthwhile structures
- Creating new narratives and institutions

Participatory Capacity underpins all three of these elements of resilience. It entails the ability of the system's actors to self-organise while including a diversity of perspectives and expectations in crisis mitigation and mobilising local practices (e.g. narratives, rituals, and humour) and knowledge, rather than importing external explanatory structures.
Societal resilience depends heavily on the ability of actors in the system to learn from the past, reflect on the future, and – if necessary – divert towards more beneficial trajectories.

The Futuresilience Foresight Approach

The FutuResilience ten Labs all followed a structured morphological scenario development process that progressed from identification of key influencing factors, via development of future projections for the selected key factors and scenario generation from consistent bundles of projections. Each Lab however, adapted this process to its specific needs that derived from their local context and problem specificities.

First insights into Resilience Contributions from three FutuResilience Labs

The TIMES Lab focused on strengthening local community preparedness at the Municipality of Cesena in Italy. The heavy flooding of Cesena in 2023 saw the spontaneous mass mobilisation of volunteers as an example of coping and participatory capacity by articulating highly diverse societal groups and existing initiatives. This example of social resilience can be assisted by anticipating future crises and how to better make use of the population as a resource for emergency management.
One key aspect of the discussions is about developing infrastructure and governance models to manage citizens' contributions to the municipality, civil protection and crisis response, such as logistics and communication systems. This illustrates how the Foresight process empowers the community to mobilise its **participatory capacity** more effectively by creating new, future-oriented social and technical linkages between people and institutions on different levels. In this direction, the TIMES Lab uses a Foresight storytelling approach that invites participants to co-create a news journal from 2050, imagining new forms of emergency response within the community and enhancing future preparedness.

The MULTILOCAL Lab dealt with new multilocal living arrangements, which distort many municipalities' budgets – especially in rural and coastal regions in Estonia, where the demand for services is difficult to plan, and very often the increased demand is not compensated by additional tax income. To understand the income effects of potential changes in local population structure, a digital data analysis tool has been developed. The tool enables

municipalities to simulate the effects on their tax incomes while considering shifts in population size and composition. Together with stakeholders from local municipalities, the Lab identifies the challenges and opportunities of the multilocality in relation to population dynamics and service provision and explores ways in which cooperation between municipal entities could help to achieve a better balance. The Lab thus enhances the **adaptive capacity** of the new multilocality challenge by better linking diverse system elements across different spatial levels.

The IMMER Lab dived into the future to an imagined crisis in 2050 and explores the hypothetical resulting situation in 2051 to draw lessons for today. IMMER involves stakeholders such as crisis intervention forces, fire brigades, and administrations from France and Germany to be able to react immediately and learn lessons for other situations. The aim is to enhance capacities and cross-border connections in readiness for a potential crisis. IMMER tested using examples such as a blackout, tsunami or new pandemic and programmed a smartphone app to place people in the situations. Using science fiction stories for inspiration and storytelling by and for participants, the Lab strengthens the ability to imagine different system states – a key aspect of **transformative capacity**. Holding the very long-term view up to 2050 and thereafter, the implications for today and for preparing better collaboration on both sides of the Rhine River become clearer. Therefore, the Lab widens the range of sectors involved and takes many different perspectives into account, usually organisations that can be mobilised quickly for crisis solutions.

Tentative Results & Conclusion: The Foresight contribution to societal resilience

The first findings already indicate that indeed Foresight contributions to societal resilience can indeed be mapped to the well-known dimensions of societal resilience. These preliminary results also show that in particular specific Foresight design features such as e.g. the storytelling approach used by the IMMER and TIMES Labs underpin the resilience impact.
We will continue the research by including also the other Labs into the analysis and analyzing in more depth how specific methodological choices may have enabled resilience contributions.

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