# Post-Growth Solutions for Social Resilience

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## Abstract

Due to the complex, novel and dynamic nature of contemporary crises and future extreme events, creative solutions, concepts and strategies need to be defined and implemented in order to strengthen the resilience of affected social systems, such as organisations, economies, states, regions or municipalities. To do so, it is worth questioning the current premises of growth-based organising, management and way of living that are even discussed as aspects of the problem then of the solution. Although the concept of post-growth is widely discussed among scholars and activists already for several years, there is still little research on the nexus of post-growth and social resilience. Both, for theory and practice, little is known on how and which post-growth solutions affect the resilience of a social system. Thus, this paper focus on the questions

a) how post-growth solutions influence social resilience (theoretical perspective) and

b) which post-growth solutions strengthen social resilience (practical perspective).

Applying a foresight method design, the research results show that the properties of autonomy, sufficiency and solidarity, as well as the capacity to self-organise have an enhancing effect on the resilience of social systems. The article concludes that post-growth is a valuable concept to deepen our understanding of resilience by adding knowledge to the underlying principles of resilience in terms of self-organisation and dynamic capacities (theoretical perspective). In addition, the concept of post-growth allows to deduct practical solutions to strengthen the capacity of a social system to prepare for, cope with and adapt to extreme crisis situations, i.e. to strengthen resilience (practical perspective).



**Keywords:** social resilience; post-growth solutions; foresight

# 1. Introduction

The conceptualisation of contemporary crises and future extreme events within research frameworks employs diverse approaches. However, these phenomena are characterised by shared attributes, namely complexity, aversiveness and dynamism. Affected social systems, such as communities, organisations, economies, states, regions or municipalities, need to prepare for, cope with, adapt to and, eventually, transform from these types of change events and extreme situations. In other words, social systems need to strengthen their resilience in order to be able to maintain their functions and, at best, thrive after such extreme crisis conditions (see Duchek, 2020).

Due to the complex, novel and dynamic nature of these events, creative solutions, concepts and strategies need to be defined and implemented in order to strengthen social resilience. To do so, it is worth questioning the current premises of growth-based organising, management and way of living that are even discussed as aspects of the problem then of the solution (see Parrique, 2019). As Krähmer (2025) puts it: "(…) infinite economic growth is structurally incompatible with ecological sustainability as a main cause of the global socio-ecological crisis" (Krähmer, 2025, p. 1).

Although the concept of post-growth (this term is also used here synonymously for the concept of degrowth) is widely discussed among scholars and activists already for several years, there is still little research on the nexus of post-growth and social resilience. Both, for theory and practice, little is known on how and which post-growth solutions affect the resilience of a social system.

By post-growth solutions, the paper calls upon "(…) changes in various dimensions of social being. That is, changes in how humans interact with nature, non-humans, and one another, changes in social structures and changes in how we are as human beings (e.g., what we value, what we strive for etc)" (Buch-Hansen, Nesterova, 2023, p. 1).

Thus, this paper focus on the questions

a) how post-growth solutions influence social resilience (theoretical perspective) and

b) which post-growth solutions strengthen social resilience (practical perspective)?

A conscious decision has been made to reject the common definition of degrowth, which can be defined as "(...) an equitable downscaling of production and consumption that increases human well-being and enhances ecological conditions at the local and global level" (Schneider et al., 2010, p. 511, in: Buch-Hansen, Nesterova, 2023, p. 4), as this definition focuses in particular on the production and demand aspects of the current economic and production system. However, due to the comprehensive nature of social resilience, this definition falls short of providing in-depth indication of the impacts of degrowth on the resilience of social systems as a multifaceted concept. The broad definition provided by Buch-Hansen and Nesterova (2023) appears to be an appropriate one for the purposes of this paper.

Following the introduction, the first part of the article undertakes a comprehensive examination of the theoretical frame of the concepts of resilience and post-growth. Based on this theoretical frame an impact model within which the research questions are investigated is established. The subsequent chapter will present the research design, which involves a qualitative content analysis of several reports developed during two foresight workshops to develop and analyse several future crisis scenarios for the Strasbourg-Kehl region. The results of this qualitative content analysis are presented and explained in chapter four of the article. In the final chapter, the analysis results are embedded in the impact model developed in order to draw conclusions for answering the research questions and to gain insights for further work on the research topic.

## 2. Theoretical Framework

In order to develop and explain the theoretical framework in which the research questions are embedded and dealt with, it is firstly of great importance to explain the conceptual backgrounds of the concepts studied in this paper, namely of resilience and post-growth.

Notwithstanding the theoretical embedding of resilience in the theory of complex adaptive systems, there is currently a paucity of definitional and conceptual clarity in research as to the meaning of resilience, especially in the case of social resilience. In contrast to related concepts such as flexibility and agility, resilience is particularly focused on periods of crisis or shock, emphasising the possibility of the system becoming stronger or flourishing after the crisis. Three fundamental approaches to resilience can be identified:

(1) Resilience as the ability to withstand shocks and revert to a normal state (see resilience engineering);
(2) Resilience as a process of adaptation and further development (see adaptive resilience); and
(3) Resilience as the ability to anticipate potential dangers (cf. Duchek, 2020, pp. 216-219).

Furthermore, there are further differentiations with regard to resilience as

(a) property,
(b) resources or resilience potential,
(c) capacities,
(d) processes or mechanisms,
(e) outcomes (cf. Rätze et al., 2021, p. 629).

The concept of adaptive resilience, as outlined by Bristow and Healy (2014), places significant emphasis on the importance of dynamic adaptability. The concept of equilibrium (or normal state) is eschewed in favour of a system that is able to react flexibly and dynamically to changes and shocks within a rapidly changing environment. The restoration of a state of normality is not regarded as a desirable outcome in this context, as this would fail to consider contextual changes and consequently diminish the resilience of the system (see Bristow, Healy, 2014, p. 94; Tillack, Hornbostel, 2022, p. 86). The conceptualisation of resilience as a process aims to identify the elements that explain the transition from resilience resources (input) to resilience outcomes (output). Sutcliffe and Vogus' (2003) seminal paper defined the concept of organisational resilience as a process by which organisations can achieve positive outcomes in the face of adversity. The argument is made that resilience at the organisational level is strengthened by processes that foster competencies, support the restoration of effectiveness and enable flourishing. A plethora of conceptual frameworks have been developed to illustrate how social systems can utilise cognitive, contextual and behavioural processes to accumulate resilience resources during stable periods, anticipate critical changes, formulate solutions to adverse events, and reflect on these experiences to ensure long-term sustainability (see Rätze et al., 2021, p. 623). Elston and Bel (2023) differentiate between the concepts of adaptive and absorptive resilience. Absorption is regarded as a pivotal ability during the coping phase of an extreme event, while the capacity to adapt becomes salient in the learning phase following an aversive event, with the objective being to develop novel abilities derived from the event (cf. Elston, Bel, 2023, p. 736). Sheffi (2007) emphasises that resilient communities can utilise the aforementioned skills to respond to both minor and major disruptions (see Hoffmann, 2017, p. 80). This definition, in conjunction with the resilience competencies derived from it – namely, absorption, adaptation and transformation capacity – forms the basis for a concept of municipal resilience that is particularly tailored to the challenges of small communities. Duchek (2020) proposes a conceptualisation of resilience as a meta-competency consisting of the phases of anticipation, coping and adaptation. The resilience process is comprised of

