

A field methodology to advance social equity and transformative adaptation to climate change in smallholder communities

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ABSTRACT

Global climate policies recognize the urgent need to address the inequitable impacts of climate change on smallholder agricultural communities, but there is limited understanding of how to accomplish this in practice. We contribute to closing this gap through the design of a participatory qualitative methodology intended to nurture locally-led “transformative adaptation pathways” that strengthen social equity and sustainability. Our conceptual framework draws upon theories of social equity and justice rooted in participatory parity—values and norms that encourage people to interact with one another as equals and synergistically nurture recognition, distributional, representational and intergenerational equities. Recognizing that social equity is enhanced when poor and vulnerable people gain decision-making power that expands their access to resources and opportunities, we question how people understand and experience social equity and its relationship to their capacity to adapt. We also ask how norms about gender, generation, and socio-economic status shape people’s understandings and experiences of social equity and adaptation. To address these questions, we illustrate the methodological approach with evidence gathered from pilot tests conducted in smallholder communities of Kenya and Philippines. Our findings show how understandings of fairness provide a basis for learning, eliciting comparative and contextualized findings that can inform community-based adaptation. Overall, we demonstrate that in the face of social processes that typically fuel inequities, participatory tools and learning tactics can serve to empower low-income women and men to identify, contribute to, and monitor actions that nurture their community’s progress towards strong and equitable climate adaptation capacity.

1. Introduction

As a matter of principle and global policy priority, our societies’ poor and vulnerable populations should not bear the brunt of the planet’s warming (IPCC, 2023). Yet, in practice many of the world’s smallholder communities reside in climate hotspots, and are already enduring unpredictable rains, temperature extremes, recurring droughts and floods, and increasing stress on their livelihoods.

Our objective is to present the design and field testing of a participatory qualitative and comparative methodology for social research that aims to advance equitable adaptation to climate change. In so doing, we strive to “put the last first” (Chambers, 1983). The approach rests on the premise that climate adaptation presents openings to advance social

equity that can be enhanced to the greatest extent when poor and vulnerable people gain decision-making power that expands their access to resources and opportunities (see McDermott and Schreckenberg, 2009; Vincent, 2023).

Petesch et al. (2024) is the open access methodology guide referred to throughout this article. The methods center on local people’s own conceptions of and experiences with social equity and climate adaptation, and can be tailored to specific needs. The conceptual approach is informed by theories of social equity and justice that are rooted in ideals of participatory parity, namely, the values and norms in a social context that encourage all people to interact with one another as equals (Fraser, 1998, 2005). We aim to contribute to transformative learning models that forefront empowerment and equitable adaptation objectives by

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engaging diverse community members and their external partners in shared learning and action intended to ease inequalities and shift “oppressive norms, behaviors, and structures” (e.g., [Galiè and Kantor, 2016](#), p. 194; [Badstue et al., 2020](#); [McDougall and Ojha, 2022](#); [Mehta et al., 2021](#); [Vincent, 2023](#)).

The methodology also draws from prior multi-sited qualitative research, developed for the Enabling Gender Equality in Agricultural and Environmental Innovation (GENNOVATE) initiative ([Petesch et al., 2018a](#)), which builds on a series of World Bank global qualitative studies (e.g., [Muñoz Boudet et al., 2013](#); [Narayan and Petesch, 2010](#); [Narayan et al., 2000](#)). GENNOVATE focused on gender norms and capacities for agricultural innovation, spanning 137 smallholder villages in 26 countries, and knitting together contextual, comparative and collaborative learning strategies capable of identifying insights and lessons of relevance to policies as well as local action ([Badstue et al., 2020](#)). Our innovation is to reorient and adapt GENNOVATE’s feminist theory and methodology to nurture equitable adaptation in smallholder agricultural communities affected by climate change. We do this with an emphasis on informing community-based interventions in small-n pilot mode. The methods are deliberately rapid to elicit diagnostic data and strengthen action learning partnerships among diverse community members and leaders, non-governmental organizations (NGOs), government partners, and others who have long-term relationships with smallholder communities, and hence can champion equitable climate adaptation interventions.

