**Article:**
Tschakert, P, Parsons, M, Atkins, E et al. (7 more authors) (2023) Methodological lessons for negotiating power, political capabilities, and resilience in research on climate change responses. World Development, 167. 106247. ISSN 0305-750X

https://doi.org/10.1016/j.worlddev.2023.106247

# Methodological Lessons for Negotiating Power, Political Capabilities, and Resilience in Research on Climate Change Responses

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**Abstract**

Critical scholarship on the intersection of development pathways and climate change responses highlights the roles of power, agency, social difference, intersecting inequalities, and social justice in shaping people's resilience in a rapidly transforming world. Yet, how to precisely increase the spaces in which people experiencing marginalisation can address power asymmetries and strengthen their resilience, particularly from a methodological perspective, remains poorly understood. Here, we build on recent insights into political capabilities and their relevance for equitable resilience practice to assess the role research methods play in not only locating political capabilities but also enhancing them in the context of climate resilience. We present the findings from an in-depth analysis of 57 articles, out of a larger set of 200+ papers, that have employed co-learning/cooperative inquiries, participatory action research, participatory methods, workshops, and/or interviews combined with other approaches as most engaging and potentially empowering methods. Methodological insights through this analysis allow us to examine if and how resilience-in-the-making materialises across uneven power relations and often flawed decision-making processes. We show the pervasiveness of power differentials, even in research settings deigned to be inclusive, and how disempowering processes in adaptation, mitigation, disaster management, and social transformation further marginalise already disadvantaged actors. At the same time, we illustrate the transformative role of alliances, resistance, shared learning, and sustaining inclusive approaches. Such nuanced insights into best processes as well as detrimental pitfalls are essential for development scholars and practitioners to help anchor deliberative resilience practice in the everyday lives of disadvantaged populations and foster political capabilities for more just climate action and policy.

**Keywords:** equitable resilience; political capabilities; inclusive decision making; participation; inequalities; deliberation

## 1. Introduction

Critical scholarship on the intersection of development pathways and climate change responses highlights the roles of power, agency, social difference, intersecting inequalities, and social justice in shaping people's resilience in a rapidly transforming world (e.g. Eriksen et al., 2015; Fazey et al., 2018; Ziervogel et al., 2017; Carr, 2019; Mikulewicz, 2019; Grove et al., 2020; Roberts & Pelling, 2020). This focus entails attention to the ways diverse stakeholders, ranging from individuals and communities experiencing marginalisation to influential corporations, share power in decision-making processes over adaptation and mitigation trajectories, disaster risk reduction, societal transformation, and the numerous contestations along the way. Yet, how power differentials and resilience shape each other, including how to cultivate the latter in the context of the former, remains understudied.

Insights into 'negotiated resilience' (Harris et al., 2018; Ziervogel et al., 2017) show that resilience is not an idealised state of being but grounded in relationships, often deliberated across spatial scales. Resilience then is best understood as a complex, relational process of negotiation between different people with diverse needs, interests, values, capacities, and aspirations. Such a relational lens is helpful to foreground the mechanisms that include or exclude disenfranchised groups from climate decision making (Garcia et al., 2020). This entails scrutinising specific contexts in which resilience-building efforts, particularly those focused on technocratic solutions, reinforce rather than reduce uneven power relations and entrenched inequalities and vulnerabilities (Grove et al., 2020) and command self-reliant, entrepreneurial, resilient subjects that are increasingly propagated under climate and development policies that uphold the status quo (e.g. Chandler & Reid, 2016; Crosweller & Tschakert, 2021a; Lyster, 2019).

In their recent review of how power operates at the nexus of climate change and resilience scholarship, drawing upon feminist political ecology and feminist theory, Garcia and colleagues (2022) highlight the responsibility of 'reflexive resilience researchers' to help address and potentially overcome uneven power dynamics and contribute to 'resilience-as-a-process' rather than just a desirable outcome (p. 14). Yet, they also concede that, unlike theoretical advances in this space, practical achievements, including methodological approaches, are lagging. Whilst there is agreement that such approaches ought to be inclusive and acknowledge diverse stakeholders and their knowledge and lived experiences, the challenge of creating and sustaining such processes remains underestimated (McNamara et al., 2020). This lacuna persists, despite long-standing insights from participatory research, underscoring the vital role of deliberation and iterative practices among historically disadvantaged populations to challenge inequitable power constellations, explore more empowering subjectivities, and anchor their new emancipatory agency in daily social relations (e.g. Kesby 2005; Manuel-Navarrete & Pelling, 2015; Tschakert et al., 2016a).

Hence, this paper aims to trace how power asymmetries and resilience as a process are reflected in research methods and methodologies within the field of climate change responses. To do so, we build upon two relevant concepts that sharpen our focus on inclusive and equitable spaces and decision-making processes that engaged research can examine and enrich, as well as foster and enact more just daily lives and futures.

First, we adopt the notion of 'equitable resilience in practice' (Matin et al., 2018, p. 198) that puts genuine inclusion of diverse actors front and centre in the pursuit of development pathways; it does so in ways that could surmount denigrating subject-making processes, across spatial and temporal boundaries, and promote fundamental changes and systemic transformation. The explicit focus on practice draws attention to the politics and power struggles that inhibit certain

groups from participating and driving deliberate transformation while allowing unjust and unsustainable solutions to persist. This focus entails attentiveness to how subjectivities are (re)produced and how and by whom they can be challenged (Garcia et al., 2021).

Second, we draw on the work of Ensor and colleagues (2021) who argue that strengthening the political capabilities and agency of people experiencing systemic marginalisation is essential to counteract this corrosive force and rethink resilience. A keen eye on how research methodologies and methods enhance or hamper political capabilities has so far received limited attention, even though there is growing consensus that more political power rather than mere knowledge is vital for historically marginalised groups to be recognised as equal partners, negotiate resilience, influence political processes, transform hierarchies, and dismantle a discriminatory status quo. We are inspired by Holland's (2017) conceptualization of political capabilities as having 'the political power to shape adaptation decisions' (p.397) (and, by extension, mitigation and disaster management) to pursue transformational outcomes. This means, at a minimum, to 'apply enough political pressure' to redirect unjust decision processes and, even better, 'formally control the decision rules and procedures' (p.397). Holland's people-centric lens on political capabilities builds on Schlosberg's (2012) interpretation of human capabilities that allow individuals to live flourishing and meaningful lives. It hence reorients our gaze back to real people with genuine struggles, to individual actors and their entanglements in structural injustices and webs of uneven power relations. Mobilising such capabilities is particularly important in situations where dominant adaptation (and mitigation) pathways favour the already powerful and function as critical mechanisms of exclusion by foreclosing alternative trajectories and genuine resilience building (Henrique & Tschakert, 2020).

Situated at the junction of the political capabilities of disenfranchised actors to design what is in their best interest in climate change responses (Holland, 2017) and recent calls to investigate

equitable and negotiated resilience making in practice (Ensor et al., 2021), this paper assesses the role research methods play in not only locating political capabilities but also enhancing them in the context of climate resilience. Here, we present the findings from an in-depth review and analysis of 57 articles, out of a more extensive set of 200+ papers, from across geographic and cultural contexts worldwide. We strategically focus on co-learning/cooperative inquiries, participatory action research, participatory methods, workshops, and interviews combined with several other approaches as most engaging and potentially empowering methods. We track if and how resilience-in-the-making materialises via the use of these methods, by examining resilience-power dynamics through four thematic angles: 1) inclusion, participation, and recognition; 2) power asymmetries; 3) processes of decision making and engagement; and 4) nourishing political capabilities. Our ultimate aim is two-fold: to derive a set of best praxis that nurtures participatory and deliberative spaces and practices; and to expose limitations, obstacles, and hierarchies in methods of data collection, deliberations, and analysis.

## 2. Materials and methods

### *2.1 Literature review*

For this systematic literature review, we followed a six-step process. First, we adopted the following broad question to guide us: How are power and resilience negotiated in the context of climate change adaptation, mitigation, disaster risk reduction, societal transformation, and human security (including food, water, livelihoods, and health), across geographic and cultural contexts and across levels of spatial scale? Second, we identified the following inclusion criteria: peer-reviewed journal articles published between January 2015 and March 2020, written in English, and

based on empirical, theoretical, methodological, and mixed scholarship. We excluded publications not authored in English and review articles, book chapters, reports, and conference proceedings.

Third, following two rounds of deliberation among a total of 16 team members, we developed a search protocol and applied it to one scholarly electronic database (Scopus) in March 2020 to identify relevant articles. Inspired by intellectual advances in deliberating resilience and equitable resilience (Matin et al. 2018; Ensor et al. 2021), we started with queries comprised of three groups of keywords reflecting our guiding question (Table 1). The AND operator connected the first-order keywords (climate, resilience, and power), and the OR operator connected key terms within second- and third-order groups. We searched within the papers' title, keywords, and abstract. As shown in Table 2, the initial keyword search produced 251 articles, then exported into Excel and screened by several team members, and 80 articles were retained as relevant. We mapped the distribution of these 80 hits across all second- and third-order keywords for representativeness.

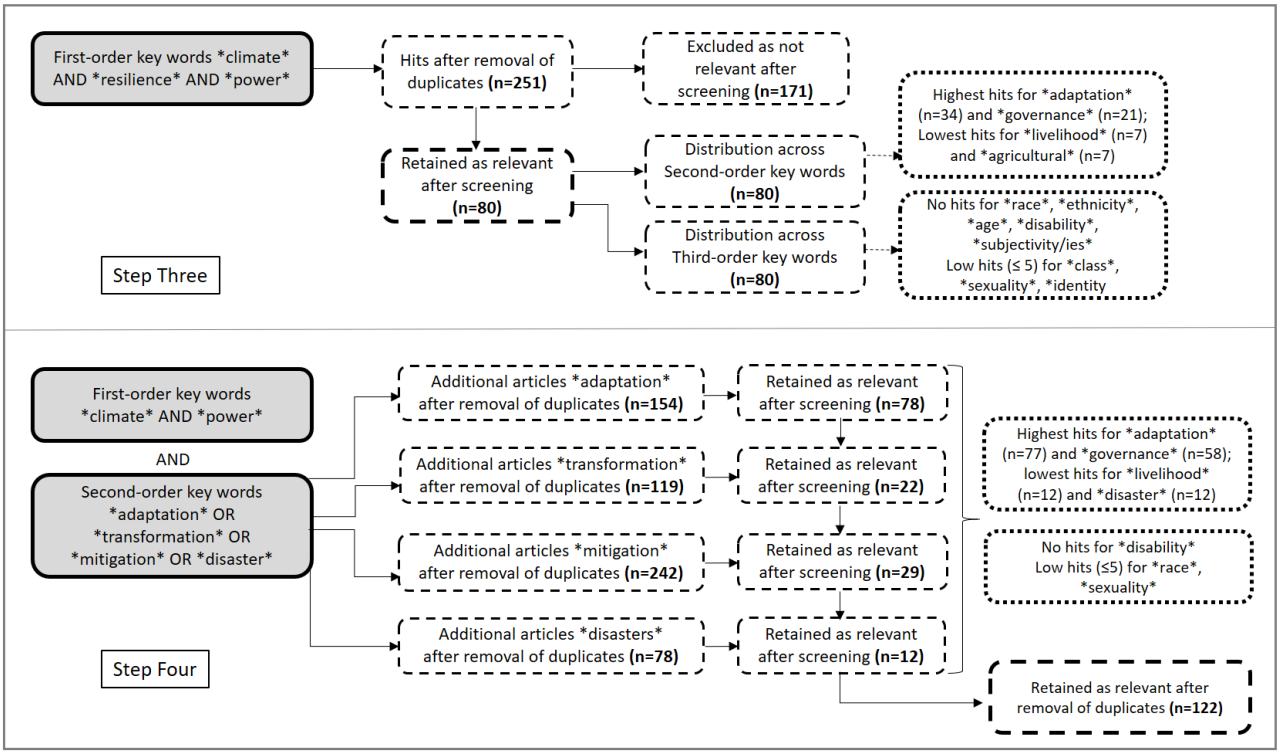
Table 1: Keywords used for the systemic search in Scopus

| First-order keywords for core concepts | Second-order keywords for thematic coverage | Third-order keywords for inequalities and power dimensions |
|---|---|---|
| *climate* AND *resilience* AND *power* | *adaptation* OR *transformation* OR *mitigation* OR *disaster* OR *vulnerability* OR *capacity* OR *security* OR *governance* OR *livelihood(s)* OR *urban* OR *rural* OR *agricultural* | *gender* OR *race* OR *ethnicity* OR *class* OR *indigenous* OR *age* OR *sexuality* OR *disability* OR *identity* OR *justice* OR *inequality* OR *participation* OR *stakeholder* OR *conflict* OR *authority* OR *knowledge* OR *rights* OR *subjectivity/ies* |

Fourth, to avoid missing other relevant insights on climate and power in scholarship on adaptation and mitigation, transformation, and disaster risk management, particularly regarding some of the key elements in the third-order set that were underrepresented in Step 3, we agreed to run a second search in Scopus, this time without "resilience" as a first-order search term (Table 2). This yielded an additional 122 articles. Confident that we had not misguidedly excluded critical

literature, we committed to this final dataset of 202 articles that fulfilled the search criteria and research aim.

