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Strengthening community resilience through participation – a conceptual exploration

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ABSTRACT

Through its increasing use, community resilience as a concept is interpreted differently across disciplines. In this paper, an indicator-based assessment framework is developed, to find an understanding of community resilience as a social dynamic that is informed by multiple theoretical approaches. It breaks community resilience down into manageable components. Understood proactively, it enables communities to tap into diverse resource pools in times of change and uncertainty. Its individual, social, governance and economic dimensions are interdependent upon each other and present community as a dynamic process. This process is impacted by drivers such as the polycrisis, which society needs to be resilient against. Participation is discussed as a potentially enabling factor to strengthen community resilience.

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Community resilience; participation; assessment framework; polycrisis

Introduction

Community resilience as a concept has gained significant attention in recent years, also in the field of environmental sociology. While a vast amount of the literature on community resilience has made important contributions to the debate, especially in the fields of climate change and natural hazard research, the sociological community has been quite critical of it. So why develop another framework of community resilience and position it within a sociological debate? I would like to explore this route for three reasons: To conceptualise community resilience as a social dynamic, to examine the potential role of community resilience as an enabler of transformation, and to discuss participation as a facilitator of community resilience's transformative potential. The goal is to evaluate the explanatory power of community resilience within sociology when addressing social dynamics, the polycrisis and the need for a socio-ecological transformation.

Traditionally, community resilience assessments have often focused on disaster response and recovery. However, recent research approaches community resilience from a different angle (Adger et al. 2021; Barr and Devine-Wright 2012; Callaghan and Colton 2008; Carmen et al. 2022). They emphasize a dynamic understanding of resilience, focusing on its role for transformation in the context of climate change, social dynamics and resources. For practical application, resilience thinking should extend beyond disaster response to encompass everyday community dynamics to proactively strengthen resilience (Okada 2018). While disaster resilience research informs transformation through research on community coping and adaptive capacities, research on community

resilience and transformative resilience may enhance it by focusing on proactive capacities. The proposed framework aims to enable these capacities through participation while considering structural conditions. By integrating different community resilience dimensions, this framework strengthens the connection between the resilience concept and its practical application, emphasising its proactive and dynamic qualities to contribute to the development of resilient communities.

I will proceed by reviewing existing community resilience conceptualisations and examining previously developed assessment frameworks. Then, I will propose an assessment framework for community resilience, focusing on different forms of participation as a potential driver. A vignette case will demonstrate the framework's practical applications.

How is community resilience currently conceptualised and assessed?

A review of (community) resilience was conducted to understand how conceptualisations of community resilience have developed and which differences in understanding resilience exist. The review is not exhaustive but focuses on dynamic, proactive and transformative understandings of community resilience. An overview of resilience assessment literature evaluates what role participation has played in resilience assessment. Based on the assumption that participation may positively impact community resilience, a conceptual framework of community resilience where participation constitutes a driving force is developed.

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Two main research questions guided this paper:

- How can we conceptualise and assess community resilience as a social dynamic within a context of change and uncertainty?
- What role can participation play as an enabling factor in this understanding?

Literature was collected in three stages. Using Google Scholar and Scopus, I searched for the literature using the keywords ‘community resilience’, ‘participation’, ‘engagement’, ‘assessment framework’, ‘resilience assessment’ and ‘indicators’ and combinations of these. In the second step, searches were conducted for ‘resilient community’ and ‘resilient communities’. In each case, up to 50 of the most relevant articles were checked. Articles were examined further to see if the keywords were found in their titles or abstracts and if they dealt with the concept of social resilience or community resilience specifically. Articles only mentioning community resilience were casually excluded. Afterward, the snowballing technique was applied by searching the reference lists of selected articles to expand the body of the literature. This resulted in a total of 85 examined articles on resilience, out of which 64 inform the review and framework.

Regarding resilience conceptualisations I focused on articles discussing the term’s origins and historical development through different schools of thought, including some case studies but mostly reviews and meta-analyses. The case studies were selected to determine if they focused on resilience-building programs or assessed community resilience. Due to its interdisciplinary nature, the literature from a wide array of disciplines was included, ranging from sociology and community development to psychology. Sociological articles were chosen, especially for critical contextualisation of resilience concepts. Regarding the frameworks for resilience assessment, mostly review literature, articles that developed indicator-based assessment frameworks or assessed community resilience were chosen. Articles developing assessment categories and indicators were selected, rather than those working with existing indexes. I consider their theoretical conceptualisation of social or community resilience, the structural logic of the framework, the specific dimensions/categories and indicators, and the role of participation.

Resilience as a boundary concept

From persistence to transformability

The resilience concept has evolved from its origins in material science, where it defines a material’s elastic properties (McAslan 2010, 2), to ecology where Holling

(1973) defined it as ‘the ability [...] to absorb changes of state variables, driving variables, and parameters, and still persist’ (Holling 1973, 17). Analysing the responses of animal populations subject to environmental change, he finds populations never subject to environmental change and hazards may be stable in their existence, but lack resilience once hazard occurs because they never learn how to flexibly adapt to persist (Holling 1973).

Social-ecological resilience integrates the role of human societies into ecological systems, believing that humans and nature are strongly interlinked and should be conceived as one social-ecological system where ecological and social dynamics interdependently interact (SES) (Stockholm Resilience Centre 2015). Focusing on stresses caused by environmental change, resilience thinking is about finding ways to deal with crises while living within planetary boundaries (Stockholm Resilience Centre 2015). In this context, resilience is understood as the ‘capacity of an SES to continually change and adapt yet remain within critical thresholds’ (Folke et al. 2010, 1). Continuous adaptability and transformability at the small scale are prerequisites for SES resilience, based on the idea of ‘adaptive cycles’ (Holling and Gunderson 2002; Salomon et al. 2019). This understanding is rooted in the natural sciences and hence has been criticised for having several blind spots when translated into the social realm (Keck and Sakdapolrak 2013).