Next, we introduce our methodological approach, and then, to demonstrate the contributions of the methodology, we draw on quality standards for qualitative research to illustrate findings from our pilot dataset. We also discuss a follow-up activity that is working to strengthen the social equity dimensions of a locally-led agricultural adaptation planning initiative with governmental and NGO partners in the Philippines. We conclude with reflections on our action learning approach and future research needs aimed at encouraging equitable and sustainable adaptation pathways in smallholder contexts.

1.1. Study rationale

The rationale for focusing on social equity follows from a fundamental need for transformative adaptation to address the climate crisis ([Few et al., 2017](#); [Hellin et al., 2022](#); [Mehta et al., 2021](#)). A starting premise is that change to the climate and environment is entwined with, and not separate from, society ([Leach et al., 2010](#)). From this perspective, social change is integral to strategies for adaptation, including the potential for transformations towards sustainable environmental futures ([Nightingale et al., 2019](#)). Justice principles are vital to future earth system stability to minimize harm, meet minimum access needs, and redistribute resources and responsibilities to enhance human health and wellbeing ([Gupta et al., 2024](#)). Hence, the thrust of transformative adaptation includes change that disrupts the many drivers of human marginalization, resource scarcity and vulnerability, including powerful interactional forces such as “lack of respect, disregard for the situation of others and obstacles to full-fledged participation in the life of the community” ([Guy and McCandless, 2012](#), p. S10).

Our premise is that achieving transformative adaptation pathways — which require actions that disrupt and shift the deeply rooted inequities and inequalities that disempower and marginalize large categories of a community (i.e., women, people with low-incomes, and other disadvantaged social groups) and underpin vulnerability to climate risks — will be essential for effective and sustainable responses to climate change ([Hellin et al., 2022](#)). The danger is that policies, programs and interventions, although intended to enhance climate adaptation, actually reinforce vulnerability and weaken livelihood capacities, thus resulting in “maladaptation” ([Eriksen et al., 2021](#); [Schipper, 2022](#)). Even when maladaptation is an unlikely outcome, approaches to locally-led adaptation have coalesced around externally-driven interventions that ignore the need for broad-based agency and empowerment to secure equitable outcomes at community-level ([Vincent, 2023](#)).

Interconnections between sustainability and equity remain deeply complex and poorly understood ([Leach et al., 2018](#)). There is a paucity of research about how to advance social equity as a cornerstone of strengthening local adaptation capacity. This paucity is compounded by how challenging it is to address adaptation ([IPCC, 2023](#)). Development of a field methodology, then, helps to fill an important gap that is the result of a “dearth of empirical evidence that explores bottom-up processes of transformation, that is, their drivers, challenges and outcomes” ([Mehta et al., 2021](#), p. 114).

1.2. Research collaboration and objectives

Our methodology study is a research and development (R&D) activity within the CGIAR Research Initiative on Climate Resilience (ClimBeR); and includes collaboration with the CGIAR Research Initiative on Livestock and Climate.¹ ClimBeR’s R&D aims to advance social equity, transform food and agricultural systems, and strengthen climate adaptation capacity. Livestock and Climate supports livestock-dependent communities to address climate risks.

Our selection of study countries and community cases was based on our priority of contributing to the R&D activities of ClimBeR and Livestock and Climate. When field-testing, we collaborated with two NGOs that are institutional partners to the two CGIAR initiatives: in Kenya, the Resource Conflict Institute (RECONCILE); and in Philippines, the International Institute of Rural Reconstruction (IIRR). Both NGOs provided expert guidance and logistical support for this research.

The objectives of the R&D activity included:

- To design a methodology incorporating a package of data collection methods on social equity and climate adaptation.
- To conduct a field test to develop robust methods for research on climate adaptation.
- To initiate a dataset on social equity and climate resilience, as a basis for identifying opportunities to nurture transformative adaptation.
- To bolster the capacity of CGIAR centers and partner organizations to foreground social equity objectives in their climate adaptation activities.

This article focuses on the first two objectives, to set the stage for new learning partnerships in the wake of our methodology development initiative.