three temporal phases: the anticipation of potential threats (1), coping and responding during the crisis (2), and adapting and possibly transforming after the crisis event (3). In each phase, specific behaviours, capacities and properties must be deployed to build resilience (see Duchek, 2020, p. 215). Although Duchek's (2020) definition was originally developed for organisational resilience, its universality allows it to be applied to social systems in general and provides a suitable conceptual framework for investigating the resilience of social systems. In the context of this study, Duchek (2020) offers a definition of resilience as "(...) the ability to anticipate potential threats, to cope effectively with adverse events, and to adapt to changing conditions." (Duchek, 2020, p. 220).

The analytical resilience framework is developed on the premise that the capabilities of anticipation, coping and adaptation, as delineated by the definition of resilience, form the basis of this framework. This approach is supplemented by a temporal crisis process framework due to the temporal nature of adverse events. This approach acknowledges the dynamic nature of adverse events and refines the conceptualisation of social resilience. Rather than perceiving it as a singular capacity manifesting exclusively in the aftermath of an adverse event, it is now understood as a multi-dimensional construct that influences various aspects of behaviour, capacities and properties not only during, but also prior to and following an adverse event[1].

Within these three temporal phases, a social system requires those aspects of behaviour, capacities and characteristics that correspond to the nature of the respective phase.

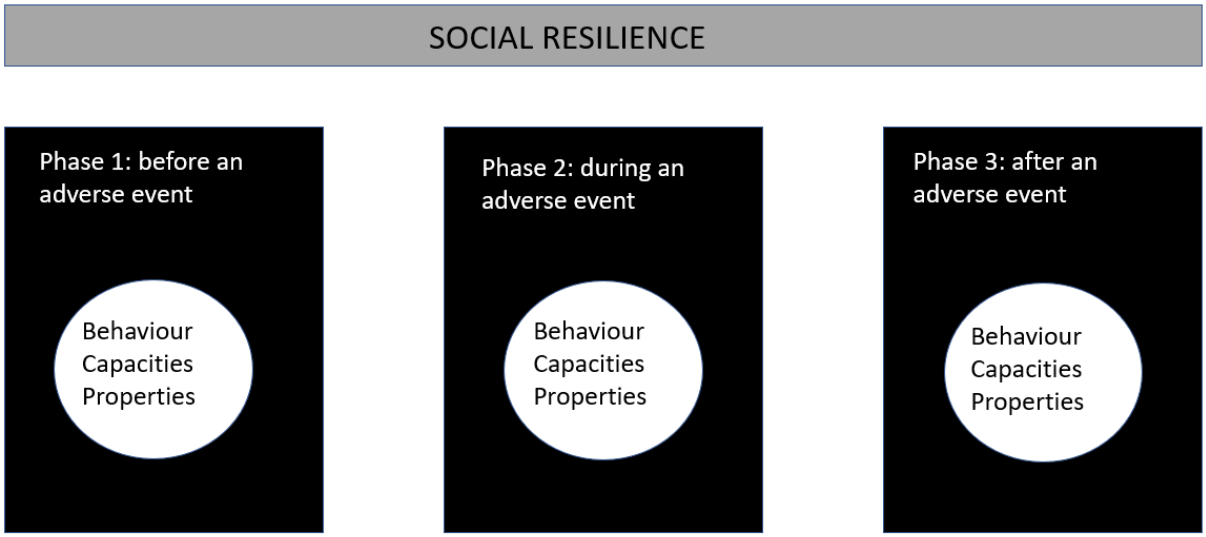


Figure 1: Analytical framework of social resilience (source: own illustration based on Gnamm, 2024, p. 12.).

By applying this analytical framework of social resilience, it is now worth questioning how (theoretical perspective) and which (practical perspective) post-growth solutions can represent behaviours, capacities and properties that strengthen the ability of a social system to anticipate potential shocks (before an adverse event), to cope with such an adverse event and to adapt to the changing context after an adverse event. In order to achieve this objective, it is necessary to supplement the analytical framework with a conceptualisation of post-growth solutions.

[1] The term "adverse event" refers to an event that poses a threat to the maintenance of organisational structures, processes and identity and thus poses a threat to organisational survival (see Raetze et al., 2021, p. 608 or Hoffmann, 2017, p. 90).

As highlighted in the introduction, the concept of post-growth transcends the notion of mere economic downscaling; rather, it demands a fundamental reorientation in societal practices and values. This reorientation involves transforming modes of production, consumption, labour, cooperation, and governance in ways that are less exploitative and more democratic, with a pronounced emphasis on promoting both human and non-human wellbeing, alongside a commitment to social justice (see Buch-Hansen, Nesterova, 2023, p. 1; Savini, 2025, p. 1). Post-growth envisions a societal paradigm rooted in a set of values that diverge markedly from those underpinning growth-centric economic systems. Central to this vision are principles such as sufficiency over accumulation, feminism and gender equality in place of patriarchy, care (for oneself and others) over exploitation, conviviality over competition, direct democracy instead of hierarchical governance, commoning in contrast to privatization and, decolonization rather than imperialism (cf. Savini, 2025, p. 2).

To conceptualize these alternative modes of societal functioning, Buch-Hansen and Nesterova (2023) utilize Roy Bhaskar's "Transformational Model of Social Activity" (TMSA), a theoretical framework that posits social agents as capable of either reproducing or transforming the structures that condition social interaction (Bhaskar, 2014; Buch-Hansen, Nesterova, 2023, p. 2). According to this model, change occurs across four distinct yet interrelated planes or dimensions.

The first dimension (plane A) pertains to "material transactions with nature." This plane emphasizes the necessity for materially affluent societies to drastically reduce their material and energy throughput, thereby mitigating waste, pollution, and greenhouse gas emissions (cf. Buch-Hansen, Nesterova, 2023, p. 2). Achieving ecological sustainability necessitates a paradigmatic shift in human attitudes towards nature, moving away from exploitative and instrumentalist approaches and reducing the conversion of ecosystems into industrialized or monocultural landscapes. It also requires a transition to clean energy sources and behaviours informed by ecological limits and regional specificity. Biodiversity and the protection of non-human life and ecosystems should be valued intrinsically rather than monetarily, encouraging the development of nature-based and place-sensitive economic activities aligned with both natural and social specificities (cf. Buch-Hansen, Nesterova, 2023, p. 2). This dimension thus calls for a decrease in extractivist practices, waste generation, and consumerism, while promoting clean energy, ecological awareness, and localized economic engagements (cf. Buch-Hansen, Nesterova, 2023, p. 3).