Table 2: The two steps in the article search and screening process




Fifth, we commenced our first round of coding of the selected articles. The coding was undertaken in Excel to ensure software accessibility across the research team in eight countries. We worked with the 202 papers listed in rows and 38 thematic categories (columns) tested beforehand within the research team to ensure depth and sophistication of the systematic review. The 38 categories represented six clusters with various sub-themes (Table 3), each treated as a column in the literature tracking table.

The 16 team members then coded 10-18 articles each to cover the entire data set across all categories. The relevant information was extracted from each article and entered as text in Excel, which yielded data in 7,676 cells, including some labelled “n/a” or “not specified”. The first author

compiled all results into a master table and attested the information across rows and columns was consistent.

Table 3: Coding clusters and thematic categories for the full set of articles reviewed

| Main clusters for coding | Thematic categories for in-depth coding |
|---|---|
| Relevance across climate-related domains | Summary; article type; resilience; adaptation; mitigation; societal transformation; climate-related disasters and extreme events; food, water, and livelihood security; urban and peri-urban; rural, agrarian, and agricultural; and other climate-related domains (e.g. health) |
| Location and actors | Geographical area; within same spatial scale; cross-scale interactions; actors and stakeholders; and axes of inequality |
| Power | Visible power; hidden power; invisible power; interactions and entanglements of power; and struggles and injustices |
| Politics and processes of negotiation | Interests, priorities, values, experiences, and rights; subject(s) of resilience making; process(es) of decision making; negotiation, contestation, and deliberation; participation and shared learning; trade-offs and compromises; elements of success; obstacles; and sustaining processes |
| Methodology | Methods of data collection and processes of negotiation; analysis; replicability; and novelty |
| Other | Article quality; notes; and article hyperlink |

Lastly, the completed literature tracking table was systematically analysed via a second round of thematic coding, within each category (column). Each of the six main clusters was handled by two or three team members who verified details of individual cells in the Excel master sheet or sourced additional details from the articles where necessary. Team members were responsible for reading all column and row entries and identifying meaningful coding sub-themes, in accordance with their level of familiarity with relevant literature, to tease out nuances within their thematic categories. The column content was then systematically colour-coded across the data set. Ultimately, information for each thematic category was arranged horizontally in Excel and details for the 202 articles were arranged side by side for ease of viewing and preliminary visualisations.

For this article and its specific focus on methodological considerations for negotiating power, political capabilities, and resilience in the context of climate change responses, we decided to concentrate on a methods sub-set of 57 papers selected for closer investigation. This sub-set represents five types of methods potentially most conducive to identifying power differentials in

research settings and also to contribute to the strengthening of political capabilities for negotiation of more just resilience outcomes: 1) co-learning/cooperative inquiry; 2) participatory action research (PAR); 3) participatory methods; 4) workshops; 5) interviews combined with three other methods of gathering data (here referred to as 'interviews+'). The last one also holds potential for iterative learning or what Kesby's (2005) calls 'iterative performance.'

We justify our decision to focus on this methods sub-set (*n*=57) as our review revealed that these papers, compared to those that relied largely on theorizing, reviews, archival works, and surveys, reflecting less engaged methodologies, contained the most pertinent insights into strengthening political capabilities and negotiating resilience. We argue that the selected papers in these methods suggest that the research and author teams that employed them may, in one way or another, have already been attuned to power dynamics and patterns of exclusion. Although we cannot read their motivations, we sense a potential interest, through their methodological preferences, in addressing and potentially overcoming well-known pitfalls of power and participation in climate and development pathways. We understand participation in the broadest sense as a right that all people have to be part of a society and contribute to shaping decisions that affect them. Not all authors, though, are explicit about whether they had deliberately designed their empirical work to be inclusive by involving multiple stakeholder/actor voices, highlighting intersecting inequalities, and creating space and time to deliberate fair pathways and outcomes. Doing so would signal researchers not shying away from allowing contestation and disagreement to occur, including the methods of data collection and engagement and the types of analyses undertaken. Despite this slight ambiguity, we posit that these five methods are well suited to detect and foster equitable and negotiated resilience-in-the-making. In the analysis of this sub-set, we paid explicit attention to whether or not this potential was fulfilled, via scrutinizing the methods of engagement and processes that supported (or not) participants

involved in the case studies to understand, contest, and negotiate power structures and social norms, and via identifying successes and obstacles that emerged in the process.

### *2.2. Sample description*

Numerous *methods of data collection and engagement* were used in the total of 202 articles, grouped here into 16 types (Figure 1, left side). Interviews were the most frequent method (50%), mainly semi-structured interviews, followed by work with archival/secondary sources, observations, focus group discussions, and surveys and reviews. Most articles combined different methods of data collection while 72 articles (26%) had only one method, and 22 articles (11%) did not specify any method, several of which were theoretical pieces.

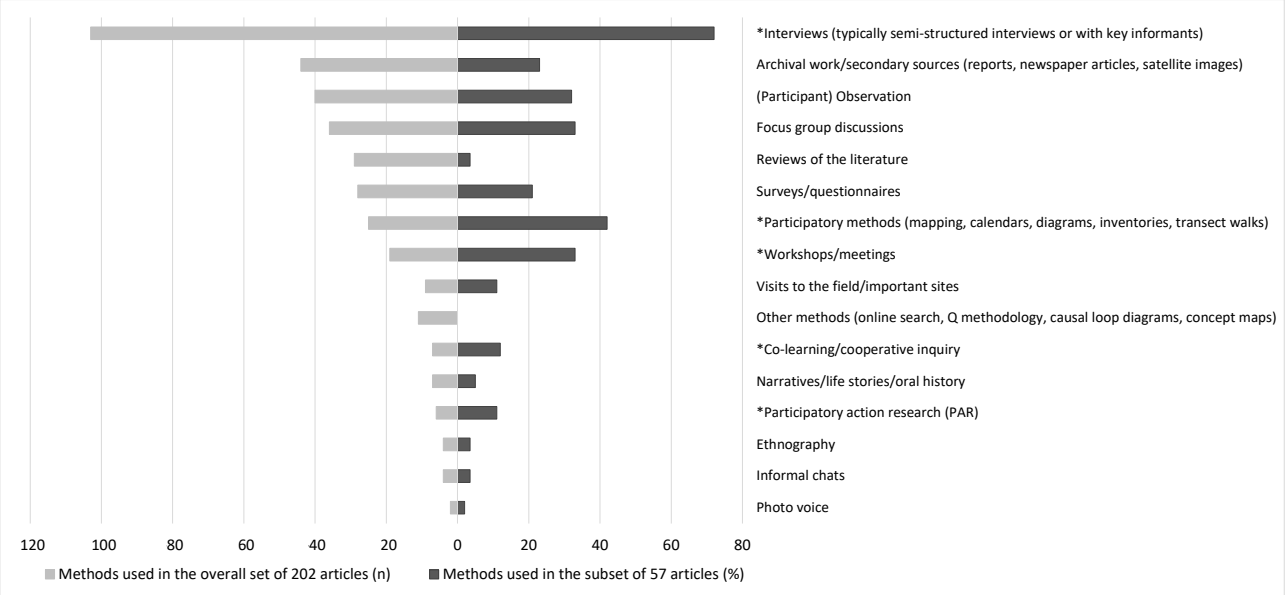



Figure 1: Methods of data collection and engagement. Left: number of articles with types of methods used (n= 202); right: percentage (%) of methods used in the sub-set of 57 articles, focusing on five potentially most empowering methods (*) and other methods employed concomitantly.

The methods expected to generate the most valuable insights for negotiating power and resilience accounted for roughly one-fourth (28%) of the entire sample across the five methods: co-learning/cooperative inquiry (n=7), participatory action research (PAR) (n=6), participatory methods, including mapping, seasonal calendars, Venn diagrams, livelihood inventories, and transect walks (n= 20), workshops and meetings (n=15), and interviews+ (n=9). These methods were often combined with other data collection approaches (Figure 1, right side, and Appendix: Methods used in combination), with only seven articles describing stand-alone activities. Interviews were most often used, blended with other methods, followed by focus group discussions, observations, archival and secondary data, and surveys.

The *analyses***,** described in 63% of the 202 articles, are grouped here into 12 types (Figure 2, left side). The most frequent was content/thematic analysis (24%), followed by other qualitative analysis (often not specified) and the use of theoretical or conceptual frameworks. Most articles (77%) had one type of analysis, with the remainder combining at least two or as many as four. A few articles (3.5%) offered feminist frameworks to scrutinize power dynamics or other distinctive analytical approaches such as creative visualizations.

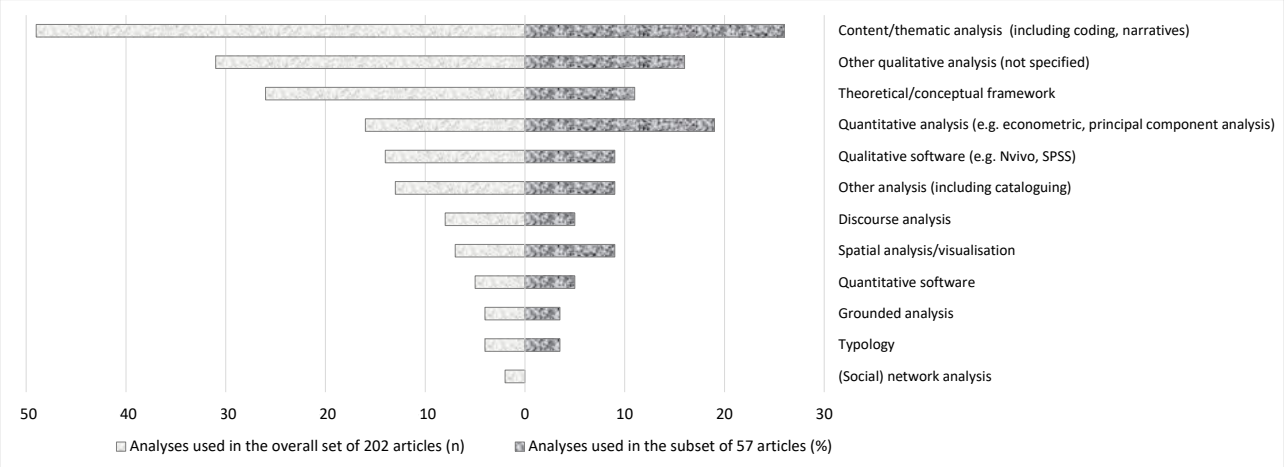



Figure 2: Types of analyses. Left: number of articles with analyses used (n= 202); right: percentage (%) of analyses used in the sub-set of 57 articles with potentially most empowering methods.

The pattern is similar for the sub-set of our 57 articles, with content/thematic analyses most frequent (26%), followed by other qualitative and also quantitative analyses (Figure 2, left side). Discourse analysis, albeit well suited to examine nuances of power dynamics, was rarely used. PAR was weak on analysis, with five out of six articles without a specified analysis (see Appendix: Analysis). Only one-fifth of studies in this sub-set utilises co-analysis, meaning analytical techniques that involve research participants in data analysis. Some co-analysis is also apparent in papers describing workshops and meetings. Yet, articles drawing upon PAR, participatory methods, and interviews+ are noticeably underrepresented.

Across the methods sub-set, *resilience* was coded as a central concept in only 16% of all articles and only tangentially, vaguely, or not at all discussed in over half. This can be partially explained by resilience being a current buzzword, at times superficially employed. We find that the concept was repeatedly accepted as a positive phenomenon, often without context. Where resilience was prominent, it was understood mainly as a process of negotiation (37%) and less so as an outcome (19%), framed often as bouncing forward, with a future-oriented or transformational intention to overcome injustices and question the status quo (see Appendix: Resilience).

Regarding the *type of scholarship*, two-thirds of the 57 articles describe empirical work and one-third a mix of empirical and theoretical, across all five methods except PAR which showed a preference for empirically driven work. Geographically, two-thirds (65%) represent research conducted in the Global South. Co-learning/cooperative inquiry appears roughly equally split between Global North (i.e., US, Sweden, Norway) and Global South countries (Malawi, India, Bangladesh, Namibia) in which the research was carried out. In contrast, studies based on PAR, participatory methods, workshops, and interviews+ were undertaken twice to three times as often in countries of the Global South. The Global South country most often described was Nepal (n=6) while the UK and the US topped the list of Global North countries (n=5 each).

Almost all articles focus on one particular *spatial level***,** with 74% at the level of communities and 46% at the level of groups to which people belong, followed by local governments and nations, with limited attention given to the level of the individual body (see Appendix: Same/within scale interactions). More interesting for our focus on negotiating power and resilience are engagements between and across spatial levels, such as between individuals and local government entities or groups and global institutions or policies, addressed in 82% of the articles (see Appendix: Cross-scalar interactions). Positive group and community cross-scale interactions such as collaborations and alliances were recorded repeatedly. Yet, there was widespread evidence of negative interactions across scale, often including social elites and uneven power dynamics, most frequently between specific groups and community power holders. As detailed in the Results section, these adverse relations have consequences for inclusion, participation, and decision-making dynamics, particularly from the vantage point of marginalised project and research participants.

We counted 32 different types of *participants* identified in the 57 papers (See Appendix: Actors). Local government officials emerged as the most prevalent stakeholders across the sub-set, listed in 51% of articles, followed by communities, central government officials and NGOs, and rural residents. The category 'other actors' includes low-income groups, youth, and infrastructure partners. These shares largely match the proportions of the total of 202 articles, with emphasis on rural residents and their livelihoods. However, urban-based research participants were often identified via their occupations (e.g., experts, engineers).