Alongside adaptability, transformability has become an increasingly important for resilience (Brown 2014; Folke et al. 2010). While some authors argue that the concept is inherently conservative, understanding resilience as the capacity to transform in periods of change is becoming more widely accepted (Bahadur and Tanner 2014; Keck and Sakdapolrak 2013). Transformability describes broader shifts than adaptation, affecting current paradigms, not only responding to changes but also anticipating these (e.g. Bahadur and Tanner 2014; Barr and Devine-Wright 2012; Brown 2014; Carmen et al. 2022; Edwards and John 2011). The notion of paradigm shifts is not only a result but also an aim of these processes: transformational resilience puts politics and power at its heart to foster changes towards new stability basins when old structures become untenable (Bahadur and Tanner 2014; Keck and Sakdapolrak 2013). Many articles have already been written on how resilience understandings have evolved and are understood in different disciplines (e.g. Bahadur and Tanner 2014; Berkes and Ross 2013; Brown 2014; Chuang et al. 2018; Coaffee 2013; Keck and Sakdapolrak 2013; Obrist, Pfeiffer, and Henley 2010; Saja et al. 2021). Employing a proactive and transformative understanding of resilience, this article aims to add onto this strand of the literature focusing on how community resilience can be conceptualised beyond the paradigm of disaster and reactivity (Bahadur and Tanner 2014; Brown 2014; Carmen et al. 2022; Edwards

and John 2011; Moghadas et al. 2022; Revell and Dinnie 2020; Vogt and Schneider 2016).

Social approaches towards resilience

Since SES conceptualisations stem from natural science-based approaches, they are not always applicable to the social realm, often paying little attention to individuals, politics, power or inequalities (Bahadur and Tanner 2014). Therefore, aspects of resilience from other disciplines are included in conceptualisations of community and social resilience.

In psychology, research on resilience has received wide attention, especially in mental health and development psychology. Scholars have been interested in the factors causing certain people to handle challenges in their lives better than others (Berkes and Ross 2013), studying how people deal with the negative effects of crisis, disaster, or trauma. The possible positive effects of (overcoming) trauma receives increasing attention (Eachus 2014). By departing from a deficit-based orientation and increasingly focusing on models considering strengths and competencies, more attention is paid to developing resilience (Southwick et al. 2014).

Psychological research looks at individuals, families or communities and can contribute to research on social resilience. However, these approaches have been criticised by sociologists, especially on two accounts: their neoliberal implications and the ignorance of social structures (Cretney 2014; Estêvão, Calado, and Capucha 2017; Finkenbusch 2023; Mu 2021). The neoliberal critique states that by focusing on individual capabilities and responsibilities to increase resilience, the state frees itself from its responsibility to provide care and social security (Mu 2021). By enabling communities to become increasingly adaptable and flexible, they can become better assets of a capitalist economy. By empowering communities to create volunteer-based local structures, they are given 'responsibility without power' (Cretney 2014). This critique also dominates discourses where resilience is understood as 'thriving against the odds', e.g. when looking at childhood development in challenging contexts as structural constraints are made the responsibility of individuals (Estêvão, Calado, and Capucha 2017). Disregarding social structures enables these implications. By focusing on individual capabilities and resources, structural enablers and constraints like socio-economic well-being and inequalities are neglected regarding their impact on resilience (King, Crossley, and Smith 2021). The relationships between institutions, individuals and social groups impact resilience beyond individual capacities, sociologists argue (Estêvão, Calado, and Capucha 2017).

Approaches towards social resilience integrate these tensions to varying degrees. The concept of social resilience considers capacities of human actors

within a social system, defined by their ability to cope, learn, adapt, and self-organise (Obrist, Pfeiffer, and Henley 2010). These capacities depend on social factors that can facilitate or hinder their development (Keck and Sakdapolrak 2013). Community resilience can be understood as a subfield of social resilience, focusing on community development and empowerment (Matarrita-Cascante et al. 2017) or as a broader concept, including individual, economic and governance dimensions, beyond the social (Saja et al. 2021). In some cases, the physical dimension including natural and built infrastructure, and their interaction with the other dimensions in a complex system are emphasised (Koliou et al. 2020; Nguyen and Akerkar 2020). While the 'social' generally describes a broader concept of human relations than 'community', which focuses on closer connections (Calhoun 1980), many definitions of social resilience describe the resilience of communities – a distinction between the two is therefore often fuzzy.

If we have these different understandings of community resilience, what does *community* as a concept itself mean? Traditionally, communities have largely been understood in spatial terms, placing emphasis on the proximity of blood, mind or place (Tönnies 1887). While for Tönnies (1887) geographical proximity was a foundation for community formation, this has changed in more recent conceptualisations. While acknowledging that spatial proximity can facilitate community building, Putnam (2000) emphasised the role of social capital and connections as the foundation of a community, built through civic engagement and social networks, which can exist beyond spatial boundaries. For Cohen (1995) geographical boundaries are less relevant than community identity, a mental construct that gives people meaning and creates identity through shared meanings, rituals or cultural practices. Going further, other authors challenge the notion of spatial bounds of communities, describing them rather as networks that can provide sociability, support and identity and can form in digital spaces, around certain events and through shared interests and identities, often characterised by the digital age and globalisation (Bauman 2000; Castells 2000; Wellman 2001). Once again, other authors increasingly focus on the importance of place-based social connections to form communities – by regarding the importance of social cohesion among neighbours or by emphasising the role of local institutions in brokering such connections (Sampson 2012; Small 2006). These conceptualisations do not dismiss other forms of community but stress the importance of neighbourhoods as spatial communities since these social-organisational units shape life trajectories (Sampson 2012). Anderson (2004) stresses the importance of physical spaces in the urban realm to provide opportunities for community building and civic engagement

to navigate diversity and increase social cohesion in contemporary societies. Hence, the community in the context of this article is understood an entity that is spatially as well as socially bound, especially as many forms of participation and participatory spaces exist within certain spatial realms. The community itself exists within a broader dimension of social interactions but also consists of an internal social dimension binding it together.

Resilient communities are able to utilise their resources, adapt to challenges, and thrive during continuous change and crises (Revell and Dinnie 2020; Steiner, Woolvin, and Skerratt 2016). As a framework, the concept is explored to understand how communities can respond to and transform when facing social, environmental and economic changes. Drawing on numerous theoretical perspectives, researchers have sought to elucidate key characteristics and processes that enable communities to not only bounce back but also actively build their capacity to thrive amidst disruption.

Berkes and Ross (2013) propose an integrated view of community resilience, highlighting how communities can develop resilience through both responsive and proactive measures. They emphasize the importance of social networks, positive outlook, leadership and self-organization – factors that contribute to a community's agency and ability to adapt. This aligns with conceptualisations of community resilience as the community's collective capacity to thrive in an environment characterised by change and crises (Adger et al. 2021, 4; Magis 2010, 401).