The second dimension (plane B) involves "social interactions between persons." Here, post-growth necessitates a departure from values such as competitiveness, greed, individualism, and various forms of social intolerance (cf. Buch-Hansen, Nesterova, 2023, p. 2). In their place, it promotes interpersonal relations grounded in empathy, sufficiency, kindness, solidarity, and respect for diversity. This implies the marginalization of exclusionary and destructive tendencies—such as racism, sexism, and climate change denial—and the amplification of prosocial values such as compassion, peaceful coexistence, generosity, mutual learning, and democratic engagement (cf. Buch-Hansen, Nesterova, 2023, p. 3).

Plane C, the "social structure" dimension, advocates for institutional transformations at all scales—local, national, and global. This involves dismantling structures that perpetuate competition, inequality, bureaucracy, and hierarchical domination (cf. Buch-Hansen, Nesterova, 2023, p. 3). In their stead, post-growth envisions socio-economic configurations characterized by cooperation, equitable distribution of resources, and horizontal governance models. Such restructuring aims to reduce the systemic imperatives of growth, patriarchy, and exploitation, while fostering institutional legitimacy for values like care, conviviality, and commoning (cf. Savini, 2025, p. 16; Krähmer, 2025, p. 1).

The fourth and final dimension (plane D) focuses on the "inner being" of individuals. Post-growth posits that achieving deep societal transformation requires individuals to undergo personal change—moving away from egoism, materialism, and hedonism, and instead cultivating traits such as mindfulness, joy, reflection, and a broader sense of interconnected existence. This inner transformation entails

diminishing self-centered tendencies and nurturing a more reflective, compassionate, and ecologically attuned self-conception (cf. Buch-Hansen, Nesterova, 2023, p. 3).

Across all four dimensions, the post-growth paradigm operates through a dialectical movement of diminishing certain existing societal traits while expanding others. Dimension A seeks to reduce ecological degradation and promote sustainability; Dimension B aims to replace divisive social behaviours with empathetic ones; Dimension C targets hierarchical and unjust systems in favour of equitable and collaborative structures; and Dimension D involves a reorientation of the self toward values of humility, interconnectedness, and inner fulfilment (cf. Buch-Hansen, Nesterova, 2023, p. 7). Employing the terminology of 'less and more', Buch-Hansen and Nesterova (2023) emphasize that while degrowth involves significant transformation, it simultaneously builds upon pre-existing ideas and practices. Importantly, just as the elements to be amplified ('more items') already exist to some extent in growth-oriented societies, so too will the elements to be diminished ('less items') persist, albeit to a lesser degree, within future post-growth societies (cf. Buch-Hansen, Nesterova, 2023, p. 4).

Below you'll find a summarizing table of the four dimensions (planes) of post-growth according to Buch-Hansen and Nesterova based on Roy Bhaskar's transformational model of social activity (TMSA).

| **Dimension** | **Definition** | **Promotion of post-growth solutions** | **Obstacle to post-growth solution** |
|---|---|---|---|
| A: Material transactions with nature | Overall decreased throughput of matter and energy with less waste, pollution and greenhouse gas emissions | Cleaner energy forms, regard for planetary boundaries, valuing and preserving biodiversity and life, place-sensitivity, place-based activities/ localisation, nature-based economic activities | Matter and energy throughput, extractivism and instrumental treatment of nature, waste, pollution, greenhouse gas emissions, production and consumption of unnecessary goods, transportation/food miles, built environments, artificial obsolescence |
| B: Social interactions between persons | Human-human interactions that are meant to create mutual and collective beneficial outcomes | Empathy, compassion, peacefulness, solidarity, sufficiency, kindness, generosity and tolerance of diversity, spontaneous right action, fellowfeeling, respect and concern for others, care, mutual learning, democracy | Competitiveness, greed, individualism, intolerance, racism, sexism, climate change denial, homophobia, xenophobia, hate, fear, alienation, instrumental treatment of humans |
| C: Social structure | Moving towards socio-economic orders on local, national and | Collaboration, equal distribution of economic and other | Growth imperative, competition, inequality, patriarchy, |

| | | | |
|---|---|---|---|
| | global scale that promote mutual and collective beneficial outcomes | resources, flat hierarchies | rigid hierarchies, bureaucracy, structures of oppression, exploitation, domination, poverty, suffering |
| D: Inner being | Self-transformation towards the realisation of an individual as part of the broader existence of life | Love, creativity, oneness, gentleness towards being and beings, awareness, curiosity, transcending the narrow ego/self, seeing oneself as part of the broader existence, self-realisation, fulfilment, harmony, joy, reflection/ mindfulness | Egoism and ego-realisation, egocentrism, equating the ego with the self, short-term orientation, entitlement, possessiveness and materialism ("to have"), hedonism |

Table 1: Overview on the four dimensions of post-growth (source: own illustration, based on Buch-Hansen, Nesterova, 2023, pp. 2-3).

In order to study the impacts of post-growth solutions on the resilience of social system, an analytical framework is needed that combines the two conceptualisations. Figure 2 represents a simplified impact model which takes into account the temporal framework of the resilience process suggested by Duchek (2020) as well as the normative framework of post-growth solutions suggested by Buch-Hansen and Nesterova (2023). This model will be used in the further course of this paper to analyse how post-growth solutions influence social resilience (theoretical perspective) and which post-growth solutions strengthen social resilience (practical perspective).