1.3. Conceptual approach

The Oxford English dictionary defines equity as “the quality of being fair or impartial.” The methodological design is informed by theories of social equity and justice rooted in participatory parity, or the values and norms that encourage all people to interact with one another as equals—and which, in turn, nurture the synergistic values of recognitional, distributional, representational and intergenerational equities that enable transformative adaptation to climate change ([Fig. 1](#); [Fraser, 2005, 2008](#)). By transformative adaptation, we refer to actions that address the root causes of vulnerability to climate change and other risks by catalyzing “a more enabling social, institutional and governance

¹ Formerly called the Consultative Group on International Agricultural Research, the CGIAR is a global partnership of organizations focused on agricultural innovation for food security. For information on ClimBeR, see <https://www.cgiar.org/initiative/climate-resilience/>; and on Livestock and Climate see: <https://www.cgiar.org/initiative/livestock-and-climate/>. These initiatives were based, respectively, with the CGIAR’s International Rice Research Institute (IRRI) in the Philippines and the International Livestock Research Institute (ILRI) in Kenya. IRRI’s and ILRI’s Institutional Research Ethics Committee/Institutional Review Board (IREC/IRB) each provided separate ethical clearances for our field research.



Fig. 1. Conceptual framework on transformative adaptation to climate change. Source: Adapted from Fraser (2005) and Chambers (1997).

environment” for social equity and sustainability (Hellin et al., 2022, p. 2; Few et al., 2017). The upward thrust of the framework expresses the bottom-up agentic actions and opportunity structures—as signaled by the interacting equities—required to challenge and alter the inequitable gender and social norms, institutions and governance systems that tend to characterize smallholder communities (e.g., Rao et al., 2019; Ng’ang’a and Crane, 2020; Petesch et al., 2018b). The conceptual approach also emphasizes learning strategies grounded in local people’s own conceptions and lived experiences of power and freedom and of wellbeing and illbeing (e.g., Kabeer, 1999; Narayan et al., 2000; Petesch et al., 2018a).

Agency refers to an individual’s capacity to act, with its empowered forms marked by a person’s ability to take consequential decisions and actions that shape their life (Kabeer, 1999); while gender norms comprise the “differential rules of conduct for women and men, including rules governing interactions *between* women and men” (Pearse and Connell, 2016, p. 35). Norms are socially constructed rules of conduct that shape the scope for equitable relations and adaptation capacity. We explore these interactions between norms and agency through the lens of participatory parity and related recognitional concerns for the relationships between people and the relative status positions of different individuals and groups in society (McDermott et al., 2013). For us, this requires special concern for how the capacity to adapt to climate change both shapes and is shaped by gender, socio-economic, and generational status differences, and by the complexity of norms attached to different intersections of these (and various other) status differences.

Gender and social norms operate through social forces that are fluid and contextual. For instance, whether out of need or interest, women

(and especially those who head their households) actively negotiate and withdraw from some of the marginalizing norms of their community while strictly upholding others (see Galiè et al., 2022). These pressures drive normative change and the great heterogeneity of norms on the ground. Normative dictates governing women’s physical mobility profoundly shape—and are shaped by—their access to information, networks, economic opportunities and other dimensions of their adaptation capacity; but mobility norms vary exquisitely on the ground, depending, for instance, on a woman’s life stage, education, marital status, socio-economic position and other markers of status (Petesch et al., 2018a). Although less common, norms in some communities may be very flexible and even strongly encourage diverse women’s agency (Petesch et al., 2018b). Local norms also differentially shape men’s agency and adaptation capacity, such as stigma attached to low-income men who work in daily wage jobs. Our analytic approach and community case study design is well-equipped to account for the fluid and contextual properties of social and gender norms, and the complex ways these societal expectations tend to hinder but also enable participatory parity and its vital contribution to equitable adaptation pathways.

2. Methodological design

Three research questions guided the design of our methodology:

- How do local people understand and experience social equity?
- How do local people perceive their capacities to adapt and how do these relate to social equity?
- How do norms about gender, generation, and socio-economic status shape people’s understandings and experiences of social equity and adaptation?

Comparative case study methods are considered the most appropriate for addressing the study’s research questions because they allow for inductive learning and in-depth investigation into the “real-life” complexities of smallholder communities (Yin, 2003). The methods also enable detection of patterns that provide a basis for “cautious generalizations” of potential usefulness for local and wider R&D initiatives to support equitable climate adaptation.

Here we address, in turn, sampling, data collection methods, field team preparations, and analysis protocols.

2.1. Sampling

The principal unit of analysis for our study is a community (equivalent to a village in Kenya and a barangay in the Philippines), with each community representing one case study.