Several scholars have argued for a greater focus on the transformative capacity of community resilience (Brown 2014; Keck and Sakdapolrak 2013; Saja et al. 2021). They state community resilience should be not only about coping with and adapting to change but also about a community's ability to self-organise and fundamentally alter its structures in response to and anticipation of disruptions. This transformative capacity is particularly relevant in the context of climate change, requiring proactive and anticipatory approaches (Carmen et al. 2022; Edwards and John 2011). Concerning the understanding of community resilience related to climate change, distinctions are often fuzzy, mingling the concepts of resilience, sustainability, adaptation and transformation (Zanotti et al. 2020). Callaghan and Colton (2008) propose a theoretical framework focusing on enhancing community capital to promote long-term community resilience and sustainable development. They argue sustainable development should seek to balance immediate needs with a vision for the future, with community resilience being crucial in moving towards sustainability. To transition into a more sustainable future, the resilience of communities is necessary for dealing with shocks due to climate change (Coaffee

2013; Elmqvist et al. 2019; Folke et al. 2010). Further, community resilience should foster local sustainability practices (e.g. the transition town movement), by empowering local communities to collectively respond to and influence changes and by strengthening social systems (Barr and Devine-Wright 2012; Brown 2014; Cinderby et al. 2016; Cretney 2014). Literature on community resilience underlines the concept's dynamic and relational nature, with communities constantly adapting and transforming in response to internal and external changes (Barr and Devine-Wright 2012; Vogt and Schneider 2016). This view challenges the notion of resilience as simply 'bouncing back' and emphasizes the importance of communities actively shaping their own futures through consensus-building, community-based planning and social learning (Ross and Berkes 2014).

The role of social capital has been widely recognized as a core component of community resilience, facilitating collective action, self-organisation, learning and the development of adaptive capacities (Bhandari et al. 2010; Callaghan and Colton 2008; Carmen et al. 2022; Murphy 2007; Yang and Shu-Hsien Wu 2020). As Li et al. (2024) emphasized in their review on social capital and risk preparedness, social capital describes both the assets of a community for dealing with stress but also the governance and management structure for building a coherent community response and for developing a system of mutual learning. Researchers have emphasized the need to consider both bonding and bridging forms of social capital, as well as the importance of trust, cooperation and communication within communities (Bhandari et al. 2010; Yang and Shu-Hsien Wu 2020). This social infrastructure is sometimes deemed more important for resilience than physical infrastructure (Aldrich and Meyer 2015). The evolving understanding of community resilience highlights the need to integrate social dynamics, transformation and multi-level governance into a conceptual framework.

Three dominant distinctions

Three distinctions dividing resilience conceptualisations in the literature are important when discussing community resilience, guiding my understanding in this paper. As elaborated on, we can understand resilience as a way of 'bouncing back' or 'bouncing forward'. Conceptualisations focusing on disaster recovery and persistence perceive resilience as a means to bounce back into a stable state, as a way for a system to absorb disturbance and recover from shock (Adger 2000; Elmqvist et al. 2019). However, as understanding resilience as adaptability and transformability shows, it is increasingly also understood as a way of anticipating changes by adapting, innovating and transforming accordingly (Revell and Dinnie 2020; Saja et al. 2021;

Wilson 2012). Faced with constant uncertainty, especially in the context of the polycrisis, communities require resilience to deal with these (Beilin and Wilkinson 2015). The polycrisis describes interrelated threats such as climate change, ecological disasters, economic inequality, conflicts and polarisation (Hoyer et al. 2023; Lawrence et al. 2024). In this context, preparing for and recovering from individual disasters should not be the focus of resilience thinking but needs to be addressed on a broader level (Cretney 2014). While this proactive approach towards resilience seems most applicable to the polycrisis context, more studies in the literature focus on reactive and responsive approaches (Carmen et al. 2022).

This leads to a second distinction within resilience literature when looking at what to be resilient *against*. Community resilience can either focus on a specific threat or be more general. Much of the literature usually focuses on resilience against specific threats or disasters (e.g. Khalili, Harre, and Morley 2018; Norris et al. 2008; Saja et al. 2018). However, by describing resilience as the ability to thrive in an environment characterised by change and uncertainty, resilience is also understood in more general terms (Berkes and Ross 2013; Magis 2010; Steiner, Woolvin, and Skerratt 2016). Social resilience, especially adaptive and transformative capacities, are necessary for societies to deal with the implications of the polycrisis because it requires broad-scale transformations of societies and communities. However, general resilience should not be confused with securitisation (Van Der Merwe, Biggs, and Preiser 2018).

A third distinction is the system- vs. actor-centred approach to resilience. In the SES literature, the concept of resilience has been applied to systems (Adger 2000; Elmqvist et al. 2019), while psychological approaches look at the individuals. Increasingly, the focus has now shifted towards individual actors within these systems (Bahadur and Tanner 2014; Berkes and Ross 2013; Brown 2014; Matarrita-Cascante et al. 2017; Meerow and Newell 2019; Obrist, Pfeiffer, and Henley 2010; Steiner, Woolvin, and Skerratt 2016). Critics of system-centred approaches often question the distribution of power and resources, asking for whom, when, where and why resilience is necessary because interactions between components within the system have often been neglected in the past (Bahadur and Tanner 2014; Meerow and Newell 2019). Social and community resilience conceptualisations often try to focus on individual actors and their agency, approaches that are often influenced by psychological understandings (Berkes and Ross 2013). Inherent to an actor-centred understanding of resilience is a focus on capacities and agency as an enabler of resilience which should not, however, neglect the role of systemic structures.

Based on these distinctions, I conceptualise CR as a **social dynamic** that is continuously shaped by structural conditions and process communities are facing (Obrist, Pfeiffer, and Henley 2010; Quinlan, Marta Berbés-Blázquez, and Peterson 2016). Understood **proactively**, resilience is about **developing** and **enabling** capacities for communities to tap into diverse resource pools to thrive in an environment characterised by change and uncertainty (Magis 2010).