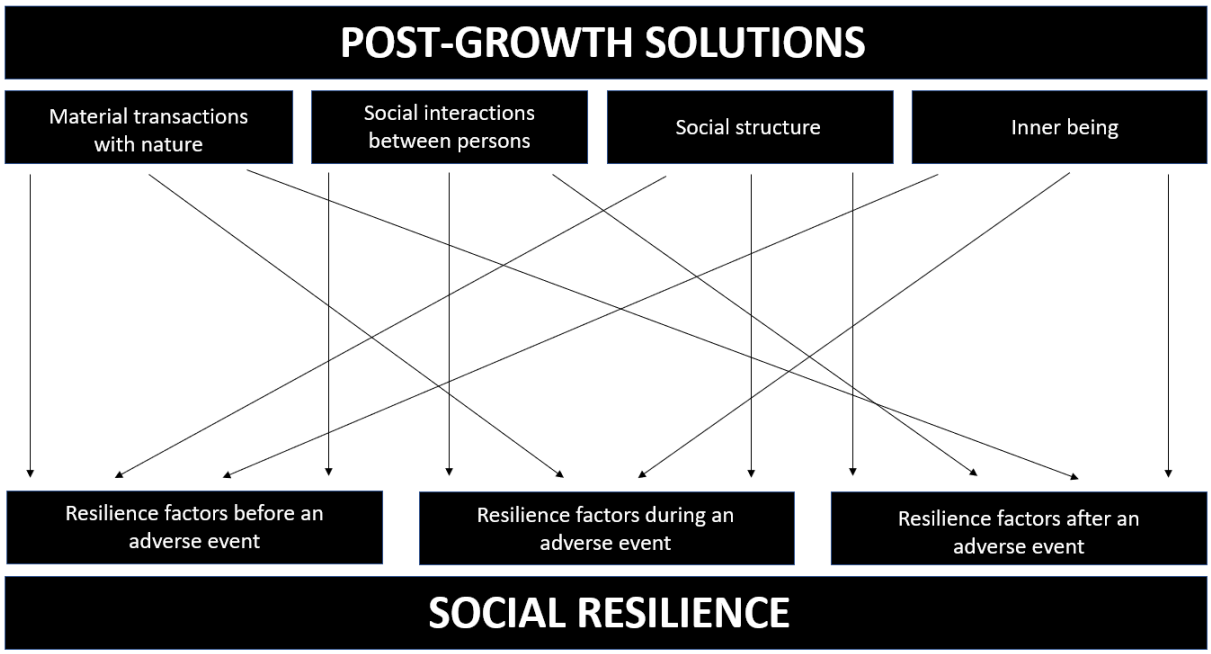


Figure 2: Impact model (v1) of post-growth solutions on social resilience; source: own illustration; based on Duchek (2020) and Buch-Hansen, Nesterova (2023).

## 3. Research Design

In summer and winter of 2024, the University of Kehl, in collaboration with the Association de Prospective Rhénane (APR, Rhine Foresight Association), organised two foresight workshops in 2024 in the framework of an EU-funded project entitled IMMER[2] (Increasing Municipal Mobility and Energy Resilience). Foresight scenarios are "(…) hypothetical sequences of events constructed for the purpose of focusing attention on causal processes and decision-points. They answer two kinds of questions: (1) precisely how might some hypothetical situation develop, step by step and (2) what alternatives exist, for each actor, at each step, for preventing, diverting, or facilitating the process" (Kuusi et al., 2015, p. 4).

These workshops brought together public and private sector representatives in the Strasbourg-Kehl region, which constitutes a cross-border area between France and Germany. The focus on a border region between Germany and France can be justified, on the one hand, by the fact that a vibrant living and economic area has developed in this region over the last few decades overcoming linguistic, political and cultural obstacles imposed by the border and, on the other hand, by the fact that this allows for a greater diversity of participants than if only French or German people had been participating. The sample of participants was comprised of around 30 representatives of key local stakeholders of the Strasbourg-Kehl region (businesses, ports, energy producers, mobility operators, public authorities and academics). The sample represents a purposive sampling (non-probabilistic). The choice of the sampling technic was due to the initial workshop objectives which targeted at developing and analysing future crisis scenarios focusing mainly on the aspects of energy and mobility. For this reason, participants have been selected upon their professional involvement in the energy and mobility sector in the Strasbourg-Kehl region. Prior to the first workshop, a series of preliminary

[2] This project has received funding from the European Union's Horizon Europe research and innovation programme under grant agreement No 101094455.

interviews with several of these stakeholders was conducted in order to design the workshop according to the expressed assumptions of the interviewees regarding future crises. By doing so, the scenarios were as close and plausible as possible to the reality of the workshop participants. During the initial workshop, the participants collaboratively co-developed three future crisis scenarios (i.e. total social collapse, long-term blackout, river tsunami) that could potentially hit the region by the year 2050. The scenarios were supplemented by participants developing them further for the year 2051 and (with the knowledge of what will happen in 2050 and 2051) deriving preparatory measures for the year 2025.

Subsequent to this, a second workshop was implemented, wherein the participants engaged in a detailed analysis of each scenario utilising a TOSA-matrix (i.e. threats, opportunities, stakes, actions). The objective of these workshops was threefold: firstly, to raise awareness among the participants regarding possible future crises; secondly, to prepare them by deducting preparation and mitigation actions that can already be implemented today; thirdly, to establish a community of practice by sparking the collective creativity and imagination on how society would change according to these future crisis scenarios.

To answer the research questions and overcome the research gap, a qualitative content analysis of the workshop reports has been conducted. A qualitative content analysis „(…)refers to the systematic and methodologically controlled scientific analysis of texts, images, films and other communication content.(…) Qualitative analysis focuses on categories that are used to code all material relevant to the research question(s). The categories can be formed deductively, inductively or deductively-inductively" (Kuckartz, Rädiker, 2022, p. 39).

The basis of qualitative content analysis entails the coding and analysis of text materials employing categories. Irrespective of the categories established in a study, the general work of analysis focuses on assigning specific text passages to the categories (cf. Kuckartz, Rädiker, 2022, p. 57). As the final reports for each workshop contain both the respective minutes and a results report, these reports were utilised as the primary source of content analysis. Furthermore, a draft report was incorporated into the analysis for each workshop, encompassing the individual notes of the workshop minute-takers. The minutes and reports were drafted and prepared by scientific project staff at Kehl University of Applied Sciences. The final report for each workshop was completed by the two professors leading the project at Kehl University of Applied Sciences and the University of Strasbourg. It is evident that there are two data points for each workshop, thus resulting in a total of four data points.

For the qualitative content analysis, a deductive evaluation was selected, with the categories being derived from the single factors of the impact model (see Figure 2). The selection of these factors was deemed appropriate, as the analysis sought to meticulously examine the impact model's constituent elements. An additional category was incorporated with the objective of identifying any post-growth factors that may be extant.

## 4. Empirical Findings

The workshop results show that the participants developed scenarios and proposed preparation and mitigation actions that run counter to neo-liberal, growth-based values and practices that are currently dominant in modern society. Instead, the participants developed post-growth solutions to prepare for, cope with and adapt to all three future crisis scenarios. A "hotwash evaluation" of the materials already indicated that the majority of these post-growth solutions address domains such as local renewal energy autonomy, non-profit agricultural methods, and conviviality.

In the following qualitative content analysis, the workshop results were analysed with regard to post-growth factors. In a subsequent step, the post-growth solutions that had been identified were incorporated into the temporal resilience process for each factor. With regard to the temporal resilience process, all measures developed by participants for 2025 were assigned to phase 1 (before an adverse event), all measures for 2050 to phase 2 (during an adverse event) and all measures for 2051 to phase 3 (after an adverse event). This approach facilitates the systematisation of resilience-promoting post-growth solutions within the framework of the developed impact model (see Figure 2).