In addition to ongoing development partnerships (discussed above), maximum diversity protocols informed community selection. These protocols call for purposively selecting cases that vary on the study’s dimensions of core concern (Eisenhardt, 1989; Miles et al., 2014). The evidence generated then provides a foundation for making cautious generalizations on the basis that: “Any common patterns that emerge from great variation are of particular interest and value in capturing the core experiences” (Patton, 1990, p. 172). Furthermore, social processes become more “transparently observable” under extreme circumstances (Eisenhardt, 1989, p. 537); this is especially the case where norms are very restrictive or relaxed (Petesch et al., 2018b).

Building on these principles and literatures about social equity and local adaptation capacity (e.g., Schlossberg et al., 2017), our sampling protocols called for selecting one case that expressed favorable conditions for social equity and adaptation capacity and one case that did not, in each sampling area: Baringo, Kenya; and Luzon and Mindanao in the Philippines. These conditions are highlighted in the explanatory notes to Fig. 2, which positions the six cases according to the sampling frame based on information available prior to the fieldwork.

As shown in Table 1, the sample enabled us to test the methods in

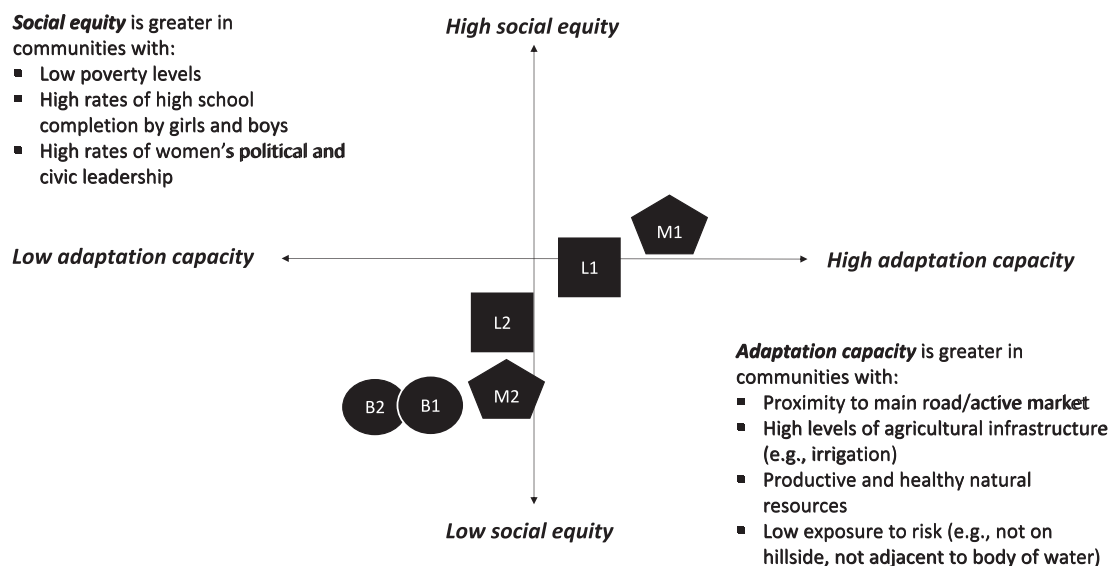


Fig. 2. Distribution of community cases by sampling criteria.

Note. See Table 1 for information on communities in Baringo (B1, B2), Luzon (L1,L2) and Mindanao (M1, M2).

varied agro-ecological and socio-cultural contexts. The cases proved more similar than anticipated based on the criteria for social equity, with most featuring extensive poverty, but also high rates of school completion and women's political and civic leadership. The sample reflects the objectives of our NGO partners to work with vulnerable communities.

2.2. Data collection methods

The methodology package contains six semi-structured methods which were applied in 13 separate data collection activities in each study community (Appendix A, supplementary data and Table 2). Six sex-specific focus group discussions (FGDs) were conducted with youth (aged 18 to 24 years), low-income (aged 35 to 55 years) and middle-income (aged 35 to 55 years) community members. Four semi-structured interviews captured life stories (two men and two women, aged 35 to 55). A community profile and two transect walks per community were also completed with local male and female key informants.

A total of 323 participants contributed to the study (Table 2). The methodology guide details additional participant selection protocols and logistical needs (Petesch et al., 2024).

The first module in the FGDs moves through questions about social equity, individual and collective power and freedom, and governance; and the second module addresses local livelihoods, climate and natural

resource conditions, and adaptation capacity. In the low-income FGDs, portions of the second module are substituted for a third module with a participatory ladder activity on local poverty dynamics and adaptation (discussed in section 3.3).