Strengthening community resilience

Increasingly, approaches are made towards understanding what might reinforce and strengthen resilience. One factor often mentioned with regard to transformational or community resilience is participation (e.g. Arvanitis, Holenstein, and Schriber 2023; Bahadur, Ibrahim, and Tanner 2013; Carabine and Wilkinson 2016; Cinderby et al. 2016; Copeland et al. 2020; Mahajan et al. 2022; Rahman and Ghosh 2016; Schauppenlehner-Kloyber and Penker 2016; Steiner, Woolvin, and Skerratt 2016). While Carabine and Wilkinson (2016) identify community engagement as one of the five governance characteristics important to foster resilience, few studies focus solely on participation as an enhancing factor. Rahman and Ghosh (2016) develop an approach for enhancing resilience through participatory planning in the context of very specific threats. In a technical approach, they focus on a system-centred understanding of resilience. While no extensive analysis is made in their case study, it is interesting to see that the positive impact of participatory top-down measures is assumed to be given (Rahman and Ghosh 2016), although extensive literature on this impact is still missing. In an extensive review, Mahajan et al. (2022) evaluate the use of the concept of 'participatory resilience' in the resilience literature, focusing on resilience establishment through participation. They find that 'concepts of "resilience" and "community participation" are not particularly well connected' (Mahajan et al. 2022, 4). While they are able to derive some general recommendations for effective engagement to promote resilience, like inclusive information management, enhanced social innovations embedded in local contexts and creating supportive digital ecosystems, they also conclude that participatory resilience needs to be investigated further (Mahajan et al. 2022). A study conducted by Arvanitis, Holenstein, and Schriber (2023) studies the impact of bottom-up participation through civil society initiatives on community resilience. They conclude that community involvement is essential for community resilience, that bottom-up initiatives can positively impact community resilience and that bottom-up initiatives also indicate an already resilient community (Arvanitis, Holenstein, and Schriber 2023). Addressing potential further research, they point to the need for assessing resilience in terms of societal transformations beyond individual specific threats or disasters. Looking at urban resilience, Schauppenlehner-Kloyber and Penker (2016)

evaluate the influence of participation and self-organised collective action on urban resilience. Collective action, self-organisation and creativity are deemed crucial for building urban resilience, realised through urban co-management in their case study.

Building on this vast area of research, this brief review gives us a glimpse at some of the challenges in community resilience research. First, in the past, a lot of research has focused on resilience to specific (natural) disasters. Increasingly, communities need to be resilient against, and able to work with, a complex set of threats and changes (Lawrence et al. 2024). Therefore, we need a general approach to assess and enhance resilience of communities. Second, while the literature often assumes the positive impact of participation on community resilience, it is hardly extensively elaborated upon. Third, integrating capacity-focused actor-centred approaches with structural system-centred approaches is necessary to acknowledge the structural enablers and limitations of resources.

Existing community resilience assessment frameworks

While operationalising community resilience is challenging, various authors have offered different indicator-based frameworks to grasp its key elements. While these often focus on resilience to disasters, they can give us a rough idea of the landscape of assessment frameworks.

The following overview (Table 1) does not cover all studies that influence the assessment framework but gives a snapshot of the current state of research on this matter and of the frameworks influencing this paper most strongly. Most of these and the other analysed frameworks include similar indicators organised in different dimensions or categories. The dimensions and organising structures are what mostly differentiate the frameworks from one another.

Participation is consistently deemed important for resilience, whether as an indicator, characteristic, or an enabler. However, except for the paper by Cinderby et al., it is never the primary focus. The framework by Saja et al. focuses on structural dimensions, while Khalili et al. and Berkes and Ross focus on capabilities. The other frameworks include both approaches to varying degrees, often focusing on economic and infrastructural indicators when it comes to structural aspects. Generally, many indicators of the different frameworks overlap but are sorted according to different logics or might include certain aspects other frameworks have excluded. Furthermore, most frameworks focus on resilience to disasters and natural hazards, and very few consider other types of changes. Most of these frameworks do

not include examples of how resilience may be impacted and fostered.

Creating a new approach

A new resilience assessment framework – components and drivers

A new framework was developed with four main goals in mind: to include participation not only as an indicator but also as an enabler for resilience; to include the most important categories according to sociological, psychological and SES theory on community resilience; to visualise the interdependencies of the framework's different dimensions; and to be able to derive policy recommendations for actors involved in participatory processes based on analyses made with this framework. The framework is also informed by the literature on resilience conceptualisations. The framework is an approach to assess the resilience of socially and spatially bounded communities. As a whole, it describes the social structure or system of the community and the context it is situated in. Similar to Giddens' understanding of how individual actors act and evolve within a given system, the framework understands people as knowledgeable actors who are constrained or enabled by certain structures, but can also transform these (see Giddens 1984).

The developed assessment framework (Figure 1) for community resilience consists of four interdependent dimensions: individual, social, governance and economic. These dimensions are impacted by the polycrisis. Participation may strengthen them. The framework's dimensions may affect how a community reacts and adapts to changes that occur. Further, they also determine the extent to which communities are able to enable and foster transformation processes. The framework highlights the interdependencies of the different dimensions and how they relate to participation and potential transformation processes. With the individual dimension situated within the social dimension, it aims to show that individual capacities are dependent on and lie within social structural conditions that shape to what extent these capacities can be developed. These two dimensions relate mostly to the social boundedness of communities.

The proposed framework draws especially on Jacinto, Reis, and Ferrão (2020) work regarding the individual, social and governance dimensions. Based on a systematic review, they developed a framework whose logic the proposed framework here is built on understanding community resilience through dimensions and categories. However, some of the dimensions and especially the categories and indicators differ. Since the built and natural dimensions of the framework by Jacinto et al. are not part of a social

Table 1. Exemplary overview of existing assessment frameworks informing this study.