## 3. Results

Here, we present our findings for the sub-set of 57 articles that employed the five potentially empowering methods we consider most conducive for marginalised populations to strengthen their capabilities for equitable resilience practice in climate change responses (detailed analysis results in the Appendix). We report if and how the particular methods contribute to such resilience-in-the-making, structured around four thematic angles, with the ultimate aim to help guide reflexive resilience researchers and practitioners: inclusion, participation, and recognition (3.1); power asymmetries (3.2); processes of decision making and engagement (3.3); and nourishing political capabilities (3.4). These thematic angles, and their sub-themes, we argue, capture most comprehensively how methodological approaches in research and everyday praxis may embolden people to successfully navigate power differentials and negotiate resilience in the space of climate change adaptation, mitigation, societal transformation, and disaster risk reduction.

### *3.1 Inclusion, participation, and recognition*

Who is included and able or invited to participate in climate adaptation and mitigation, disaster risk management, and deliberate societal transformation, and who is overlooked or purposefully excluded, goes hand in hand with lived experiences of inequalities and struggles over recognition. Intersecting disparities are revealed repeatedly in our selected sub-set, most frequently through PAR activities, participatory methods, and interviews+, and least within co-learning/cooperative inquiries (See Appendix: Axes of inequalities). Nearly one-fifth of the articles did not explicitly address inequality, which was surprising.

#### 3.1.1 Inequalities and their relevance for inclusion and participation

References to gender and class were widespread in the sub-set of interest (44% and 40%, respectively), followed by age, ethnicity, and indigeneity. For instance, using an innovative combination of the power cube and the ladder of participation to assess procedural justice in climate-compatible development, Wood et al. (2018) make visible that gender never exists in isolation but instead intersects with other social identities (health, disability, class). Such intersecting inequalities, the authors find, hampered women's participation in research and development interventions in Malawi, although they were meant to enhance community resilience. Other studies assess how race, ethnicity, class, and/or indigeneity create specific inequalities that determine who is included or marginalised within research projects, forming additional layers of intersectional exclusions (Ensor et al., 2018; Jones, 2019; Neef et al., 2018).

The role of traditions and social norms associated with the various axes of inequalities and elite capture shape who is allowed to take part in decision-making processes, explicitly discussed in one-fourth of the articles. For example, traditional community and household level hierarchies — often gendered — and social stigmas surrounding HIV determined who was included and who was overlooked in agro-ecological climate change adaptation projects in Malawi (Kerr et al., 2018). Temper (2019), employing PAR to investigate the resistance of the Wet'suwet'en First Nation in British Colombia to a government-planned oil pipeline, found that corporations, NGOs, and governments had diluted Free, Prior and Informed Consent to mean no more than consultation, rather than authentic participation as legitimate development partners. Consequently, First Nations stakeholders witnessed their environmental justice efforts mirroring long histories of colonialism and exclusionary practices.

Several articles remind us that participatory processes are not necessarily inclusive, for instance, when applied uncritically. This becomes evident in Udas' and colleagues' (2019) account of how affirmative quota policies for minimum women's participation in river-basin adaptation in India

and Nepal do not equate to women in decision making. Participation can also reinforce existing hierarchies (e.g. Nagoda & Nightingale, 2017), fail to draw on local knowledge and capacities (e.g. Sayer et al., 2015), or succumb to elite or expert domination (Sultana & Thompson, 2017). Some participatory processes generate or sustain vulnerabilities and inequalities, such as women's predominantly voluntary labour in community-driven disaster risk management in the Philippines that entrenches gendered inequalities and perpetuates the fact that other less powerful groups are overlooked, too (Ramalho, 2019). In contrast, collective, coastal livelihood adaptation processes in Bangladesh, as examined by Tanjeela and Rutherford (2018), actively engaged women as partners and ultimate beneficiaries to strategically counteract the fortification of patriarchal relations and women's exclusions in the name of inclusion. Similarly, Westling et al. (2019) illustrate how, for Wales in the UK, workshops that focused on collaboration and reflexivity in participatory spaces and narratives helped overcome the pitfalls of unequal participation and work toward a resilient water system.

### 3.1.2. Struggles for recognition

Inclusion, exclusion, participation, and marginalisation typically occur in daily *struggles,* most frequently in struggles over recognition, as shown in one-third of all papers across the methods sub-set (See Appendix: Power struggles). These struggles are intimately entwined with knowledge politics, gender and class dynamics, and uneven access to resources such as land, seeds, and water, as well as funding.

Participants in various projects were frequently portrayed as wrestling over recognitional justice, mainly in representation, decision making, cooperation, and collective action. Evidence in the articles points to often thinly recognised interests, roles, and opinions, with examples from local

communities in forestry management (Ongolo & Karsenty, 2015), forest landscape restoration (Reinecke & Blum, 2018), and decision making over resource distribution (McDonnell, 2019) such as water (Sultana & Thompson, 2017). Lack of recognition often goes hand in hand with marginalisation and was found to be one of the major obstacles to successful projects and resilience building (see Appendix: Obstacles). It signals deep-seated disregard, or purposeful erasure of certain voices, needs, desires, rights, and capabilities, often along multiple axes of difference. A telling example is described in climate adaptation projects in Kenya in which lack of recognition stems from historically engrained disenfranchisement of (agro)pastoral citizens (Mosberg et al., 2017). Despite their early efforts to identify project participants in participatory ways, the authors witnessed the pervasive forces of persistent power hierarchies and marginalisation processes that undermined climate-resilient development pathways in a post-hazard humanitarian context. They illustrate how elites in Kenya — generally men, such as hereditary chiefs — were able to shape community adaptation projects and procedures and maintain or strengthen their socio-economic and political privilege by controlling interactions with experts, external institutions such as NGOs, and international aid agencies.

Intersecting with claims of recognition and/or rights are struggles for better accountability, responsibility, and living conditions. Evidence from the case studies ranges from ethnic minorities and political dissidents claiming spaces of recognition in the context of flood prevention and disaster risk management in India (Tschakert et al., 2016a) to actions undertaken by flood-prone residents and informal settlers in São Paulo, Brazil, to stay in place or be relocated with dignity (Henrique & Tschakert, 2020). In the context of Austin, Texas, Jones (2019) describes Black youth's struggles for healthy food as coinciding with fights against US African Americans' stigmatization for having 'unhealthy' consumption habits and jeopardizing national health. The author uses PAR to explore the link between Black urban farming initiatives and community resilience, highlighting

embodied health and wellbeing benefits of self-grown food compared to that from supermarkets or fast-food outlets. Moreover, struggles for recognition and participation in decision making are also observed within seemingly homogenous communities. For instance, Neef et al. (2018) report how young women in Fiji want to leave their community to stay safe from flooding while older male chiefs opt for staying as a means to maintain their ancestral connections to land. The latter hold more political influence in communal decision-making fora, with women and youth less successful in reducing risks for themselves.

### *3.2. Power asymmetries*

As explored above, struggles for inclusion, participation, and recognition are enmeshed in myriad power relations, observed across all methods, contexts, and spatial levels. Here, and following a widely-used approach in development studies developed by VeneKlasen and Miller (2002) and adapted by Gaventa (2006), we first distinguish between three types of power, namely visible, hidden, and invisible power. This allows us to tease out distinct types of power dynamics that privilege some actors in their endeavours to negotiate resilience while inhibiting others from pursuing equitable resilience outcomes. We then show how power entanglements are to blame for certain populations to lose out in the process, often despite being identified as the anticipated beneficiary group.

#### 3.2.1 Types of power

*Visible power* refers to observable political power and decision making, such as authorities, formal rules, and procedures. Across all five methods, governments and governmental authorities were most often mentioned as employing visible power in adaptation and resilience efforts (56%),

followed by community stakeholders, including women; donors and NGOs, experts, and corporate entities combined accounted for one-fourth of power holders (see Appendix: Visible power). Such visible power operates mainly at the national and community level, mirroring the strong presence of governmental and community actors. These actors influence, control, and exclude certain parties; they define, identify, decide, manage, regulate, and implement. Almost half of our sub-set specified environmental and climatic issues and land and water resources as primary focus areas, with a strong influence of top-down decision making evident in structure, hierarchy, rules, strategies, authority, control, and legitimacy.

Examples are abundant, particularly regarding the visible power of social elites and other socio-political power holders. In Nepal, wealthy and politically well-connected individuals and groups have been witnessed to exert control during the creation and implementation of multi-scalar adaptation programs and policies, thereby influencing national and international players and cementing the status quo (Nagoda & Nightingale, 2017). The authors highlight how local elites position themselves as gatekeepers to participation while marginalised households continue to lack access to influential roles.

Not surprisingly, such power holders were most often cited as benefitting from climate-related interventions (see Appendix: Winners). Some local communities benefit too, as well as higher-level governments and affluent individuals, both men and women, but not consistently. For instance, Nagoda and Nightingale (2017), in the same case study from Nepal as above, illustrate how high-caste households ensure that adaptation actions align with their priorities. Policymakers, those connected to NGOs or existing networks, donors/investors, and more educated people also regularly profit. Besides being part of the wealthy and privileged elite, having access/rights over resources (e.g., land and water) appears crucial in negotiation processes and hence affects who is likely to emerge as a winning party.

More nuanced insights still into top-down decision-making processes, such as plain agenda-setting dynamics (Appendix: Processes of decision making), were evident in one-fourth of all articles, most often explored through participatory methods, workshops, and interviews+. Garriga-López (2019), for instance, shows how federal and state governments in Puerto Rico set the policy and legislative framework, define the issues and scope, allocate finances and resources, and manage consultation processes. Although local participation may be informational, it is often not representational or democratic. Furthermore, top-down processes that capitalise on pervasive power differentials can be undertaken through oppressive forces. This was the case with forest policy decisions in Cameroon, in which influential stakeholders used cunning strategies such as taking advantage of naive policy formulation and scapegoating others in evaluating policy failure, seemingly to avoid blame by the international community (Ongolo & Karsenty, 2015).

The second dimension to power asymmetries, *hidden power,* denotes the more subtle dynamics that determine who sets political agendas and asserts their influence on who gets a seat at the decision-making table. Dynamics related to inclusion and exclusion were evident in more than a quarter of the selected articles, specifically around decision making (almost half of all cases) and access to resources (Appendix: Hidden power). Actors who exert hidden power are often members of national governments and corporate entities and powerful individuals defined by gender, wealth, race, ethnicity, and traditional leadership. Authors repeatedly identified exclusions due to blatant disregard for the power-laden nature of resilience in policy and practice. Such disregard reasserts social and institutional hierarchies and mandates whose voices are heard in resilience planning.

This is illustrated, for instance, in the context of procedural (un)fairness in transboundary environmental decision making in Africa's Lake Victoria Basin. In task forces, working groups, and steering committees, as Hamilton (2018) observes, policy actors with high social capital and

authority tended to drive participatory adaptation processes while co-opting them. Hidden power processes that disbar disadvantaged actors also exist at lower spatial levels, for instance, between livestock owners and crop owners in Malawi, with the former bending customary norms to avoid restrictions on cattle grazing (Zulu et al., 2018). Furthermore, power asymmetries were detected during discussions in formal fora such as committees (see Appendix: Types of engagement). For example, in the case of Vanuatu's reconstruction after Cyclone Pam, community disaster committees were externally-imposed structures, co-opted or pressured by social elites, and entangled in a politics of disaster distribution that exacerbated local tensions (McDonnell, 2019).

At the core of many observed power asymmetries across our methods sub-set were biases in and struggles over knowledge production and agendas that prioritise influential actors and silence those at lower levels of the pecking order. Evidence from co-earning/cooperative inquiry, PAR, participatory methods, and workshops points toward persistent agendas that entail promoting techno-managerial solutions (Nagoda & Nightingale, 2017) that obscure the struggles and rights of disadvantaged citizens (Kammerbauer & Wamsler, 2017) and depoliticise climate change and resilience (Fazey et al., 2018; Wamsler et al., 2020). At times, these agendas operate co-constitutively, reinforcing one another through the shrouding of power and politics at work in the relational web of resilience-as-a-process. For instance, in the context of urban flood adaptation in Brazil, a "politics of invisibility" renders "poor people's rights, desires, and ultimately their bodies [….] paradoxically central and invisible yet are systematically erased by government projects" (Henrique & Tschakert, 2019, p. 188). Such mechanisms of obscuring privilege in the identification of, and response to, biophysical threats in resilience policy and practice allow techno-managerial solutions to prevail over alternative, potentially more just solutions (Nagoda & Nightingale, 2017).

Moreover, the colonial legacies of knowledge production and hierarchies between scientific and traditional knowledge permeate project efforts to facilitate the negotiating of resilience. Power

differentials in this space and the marginalisation they produce can be addressed, for instance, through storytelling, as used by Bremer et al. (2017) in Bangladesh, for eliciting and validating tacit traditional knowledge alongside scientific insights to explain experiences with climatic hazards. Knowledge struggles can also stem from disagreements between scientists and practitioners about the 'right' methodological framework, for instance, between quantitatively trained academics and qualitatively trained practitioners (Tschakert et al., 2016b). Such tensions are even reported within the climate change adaptation regime, such as at the UNFCCC Conferences of the Parties (C. Sova et al., 2015a) or local adaptation plans of action (LAPAs) in Nepal (Vij et al., 2019).