## 4.1 Material Transactions with Nature

*Post-Growth solutions regarding material transactions with nature before an adverse event*

In anticipation of systemic disruptions, a proactive approach grounded in post-growth principles can enhance societal resilience. Comprehensive **training programs** should be established to equip individuals with fundamental crisis management capabilities, survival skills, and **self-sufficiency techniques**, such as foraging and fire-starting without reliance on modern utilities. To prepare for potential disruptions in digital infrastructure, such as prolonged power outages, organizations may implement regular **"computer-free" working days**. These periodic exercises aim to cultivate adaptive working habits and foster interpersonal networks that can be rapidly mobilized during adverse events.

Transitioning toward sustainable consumption patterns is imperative to mitigate environmental degradation and curb the emergence and spread of zoonotic diseases. **Promoting frugality**—exemplified by reduced meat consumption—and **fostering environmental literacy** can contribute to crisis prevention efforts. Furthermore, the development of **robust local supply chains** and **local circular economies** is essential to reduce dependency on globalized ICT and service-based systems.

**Local food production** is a cornerstone of post-growth solutions for resilience. Strengthening food sovereignty through community and urban agriculture initiatives, as well as integrating food production capacities into individual households, can secure access to essential resources. **Dissemination of basic agricultural knowledge** among the population can decrease reliance on agri-food industries and international imports, thereby reinforcing community-level self-sufficiency.

Additionally, the preservation and regeneration of natural ecosystems is critical. **Ecological restoration efforts**—such as reforestation, hedge planting, and the creation of water retention zones like polders—can mitigate the impacts of future environmental shocks. Concurrently, **industrial regulation** should be tightened to align with climate and ecological protection goals.

Pre-crisis **investments in decentralized, renewable energy infrastructures**—such as solar-powered systems or restored watermills—are fundamental for maintaining functionality during crises. These systems must be designed for autonomous operation, reducing reliance on human intervention. Building energy overcapacity, **enhancing energy efficiency,** and promoting household or community-level **energy self-sufficiency** are key pillars of energy resilience.

*Post-Growth solutions regarding material transactions with nature during an adverse event*

In the midst of a major adverse event, transportation systems may undergo a rapid transformation. With the scarcity of fossil fuels and collapse of motorized transport systems, **non-motorized mobility**—such as bicycles, cargo bikes, walking, rafts, and horses—becomes predominant. The urban landscape adapts accordingly, re-emphasizing pedestrian and animal-powered transport modalities. This enforced shift reflects society's coping capacity and highlights the infrastructural challenges of maintaining mobility in a low-energy context.

Basic needs such as water and food must be met through **localized and low-tech solutions**. Water conservation measures, decentralized wastewater treatment, and innovative passive cooling systems (e.g. subterranean or clay-based coolers) are essential. Food security can be bolstered by the rapid set-up of **local food production**, thus reducing transport dependencies and supporting community resilience.

*Post-Growth solutions regarding material transactions with nature after an adverse event*

In the aftermath of an adverse event, governance structures must be reoriented to **decentralize resource management** and **empower local actors**. Crises offer a unique opportunity to redesign territorial configurations into **less dense, more diverse local landscapes**.

Economic adaptation may involve the contraction of globalized supply chains in favour of localized production and distribution models. **Self-production**, small-scale exchange using **local currencies**, and **sharing systems** can replace conventional market mechanisms, particularly where monetary systems lose value. Emphasis should be placed on **circular economies** characterized by recycling, sharing, and localized sustainable food systems.

**Energy generation** at the micro level becomes an essential adaptation measure. Individuals and communities may **utilize low-tech solutions** such as pedal-powered generators, dynamos, biogas systems, small-scale hydroelectric and solar systems. Communication infrastructures must also adapt, potentially reverting to **pre-digital technologies** such as battery-powered radios, Morse code, and printed local newspapers to maintain information flow. These l**ow-tech, small scale energy and communication solutions** must be combined with a general reduction in energy and communication needs.

Finally, the re-adoption of **simple, sustainable technologies and practices** can facilitate recovery and long-term adaptation. Manual water pumps, dry composting toilets, and non-motorized transport systems—such as horse-drawn vehicles and boats—serve as practical alternatives. **Dietary shifts toward low-preservatio**n, locally available foods may emerge, reducing dependence on refrigeration and global supply chains.

## 4.2 Social Interactions Between Persons

*Post-Growth solutions regarding social interactions between persons before an adverse event*

In preparation of future adverse events, which frequently exacerbate existing social inequalities and contribute to escalating societal tensions, it is imperative to prioritize the **reinforcement of empathy,**

**solidarity, and social cohesion**. The development of inclusive and interconnected communities can play a pivotal role in minimizing the risk of social conflict and enhancing social resilience. To do so, targeted interventions and methodologies should aim at **fostering interpersonal relationships and communal solidarity** are essential. **Education** emerges as a foundational mechanism in this regard. **Integrating curricula** that emphasize resilience, mutual support, and civic responsibility from an early age can cultivate a culture of solidarity. Moreover, **civic service initiatives**, particularly those engaging youth, offer valuable opportunities to strengthen intergroup ties and promote prosocial behaviour across diverse social groups. Educational efforts that highlight the significance of social cohesion and cooperative living arrangements can serve as preventative measures against internal discord.

*Post-Growth solutions regarding social interactions between persons during an adverse event*

With regard to post-growth solutions that strengthen social resilience during an adverse event, only little evidence could be identified in the analysed materials. Workshop participants mentioned the need to **deepen social bonds within a population** in order to cope with major crisis events without going into detail.

*Post-Growth solutions regarding social interactions between persons after an adverse event*

At the post-crisis stage, the implementation of **adaptive communication mechanisms** can contribute to the restoration and reinforcement of community solidarity. For example, the use of traditional signalling methods, such as church bells, may reduce dependence on centralized communication infrastructures. This shift toward **localized and direct modes of communication** has the potential to strengthen communal ties and support the re-establishment of communal resilience.

## 4.3 Social Structure

*Post-Growth solutions regarding the social structure before an adverse event*

Across all three examined future crisis scenarios, the prioritization of smaller, self-sufficient communities emerges as a central tenet for enhancing resilience. This necessitates a substantive increase in **investment in local-level initiatives**, particularly those aimed at the **development of robust social networks** that underpin local and regional adaptive capacities. In times of crisis, localized responses often prove to be the most effective in addressing the immediate needs of affected populations. To facilitate such decentralized responses prior to an adverse event, **legal and institutional frameworks** should be adapted to include provisions that **promote and protect local autonomy during emergencies**. Empowering local authorities and communities through these mechanisms allows for a more agile and context-specific management of adverse events.

*Post-Growth solutions regarding the social structure during an adverse event*

During the occurrence of an adverse event, the **capacity for self-organization** among local residents becomes a critical determinant of a community's ability to respond effectively and mitigate the human and material consequences. Mechanisms of **local cooperation**—such as the sharing of physical resources, the establishment of community-based communication networks, and the deployment of decentralized medical support hubs—play a vital role. **Community institutions** such as libraries and community noticeboards can serve as hubs of real-time information dissemination, knowledge sharing, and mutual support, reinforcing both trust and collective action in the midst of uncertainty.