Authors	Operationalised understanding of resilience	Role of participation
Saja et al. (2018)	<p>Five social dimensions with corresponding characteristics and indicators:</p> <ul style="list-style-type: none"> • Social structure (e.g. social demography, family structures, and socio-economic stratification) • Social capital: (e.g. social bonds, networking abilities, interaction between social groups or governing institutions) • Social mechanisms (e.g. developing community goals, engagement and competence, collective attitudes) • Social equity (e.g. equal access to resources, skills and services, inclusive resilience initiatives, ensuring equity for people with specific needs) • Social beliefs (Social behaviours, local cultural beliefs and norms, faith-based values and practices) <p>Four primary sets of networked resources and corresponding indicators:</p> <ul style="list-style-type: none"> • Information and communication (Narratives, responsible media, skills & infrastructure, trusted sources of information) • Community competence (Community action, critical reflection, flexibility and creativity, collective efficacy empowerment, political partnerships) • Social capital (e.g. received social support, social embeddedness, attachment to place, sense of community, and citizen participation) • Economic development (Fairness of risk & vulnerability, level and diversity of economic resources, equity of resource distribution) 	<p>Participation important factor for social mechanisms (community engagement, political participation, community inclusiveness)</p> <p>Community bonds are defined as an indicator of social capital which is dependent on participation</p>
Norris et al. (2008)	<p>14 indicators in matrix organised from pre- to post-disaster and according to their influence (high – low)</p> <ul style="list-style-type: none"> • High: e.g. community participation or shared support; Medium: demographic information; Low: e.g. improvisation inventiveness or leadershipResponse • High: e.g. community participation or sense of community; Medium: coordination; Low: coping style, leadershipRecovery • High: e.g. community participation, exchange information, learning, shared information, social support; Medium: community efficacy; Low: improvisation inventiveness, coping style, leadership <p>No indicators, four components of social resilience</p> <ul style="list-style-type: none"> • social individual resilience • social CR • economic individual resilience • economic CRAssessed through 20 quantitative and 12 qualitative questions 	<p>Community participation defined as an important indicator for social resilience in all three phases from pre- to post-disaster</p> <p>Community participation as means for empowerment mentioned but not elaborated</p>
Khalili, Harre, and Morley (2018)	<p>Integration of SES and psychological resilience approaches.</p> <p>Two main components:</p> <ul style="list-style-type: none"> • agency • self-Organising;enabled through: positive outlook, community infrastructure, diverse and innovative economy, people-place relationships, leadership, learning, values & beliefs, social networks, engaged governance 	<p>Participatory approaches briefly mentioned as enhancing factor, engaged governance also includes collaborative institutions, participation as an indicator</p>
Berkes and Ross (2013)	<p>Ten characteristics of resilience:</p> <ul style="list-style-type: none"> • high diversity; effective governance and institutions; acceptance of change and uncertainty; non-equilibrium system dynamics; community involvement & inclusion of local knowledge; preparedness & planning; high degree of equity; social capital, values & structures; learning: adoption of cross-scalar perspective 	<p>Participation is a characteristic of resilience</p>
Bahadur, Ibrahim, and Tanner (2013)	<p>Six dimensions with associated categories, each category is comprised of several indicators</p> <ul style="list-style-type: none"> • Individuals: Adaptive capacity, health, demography, migration • Society: Associativism, social networking, institutions, livelihood conditions, insurance • Governance: Planning & governance • Built environment: Infrastructures, building resistance • Natural environment: Hazard susceptibility, natural environment • Disaster: Learning from the past, disasters and recovery 	<p>Included as a governance indicator → community involvement</p>
Jacinto Reis, and Ferrão (2020)	<p>Asset-based approach, characterises interacting capitals/resources:</p> <ul style="list-style-type: none"> • Natural capital (e.g. access to green space) • Human capital (e.g. skills and education) • Social capital (e.g. social networks) • Cultural capital (e.g. heritage and festivals) • Built/infrastructural capital (e.g. access to amenities) • Economic capital (e.g. income and savings) <p>Transformative interventions are suggested for each type of capital to increase CR</p>	<p>Forms of empowerment and engagement deemed crucial transformative interventions to increase CR, they are a focus of the paper</p>

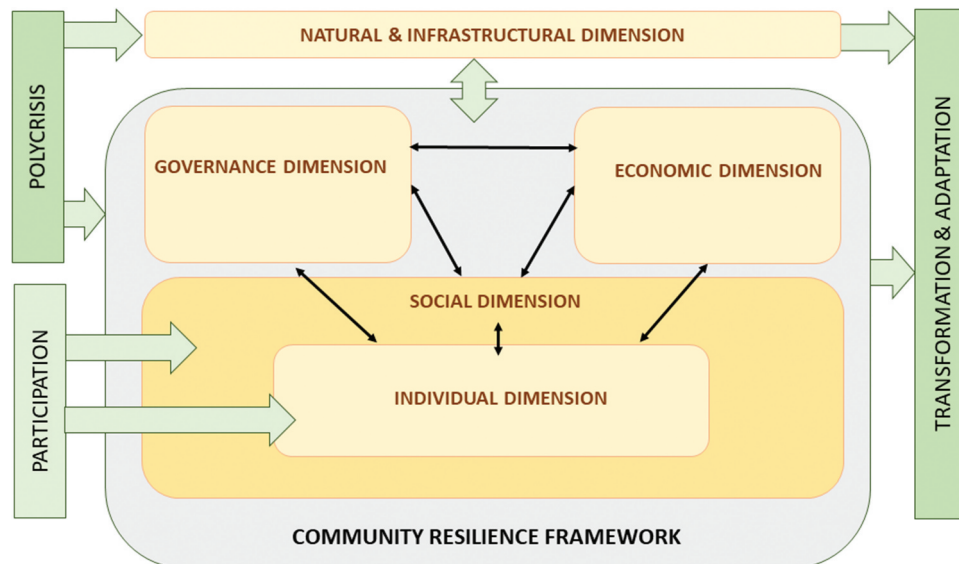


Figure 1. Interdependencies of the dimensions and the influence of participation.

dynamic, they are situated outside of this proposed framework for community resilience – however, this dimension does play a crucial role in the polycrisis and for transformation and is interdependent with the social dynamic. Furthermore, the disaster dimension is excluded since the specific aim of this framework is to enable general resilience and not focus on individual disasters. The economic dimension is included as it consists of social interactions and is relevant in various frameworks (Berkes and Ross 2013; Cinderby et al. 2016; Norris et al. 2008; Ribeiro and António Pena Jardim Gonçalves 2019; Saja et al. 2018; Steiner, Woolvin, and Skerratt 2016). The governance, economic and external dimensions relate to the social and spatial boundedness of communities. The categories and indicators were compiled based on qualitative content analyses of existing frameworks and community resilience conceptualisations, structuring the findings into the inductively developed dimensions. Some of these categories intersect, creating redundancies that can foster enabling community resilience (Bahadur, Ibrahim, and Tanner 2013; Quinlan, Marta Berbés-Blázquez, and Peterson 2016; Ribeiro and António Pena Jardim Gonçalves 2019).

Individual dimension

The individual dimension constitutes the basis for community resilience and captures human capital and agency of actors within the community (Cinderby et al. 2016). It is characterised by coping, adaptive and transformative (CAT) capacities. Coping capacities consist of multiple indicators. Firstly, a sense of security (Cinderby et al. 2016; Norris et al. 2008; Obrist, Pfeiffer, and Henley 2010; Ribeiro and António Pena Jardim Gonçalves 2019), a sense of belonging (Berkes and Ross 2013; Steiner, Woolvin, and Skerratt 2016) and general health and well-being (Cutter et al.