Similar albeit often even more subtle dynamics are at work when it comes to the third power dimension, namely *invisible power.* It shapes meaning, people's beliefs and sense of self, what is acceptable and safe, and ultimately the boundaries of participation. Most frequently described were forms of subjugation and subordination of disenfranchised groups and individuals within and outside of resilience processes (see Appendix: Invisible power). Subordination was often tied to narratives and discourses, coupled with how people are stereotyped, seen through the lens of denigrating labels. Such dynamics entail subtle performances of outward and internalised power that mandate what 'acceptable' resilience looks like. Pervasive subjectivities often stigmatize disenfranchised groups as 'recipients' rather than active partners (Tanjeela & Rutherford, 2018), 'vulnerable and helpless' (Eriksen et al., 2019; Tschakert et al., 2016a), and 'unknowing and unable' (e.g., Bee, 2016; Wood et al., 2018). Jackson and colleagues (2020) show how a 'prevailing narrative of despondency' among Indigenous Bedamuni communities in Papua New Guinea perpetuates their societal positions as subjugated, powerless, and backwards; these notions are seen to reinforce missionaries' attempts to assert Western and Christian ideologies and solutions that stifle Indigenous ways of knowing, doing, and surviving.

### 3.2.2 Power entanglements and losing out

In daily, lived realities, these types of power are layered and intertwined, as evidenced in three-quarters of the articles (see Appendix: Power entanglements). Our focus on deliberative and arguably empowering methods of engagement brought to the fore uneven and/or unaddressed power dynamics that constitute the most frequent barriers to achieving successful and/or equitable resilience outcomes (see Appendix: Obstacles). Knowledge to generate more inclusive climate response trajectories becomes embedded within power-laden processes (Bee, 2016). Power asymmetries are sometimes reinforced rather than challenged by adaptation programs, for example, in São Paulo's river park project, where private, polluting industry actors secure further support while informal dwellers are considered 'predatory' (Henrique & Tschakert, 2019).

Among the most common power entanglements are mismatches of scales, such as local empowerment processes competing with project-driven governmentality, for instance, concerning understandings of development. Mismatches are often imbued by scalar politics, mainly when what is deemed as being resilient at a particular scale creates exclusions at the same or another scale. This was observed in the context of donor country-supported forest conservation and the host country's avoidance and blame games around forest reforms in Cameroon (Ongolo & Karsenty, 2015). Mismatches in priorities may be underpinned by clashing values, including religious beliefs about climate change impeding adaptive actions in Kenya (Mosberg et al., 2017), often favouring elites (Uson, 2017). Equally problematic are exclusionary modes of governance, time and again in combination with coerced consent. These power constellations contribute to a small number of institutions and actors disproportionately shaping resilience agendas, planning processes, and outcomes.

As a consequence of entangled and entrenched power hierarchies, the experiences, voices, and needs of marginalised populations (most notably women, evidenced in one-quarter of articles) were observed as repeatedly excluded from planning and decision-making processes and identified as losing out in climate response projects (see Appendix: Losers). Gender inequality, poverty, and dismissed needs of vulnerable populations are frequently described as key parameters for unfulfilled outcomes. Equally detrimental are top-down processes that exacerbate disadvantage and the recurrent reality for many who are not invited to participate. For instance, Vij et al. (2019) report that women were left out of designing local adaptation plans in Nepal because they were not captured in ward data available to organizers. Singh (2018) reports how in Rajasthan, India, participatory watershed development aimed at building local capacity but instead reinforced existing gender and caste hierarchies. Poor people and smallholder farmers also appear to often miss out, and so do Indigenous populations, uneducated and/or disabled people, and the youth. Mosberg et al. (2017) list several pastoral clans, minority ethnic groups, people with disabilities, orphans, widows, and people living with HIV/AIDS in Kenya among those losing out in the face of floods and droughts when interacting with humanitarian organisations. However, many articles (44%) do not explicitly identify who fails to benefit from climate response initiatives, although all methods deployed appear to tease out determinants that side-line and paralyse.

Therefore, tracing how disenfranchised actors are subjugated by uneven power dynamics, particularly by gender, wealth, race, ethnicity, and other demographics, and how they push back is crucial to expose the underrepresentation of marginalised citizens in resilience efforts and to envision subversive political interventions. Most importantly, researchers paying close attention to how invisible power operates through discursive subject making and subjugation are well

positioned to identify processes to "shape politics in a more emancipatory direction" (Eriksen et al., 2015, p. 526). We examine such efforts in the subsequent sections.

### *3.3. Processes of decision making*

#### 3.3.1 Committees and alliances

To overcome struggles, address power differentials, and negotiate resilience-in-the-making for more inclusive and just climate change responses, several authors have chronicled how and by whom decisions are made. Across our sub-set, the most prevalent form of decision making described is community/collective processes (e.g., community organizing groups, committees, and alliances), while direct action (i.e., resistance, campaigns, and protests) and partnerships between stakeholders account for only a tiny share (see Appendix: Processes of decision making). Evidence suggests that local committee structures often have a consultative role to governments with limited decision-making powers (Ramalho, 2019) while committees can be co-opted or pressured by social elites (McDonnell, 2019) or people with personal agendas (Wamsler et al., 2020). Who can represent the community in decision-making fora, and who benefits, is rife with tension. This is shown by Poudyal et al. (2016) who document unequal representation through community forest management groups in a REDD+ mitigation program in Madagascar. Although committees offer an opportunity to air concerns or propose solutions, these concerns may not be heeded. Research processes may remain apolitical, with critical voices and opposition smoothed over through so-called 'consensus making', as experienced by Van Huynh et al. (2019) in their PAR project on designing new governance associations to address water-sharing conflicts in rural communes in Vietnam.

### 3.3.2 Negotiation, deliberation, and contestation

How to deliberate decisions, negotiate, and contest power differentials and unjust processes and outcomes is fundamental in striving for equitable climate resilience (see Appendix: Types of engagement). Indeed, 40% of our sub-set across all five methods sketches how disadvantaged groups and individuals utilise deliberative spaces to assert counter-narratives, challenge authority, and rewrite their subjectivities as seemingly helpless and incapable. This seems to be a vital space for innovative methods. For instance, Vij et al. (2019) use an interactional framing approach to document (subtle) power interplays between ward, district, and national stakeholders (n=180) and facilitators during several adaptation policy design meetings in Nepal. In ~60 hours of recorded and transcribed material, the authors can detect key moments of power interplay in deliberations, agreements, and disagreements (e.g., who gets to speak first, who speaks back, who overpowers what other constituencies, who leaves and why). Such and other bottom-up approaches, the willingness to challenge injustices, and being invited to processes of participation, negotiation, and decision making help counteract entrenched authority.

Negotiation occurs through debating interests and priorities across differently positioned stakeholders, for instance, through consultation, compromise, and deliberately delaying processes. Negotiation can also empower voices through contesting, for instance, at UNFCCC Conferences of the Parties (Sova et al., 2015a). Power mapping exercises were seen as valuable tools, including influence scoring and visual maps, for affected actors to use in policy development processes and conversations on enhancing relevant capacities. Yet, as shown in post-flood reconstruction in Germany, it can be difficult for vulnerable peoples to gain control, particularly when negotiations intensify pre-existing conflicts and marginalisation (Kammerbauer & Wamsler, 2017).

Deliberation refers to deliberative processes to discuss, plan, and decide on interests and priorities, including in the development of community-based institutions (Singh, 2018), sharing and exploring different perspectives (Morchain et al., 2019), deliberating policy (Sova et al., 2017), and bottom-up initiatives that, for instance, shift responsibility from governments to citizens (Thaler & Seebauer, 2019). Deliberation is often central to reflexive, adaptive management. Westling et al. (2019) document this via contradictions between 'opening up' and 'closing down' in stages of an authentic workshop dialogue that manages to bridge power differentials in a water case study in the UK, including iterative, collaborative analyses. Nonetheless, deliberative processes cannot always escape power dynamics, including the silencing of the least powerful, as Tschakert et al. (2016a) observed, when male village leaders in India, newly emboldened by contesting unjust, top-down disaster risk management, nonetheless excluded their community women in planning efforts.

Other engagements to debate interests were evident through protests, resistance, and conflict, typically by drawing on collective resources. Conflicts within and across scales can trigger contestation, collective action, and transformation (e.g., Sultana et al., 2019). Examples include hunger strikes, civil disobedience, street protests, petitions, and litigation. There was evidence for cases fought in the Supreme Court against hydropower projects and dams in the eastern Himalayas in northeast India, in areas experiencing nascent democratization 'from below', with local communities successfully shutting down planned dams (Huber & Joshi, 2015, p. 16). Temper (2019), employing PAR to investigate the resistance of the Wet'suwet'en First Nation in British Colombia to a planned oil pipeline, detailed the connections of the Indigenous people and non-Indigenous environmental activists and NGOs to contest the pipeline's construction. The external actors visited and stayed with the Indigenous people at the resistance camp and assisted in getting their self-determination rights recognised by the Canadian state and national governments.

Autonomous modes of organizing (*auto-gestión*), understood as a mode of survival, encouraged residents in Puerto Rico to protest state inertia, enact solidarity, and opened up grounded pathways for decolonizing disaster management (Garriga-López, 2019). Yet, seemingly empowering processes can also alienate, including 'emancipation for resilience' that exacerbates exclusion, particularly when it places additional burden on disenfranchised actors (Kerr et al., 2018). Such subjugating empowerment narratives are increasingly resisted – people no longer want to be called 'resilient' (e.g., McDonnell, 2019; Temper, 2019).

### *3.4 Strengthening political capabilities*

The last and arguably most important findings from our analysis of potentially empowering methods for negotiating resilience in the context of climate change responses illustrate how political capabilities can and, to a certain degree, have been strengthened in the sub-set of chosen 57 articles. The emphasis here, and following Holland (2017), is on whether people have or can gain political power and exert sufficient pressure to shape desirable outcomes in adaptation, mitigation, and disaster risk management and how they may control, in formal ways, decision rules and procedures, in alignment with the principle of procedural justice.

#### 3.4.1 Resilience and transformation

The most valuable insights regarding how to foster political capabilities stem from articles exploring (deliberate) *transformation*. The relevant articles (68%) start with the premise that, if transformation departs from the status quo, dominant institutional arrangements engrained in power asymmetries must change. Transformation was most often discussed concerning systems and communities as the practical scale for this change (see Appendix: Transformation).

Community-based adaptation and transformative/transformational adaptation and their potential to increase the agency of local stakeholders were typically explored through resource management such as water (Van Huynh et al., 2019), food, land or agricultural processes (Bizikova et al., 2015), forests (Reinecke & Blum, 2018), and energy (Allen et al., 2019). Transformation requires more inclusive processes that address injustices and power inequity in decision making (Ensor et al. 2018). For example, Thaler & Seebauer (2019) show how citizen-led, bottom-up initiatives for natural hazard management in Austria reduce perceived patterns of inequity and gaps left by institutional structures.

This focus on shifting responses to address injustices and underlying causes of vulnerability and question the status quo is also evident in articles in which authors treat resilience as bouncing forward while also aiming to determine the key purpose of the concept itself (See Appendix: Resilience). The more process-focused methodological approaches tended to provide critical spaces to encourage diverse participants to grapple with the root causes of vulnerability and, as such, rehumanise otherwise technocratic approaches. Space for negotiation has also been shown to be beneficial for overcoming conceptual vagueness regarding the term resilience as actors are forced to be explicit. The question of who gets invited to the process remains paramount. Morchain et al. (2019), via an innovative participatory risk and vulnerability methodology, bring together village members and regional decision makers in southern Africa to shift power dynamics and embolden hitherto marginalised citizens to debate vulnerability and adaptation options across scales.

Normative aspects of transformation capture how individual and community perceptions of environmental change and adaptation solutions interrelate with what is defined as ‘good’ or ‘resilient’ and what such definitions might omit (Neef et al., 2018). According to Fazey et al. (2018), transformational adaptation requires more profound shifts in dominant worldviews and

beliefs. For example, the opening up of processes in vulnerability assessments in the same case study from southern Africa made it possible for people experiencing systemic injustices to be heard and for new cross-scalar relationships and adaptation solutions to be co-created (Morchain et al., 2019).

### 3.4.2 Shared learning

Changes to values, assumptions, identities, sense of place, and priorities challenge the supremacy of technical knowledge in resilience-making processes. Shared, interdisciplinary, and transformational learning, together with inclusion and learning about processes, are vital ingredients — although insufficient — for nourishing political capabilities (See Appendix: Participation and learning). PAR emerged as best suited to facilitate participation and joint learning, with ways of doing so including coproduction and transformational learning in development pathway thinking (Tschakert et al., 2016b) and reflexive praxis on processes that politicise and historicise dominant pedagogies (Jones, 2019). Methods that entail mapping, deliberating values, and envisioning desirable futures enable collaborative learning and debates on transformational governance (Fazey et al., 2018). Innovative approaches involve using participatory GIS to democratize fire management in Spain through a values-based PAR process (Otero et al., 2018) and interdisciplinary learning labs with Swedish citizens, scholars, and municipality representatives (Wamsler & Raggers, 2018). Case studies with participatory methods appeared to pay less attention to these richer dimensions of learning. For instance, Kmoch et al. (2018) focused on ‘increased resilience’ against the backdrop of top-down mitigation planning by validating agroecological knowledge in Morocco, with little room for enhancing agency.

Shared learning is more likely to materialise when diverse knowledges and skills are embraced and empowering forms of change are practised (Fazey et al., 2018), such as supporting actors to understand sources of inequality and ways to reduce them (Ravera et al., 2019). Our analysis identifies specific processes that are well suited to support such sharing, including co-valuing landscapes and citizen sciences and exhibitions (Otero et al., 2018), collective drought risk scoring (Bee, 2016), and lived experiences conveyed through narratives (Bremer et al., 2017). Petzold et al. (2018), assessing coastal management and sea level rise in the Bahamas, showed how different islander knowledge systems, even if they do not align, were central to raising local adaptive potential and strengthening resilience.