*Post-Growth solutions regarding the social structure after an adverse event*

In the aftermath of an adverse event, local communities are often compelled to **reorganize around principles of self-reliance and mutual aid**. This post-crisis phase underscores the importance of societal self-organization, wherein individuals leverage personal skills—ranging from first aid and resource bartering to knowledge transfer—in order to build adaptive and sustainable communal structures. These processes often give rise to tighter social bonds, **increased intra-local collaboration**, and the emergence of decentralized communities governed by **informal, localized leadership**.

While the **decentralized, network-based coordination** within these self-organized communities can enhance resilience and democratic engagement, it is not without inherent vulnerabilities. The absence of overarching governance structures may lead to inefficiencies in decision-making and perceived inequities in resource distribution, which in turn can undermine trust and cooperation. Moreover, in the absence of a legitimate centralized authority, a power vacuum may emerge, **increasing the risk of exploitation by criminal actors** who could destabilize local governance structures and appropriate communal resources. Thus, while community self-organization holds significant promise for post-growth resilience, it must be accompanied by safeguards that ensure equitable governance and protection against coercive or illicit forces.

## 4.4 Inner Being

During the development of the three crisis scenarios and subsequent analysis, the workshop participants did not refer to any elements that correspond to factor “inner being” which refers to self-transformation for the realisation of the individual as part of a broader life. It is important to note that this was not a specific requirement for the participants during the workshop. Consequently, it can be deduced that, despite the foresight workshops yielding a plethora of outcomes pertaining to the structural and collective ramifications of prospective scenarios, these outcomes were not translated into individual, personal applications. Thus, the applied approach was insufficient to let participants reflect on personal and emotional elements regarding the developed and analysed scenarios. A possibly promising approach to deal with this challenge could be the operationalisation of the Inner Development Goals (IDG), a framework that aims at identifying pathways to develop the inner skills needed to sustainable development goals[3]. This approach should be part of future research on this matter.

[3] For more details see https://innerdevelopmentgoals.org/

# 5. Discussion and Conclusion

With the exception of the dimension “inner being”, it can be posited that the TMSA provide a suitable framework for analysing text material with regard to post-growth. Despite thorough examination, no text passages were identified that addressed aspects of post-growth, yet were not encompassed by one of the four dimensions of the TMSA. As the underlying foresight workshops did not explicitly focus on the development of post-growth solutions, a significant number of text passages were identified that were not coded as post-growth solutions.

Using the impact model developed in chapter 2, an initial attempt was made to illustrate the influence of the concept of post-growth on the resilience of a social system. This was based on the conceptual resilience framework developed by Duchek (2020) and the “Transformational Model of Social Activity” (TMSA) developed by Roy Bhaskar (1979; 2014). According to Duchek's model, resilience is a meta-capacity that manifests itself throughout a temporal resilience process (before, during and after an adverse event). In contrast, the TMSA identifies four dimensions in which post-growth develops, i.e. material transactions with nature, social interactions between persons, social structure, inner being.

The hypothesis has been put forward that post-growth solutions have a positive influence on the resilience of a social system if they are suitable for strengthening the capacities of anticipation, crisis management and adaptation in the course of the resilience process. To test this hypothesis, the reports (draft and final) of two foresight workshops conducted by the University of Kehl in cooperation with the Association de Prospective Rhénane (APR, Rhine Foresight Association) in Kehl and Strasbourg were examined using a deductive qualitative content analysis. The content of these two workshops was the development and analysis of three future crisis scenarios that the Strasbourg-Kehl region could potentially experience in 2050. In particular, the analysis focused on how and through which post-growth solutions the social resilience of the region could be positively influenced with regard to the crises developed in the course of the resilience process.

*How do post-growth solutions influence social resilience?*

It was demonstrated that post-growth solutions can have a positive influence on the resilience of a social system in all three resilience phases. However, it was also found that only three of the four dimensions of post-growth have an identified influence on social resilience. The dimension “inner being” did not provide any indication of resilience promotion in either the first or second foresight workshop. Due to the interconnectivity of the single dimensions of post-growth, an influence of this dimension can be assumed, but cannot be confirmed due to a lack of data. Still, the influence of individual self-transformation is a matter of future research since neither the assumption that this aspect is not relevant in terms of promoting resilience in social systems nor that the individual-personal level in foresight workshops can only be achieved through an explicit request and steering by the workshop moderator could have been tested. This would need to be investigated in further foresight workshops on this topic.

In all three other dimensions, it was shown that post-growth has a positive influence on social resilience, both in terms of preparing for future adverse events and in terms of the capacity to cope with these events and adapt to the changed context. This is achieved in particular by strengthening the properties of autonomy, sufficiency and solidarity, and by promoting the capacity to self-organise. While autonomy minimises a social system's dependence on external factors and actors, sufficiency reduces its dependence on resources. This mitigates the impact of adverse events and helps social systems to cope with them effectively. In contrast, community solidarity promotes social cohesion during a crisis, which minimises the negative effects on vulnerable groups within a community and prevents social unrest caused by social inequalities. In addition, the capacity to self-organise supports

resilient crisis management in small communities and promotes the adaptation of these communities to the environment changed by the adverse event.