2008; Jacinto, Reis, and Ferrão 2020; Khalili, Harre, and Morley 2018; Revell and Dinnie 2020) are often defined as base indicators for individual resilience. They can positively impact the ability to deal with external stress, derived especially but not only from psychological theories (Berkes and Ross 2013). A perceived high quality of life (Cutter et al. 2008) and a positive and open outlook (Berkes and Ross 2013; Steiner, Woolvin, and Skerratt 2016) are also important indicators for an individual's coping capacities. Furthermore, knowledge (Berkes and Ross 2013; Maclean, Cuthill, and Ross 2014) and access to community resources (Magis 2010; Obrist, Pfeiffer, and Henley 2010) are defined as important components when dealing with stress and disturbance.

Adaptive capacities support resilience in the face of external stresses but also in times of change. Flexibility and accepting change and uncertainty (Bahadur, Ibrahim, and Tanner 2013; Berkes and Ross 2013) as well as being able to adapt (Ribeiro and António Pena Jardim Gonçalves 2019) are therefore apparent indicators.

Transformative capacities go beyond adaptation. They are about enabling transformation and thriving through change and are essential in each dimension of community resilience. Empowerment, learning and experimentation can enable transformative capacities (Bahadur, Ibrahim, and Tanner 2013; Berkes and Ross 2013; Hölscher, Frantzeskaki, and Loorbach 2019; Maclean, Cuthill, and Ross 2014; Quinlan, Marta Berbés-Blázquez, and Peterson 2016; Wolfram 2016). Reflexivity and an awareness of system dynamics (Hölscher, Frantzeskaki, and Loorbach 2019; Wolfram 2016), coupled with a sense for sustainability (Hölscher, Frantzeskaki, and Loorbach 2019; Quinlan, Marta Berbés-Blázquez, and Peterson 2016; Revell and Dinnie 2020; Wolfram 2016) characterise transformative capacity to bring about

change. If the goal is to transform a system, actors need to be able to understand and reflect upon the system in question, which is also described through agency. Agency describes abilities like knowledgeability or reflexive abilities and exists in a recursive relationship with the general social structure of a community (Giddens 1984). In addition to these mental abilities, self-organisation and self-efficacy (Berkes and Ross 2013; Revell and Dinnie 2020) are essential to empower and foster transformations.

Social dimension

The social dimension describes the social connections *within* a community. It is divided into basic social structure, social capital and social mechanisms (Saja et al. 2018). The concept of social structure generally includes characteristics like social relations and interactions to describe differentiation or similarities among people in a society, which would be equivalent to the social dimension, or even the whole framework in this context (Blau 1977). However, in its most basic sense, it can also be understood quantitatively through population composition to describe the heterogeneity of a group (Blau 1977). Since the social dimension as a whole describes social relations and the community resilience framework in total aims to assess institutional arrangements, this basic understanding of social structure is applied as part of the social dimension. This should not be confused with the overall social structure the community is embedded in. Social capital describes the networks creating a community (Aldrich and Meyer 2015; Li et al. 2024; Magis 2010). Social capital can represent close bonds between similar people (bonding social capital) or connections across a more diverse group of people (bridging social capital). Social capital as well as formal and informal networks can create collective benefits for communities and foster civic engagement (Putnam 2000). Social mechanisms describe *how* a community functions.

Social structure here is described by the community's population composition (Bahadur, Ibrahim, and Tanner 2013; Jacinto, Reis, and Ferrão 2020; Quinlan, Marta Berbés-Blázquez, and Peterson 2016; Ribeiro and António Pena Jardim Gonçalves 2019; Saja et al. 2018). Additional attributes such as the degree of social equity and the access to basic needs and services or other infrastructure within the community further define this composition (Bahadur, Ibrahim, and Tanner 2013; Maclean, Cuthill, and Ross 2014; Saja et al. 2018).

Social capital is an essential feature of community resilience, and various authors describe it as the most relevant component (Aldrich and Meyer 2015). Informal safety nets and support (Berkes and Ross 2013; Jacinto, Reis, and Ferrão 2020), close relationships with others (Aldrich and Meyer 2015; Copeland et al. 2020; Revell and Dinnie 2020) and a sense of community (Cutter

et al. 2008; Steiner, Woolvin, and Skerratt 2016) describe connections between people who are close to one another, like friends or family who enhance bonding social capital (Aldrich and Meyer 2015). Social networks and volunteerism (Berkes and Ross 2013; Cinderby et al. 2016; Cutter et al. 2008; Maclean, Cuthill, and Ross 2014) and interconnectedness between social groups (Aldrich and Meyer 2015; Berkes and Ross 2013; Copeland et al. 2020; Quinlan, Marta Berbés-Blázquez, and Peterson 2016; Revell and Dinnie 2020; Ribeiro and António Pena Jardim Gonçalves 2019) represent bridging social capital that stretches beyond close contacts and enables broader and diverse networks. Trust in community leadership organises relationships between people across power gradients in a community, representing linking social capital (Aldrich and Meyer 2015).

Social mechanisms describe more specifically how a community functions. As a category, this includes a broad set of indicators such as collaboration and experimentation within the community (Quinlan, Marta Berbés-Blázquez, and Peterson 2016; Saja et al. 2018), but also engagement and the inclusion of local knowledge in decision making processes affecting the community (Bahadur, Ibrahim, and Tanner 2013; Quinlan, Marta Berbés-Blázquez, and Peterson 2016; Saja et al. 2018). These mechanisms are also described by the community's inclusiveness towards others (Berkes and Ross 2013; Revell and Dinnie 2020; Ribeiro and António Pena Jardim Gonçalves 2019; Saja et al. 2018) since a community does not exist in a vacuum but people within it are always interacting with others. Increasing community competence (Cutter et al. 2008; Jacinto, Reis, and Ferrão 2020; Maclean, Cuthill, and Ross 2014; Norris et al. 2008) may enable collective action towards common goals (Magis 2010; Saja et al. 2018) generating a sense of pride in the community and general empowerment (Revell and Dinnie 2020; Saja et al. 2018; Wolfram 2016). Ideally, these collective actions also lead to innovation creation in the community and transmission of these innovations into other communities (Hölscher, Frantzeskaki, and Loorbach 2019; Ribeiro and António Pena Jardim Gonçalves 2019; Wolfram 2016). Collective action can happen at the community level without governance involvement, but it can also overlap with community inclusion in the governance dimension.

Governance dimension

The governance dimension offers important insights into the effects of participation on community resilience on a broader scale, especially regarding interdependencies. Resilience in this dimension is characterised by community governance and the governing actors' transformative capacity.

Indicators for resilient community governance include engagement across multiple layers of the governance system between political and administrative actors as well as stakeholders from civil society (Berkes and Ross 2013; Maclean, Cuthill, and Ross 2014). Community inclusion and participation in decision making processes indicate high levels of engaged governance (Bahadur, Ibrahim, and Tanner 2013; Cinderby et al. 2016). Community inclusion may overlap with 'collective action' from the social dimension, if bottom-up action is included in governance processes.