Learning about methods of decision making has good potential to contribute to enhancing political capabilities, mainly if it entails one of the following: reflexivity and iterative processes for transformational learning (Tschakert et al., 2016b), inclusive and self-reflective analysis (Temper, 2019), and people enhancing their own capacities (Garriga-López, 2019). Equally important is learning new information and skills, such as career training and women leadership for historically underrepresented and marginalised groups to manage renewable energy systems in the USA, supported by gender in energy justice and energy democracy movements (Allen et al., 2019). Even if shared learning is not built into decision making, it can boost trust, networks, and relationships and generate mutual support and compassion (Paterson et al., 2017).

### 3.4.3 Success stories

Several articles depict beneficial outcomes for hitherto disadvantaged people across various case studies, captured here under the theme ‘success’ (see Appendix: Success outcomes). Spaces in which people experiencing systemic marginalisation and deprivation can acquire new knowledge

are vital for strengthening agency. This includes better understandings of complexity and skills to draw linkages that are often multidimensional and complementary. For example, Otero et al. (2018) highlight how stakeholder exchanges across scales simultaneously increased local agency and reduced wildfire risk in Spain. Through their co-learning/cooperative inquiry in Malawi, Kerr et al. (2018) show how the inclusion of groups previously discriminated against (i.e. women and HIV-positive individuals) contributed to expanding agroecological knowledge, better access to resources, and fewer negative climate change impacts. Yet, what ultimately fuels and nourishes political capabilities needs to go beyond the foundations of participation, inclusion, shared learning, and shifts in beliefs and worldviews.

Evidence in our methods sub-set points toward the importance of situated approaches attentive to local chronicles and lived experiences of historically marginalised groups (e.g. Ensor et al., 2018; Tanjeela & Rutherford, 2018), dialogue, deliberation, shared visioning, and iterative, reflexive, and playful interactions (e.g. Tschakert et al., 2016b), best in combination with (everyday) acts of contestation, politicization, and resistance (see Appendix: Success indicators). Innovative participatory methodologies — often introduced by research projects — such as visioning to scope adaptation pathways (Lavorel et al., 2019) and mapping tools to assess stakeholder power (C. Sova et al., 2015b) have been shown to open up hierarchical spaces. These approaches were combined with support and activities coordinated from 'the outside', for instance, by NGOs and governing authorities or via training programmes available to both women and men (Ravera et al. 2016). This dovetails with empowering disadvantaged constituencies, i.e. enabling disenfranchised individuals and groups to gain access to and control over resources, enact a sense of personal control, achieve shared goals, and shape decisions for their future (see also Parkhill et al., 2015). In the articles of our methods sub-set, women emerged as the group most often empowered, acquiring more skills, a higher sense of self-worth, mobility, social networks, and independence, for instance, the

women volunteering in disaster risk management in the Philippines (Ramalho, 2019), even though their ability to influence adaptation governance remained relatively limited. Equally important appear to be enhanced processes, often nurtured through co-learning/cooperative inquiries, such as better and lasting collaborations, sustained engagements, and spaces where participants feel a sense of belonging and cohesion. Through that, "positive emotions such as hope, responsibility, care, and solidarity, and thus potential to inspire action" can emerge (Fazey et al. 2018, p. 35).

Finally, political capabilities to address uneven power dynamics, confront patterns and processes of exclusion and marginalisation and negotiate resilience-in-the-making require sustained efforts (see Appendix: Sustaining processes). Our analysis of articles with the most conducive methods for this very aim highlights, again, the crucial role of empowerment and inclusion, with particular attention to women (e.g., Rao et al., 2020; Udas et al., 2019) and Indigenous groups (e.g., Jackson et al., 2020). Equally vital is coproduction that incorporates multiple knowledges, values, and experiences to connect institutional landscapes with the dynamic spaces of everyday life (Henrique & Tschakert, 2019), increases project uptake at multiple scales (Bizikova et al., 2015), and critically evaluates implemented solutions (Dixon & Stringer, 2015), all of which are well suited to catalyse transformational change. Just processes are not possible without situated approaches that actively embrace the beliefs and worldviews held by different actors (Eriksen et al., 2019) and comprehend the social and cultural norms that shape division and conflict (Ravera et al., 2019). Lastly, as Sareen and Rommetveit (2019) illustrate in the context of smart grids and meters in Norway, just processes also mean better alignments between localised concerns, bottom-up discourses, and various systemic challenges.

## 4. Discussion and conclusion

This systematic review and analysis confirm that research that aims to engage in 'equitable resilience practice' (Matin et al., 2018) in climate change responses, not theoretically but practically, is indeed a complex undertaking. By 'practically', we mean as part of the research process, through engaging methodologies and methods well suited to empower participants and enhance their political capabilities to negotiate desirable resilience outcomes for themselves. Our in-depth assessment of 57 articles that use such promising methods — co-learning/cooperative inquiry, participatory action research (PAR), participatory methods, workshops, and interviews combined with several other methods — demonstrates comprehensive insights into the workings of power via the approaches the articles' authors had employed. They make it possible to trace disempowering processes in adaptation, mitigation, disaster management, and social transformation, across geographic and cultural contexts and spatial and temporal scales.

Our findings also reveal how difficult it often is, in on-the-ground research settings, to address and overcome the many obstacles in resilience-in-the-making and nourish the political capabilities of actors experiencing systemic marginalisation to apply pressure and take control over procedures for decision making, as Hollands recommends (2017). This difficulty is due to pervasive hierarchies and complex entanglements of power, misguided emancipation that exacerbates exclusions, exclusionary modes of governance, and compounding barriers across intersecting dimensions of inequality. Nonetheless, approaches that pursue transformational objectives, foster inclusive and innovative learning, and create and sustain spaces for deliberation, contestation, and resistance seem most fruitful in fulfilling this potential. We concur with Ramalho (2019) and other authors reviewed here that methodologies that address uneven power relations head-on are indeed at the crux of nourishing political capabilities in equitable resilience practice.

What have we learned about the specific methods in our analysed sample? Our review shows that no one method of engagement is inherently better than any other. Whilst PAR emerged as performing well across several aspects (e.g., examining resilience, addressing inequalities, detecting power struggles, fostering inclusion and participation, and sustaining processes), it rarely involved any analysis (see Appendix, all coding results). In contrast, workshops were most effective in engaging with diverse actors and exposing patterns of invisible power yet less successful in probing transformational potentials. Co-learning/cooperative inquiry appeared well suited to explore how to achieve desirable outcomes and identify obstacles, yet disappointed in dealing with intersecting inequalities and cross-scale interactions. This may well be a result of a narrow range of recruited participants, with several in positions of authority (Loblay et al., 2021). One limitation of our in-depth review is that it was not always straightforward in the coding process to distinguish between the original authors' involvements in and observations and interpretations of power dynamics and to disentangle methodological feats from aspirational conclusions.

Despite the pros and cons of each method, our review reveals some best practices that nourish inclusive and deliberative spaces and processes. Such best practices should not be equated with "best methodologies" for research on resilience but rather understood as "best processes" with respect to decision making among beneficiaries. We find them at the confluence of three interrelated dynamics, all imbued with how power operates: first, producing and sustaining situated, iterative, participatory, and agency-enhancing methodologies that incorporate multiple knowledges and worldviews; second, fostering deliberation and negotiation as the core mode of engagement, across scales, alongside shared learning and collective processes; and third, strengthening political capabilities by building solidarities and subverting exclusionary practices through contestation, resistance, protest, and litigation. As Kaika (2017) notes, dissensus is a powerful tool to rapture path dependencies while novel approaches, such as living labs, champion

flexible and enduring coproduction (Djenontin & Meadow, 2018; Laursen et al., 2018; Rosen & Painter, 2019). Most of these ingredients match the ten essentials for community resilience in the context of climate change, as outlined by Fazey et al. (2018). Given the centrality of power and political capabilities in collective decision-making spaces, we see the best processes for examining negotiated climate resilience as approaching research and action as intertwined and working towards distributive, procedural, and recognitional justice (Patterson et al., 2018). Participants' own understandings of their position in this process is vital (Matin et al., 2018).

Nonetheless, the methods employed in the selected sub-set of articles often failed to deliver the expected antidote to top-down or expert-led processes and fell short of their ideals, also observed elsewhere (Le De et al., 2015; Meriläinen et al., 2021). Such outcomes, we speculate, are likely to be more pervasive in nominally less inclusive methodologies throughout the full set of 202 articles reviewed. While our sub-set already points to such omissions (e.g., >40% of articles not identifying those who lose out in supposedly beneficial programs), the absences and silences in the full set of papers will be more pronounced. Repeatedly, we found that power, negotiation, and contestation may well be discussed in reviews or theoretical papers but otherwise not engaged with in meaningful depth. This indicates insufficient attention among researchers to the ways in which power operates between different actor groups and how this affects the strengthening of resilience. Moreover, numerous studies of the full set were light on inclusive methodologies and hence are likely to miss important opportunities to enhance rather than describe resilience-in-the-making, disrupt uneven power dynamics, and address gender, class, and other structural inequities that inhibit more inclusive practice.

As a consequence, we remind ourselves and our fellow scholars of the pitfalls of 'equitable resilience practice'. Analogous to the guise of 'empowerment' or 'sustainable development', we wish to caution that, if employed uncritically, our well-intentioned efforts may well lead to the

voices of marginalised people being co-opted to support the interests of those with authority (Meriläinen et al., 2021; Woroniecki et al., 2019). This risk is further heightened as our review reveals scarce insights into reflexive practices among research teams, with a few noteworthy exceptions. Some studies went to great lengths to build reflexivity into their research process. For instance, Otero and colleagues (2018), guided by a PAR methodology and an activist-academic lead, incorporated several rounds of reflection into their values-based fire management democratization process. Relatedly, Tschakert and colleagues (2016a) gathered observations of power dynamics in flood management in Assam through 'process notes' during all community interactions and debriefed at the end of each day about power dynamics, knowledge struggles, authority, and subjectivities. Unfortunately, writing self-reflexively about their research practices and complicities in power differentials is not the norm among climate resilience scholars. Overcoming such power asymmetries involves working *with* not *on* marginalised communities in data collection, analysis, discussion, and presentation, including Indigenous and disenfranchised rural and urban populations in the Global South, and making research findings accessible to people who live in those communities (Le De et al., 2015; Nakashima et al., 2018).

Equally unsettling is the scant evidence of co-analysis undertaken in our sub-set of most conducive methods. Joint analysis between study participants and researchers contributes to shared learning, and reflexive praxis in this process enriches iterative and reflexive co-design (Tschakert et al. 2016b). However, only a few examples point toward successful attempts, such as the 18-month living lab approach used in Norway that allowed energy users to track their real-time household electricity consumption data (Sareen & Rommetveit, 2019). Moreover, we noticed an absence of (participatory) monitoring and evaluation (M&E) to trace patterns of subjugation and assess whether or not, how, and for whom political capabilities had, in fact, increased. The lack of adequate M&E mechanisms is sometimes blamed on inadequate resourcing (Wamsler et al.,

2020), yet, the problem hints at more extensive failure in research accountability. Evidence shows that respectful, participatory, emancipatory, and transformative M&E processes are indeed possible, even in challenging circumstances (see Worthen et al., 2019).

We conclude by reiterating that the road to empowering methodologies in resilience practice, including collaborative analysis and evaluation, albeit vital, remains long and rocky. While there is a systemic overemphasis on emblematic power holders and their priority agendas in climate resilience planning, counteracted by calls for more inclusive participation of 'the most vulnerable', ethically grounded scholars will want to embrace candid resilience practice. This not only entails grappling with the interplay of dispossession and authoritative power (Porter et al., 2020) but adopting self-critical methodologies that put front and centre questions such as who owns the research and who benefits from positive change (Goodman et al., 2018; Mosurska & Ford, 2020; Smith, 2013).

Courageous methodologies are needed to detect resilience-in-the-making coupled with nimble ways to distil intersectionality and the power structures it produces (Garcia et al. 2022). This means not just understanding gender and class and race but overlapping and shifting axes of privilege and oppression and interlocking structures of domination, including those tied to patriarchy (Jordan 2019). Instead of more studies on climate resilience documenting women, youth, Indigenous and poor peoples as losing out in climate adaptation, mitigation, and transformation, efforts to advance equitable resilience practice demand creative and responsive ways to trace and disrupt patterns of privileging. Critical development scholars are ideally positioned to anchor deliberative resilience building in the everyday lives of disadvantaged populations and help foster political capabilities for more just climate action and policy.

We would like to thank the Worldwide Universities Network (WUN) for supporting our project “Renegotiating power to enhance resilience to climate change” as well as the Swedish Research Council (VR-Vetenskaprådet; No. 2018–05866) through which this study was made possible. In particular, we would like to thank additional team members [*** to be named later to not compromise the double-blind review process***] and two anonymous reviewers for their constructive feedback.