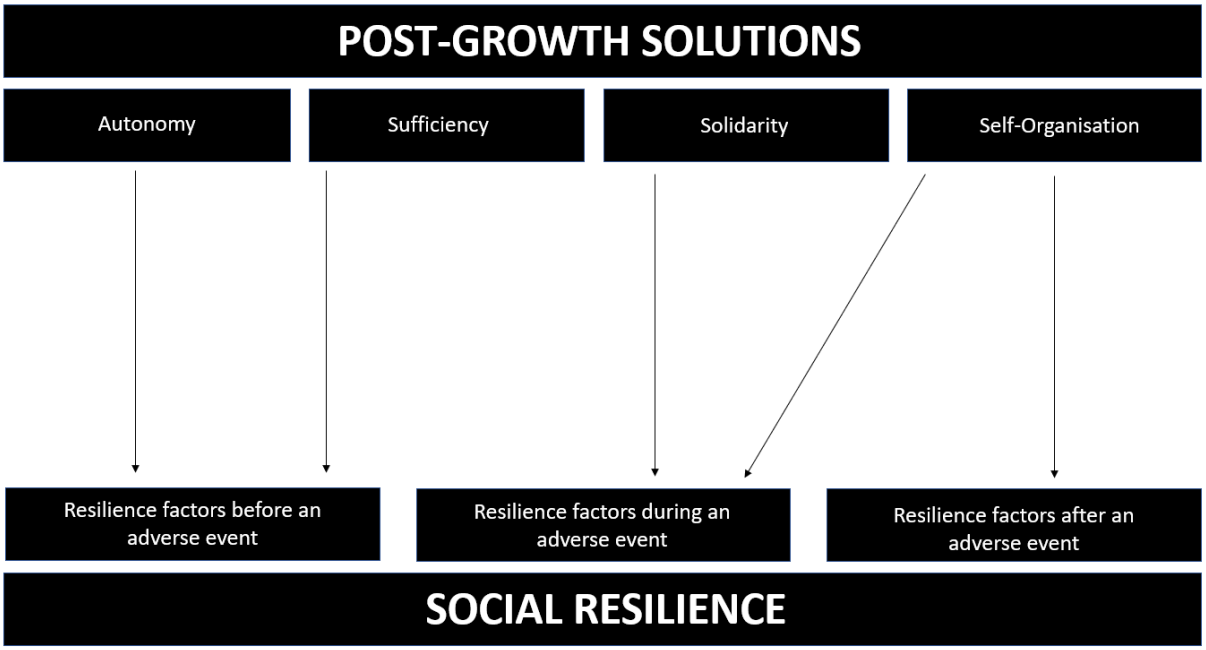


Figure 3: Impact model (v2) of post-growth solutions on social resilience; source: own illustration.

*Which post-growth solutions strengthen social resilience?*

In addition to these rather abstract post-growth factors that promote social resilience, the study also identified specific practical post-growth solutions for strengthening social resilience. The largest number of solutions were developed for phase 1 of the resilience process (before an adverse event). These include, in particular, measures to strengthen (energy) autonomy, the re-localisation of economic (especially agricultural) practices, and knowledge and learning opportunities.

The smallest number of post-growth solutions can be identified in phase 2 of the resilience process (a total of six out of 37 measures). The focus here is particularly on promoting non-motorised mobility, simple low-tech solutions and measures to strengthen local cooperation and solidarity. It is interesting to note that while the technical measures in particular were elaborated in detail by the participants and accompanied by examples, the measures to strengthen local cooperation and solidarity were only mentioned in very abstract terms and mostly without concrete examples. This could be partially explained by the applied non-probability sampling technique of purposive sampling including mainly participants attached to the energy and mobility sector. In addition, it also showcases the difficulty of developing concrete social measures to increase the resilience of a social system. Buch-Hansen and Nesterova (2023) have already noted that while a focus on mostly technical solutions and socio-ecological policies can contribute to improving the relationship between humans and nature, their impact on social relationships and structures as well as on people's inner being must also be taken into account. This is because these factors (social relationships, social structures, inner being) in turn have an impact on a sustainable human-nature relationship (cf. Buch-Hansen, Nesterova, 2023, p. 5).

Practical post-growth solutions for promoting resilience after an adverse event mostly focus on the self-organised production and development of goods and services. The network form of governance is highlighted as an effective form of local self-organisation.

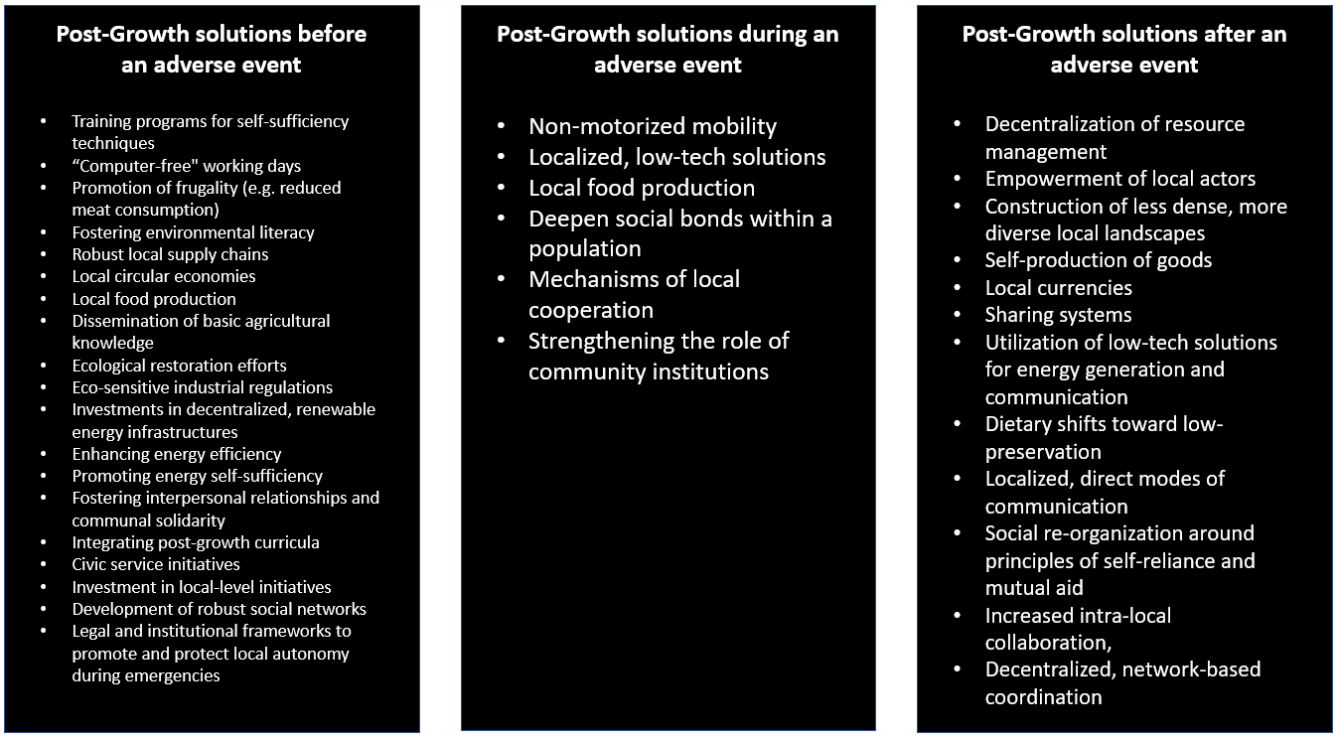


Figure 4: Identified post-growth solutions to foster social resilience; source: own illustration.

The results in Figure 4 show that it is not possible to clearly assign the identified post-growth solutions to a specific phase of the resilience process. This is due, on the one hand, to the subjectivity of the results and, on the other hand, to the fact that it does not seem logical to strictly define the time frame for the measures. This can be illustrated by the example of strengthening local economic systems. These local economic systems should be strengthened before an adverse event occurs, particularly with regard to their circular nature, in order to prepare local communities for a possible collapse of the globalised economic system. During an adverse event, a strong local economic system can help to supply the community with essential goods even if global supply chains break down, thereby supporting crisis management. After an adverse event, local economic systems, possibly supplemented by local currencies and sharing systems, can support the community's adaptation to the adverse event. This example clearly illustrates that the individual measures should not be viewed in strict isolation in terms of their timing, but rather as a general catalogue of resilience-promoting post-growth solutions. Nevertheless, classifying these solutions according to the phases of the resilience process provides useful insights into how the individual measures contribute to strengthen the resilience of a social system.