Transformative capacity in governance requires a commitment to systemic change for sustainability among the governing actors (Wolfram 2016). This willingness for systemic change may further be exemplified by facilitating experimentation and innovation processes within governance structures but also in terms of new policies and concepts put forward (Wolfram 2016).

Economic dimension

The economic dimension focuses on the local economy and its relationship with the community, as well as the overall economic situation of community members. Similar to the social and governance dimension, it also describes the structural conditions for community resilience. This includes categories such as economic capital (Cinderby et al. 2016), a diverse local economy (Steiner, Woolvin, and Skerratt 2016) and community infrastructure (Berkes and Ross 2013; Cinderby et al. 2016; Steiner, Woolvin, and Skerratt 2016).

Economic capital is closely related to and intersecting with social structure as it describes factors like income, employment and wealth (Adger 2000; Cinderby et al. 2016). A diverse local economy is characterised by a local ecosystem of diverse and thriving enterprises that foster innovation (Berkes and Ross 2013; Maclean, Cuthill, and Ross 2014; Norris et al. 2008; Revell and Dinnie 2020; Steiner, Woolvin, and Skerratt 2016). Community infrastructure includes facilities like medical services, community centres, transport options or arts and food markets (Maclean, Cuthill, and Ross 2014). They can span the bridge between economic, social and cultural needs in a community. The dimension includes market and non-market-based arrangement, whereby the non-market-based arrangements overlap with categories from the social dimension.

The different dimensions of community resilience are interdependent to one another, categories within the dimensions may overlap. Rather than understanding community resilience as a set state, our framework aims at understanding it as a social dynamic of interacting dimensions. Figure 2 gives an overview of the framework's assessment categories.

Participation – a potential driver for community resilience

Participation is brought into the equation as a potential driver of community resilience. To

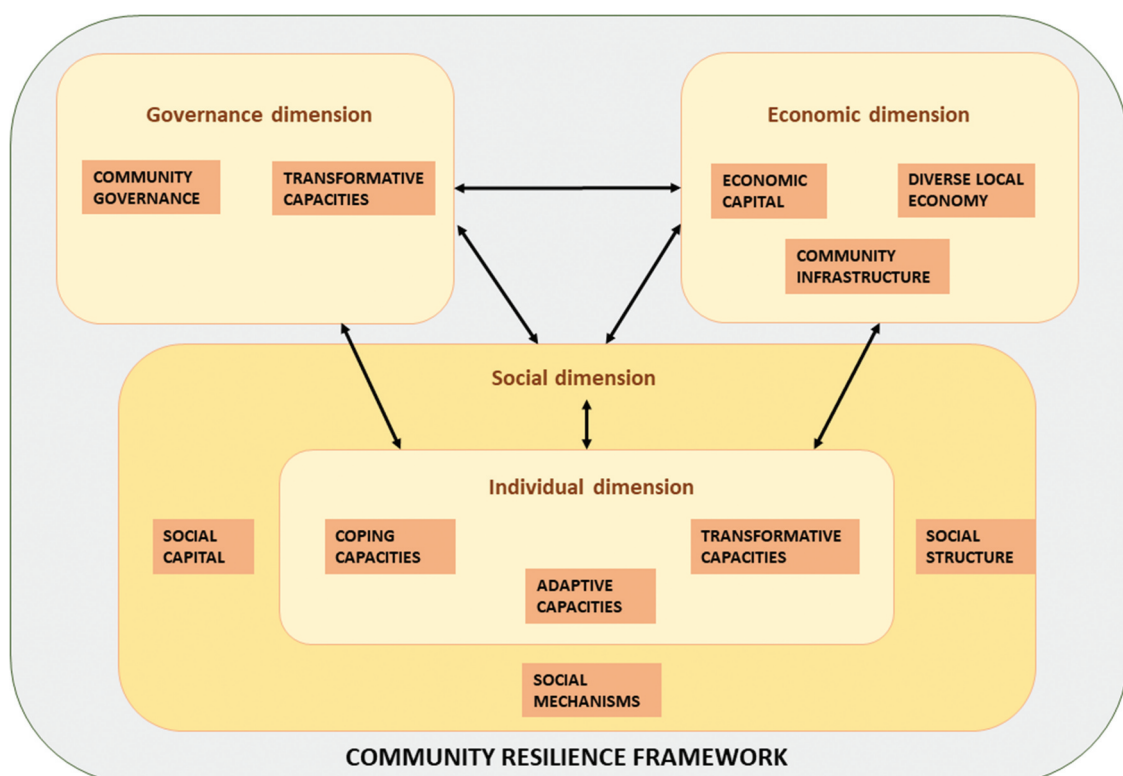


Figure 2. Assessment framework for community resilience, including assessment categories.

understand this potential impact, we will shed some light on how participation may be conceptualised.

Participation can be viewed as a functional tool for basing decisions on a wide range of diverse viewpoints and interests as a means to include all relevant aspects and to serve the needs for all people affected. Beyond, this functional perspective participation has been proposed as a normative goal for making the principles of democracy work in practice (Lafont 2019). It may promote social justice by giving individuals from all social backgrounds the opportunity to codetermine their environments and their future. It can be an empowerment strategy for promoting democratic values and social justice (Gaventa 2006). Through participation, fair and socially balanced procedures could empower all affected individuals to be part of the collective solution. While participation is not sufficient for reaching equity, sustainability and resilience aims alone, it is an important pillar.

Often, participation processes are understood as top-down phenomena where official decision makers invite citizens or stakeholders to give an input on a particular issue. Agenda and boundaries of the process such as who participates and in which aspect of the decision-making process are determined by decision makers. In the past few years, formats like citizen assemblies and other mini-publics have increasingly been implemented by decision makers to enhance this type of political participation. These dialogues oriented participatory processes are usually employed in a top-down manner and aim at being consultative, consensus oriented and enhancing mutual understanding through deliberation (Dryzek et al. 2019). These participation processes can be understood as top-down processes, enabling *invited spaces* for participation – spaces, wherein citizens have been invited to participate (Gaventa 2006). Also described as *governance driven democratisation*, these processes are implemented in response to the seemingly increasing incapacity of electoral democratic processes to capture the needs of pluralist societies and deal with current complex challenges (Warren 2009). These processes can offer pragmatic, solution-oriented options for dealing with political challenges (Bua and Bussu 2021) and are usually of consultative nature. Deliberative processes aim at fostering dialogue between citizens with different opinions and at opening up avenues of intersubjective reasoning to reach meta-consensus, especially in polarised contexts (Niemeyer 2011). Meta-consensus ‘embraces the principle of plurality [...] that there are other legitimate points of view that should be admitted to the deliberative table’ (Niemeyer and Dryzek 2007, 502). Such processes, the surge in climate assemblies all over Europe is an example of this, are therefore often implemented to deal with current political problems that seem to have polarising societal effects but require urgent action.