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*Part of the complete literature review set (202 articles)

**Part of the sub-set of most conducive methods for equitable resilience practice (57 articles)


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## Appendix: Coding results (in order of appearance in the text)

| **Methods used in combination** | Co-learning/cooperative inquiry (n=7) | Participatory action research (n=6) | Participatory methods (n=20) | Workshop (n=15) | Interviews + (4 other methods) (n=9) | **Methods total** |
|---|---|---|---|---|---|---|
| Interviews | 1 | 2 | 13 | 7 | 9 | 32 |
| Focus group discussions | 3 | 1 | 8 | 1 | 6 | 19 |
| Observation | 1 | 0 | 4 | 5 | 8 | 18 |
| Archival/secondary data | 0 | 0 | 7 | 1 | 5 | 13 |
| Survey | 1 | 0 | 5 | 3 | 3 | 12 |
| Visits | 2 | 0 | 2 | 1 | 1 | 6 |
| Workshop | 2 | 2 | 0 | - | - | 4 |
| Participatory methods | 1 | 2 | - | 1 | - | 4 |
| Life histories/narratives | 1 | 0 | 1 | 0 | 1 | 3 |
| Informal chats | 0 | 0 | 0 | 1 | 1 | 2 |
| Review | 0 | 1 | 0 | 1 | 0 | 2 |
| Ethnography | 0 | 0 | 0 | 1 | 1 | 2 |
| Photovoice | 0 | 0 | 0 | 0 | 1 | 1 |
| TOTAL | 12 | 8 | 40 | 22 | 36 | 118 |
| Per method | 1.7 | 1.3 | 2.0 | 1.5 | 4.0 | 2.1 |
| | | | | | | |
| None/not specified | 2 | 2 | 2 | 5 | 0 | 11 |
| Min | 1 | 1 | 1 | 1 | 4 | 1.6 |
| Max | 4 | 4 | 5 | 5 | 4 | 4.4 |

| **Analysis** | Co-learning/cooperative inquiry (n=7) | Participatory action research (n=6) | Participatory methods (n=20) | Workshop (n=15) | Interviews + (4 other methods) (n=9) | **Analysis total** |
|---|---|---|---|---|---|---|
| Content/thematic analysis | 1 | 0 | 9 | 2 | 3 | 15 |
| Quantitative analysis | 1 | 1 | 4 | 4 | 1 | 11 |
| Other qualitative analysis | 3 | 0 | 2 | 2 | 2 | 9 |
| Theoretical/conceptual | 0 | 0 | 3 | 2 | 1 | 6 |
| Other analysis | 0 | 0 | 2 | 2 | 1 | 5 |
| Visualisation/spatial analysis | 0 | 1 | 4 | 0 | 0 | 5 |
| Qualitative software | 0 | 0 | 2 | 1 | 2 | 5 |
| Discourse analysis | 0 | 0 | 2 | 0 | 1 | 3 |
| Quantitative software | 1 | 0 | 2 | 0 | 0 | 3 |
| Grounded theory analysis | 1 | 0 | 0 | 1 | 0 | 2 |
| Typology | 1 | 0 | 1 | 0 | 0 | 2 |
| TOTAL | 8 | 2 | 31 | 14 | 11 | 66 |
| Per method | 1.1 | 0.3 | 1.6 | 0.9 | 1.2 | 1.2 |
| | | | | | | |
| None/not specified | 2 | 5 | 2 | 3 | 2 | 14 |
| Min | 1 | 2 | 1 | 1 | 1 | 1.2 |
| Max | 3 | 2 | 3 | 2 | 3 | 2.6 |

Note: duplicates were counted only once, in the first methods set or analysis they appeared.

| **Resilience**<br>F = framing<br>W = what<br>S = standpoint/purpose<br>T = theme | Co-learning/cooperative inquiry (n=7) | Participatory action research (n=6) | Participatory methods (n=20) | Workshop (n=15) | Interviews + (4 other methods) (n=9) | **Resilience total** |
|---|---|---|---|---|---|---|
| F_bounceforward | 2 | 3 | 3 | 5 | 2 | 15 |
| T_climate | 1 | 3 | 5 | 4 | 2 | 15 |
| W_negotiation | 1 | 3 | 3 | 3 | 2 | 12 |
| T_socialecological | 1 | 2 | 3 | 3 | 1 | 10 |
| Central theme | 0 | 1 | 3 | 3 | 2 | 9 |
| S_injustices | 0 | 2 | 4 | 2 | 1 | 9 |
| S_underlyingcauses | 1 | 1 | 2 | 4 | 1 | 9 |
| T_community | 1 | 4 | 1 | 0 | 2 | 8 |
| F_holistic | 0 | 2 | 2 | 3 | 0 | 7 |
| T_socialjustice | 1 | 1 | 4 | 1 | 0 | 7 |
| W_outcome | 1 | 0 | 2 | 2 | 1 | 6 |
| W_capacities | 0 | 1 | 2 | 2 | 1 | 6 |
| T_cultural | 0 | 1 | 3 | 1 | 1 | 6 |
| W_attributes | 1 | 1 | 3 | 0 | 0 | 5 |
| T_sociotechnical | 0 | 0 | 3 | 1 | 0 | 4 |
| Other resilience | 3 | 2 | 7 | 5 | 4 | 21 |
| TOTAL | 13 | 27 | 50 | 39 | 20 | 149 |
| Per method | 1.9 | 4.5 | 2.5 | 2.6 | 2.2 | 2.6 |
| | | | | | | |
| Not specified | 4 | 2 | 11 | 9 | 7 | 33 |
| Min | 1 | 5 | 2 | 2 | 9 | 3.8 |
| Max | 7 | 11 | 9 | 9 | 11 | 9.4 |

| **Same/within scale interactions** | Co-learning/cooperative inquiry (n=7) | Participatory action research (n=6) | Participatory methods (n=20) | Workshop (n=15) | Interviews + (4 other methods) (n=9) | **Same/within scale interactions total** |
|---|---|---|---|---|---|---|
| Community | 3 | 5 | 17 | 10 | 7 | 42 |
| Group | 3 | 4 | 8 | 7 | 4 | 26 |
| Local Government | 2 | 0 | 10 | 7 | 2 | 21 |
| Nation | 0 | 1 | 5 | 4 | 1 | 11 |
| City | 2 | 1 | 4 | 1 | 2 | 10 |
| Region | 0 | 1 | 3 | 4 | 1 | 9 |
| Body | 0 | 1 | 2 | 0 | 3 | 6 |
| State | 0 | 0 | 3 | 2 | 1 | 6 |
| Global | 0 | 0 | 1 | 1 | 1 | 3 |
| TOTAL | 10 | 13 | 53 | 36 | 22 | 134 |
| Per method | 1.4 | 2.2 | 2.7 | 2.4 | 2.4 | 2.4 |
| | | | | | | |
| None/not specified | 1 | 1 | 0 | 2 | 1 | 5 |
| Min | 1 | 2 | 1 | 1 | 1 | 1.2 |
| Max | 3 | 5 | 4 | 7 | 5 | 4.8 |

| **Cross-scale interactions (positive, negative, and neutral)** | Co-learning/cooperative inquiry (n=7) | Participatory action research (n=6) | Participatory methods (n=20) | Workshop (n=15) | Interviews + (4 other methods) (n=9) | **Across scale interactions total** |
|---|---|---|---|---|---|---|
| Group/Community_positive | 1 | 5 | 9 | 5 | 8 | 28 |
| Community/LocGov_positive | 2 | 3 | 4 | 1 | 3 | 13 |
| Group/Nation_neutral | 2 | 0 | 5 | 4 | 1 | 12 |
| Group/LocGov_positive | 0 | 1 | 3 | 5 | 1 | 10 |
| Group/Community_negative | 1 | 1 | 4 | 3 | 0 | 9 |
| Body/Community_neutral | 0 | 0 | 8 | 0 | 0 | 8 |
| Group/Community_neutral | 0 | 0 | 6 | 0 | 1 | 7 |
| Body/Group_positive | 0 | 0 | 2 | 1 | 3 | 6 |
| Body/Group_negative | 1 | 0 | 5 | 0 | 0 | 6 |
| Group/Nation_negative | 1 | 0 | 3 | 1 | 1 | 6 |
| Group/Globe_neutral | 0 | 0 | 2 | 2 | 2 | 6 |
| Body/Group_neutral | 0 | 0 | 1 | 1 | 2 | 4 |
| Group/Nation_positive | 0 | 0 | 0 | 2 | 2 | 4 |
| Community/Nation_positive | 0 | 3 | 0 | 0 | 1 | 4 |
| Community/Globe_negative | 0 | 0 | 3 | 1 | 0 | 4 |
| LocGov/Nation_positive | 1 | 0 | 2 | 0 | 1 | 4 |
| Other crosss-scale interactions | 3 | 5 | 6 | 9 | 9 | 32 |
| TOTAL | 12 | 18 | 63 | 35 | 35 | 163 |
| Per method | 1.7 | 3.0 | 3.2 | 2.3 | 3.9 | 2.9 |
| | | | | | | |
| None/not specified | 3 | 1 | 2 | 4 | 0 | 10 |
| Min | 2 | 4 | 2 | 2 | 2 | 2.4 |
| Max | 4 | 5 | 5 | 7 | 6 | 5.4 |

| **Actors** | Co-learning/cooperative inquiry (n=7) | Participatory action research (n=6) | Participatory methods (n=20) | Workshop (n=15) | Interviews + (4 other methods) (n=9) | **Actors total** |
|---|---|---|---|---|---|---|
| Local government officials | 4 | 3 | 10 | 7 | 5 | 29 |
| Communities | 1 | 1 | 7 | 5 | 5 | 19 |
| Central government officials | 2 | 1 | 5 | 5 | 4 | 17 |
| NGOS | 1 | 1 | 6 | 5 | 4 | 17 |
| Rural residents | 1 | 2 | 8 | 4 | 1 | 16 |
| Households | 2 | 0 | 5 | 2 | 5 | 14 |
| Practitioners | 2 | 2 | 3 | 6 | 0 | 13 |
| Agriculture and forestry | 1 | 3 | 6 | 2 | 1 | 13 |
| Private sector | 1 | 1 | 2 | 3 | 3 | 10 |
| State government officials | 1 | 0 | 1 | 2 | 5 | 9 |
| Experts | 3 | 0 | 0 | 4 | 1 | 8 |
| Women | 0 | 1 | 4 | 2 | 1 | 8 |
| International actors | 0 | 0 | 4 | 2 | 1 | 7 |
| Energy Sector | 1 | 1 | 1 | 1 | 2 | 6 |
| Property owners | 1 | 2 | 1 | 1 | 1 | 6 |
| Men | 0 | 1 | 2 | 2 | 1 | 6 |
| Community organisations | 1 | 1 | 3 | 1 | 0 | 6 |
| Urban Residents | 1 | 0 | 1 | 1 | 1 | 4 |
| Indigenous group | 0 | 1 | 1 | 1 | 1 | 4 |
| Elites | 0 | 0 | 2 | 2 | 0 | 4 |
| Banks | 0 | 0 | 1 | 0 | 3 | 4 |
| Other actors | 4 | 3 | 5 | 7 | 6 | 25 |
| TOTAL | 27 | 24 | 78 | 65 | 51 | 245 |
| Per method | 3.9 | 4.0 | 3.9 | 4.3 | 5.7 | 4.3 |
| | | | | | | |
| None/not specified | 0 | 0 | 2 | 0 | 0 | 2 |
| Min | 2 | 1 | 2 | 1 | 3 | 1.8 |
| Max | 6 | 8 | 7 | 8 | 8 | 7.4 |

| **Axes of inequality** | Co-learning/cooperative inquiry (n=7) | Participatory action research (n=6) | Participatory methods (n=20) | Workshop (n=15) | Interviews + (4 other methods) (n=9) | **Axes of inequality total** |
|---|---|---|---|---|---|---|
| Gender | 2 | 3 | 11 | 5 | 4 | 25 |
| Class | 0 | 2 | 11 | 5 | 5 | 23 |
| Age | 0 | 2 | 4 | 2 | 3 | 11 |
| Ethnicity | 0 | 2 | 2 | 4 | 3 | 11 |
| Other | 1 | 1 | 4 | 1 | 4 | 11 |
| Indigeneity | 1 | 2 | 1 | 2 | 1 | 7 |
| Livelihood | 0 | 1 | 2 | 1 | 0 | 4 |
| Education | 0 | 0 | 2 | 2 | 0 | 4 |
| Health | 1 | 0 | 2 | 0 | 0 | 3 |
| Disability | 0 | 0 | 2 | 0 | 1 | 3 |
| Population | 0 | 0 | 1 | 2 | 0 | 3 |
| Race | 0 | 2 | 1 | 0 | 0 | 3 |
| Other inequalities | 0 | 0 | 4 | 1 | 1 | 6 |
| TOTAL | 5 | 15 | 47 | 25 | 22 | 114 |
| Per method | 0.7 | 2.5 | 2.4 | 1.7 | 2.4 | 2.0 |
| | | | | | | |
| None/not specified | 4 | 1 | 0 | 6 | 0 | 11 |
| Min | 1 | 2 | 1 | 1 | 1 | 1.2 |
| Max | 3 | 5 | 5 | 4 | 6 | 4.6 |