The fieldwork required recruiting and training a local team in Kenya and one in the Philippines, each conversant in English as well as the local languages. Each team consisted of four members: one female and one male facilitator, and one female and one male notetaker, enabling the team to ensure no member of the opposite sex was present during a data collection activity. The final two days of training featured a field-based pre-test of each method, after which the field team translated two FGDs into English as a quality measure before proceeding to the actual fieldwork. A community mobilizer supported each team's entry into the community, logistics, and recruitment of study participants. The field team and several NGO staff participated in our one-week training in each country. NGO staff and local authorities also joined the field team for the community feedback session after the fieldwork in each village.

2.3. Data analysis

Our approach to analysis is standard for participatory qualitative social research, beginning from a study's inception and continuing after fieldwork, and stressing the interpretations and analysis provided by the study participants themselves. Interview guides structure the shared

Table 1
Overview of study communities.

County/ Island (Province) Country	Study village	Livelihood system/main livelihoods (main commercial goods)	Low-income FGDs' est. village household poverty	Distance to commercial center with government offices	Principal social groups (religions)
Baringo, Kenya	Korok (B1)	Agro-pastoral: livestock (cattle, goats) and poultry, charcoal burning, beekeeping	Men: 60% Women: 70%	10 kms*	Endorois indigenous people (IP) (Christian)
	Cheso (B2)	Agro-pastoral: livestock (cattle, goats) and poultry, charcoal burning, beekeeping	Men: 75% Women: 75%	50 kms*	Endorois IP (Christian)
Luzon (Quezon), Philippines	Rose (L1)	Fishing: fish, crab, shrimp, shellfish	Men: 40% Women: 70%	15 kms	Tagalog (Catholic)
	Tubig (L2)	Forest-based: coconut products (copra), plant-based medicine, home gardening, livestock (cows, pigs)	Men: 55% Women: 50%	6 Kms	Tagalog (Catholic)
Mindanao (Misamis Oriental)	Merkado (M1)	Agriculture: rice, home gardening, coconut, vegetables.	Men: 50% Women: 50%	2 Kms	Cebuano (Catholic)
	Kaban (M2)	Agro/forest-based: banana, sweet potato, coconut, maize, peanut, plant-based medicine.	Men: 85% Women: 85%	16 kms*	Higaonon IP (Catholic, local religious traditions)

* Portions of road unpaved and hilly.

Table 2
Numbers of study participants per community and method.

County/Island, Country	Study village	Comm profile	Youth FGD		Low-income FGD		Middle-income FGD		Life story individual interview		Transect walk
		2 KIs*	Women	Men	Women	Men	Women	Men	Women	Men	2 KIs*
Baringo, Kenya	Korok	2	9	9	9	9	9	9	2	2	2
	Cheso	1	9	9	9	9	9	9	2	2	2
Luzon, Philippines	Rose	2	5	7	8	8	7	6	2	2	2
	Tubig	2	6	5	7	6	8	5	2	2	2
Mindanao, Philippines	Merkado	2	5	9	6	8	8	6	2	2	2
	Kaban	2	7	7	10	8	7	8	3	2	2

* 2 key informants: 1 female, 1 male.

learning, and community validation provides an opportunity for feedback on initial findings. The guides’ open-ended questions are helpful for in-depth learning, while the rating and sorting exercises contribute comparative as well as nuanced insights into the core study topics.

This weave of “deep and wide” learning tactics continue to frame the analytical work beyond the fieldwork phase (Patton, 1990; Miles et al., 2014). The “deep” case-oriented work includes development of background notes on each study village, as well detailed investigation of, for instance, recurring norms expressed in testimonies, such as those related to women’s and men’s livelihood activities or preparations for seasons of scarcity. The “wide” variable-oriented methods include building two datasets: i) an Excel file with responses to closed-ended questions in each data collection activity; and ii) an NVivo 14 (social science software) project file with coded data that our team generated from systematic content analysis of the narrative data. The Excel file enables comparative work on, for instance, information from key informants on public services or market conditions, or from FGD estimates of local equity or poverty levels. For the NVivo dataset, a coding framework was developed through a combination of inductive and deductive methods.