The potential impact of these top-down processes on citizens and communities has been evaluated in different studies and with various foci. These processes seem to foster learning processes for participants and political interest, create new social connections or can serve as a catalyser for further political or social engagement (Kirby et al. 2021; Michels and Binnema 2019; Talpien 2019). Based on these findings, one might assume that it could also have an impact on community resilience, as aforementioned aspects are also some of its common characteristics.

Further, we can also think of participation as a bottom-up process. Contrary to the aforementioned top-down process, civil society actors determine the agenda and boundaries of participation. These processes result in the creation of *claimed spaces* for participation: spaces that citizens themselves created due to their dissatisfaction with governing actors, or as a result of civil society demands (Gaventa 2006). These claimed spaces can take very different forms, ranging from protest and citizen petitions to social movements, organised civil society groups or community associations. These spaces may be an expression of public dissent or can be institutionalised. Campaigns by civil society actors can claim a space by collecting signatures for citizen petitions or organising participatory public events about specific issues (von Schneidmesser and Kirby 2022). If such bottom-up social movements go beyond ad-hoc initiatives and embed participatory practices in established institutions, they can also be described as *democracy-driven governance* (DDG) processes (Bua and Bussu 2021). An example of a DDG process could be the implementation of the Berlin climate assembly in 2022, which was initially demanded by a civil society group, but also new collaborative governance approaches towards community management (e.g. Barcelona’s *Citizen Asset Programme*).

The aim of these processes is to create empowered spaces – rather than merely consultative ones, like top-down processes usually are. Beyond the policy realm, bottom-up participatory processes also have an empowering impact on participants by fostering knowledge, learning and community networks (Arvanitis, Holenstein, and Schriber 2023). Citizen-led participatory processes tend to mobilise the public sphere and generate more participation in other social movements and participatory practices, leading to a political activation beyond the direct participants (Della Porta and Felicetti 2022). This mobilising effect hints at a greater societal relevance of bottom-up participatory processes (Bua and Bussu 2021). These effects, especially in terms of agency, empowerment and efficacy, point towards a potentially positive effect on community resilience.

The distinction between top-down and bottom-up participatory approaches is not rigid, they can rather be seen as complementary to one another being in a dynamic relationship of continuous push and pull

between contention, collaboration and co-optation. They can take hybrid forms and learn from each other. This diversity in form should be kept in mind when thinking about the impact of participation on resilience.

The potential impact of participation to strengthen community resilience

To explore the full potential of the framework, it needs to be applied in practice, which we do in another paper (Kirby, Stasiak, and Von Schneidemesser 2024). However, before doing so, I will present a vignette case to illustrate the possible impact of participatory processes on communities to conceptually elaborate on the framework's potential.

As we briefly delved into, participation should not be understood as a one-way street but a two-directional process, where stakeholders from different ends of the power hierarchy seek to engage with one another – be it by protests from social movements, through citizen assemblies convened by governing actors, and everything in between. Evaluating the impact of such participatory processes depends largely on the chosen indicators that the process is evaluated against. The following vignette seeks to give a glimpse into what the impact of bottom-up participation on community resilience could look like.

In a recent study Arvanitis, Hostenstein, and Schriber (2023) develop a conceptual framework to understand the relationship between bottom-up initiatives (BUIs) and community resilience. They selected seven BUIs to analyse this relationship. They define community resilience as the 'capability of a community to resist and potentially thrive in a period of pressure, disturbance, or change with solutions, actions, or development that are sustainable for the community' (Arvanitis, Hostenstein, and Schriber 2023, 60). Based on Maclean, Cuthill, and Ross (2014) their concept of community resilience consists of six relevant components (engaged governance; community networks; community infrastructure; diverse & innovative economy; knowledge, skills & learning; and people-place connections) activated through agency and the ability to self-organise (Berkes and Ross 2013). Based on interviews with BUI members and the assessment of project team experts, they found that the components *knowledge, skills and learning, community networks* and *engaged governance* were significantly strengthened through their engagement. They found that the existence of a BUI not only can strengthen community resilience but is also an indicator for an already resilient community (Arvanitis, Hostenstein, and Schriber 2023).

These findings provide a helpful starting point for future analyses through the framework proposed in this paper as they align with our assumptions for the impact of participation. However, our proposed framework seeks to go a step further on

two accounts: By including further important categories like social structure, social mechanisms and CAT capacities, it seeks to get a more nuanced view on more specific indicators that participation might have an impact on, as well as the interdependencies between these dimensions to show how its understanding is constant in flux and dynamic.

Conclusion and outlook

Community resilience as a concept allows us to integrate various community qualities within one framework. Frameworks offer us a means to understand specific phenomena or processes in a simplified, yet analytically comprehensive way by breaking multifaceted concepts up into individual layers and indicators. What makes community resilience such a challenging concept to grasp is its fuzziness and often also lack of delineation from related concepts. In my view, what makes community resilience unique and useful as a concept is the fact that it combines a multitude of community qualities and capacities within different community dimensions. The developed framework can help understand these various layers and how the individual, social, governance and economic dimensions relate to each other. Further, as the framework shows, resilience is not a stable state but constant dynamics of interactions between different dimensions.

Currently, many frameworks for community resilience focus on resilience against specific threats or disasters and less on more general reasons for resilience. This inhibits a transformation-oriented focus on resilience necessary within a polycrisis setting. To enable transformation, a focus on strengthening factors for community resilience is helpful. Further, resilience is often understood as a capacity, with little focus on the social dynamics within communities. In this framework, community resilience is understood as a social dynamic enriched by capacities that can enable transformation processes necessary to thrive in an environment characterised by change and uncertainty.

This understanding can help to evaluate the impact of participatory processes on communities – not just when top-down measures are implemented, but also when communities engage in a bottom-up manner. This can further be helpful for designing policies aimed at increasing community resilience, by using different participatory measures. The framework is limited to the extent that it is quite complex, requiring time and resources to apply and assess. Further research should test how the assessment framework can be applied in practice and how well it can be applied in different participatory contexts.

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