| **Power struggles**<br>PA = participation and accountability<br>PW = power, knowledge, subjectivities<br>IS = intersectional<br>LI = livelihoods<br>AD = adaptation | Co-learning/cooperative inquiry (n=7) | Participatory action research (n=6) | Participatory methods (n=20) | Workshop (n=15) | Interviews + (4 other methods) (n=9) | **Struggles total** |
|---|---|---|---|---|---|---|
| PA_Recognition | 2 | 2 | 7 | 5 | 2 | 18 |
| PW_Knowledge politics | 2 | 2 | 0 | 3 | 0 | 7 |
| IS_Gender | 1 | 0 | 4 | 0 | 2 | 7 |
| IS_Class | 1 | 0 | 3 | 1 | 1 | 6 |
| LI_ Resource access | 0 | 1 | 4 | 0 | 1 | 6 |
| AD_For adaptation | 1 | 0 | 2 | 0 | 2 | 5 |
| LI_Living conditions | 1 | 0 | 1 | 0 | 1 | 3 |
| IS_Race | 0 | 2 | 0 | 0 | 0 | 2 |
| PA_Responsability | 0 | 1 | 0 | 0 | 1 | 2 |
| LI_Food security | 1 | 1 | 0 | 0 | 0 | 2 |
| IS_Generational | 0 | 0 | 1 | 0 | 1 | 2 |
| Other power struggles | 0 | 0 | 1 | 2 | 1 | 4 |
| TOTAL | 9 | 9 | 23 | 11 | 12 | 64 |
| Per method | 1.3 | 1.5 | 1.2 | 0.7 | 1.3 | 1.1 |
| | | | | | | |
| None/not specified | 1 | 0 | 6 | 5 | 1 | 13 |
| Min | 1 | 1 | 1 | 1 | 1 | 1 |
| Max | 2 | 2 | 3 | 2 | 5 | 2.8 |

| **Visible power**<br>A = actor who employs power<br>D = deed/action of power<br>S = scale at which power operates<br>C = concept associated with power<br>O = object of power | Co-learning/cooperative inquiry (n=7) | Participatory action research (n=6) | Participatory methods (n=20) | Workshop (n=15) | Interviews + (4 other methods) (n=9) | **Visible power total** |
|---|---|---|---|---|---|---|
| A_Government/authorities | 3 | 4 | 12 | 9 | 5 | 33 |
| C_Structure/hierarchy/rules/strategy | 1 | 1 | 12 | 5 | 4 | 23 |
| C_Power/authority/legitimacy/control | 0 | 1 | 8 | 6 | 4 | 19 |
| D_Influencing/controlling/excluding | 1 | 2 | 9 | 3 | 3 | 18 |
| S_National | 1 | 1 | 8 | 4 | 4 | 18 |
| D_Deciding/identifying/defining | 0 | 1 | 6 | 4 | 5 | 16 |
| S_Local/community/village | 2 | 1 | 6 | 4 | 3 | 16 |
| D_Implementing/acting/managing | 2 | 0 | 4 | 5 | 4 | 15 |
| O_Environment/climate | 0 | 1 | 8 | 4 | 2 | 15 |
| C_Knowledge/discourse | 1 | 1 | 5 | 5 | 2 | 14 |
| A_Community/stakeholder/women | 2 | 1 | 4 | 0 | 4 | 11 |
| D_Creating/establishing/intensifying | 1 | 1 | 3 | 4 | 2 | 11 |
| O_Resources/land/water | 2 | 1 | 5 | 1 | 1 | 10 |
| S_Regional/district/city | 1 | 0 | 4 | 3 | 1 | 9 |
| A_Donors/NGOs | 1 | 0 | 5 | 1 | 1 | 8 |
| C_Politics and governance | 1 | 1 | 0 | 2 | 3 | 7 |
| D_Planning/designing | 1 | 0 | 4 | 0 | 1 | 6 |
| S_Global/world | 1 | 0 | 3 | 2 | 0 | 6 |
| O_Project/policy/program | 1 | 0 | 3 | 1 | 1 | 6 |
| Other visible power | 1 | 1 | 2 | 2 | 1 | 7 |
| TOTAL | 23 | 18 | 111 | 65 | 51 | 268 |
| Per method | 3.3 | 3.0 | 5.6 | 4.3 | 5.7 | 4.7 |
| | | | | | | |
| Not specified | 2 | 1 | 3 | 3 | 0 | 9 |
| Min | 1 | 1 | 3 | 1 | 1 | 1.4 |
| Max | 8 | 6 | 11 | 10 | 9 | 8.8 |

| **Winners**<br>WC = within a community<br>HL = at higher levels | Co-learning/cooperative inquiry (n=7) | Participatory action research (n=6) | Participatory methods (n=20) | Workshop (n=15) | Interviews + (4 other methods) (n=9) | **Winners total** |
|---|---|---|---|---|---|---|
| WC_Elite | 1 | 1 | 7 | 4 | 3 | 16 |
| HL_Local community | 1 | 1 | 0 | 2 | 3 | 7 |
| HL_Government | 1 | 0 | 2 | 2 | 1 | 6 |
| WC_Men | 2 | 0 | 2 | 1 | 0 | 5 |
| WC_Women | 0 | 0 | 4 | 0 | 0 | 4 |
| WC_High socio-economic status | 0 | 0 | 3 | 0 | 1 | 4 |
| WC_Connected to NGOs | 0 | 0 | 1 | 0 | 1 | 2 |
| HL_Policy makers | 0 | 0 | 1 | 1 | 0 | 2 |
| Other winners | 0 | 0 | 1 | 1 | 2 | 4 |
| TOTAL | 5 | 2 | 21 | 11 | 11 | 50 |
| Per method | 0.7 | 0.3 | 1.1 | 0.7 | 1.2 | 0.9 |
| | | | | | | |
| Not specified | 4 | 4 | 6 | 7 | 0 | 21 |
| Min | 1 | 1 | 1 | 1 | 1 | 1.0 |
| Max | 2 | 1 | 3 | 3 | 3 | 2.4 |
| | | | | | | |
| **Winner criteria** | | | | | | |
| SC_Elite/privileged/wealthy | 2 | 1 | 9 | 4 | 3 | 19 |
| SC_Resources | 1 | 2 | 2 | 0 | 1 | 6 |
| PR_Governance structures | 1 | 0 | 1 | 2 | 0 | 4 |
| PR_Bottum-up approaches | 0 | 2 | 0 | 1 | 0 | 3 |
| SC_Willing to challenge | 0 | 1 | 0 | 0 | 2 | 3 |
| PR_Invited to process | 0 | 2 | 0 | 0 | 0 | 2 |
| PR_Needs of vulnerable addressed | 0 | 1 | 0 | 0 | 1 | 2 |
| Other winner criteria | 1 | 2 | 0 | 0 | 0 | 3 |
| TOTAL | 5 | 11 | 12 | 7 | 7 | 42 |
| Per method | 0.7 | 1.8 | 0.6 | 0.5 | 0.8 | 0.7 |
| | | | | | | |
| Not specified | 2 | 2 | 4 | 8 | 3 | 19 |
| Min | 1 | 1 | 1 | 1 | 1 | 1.0 |
| Max | 1 | 6 | 1 | 1 | 2 | 2.2 |

| **Processes of decision making** | Co-learning/cooperative inquiry (n=7) | Participatory action research (n=6) | Participatory methods (n=20) | Workshop (n=15) | Interviews + (4 other methods) (n=9) | **Processes of decision making total** |
|---|---|---|---|---|---|---|
| Community/collective | 4 | 2 | 5 | 2 | 4 | 17 |
| Participation | 1 | 5 | 2 | 5 | 3 | 16 |
| Top down | 1 | 0 | 6 | 4 | 4 | 15 |
| Traditional/cultural | 1 | 1 | 8 | 1 | 0 | 11 |
| Government | 1 | 0 | 3 | 2 | 2 | 8 |
| Multiple stakeholders | 0 | 1 | 2 | 2 | 2 | 7 |
| Elites | 0 | 1 | 0 | 2 | 1 | 4 |
| Other processes | 0 | 0 | 1 | 2 | 2 | 5 |
| TOTAL | 8 | 10 | 27 | 20 | 18 | 83 |
| Per method | 1.1 | 1.7 | 1.4 | 1.3 | 2.0 | 1.5 |
| | | | | | | |
| None/not specified | 2 | 1 | 4 | 3 | 0 | 10 |
| Min | 1 | 1 | 1 | 1 | 1 | 1.0 |
| Max | 3 | 4 | 5 | 4 | 3 | 3.8 |

| **Hidden power**<br>IE = inclusion/exclusion<br>S = subjugated<br>A = asserting<br>N = norms<br>Su = subverting<br>C = consequences | Co-learning/cooperative inquiry (n=7) | Participatory action research (n=6) | Participatory methods (n=20) | Workshop (n=15) | Interviews + (4 other methods) (n=9) | **Hidden power total** |
|---|---|---|---|---|---|---|
| IE_Decision making | 5 | 4 | 8 | 5 | 4 | 26 |
| IE_Access to resources | 1 | 1 | 6 | 4 | 2 | 14 |
| S_By gender | 1 | 0 | 7 | 1 | 4 | 13 |
| A_National government/corporate | 3 | 0 | 3 | 2 | 2 | 10 |
| A_By gender | 1 | 0 | 7 | 0 | 2 | 10 |
| S_Other actors/demographics | 0 | 1 | 7 | 0 | 2 | 10 |
| A_By wealth/status | 0 | 1 | 4 | 1 | 3 | 9 |
| N_Gendered roles/practices | 1 | 0 | 6 | 0 | 2 | 9 |
| IE_Participation | 1 | 1 | 3 | 2 | 2 | 9 |
| Su_Emancipatory processes | 2 | 2 | 1 | 3 | 1 | 9 |
| S_By wealth/status | 0 | 0 | 5 | 0 | 2 | 7 |
| S_By race/ethnicity | 0 | 1 | 2 | 1 | 2 | 6 |
| C_(Re)producing_participation | 0 | 0 | 1 | 2 | 2 | 5 |
| A_Traditional community leaders | 0 | 0 | 2 | 2 | 0 | 4 |
| A_By race/ethnicity | 0 | 1 | 1 | 0 | 2 | 4 |
| IE_Recognition | 0 | 1 | 3 | 0 | 0 | 4 |
| Other hidden power | 7 | 5 | 17 | 14 | 6 | 49 |
| TOTAL | 22 | 18 | 83 | 37 | 38 | 198 |
| Per method | 3.1 | 3.0 | 4.2 | 2.5 | 4.2 | 3.5 |
| | | | | | | |
| Not specified | 0 | 0 | 3 | 3 | 2 | 8 |
| Min | 1 | 2 | 1 | 2 | 2 | 1.6 |
| Max | 8 | 7 | 11 | 9 | 7 | 8.4 |

| **Types of engagement** | Co-learning/cooperative inquiry (n=7) | Participatory action research (n=6) | Participatory methods (n=20) | Workshop (n=15) | Interviews + (4 other methods) (n=9) | **Types of engagement total** |
|---|---|---|---|---|---|---|
| Negotiation | 2 | 2 | 3 | 2 | 2 | 11 |
| Deliberation | 1 | 1 | 2 | 3 | 2 | 9 |
| Discussions in formal fora | 0 | 1 | 3 | 3 | 0 | 7 |
| Protest, resistance, conflict | 1 | 1 | 1 | 0 | 3 | 6 |
| Disagreements and debates | 1 | 1 | 2 | 2 | 0 | 6 |
| Dialogue | 2 | 0 | 0 | 1 | 1 | 4 |
| Organising and campaigns | 0 | 1 | 1 | 1 | 1 | 4 |
| Other engagement | 2 | 1 | 1 | 3 | 1 | 8 |
| TOTAL | 9 | 8 | 13 | 15 | 10 | 55 |
| Per method | 1.3 | 1.3 | 0.7 | 1.0 | 1.1 | 1.0 |
| | | | | | | |
| None/not specified | 1 | 1 | 7 | 4 | 0 | 13 |
| Min | 1 | 1 | 1 | 1 | 1 | 1.0 |
| Max | 2 | 2 | 2 | 2 | 2 | 2.0 |

| **Invisible power**<br>S = subjugated<br>A = asserting<br>Sj = subjectivities<br>N = narratives<br>I = ideologies<br>C = consequences | Co-learning/cooperative inquiry (n=7) | Participatory action research (n=6) | Participatory methods (n=20) | Workshop (n=15) | Interviews + (4 other methods) (n=9) | **Invisible power total** |
|---|---|---|---|---|---|---|
| S_By gender | 1 | 1 | 4 | 4 | 2 | 12 |
| Sj_Unknowing/unable | 0 | 0 | 5 | 2 | 1 | 8 |
| A_By gender | 0 | 1 | 3 | 2 | 1 | 7 |
| S_Other actors/demographics | 1 | 1 | 3 | 1 | 0 | 6 |
| I_Beliefs/ideologies | 0 | 0 | 1 | 3 | 2 | 6 |
| N_Good/bad approach | 0 | 1 | 2 | 1 | 2 | 6 |
| N_Supporting dominant structures | 3 | 0 | 1 | 1 | 1 | 6 |
| A_Other actors/demographics | 0 | 1 | 2 | 1 | 1 | 5 |
| S_By wealth/status | 0 | 1 | 4 | 0 | 0 | 5 |
| N_Obscuring struggles/rights | 1 | 1 | 2 | 0 | 1 | 5 |
| A_By wealth/status | 0 | 1 | 3 | 0 | 0 | 4 |
| C_Privileging expert knowledge | 0 | 1 | 1 | 2 | 0 | 4 |
| C_Undervaluing other knowledge | 0 | 0 | 1 | 3 | 0 | 4 |
| Sj_Vulnerable/helpless | 1 | 0 | 2 | 1 | 0 | 4 |
| Other insisible power | 6 | 5 | 13 | 18 | 8 | 50 |
| TOTAL | 13 | 14 | 47 | 39 | 19 | 132 |
| Per method | 1.9 | 2.3 | 2.4 | 2.6 | 2.1 | 2.3 |
| | | | | | | |
| Not specified | 1 | 5 | 8 | 6 | 3 | 23 |
| Min | 1 | 14 | 1 | 1 | 1 | 3.6 |
| Max | 5 | 14 | 7 | 9 | 5 | 8.0 |