2.3.1. Coding framework

Table 3 displays the principal codes and subcodes that framed the systematic content analysis for building the coded dataset. The four codes in bold in column 1 repeat the core social equity dimensions noted in Fig. 1 of the conceptual framework on transformative adaptation.

In practice, the coded dataset is helpful for detecting patterns (i.e., in answer to NVivo queries), and facilitating systematic comparison of the study’s core themes among the six different population groups (FGDs) sampled within and across the study communities. Unexpected patterns

for further investigation often emerge as well. The analytic work engages the research team in cycling between deep and wide analytic tactics that include triangulation with secondary literatures, the Excel files, coded data, the detailed field notes documenting testimonies from each data collection activity, and consultations with experts beyond the team. Of particular importance is that all this analytic work to distill compelling arguments and lessons for broader audiences, no matter how abstract this may become, can be traced back systematically to specific people and places and their quite diverse circumstances.

2.3.2. Reflexivity

We are cognizant of critiques of participatory approaches (e.g., Brock and McGee, 2002; Cooke and Kothari, 2001) but nevertheless consider it vital to foreground people’s experiences of the differential impacts of climate change, and to work with poor and vulnerable people to develop appropriate adaptation strategies. One well-established tactic for researchers to address their dominant status position during fieldwork and blind spots throughout the research is for them to engage in ongoing reflexivity (such as by journaling and sharing initial findings for discussion with colleagues) about how their status may often be distorting who they interact with and what they can see and learn. Participatory learning activities that systematically engage diverse participants provide another means for triangulating what is being learned.

3. Results and discussion

With key elements of our methodology introduced, here we demonstrate how the collaborative learning approach strengthens understanding of and support for transformative adaptation. To structure the discussion, we use Epp and Otnes’ (2021) criteria for strong qualitative research: relevance, rigor and responsiveness. The checklist emphasizes lengthy immersion methods, and thus we add concern for resonance (Tracy, 2010) because this enables us to account more effectively for our study’s links to operational partners, rapid participatory methods, and the transformative aims of our theory and methods (also see Farias et al., 2017).

3.1. Relevance of approach

Relevance tops Epp and Otnes’ (2021) criteria for qualitative research—and especially how a theoretical approach enlightens understanding of a worthy and significant topic. Earlier we discussed existential climate risks for smallholder communities, high-level global policy bodies calling for social equity to guide climate responses, and scarcity of empirical contributions on equity dimensions of adaptation. Here we continue to build a case for our methodological approach by presenting patterns from our coded dataset and highlighting connections between our findings and theoretical framework.

“What does it mean to be fair?” asks the facilitator at the start of each FGD. The question centers on fairness as an entry point to social equity, and the responses are especially valuable because they are not biased by previous questions and responses. Fig. 3 presents the most frequently mentioned themes in the coded dataset of all text passages pertaining to

Table 3
Coding framework.

Principal code	Sub-codes
Distribution	Need-based, equal-based, connection-based, merit-based, sharing, other rules, enforcement, challenges
Recognition	Vulnerable group, youth-child, marital relations, other household relations, equal relations, inclusive/participatory, women’s norms and practices, men’s norms and practices
Resources	Social protection, education, finance/asset management, food, health, knowledge/technology/information, time/work burden, water, livelihood (with 17 sub-sub codes)
Representation	Accountable/transparent, [local, subnational, national or international] government/leader, NRM-related government, civic group/leader, collective action, market, land tenure, rights
Intergenerational	Aspirations/recommendations [for self/family, for community] Equity, now, past, future
Adaptation	Climate/seasonal, coping/vulnerability, resilience, shocks/risks [conflict/vices, drought, flood, scarcity season, other risks]
Wellbeing	Power and freedom [strong, moderate, limited] Wellbeing [high, moderate, illbeing], poverty now, poverty 10 years ago
Qualifiers	Negative, positive, increasing, no change, decreasing, future, past, gem/process

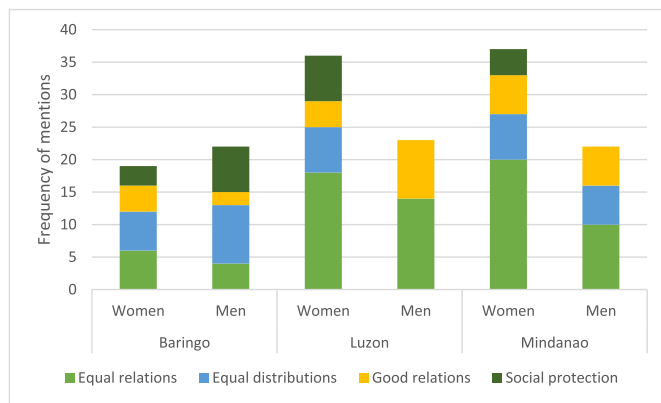


Fig. 3. What does it mean to be fair? Most frequently mentioned themes (36 FGDs).