To conclude, post-growth is a valuable concept to deepen our understanding of resilience by adding knowledge to the underlying principles of resilience in terms of autonomy, sufficiency, solidarity and self-organisation (theoretical perspective). In addition, the concept of post-growth allows to deduct

practical solutions to strengthen the capacity of a social system to prepare for, cope with and adapt to extreme crisis situations, i.e. to strengthen resilience (practical perspective).

*Limitations of the Research Design*

One of the study's limitations is the utilisation of a non-probabilistic sampling technique, which was deliberately employed to target participants from the energy and mobility sector in the Strasbourg-Kehl region. While this sampling technique was advantageous for the initial objectives of the workshops, it proved inadequate for drawing conclusions about the region's diverse social system. This was particularly evident in the strong focus on technical solutions, while social and personal-individual solutions were developed to a lesser extent and in less detail. Consequently, no solutions were developed at the personal-individual level (i.e. inner being). In the event of the supposition advanced by Buch-Hansen and Nesterova (2023) being accepted, namely that socio-ecological change in the sense of post-growth can only be achieved by connecting the four dimensions of the TMSA (cf. Buch-Hansen, Nesterova, 2023, p. 4), a discrepancy in the research results is indicated.

Another limitation of the study is the small number of workshops examined and reports analysed. Given this small number of workshops, it was not possible to conduct an in-depth investigation of the differences and similarities between German and French workshop participants. However, given the cross-border nature of the territory examined, such an investigation would be of great interest in order to examine the influence of nationality and socialisation on the development of post-growth solutions. Due to the limited amount of data available, the study provides only limited evidence of the beneficial influence of post-growth on social resilience. This data consists of only four data points, some of which overlap due to them being different versions of the same report. The paucity of text material to be analysed also means that it was only coded deductively using the four dimensions of post-growth. A more extensive inductive analysis, incorporating a greater amount of data, could have yielded more profound insights, particularly in addressing the first research question (How do post-growth solutions influence social resilience (theoretical perspective)?).

*Future Research Agenda*

Future research studying the impact of post-growth on the resilience of social systems should continue using foresight methods as exemplified in the present study. Such foresight methods foster the creativity of the participants and spark imaginaries that go beyond current paradigms which proved to be useful to investigate these two concepts.

However, to improve the generalisability of the findings, it is recommended to employ probabilistic sampling methods. Such an approach would mitigate the risk of overrepresentation by specific participant groups, thereby facilitating a more balanced assessment of the technical, social, governmental and personal dimensions of resilience-enhancing post-growth strategies.

Moreover, subsequent investigations should incorporate a broader array of scenario types to increase the volume of empirical data and to systematically assess how different scenario typologies influence the development of post-growth solutions. While the current focus on dystopian yet plausible scenarios has yielded preliminary insights into the nexus between post-growth and social resilience, this relationship may manifest differently under alternative scenario frameworks, including utopian, probable, desirable, or possible futures.

An additional line of inquiry could involve the analysis of secondary data derived from existing foresight workshop archives. Such an approach may offer a valuable means of triangulating findings and enriching the understanding of post-growth across diverse contexts.

**Declaration of generative AI and AI-assisted technologies in the writing process**

During the preparation of this work the author used Chat GPT-5 by OpenAI in order to improve the readability of the text. After using this tool/service, the author reviewed and edited the content as needed and takes full responsibility for the content of the publication.

# References


Banerjee S. B./ Jermier J. M./ Peredo A. M./ Perey R./ Reichel A. (2021): Theoretical perspectives on organizations and organizing in a post-growth era, Organization, Vol. 28, No. 3, pp. 337-357.

Bhaskar R. (2014): The Possibility of Naturalism: A philosophical critique of the contemporary human sciences, Routledge.

Bristow G./ Healy A. (2014): Building Resilient Regions: Complex Adaptive Systems and the Role of Policy Intervention, Raumforschung und Raumordnung, Vol. 72, No. 2, pp. 93-102.

Buch-Hansen H./ Nesterova I. (2023): Less and more: Conceptualising degrowth transformations, Ecological Economics, Vol. 205, pp. 1-9.

Cohen M./ Levinthal D. (1990): Absorptive Capacity: A New Perspective on Learning and Innovation, Administrative Science Quarterly, Vol. 35, pp. 128-152.

Daimer S./ Havas A./ Cuhls K./ Yorulmaz M./ Vrgovic P. (2021): Multiple futures for society, research, and innovation in the European Union: jumping to 2038, Journal of Responsible Innovation, Vol. 8, No. 2, pp. 148–174.

Duchek S. (2020): Organizational resilience: a capability-based conceptualisation, Business Research, Vol. 13, pp. 215-246.

Elston T./ Bel G. (2023): Does inter-municipal collaboration improve public service resilience? Evidence from local authorities in England, in: Public Management Review, Vol. 25, No. 4, S. 734-761.

Hillmann J./ Guenther E. (2020): Organizational Resilience: A Valuable Construct for Management Research?, International Journal of Management Reviews, Vol. 23, S. 7-44.

Hoffmann G. P. (2017): Organisationale Resilienz, Kernressource moderner Organisationen, Springer Verlag, Berlin.

Krähmer K. (2025): Degrowth in global spaces: Extractivism and practices of socio-ecological transformation in the geography of Chile's global fruit trade, Geoforum, Vol. 160, pp. 1-13.

Kuckartz U./ Rädiker S. (2022): Qualitative Inhaltsanalyse. Methoden, Praxis, Computerunterstützung, 5. Auflage, Beltz Juventa, Weinheim.

Kuusi O./ Cuhls K./ Steinmüller K. (2015): The futures Map and its quality criteria, Eur J Futures Res, Vol. 3, No. 22, pp. 1-14.

Parrique T. (2019): The political economy of degrowth, Economics and Finance, Université Clermont Auvergne (2017-2020); Stockholms universitet.

Piirainen K. A./ Gonzalez R. A. (2015): Theory of and within foresight — "What does a theory of foresight even mean?", Technological Forecasting and Social Change, Vol. 96, pp. 191-201.

Raetze S./ Duchek S./ Maynard M. T./ Kirkman B. L. (2021): Resilience in Organizations: An Integrative Multilevel Review and Editorial Introduction, in: Group & Organisation Management, Vol. 46, No. 4, pp. 607-656.

Savini F. (2025): Strategic planning for degrowth: What, who, how, Planning Theory, Vol. 0, No. 0, pp. 1-22.

Tillack D./ Hornbostel L. (2022): Kommunale Resilienz als Innovationsmotor und Garant künftiger Daseinsvorsorge, S. 83-98, in: Wittpahl V. (2022): Resilienz, Leben-Räume-Technik, Springer Vieweg Berlin, Heidelberg.