| **Power entanglements**<br>M = mismatches<br>E = exclusionary governance and participation<br>A = ambivalent discourses<br>C = counter conducts | Co-learning/cooperative inquiry (n=7) | Participatory action research (n=6) | Participatory methods (n=20) | Workshop (n=15) | Interviews + (4 other methods) (n=9) | **Invisible power total** |
|---|---|---|---|---|---|---|
| M_ Scale mismatch | 1 | 1 | 2 | 2 | 1 | 7 |
| E_ Marginalising governance | 1 | 1 | 3 | 1 | 1 | 7 |
| E_Coerced consent | 0 | 0 | 1 | 3 | 2 | 6 |
| M_Contradicting priorities | 1 | 0 | 1 | 1 | 2 | 5 |
| C_ Counter conducts | 0 | 1 | 1 | 2 | 1 | 5 |
| E_ Excluded knowledge | 0 | 0 | 2 | 1 | 0 | 3 |
| A_Alienating emancipation | 0 | 0 | 0 | 1 | 2 | 3 |
| Other entanglements | 2 | 0 | 5 | 2 | 0 | 9 |
| TOTAL | 5 | 3 | 15 | 13 | 9 | 45 |
| Per method | 0.7 | 0.5 | 0.8 | 0.9 | 1.0 | 0.8 |
| | | | | | | |
| Not specified | 3 | 3 | 5 | 2 | 1 | 14 |
| Min | 1 | 1 | 1 | 1 | 1 | 1.0 |
| Max | 2 | 1 | 2 | 1 | 1 | 1.4 |

| **Obstacles**<br>ST = Structures<br>PR = Process<br>RE = Resources<br>KN = Knowledge | Co-learning/cooperative inquiry (n=7) | Participatory action research (n=6) | Participatory methods (n=20) | Workshop (n=15) | Interviews + (4 other methods) (n=9) | **Participation and learning total** |
|---|---|---|---|---|---|---|
| ST_Uneven power dynamics | 2 | 1 | 5 | 4 | 2 | 14 |
| ST_Marginalisation | 2 | 1 | 3 | 1 | 2 | 9 |
| PR_Inadequate interventions | 2 | 0 | 1 | 1 | 4 | 8 |
| ST_Social hierarchies/norms | 0 | 0 | 3 | 3 | 1 | 7 |
| ST_Institutionalized practices | 0 | 1 | 1 | 2 | 2 | 6 |
| RE_Lack of resources | 0 | 1 | 3 | 1 | 1 | 6 |
| KN_Fractional framing | 0 | 2 | 1 | 1 | 0 | 4 |
| KN_Disconnects/disjuncture | 1 | 1 | 2 | 0 | 0 | 4 |
| PR_Lack of participation | 1 | 0 | 2 | 1 | 0 | 4 |
| RE_Lack of capacities | 1 | 0 | 2 | 0 | 1 | 4 |
| Other obstacles | 3 | 1 | 5 | 5 | 2 | 16 |
| TOTAL | 12 | 8 | 28 | 19 | 15 | 82 |
| Per method | 1.7 | 1.3 | 1.4 | 1.3 | 1.7 | 1.4 |
| | | | | | | |
| None/not specified | 1 | 0 | 2 | 5 | 0 | 8 |
| Min | 1 | 1 | 1 | 1 | 1 | 1.0 |
| Max | 5 | 2 | 4 | 4 | 3 | 3.6 |

| **Losers**<br>WC = within a community<br>HL = at higher levels | Co-learning/cooperative inquiry (n=7) | Participatory action research (n=6) | Participatory methods (n=20) | Workshop (n=15) | Interviews + (4 other methods) (n=9) | **Losers total** |
|---|---|---|---|---|---|---|
| WC_Women | 2 | 0 | 5 | 3 | 4 | 14 |
| HL_Local community | 0 | 0 | 4 | 1 | 3 | 8 |
| WC_Poor people | 0 | 0 | 4 | 1 | 3 | 8 |
| WC_Smallholder farmers | 1 | 1 | 4 | 0 | 0 | 6 |
| HL_Marginalised communities | 0 | 0 | 3 | 1 | 1 | 5 |
| WC_Youth | 0 | 1 | 2 | 1 | 0 | 4 |
| WC_Indigenous people | 0 | 1 | 0 | 1 | 1 | 3 |
| WC_Uneducated and/or disabled | 1 | 0 | 0 | 1 | 1 | 3 |
| Other losers | 0 | 1 | 4 | 1 | 1 | 7 |
| TOTAL | 4 | 4 | 26 | 10 | 14 | 58 |
| Per method | 0.6 | 0.7 | 1.3 | 0.7 | 1.6 | 1.0 |
| | | | | | | |
| Not specified | 5 | 4 | 5 | 9 | 2 | 25 |
| Min | 1 | 1 | 1 | 1 | 1 | 1.0 |
| Max | 2 | 2 | 4 | 3 | 5 | 3.2 |

| **Loser criteria** | | | | | | |
|---|---|---|---|---|---|---|
| PR_Needs of vulnerable addressed | 1 | 0 | 6 | 6 | 4 | 17 |
| SC_Poverty/deprivation | 0 | 1 | 6 | 3 | 2 | 12 |
| SC_Gender disparities/inequalities | 2 | 0 | 5 | 3 | 1 | 11 |
| SC_Disadvantaged/marginalised | 1 | 1 | 4 | 1 | 2 | 9 |
| PR_Not invited to process | 1 | 0 | 3 | 1 | 2 | 7 |
| PR_Top-down processes | 1 | 0 | 2 | 1 | 2 | 6 |
| PR_Resource distribution | 1 | 1 | 0 | 1 | 0 | 3 |
| Other loser criteria | 2 | 0 | 2 | 1 | 0 | 5 |
| TOTAL | 9 | 3 | 28 | 17 | 13 | 70 |
| Per method | 1.3 | 0.5 | 1.4 | 1.1 | 1.4 | 1.2 |
| | | | | | | |
| Not specified | 3 | 4 | 0 | 4 | 0 | 11 |
| Min | 1 | 1 | 1 | 1 | 1 | 1.0 |
| Max | 3 | 2 | 3 | 4 | 2 | 2.8 |

| **Transformation** | Co-learning/cooperative inquiry (n=7) | Participatory action research (n=6) | Participatory methods (n=20) | Workshop (n=15) | Interviews + (4 other methods) (n=9) | **Transformation total** |
|---|---|---|---|---|---|---|
| System | 2 | 2 | 3 | 4 | 0 | 11 |
| Community | 1 | 1 | 3 | 0 | 2 | 7 |
| Normative | 1 | 1 | 1 | 3 | 0 | 6 |
| Food/land/agriculture | 1 | 1 | 3 | 1 | 0 | 6 |
| Water | 2 | 1 | 1 | 0 | 1 | 5 |
| Gender | 0 | 0 | 4 | 0 | 1 | 5 |
| Rights | 0 | 2 | 1 | 0 | 0 | 3 |
| Action | 0 | 1 | 1 | 0 | 0 | 2 |
| Top-down | 0 | 0 | 1 | 0 | 1 | 2 |
| Other transformation | 1 | 0 | 1 | 0 | 3 | 5 |
| TOTAL | 8 | 9 | 19 | 8 | 8 | 52 |
| Per method | 1.1 | 1.5 | 1.0 | 0.5 | 0.9 | 0.9 |
| | | | | | | |
| None/not specified | 1 | 0 | 6 | 8 | 3 | 18 |
| Min | 1 | 1 | 1 | 1 | 1 | 1.0 |
| Max | 2 | 2 | 2 | 2 | 2 | 2.0 |

| **Participation and learning** | Co-learning/cooperative inquiry (n=7) | Participatory action research (n=6) | Participatory methods (n=20) | Workshop (n=15) | Interviews + (4 other methods) (n=9) | **Participation and learning total** |
|---|---|---|---|---|---|---|
| Inclusion and participation | 1 | 2 | 4 | 2 | 2 | 11 |
| Knowledge sharing | 1 | 2 | 3 | 3 | 1 | 10 |
| Methods | 2 | 2 | 0 | 1 | 1 | 6 |
| Vulnerabilities, inequalities | 1 | 0 | 1 | 2 | 2 | 6 |
| Normative | 1 | 1 | 1 | 2 | 0 | 5 |
| Cognitive | 1 | 0 | 1 | 1 | 2 | 5 |
| Learning about learning | 0 | 2 | 1 | 1 | 0 | 4 |
| Other participation | 1 | 1 | 2 | 1 | 1 | 6 |
| TOTAL | 8 | 10 | 13 | 13 | 9 | 53 |
| Per method | 1.1 | 1.7 | 0.7 | 0.9 | 1.0 | 0.9 |
| | | | | | | |
| None/not specified | 1 | 1 | 8 | 5 | 3 | 18 |
| Min | 1 | 1 | 1 | 1 | 1 | 1.0 |
| Max | 2 | 4 | 2 | 3 | 2 | 2.6 |

| **Success outcomes**<br>T = transformational<br>R = recognition<br>P = procedural<br>D = distributive<br>C = climate-related<br>M = dsasda | Co-learning/cooperative inquiry (n=7) | Participatory action research (n=6) | Participatory methods (n=20) | Workshop (n=15) | Interviews + (4 other methods) (n=9) | **Success outcomes total** |
|---|---|---|---|---|---|---|
| T_New knowledge | 2 | 2 | 2 | 2 | 2 | 10 |
| R_Empowerment | 2 | 1 | 4 | 1 | 2 | 10 |
| R_Inclusion | 2 | 1 | 1 | 1 | 1 | 6 |
| T_Structural change | 1 | 0 | 3 | 2 | 0 | 6 |
| P_Enhanced processes | 1 | 0 | 0 | 3 | 1 | 5 |
| D_Equality | 0 | 1 | 1 | 1 | 2 | 5 |
| C_Reduced impacts | 1 | 0 | 3 | 1 | 0 | 5 |
| P_Local interests | 0 | 0 | 1 | 2 | 1 | 4 |
| M_Productivity | 1 | 0 | 3 | 0 | 0 | 4 |
| D_Resource access | 1 | 0 | 2 | 0 | 1 | 4 |
| Other outcomes | 2 | 0 | 3 | 5 | 1 | 11 |
| TOTAL | 13 | 5 | 23 | 18 | 11 | 70 |
| Per method | 1.9 | 0.8 | 1.2 | 1.2 | 1.2 | 1.2 |
| | | | | | | |
| None/not specified | 2 | 0 | 3 | 4 | 2 | 11 |
| Min | 2 | 1 | 1 | 1 | 1 | 1.2 |
| Max | 8 | 2 | 3 | 4 | 3 | 4.0 |

| **Success indicators** | Co-learning/cooperative inquiry (n=7) | Participatory action research (n=6) | Participatory methods (n=20) | Workshop (n=15) | Interviews + (4 other methods) (n=9) | **Success indicators total** |
|---|---|---|---|---|---|---|
| Participation | 3 | 2 | 2 | 2 | 2 | 11 |
| External action | 0 | 0 | 2 | 3 | 1 | 6 |
| New methodologies | 0 | 1 | 1 | 2 | 0 | 4 |
| Contestation | 0 | 1 | 1 | 1 | 1 | 4 |
| Situated approaches | 0 | 1 | 1 | 2 | 0 | 4 |
| Local action | 0 | 0 | 1 | 1 | 1 | 3 |
| Other indicators | 1 | 0 | 1 | 0 | 2 | 4 |
| TOTAL | 4 | 5 | 9 | 11 | 7 | 36 |
| Per method | 0.6 | 0.8 | 0.5 | 0.7 | 0.8 | 0.6 |
| | | | | | | |
| None/not specified | 2 | 2 | 3 | 4 | 2 | 13 |
| Min | 1 | 1 | 1 | 1 | 1 | 1.0 |
| Max | 2 | 2 | 2 | 3 | 3 | 2.4 |

| **Sustaining processes** | Co-learning/cooperative inquiry (n=7) | Participatory action research (n=6) | Participatory methods (n=20) | Workshop (n=15) | Interviews + (4 other methods) (n=9) | **Invisible power total** |
|---|---|---|---|---|---|---|
| Empowerment and inclusion | 1 | 1 | 8 | 2 | 4 | 16 |
| Co-production | 0 | 1 | 6 | 3 | 0 | 10 |
| Situated approaches | 3 | 0 | 4 | 1 | 1 | 9 |
| Addressing power | 0 | 0 | 3 | 2 | 2 | 7 |
| Collaborations | 0 | 1 | 2 | 1 | 1 | 5 |
| Recognising complexities | 0 | 2 | 0 | 2 | 0 | 4 |
| Resource availability | 0 | 0 | 2 | 0 | 1 | 3 |
| Other processes | 3 | 3 | 1 | 3 | 0 | 10 |
| TOTAL | 7 | 8 | 26 | 14 | 9 | 64 |
| Per method | 1.0 | 1.3 | 1.3 | 0.9 | 1.0 | 1.1 |
| | | | | | | |
| None/not specified | 1 | 0 | 1 | 3 | 2 | 7 |
| Min | 1 | 1 | 1 | 1 | 1 | 1.0 |
| Max | 2 | 3 | 4 | 4 | 2 | 3.0 |