Note: All codes shown that received at least 20 mentions in participants' responses to the first FGD question on fairness.

the opening question on fairness in the 36 FGDs. These testimonies reveal how the study's theory provides a relevant foundation for learning and framing the analysis, with the caveat that intergenerational dimensions remain invisible until prompted by follow-up questions about the future.

The value that "we are all equal" rings out across the FGDs and speaks directly to recognitional dimensions of social equity theory. In the Philippines' cases, the theme of "equal relations" emerges as the most common conception of fairness, especially among the women but also among the men. "The same treatment should be accorded to everyone ... everyone is on equal footing," is the opening testimony of an 18-year-old in the young women's FGD of Merkado, Mindanao. Similarly, a 45-year-old laborer in the men's low-income FGD in Barangay Rose, Luzon, states that fairness means, "No one tries to be on top of others."

Resource and social protection dimensions of fairness feature strongly among men's testimonies from the Baringo villages, and clearly signal the salience of distributional and representational dynamics in our theoretical approach. One member of the young men's FGD in Cheso of Baringo argues for sharing resources "equally" only to be followed by a peer who calls for "making sure that people who need to be given goods, are given their rightful share." The larger coded dataset reveals, however, that equal-based allocation principles emerged with roughly twice the frequency compared to participants' testimonies expressing need-based principles. In the young women's FGD in Cheso, a 23-year-old farmer and charcoal burner cautions that one must share "available resources equally to eradicate any complaints from the villagers." Most testimonies that address aid allocations suggest that targeting their village's most vulnerable people—the poor, elderly people, orphans or disabled people—opens the door to issues of (lack of) transparency, missing the neediest, favoring "friends," and "relatives," and partisanship.

Testimonies coded as "good relations" express a diversity of desirable conduct about how people should interact with one another and may be interpreted as being important in bolstering norms that nurture (or discourage) participatory parity. Members of the men's low-income group of Barangay Rose, for example, associate fairness with "being honest," "true," "getting along," and "friendship." Study participants also describe the ideal of fairness as being what people ought not to do, such as "no one gets stepped on," becomes "embittered," has "quarrels," or acts "haughty" or "pompous," or "snubs" others.

Many women's testimonies about fairness express their village's gender norms, and in ways that are revealing of the more relaxed norms in the Philippines cases compared to Kenya. With this notion of fairness, a 48-year-old farmer from the middle-income FGD of Kaban in Mindanao signals the communal norms and women's significant economic

roles in her indigenous village: "We women here we do farming. We group ourselves and help each other to farm, and we divide the proceeds from our harvest (48-year-old farmer, women's low-income FGD, Kaban). Women's FGDs in Kenya also associate fairness with their economic agency, but caution that a "mother should not be treated like she is less of an adult. She should be able to make decisions, even those including when to sell a cow in case it is needed" (36-year-old charcoal burner and farmer, women's middle-income FGD, Korok). Her testimony about fairness challenges norms that only men should control sales and purchases of large livestock (Galiè et al., 2022).

This notion of fairness, from the men's middle-income FGD of Cheso in Baringo, weaves in concerns for climate change and hunger:

We are all the same and when we say we have no rainfall we are all put on an equal platform. When we say we are hustling, all of us are living hand-to-mouth here in the village... All of us are equal. The *shambas* (farms) are all the same. We have a common problem in Cheso and that is food. To be fair to all, you have to ensure that there is a source of food that will be able to reach everyone. (38-year-old livestock keeper).

The men's middle-income focus group in Kaban, Mindanao, similarly relates (un)fairness to their community's "hand-to-mouth existence," their (low) standing as "farmers" and the "cheap" and "unfair" prices for "our products"; and "while you have a car, we are just walking." In such ways, testimonies from men's FGDs express anxieties that accompany rural men, who, as farmers and herders from marginalized communities, often lack status in the world beyond and opportunities in their own communities to fulfil their gender-ascribed roles as authority figures and adequate providers (Connell and Messerschmidt, 2005).

Intergenerational dimensions that knit together future wellbeing with sustainability did not emerge unprompted in the opening testimonies, which may reflect the press of current needs. When asked in follow-up questions to imagine their power and freedom to shape their lives ten years in the future, young people most often conceive of their future selves in ways that express the restrictive norms which govern their current circumstances. For example, some predict little change ahead in their level of agency "because very little has been changing over time when it comes to culture" (24-year-old business owner, women's youth FGD, Korok). Others in the youth groups, most of whom hold high school and college degrees, see a world of greater freedom due to longstanding norms that provide more freedom and respect to those with education, to women with older children, and to men who head their households.

In sum, the study's social equity theory provides a strong and relevant foundation upon which to identify and learn from regularities in local women's and men's understandings of fairness. Recognitional ideals of equality frame much of the opening discourse. Many study participants observe that "we are all equal" whether "rich or poor," "man or woman," "too young or too old," "sex or gender," or "LGBT" [lesbian, gay, bisexual, transgender]. Distributional and representational concerns emerge in testimonies that speak to fairness (and unfairness) in access to resources, including social assistance. Study participants' notions of fairness also stress everyday norms that underpin good relations. At a practical level, the methods provide stepping-stones to encouraging participatory parity by enabling diverse community members to reflect together on the values and practices that they consider to be fair.

3.2. Rigor of methods

Epp and Otnes' (2021, p. 164) second criterion is for qualitative research to demonstrate rigor, namely, by showing the coherence of a study's conceptual approach with its sampling, data collection, and analysis methods, and especially how the evidence gathered contributes to the study's theory. In the previous section, we already began to showcase the links between our theory, methods and evidence in our

presentation of inter-community findings on fairness. Here we continue to demonstrate those linkages with evidence about climate adaptation capacity. These findings employ “wide and deep” analysis methods to reveal how gender, socioeconomic and generational status differences intertwine in patterned ways and shape perceptions of local adaptation capacity.

Module 2 of the FGDs opens with study participants reflecting on their community’s principal livelihoods and local people’s experiences with adapting these livelihoods to climate-related impacts. We also ask individual FGD participants to rate privately, on a scale of one to six, whether most men and women of their village are undertaking few (a rating of one) or many initiatives (a rating of six) to prepare for and adapt to climate change. Placing emphasis on concerns for responsiveness (discussed in the next section) and continuous learning from the pilot, we added this rating activity to the FGD interview guides after identifying gaps in the Kenya evidence on adaptation capacity. Thus, this discussion draws on just the Philippines cases.

To our surprise, men and women alike generally assess their community’s adaptation capacity quite favorably (Fig. 4). More than 70 % of the 24 FGDs conducted in the Philippines averaged ratings of at least four. Less unexpected is that participants in the middle-income FGDs tend to perceive their barangay to be better prepared than in the low-income and youth FGDs. Here we explore these findings with women’s testimonies from Barangay Merkado about adaptation. Merkado’s relatively favorable conditions compared to the other five cases offer a clearer view of social processes contributing to the high ratings.

Among the six communities sampled, Merkado stands out for its infrastructure, health and education provision, dynamic economy, and large population of roughly 7500 people. The barangay lies near a market and adjacent to a river and highway, which support the workers’ diverse livelihoods. In discussions about major climate events, FGD members report on recurring typhoons, and, most recently, extensive damage to the barangay’s homes, farms, livestock, boats, and roads from Typhoon Odette in 2021, which followed on the heels of the pandemic. Nevertheless, most consider the adaptation capacity of their barangay to be strong.

For instance, participants in the middle-income women’s FGD reported their local government to be well prepared for Odette and even provided relief assistance before the storm arrived. They mention barangay officials’ support for cutting down trees and clearing debris in anticipation of floods and winds. The other two women’s groups testify to their own or other family members’ typhoon preparations, such as women stocking up on supplies and men moving boats to higher ground

and securing homes to trees with ropes. Beyond typhoon preparations, women across the Merkado FGDs—and in the other five study communities—reveal their central roles in carrying their families through difficult climate events and seasonal scarcities by expanding their income generation activities, taking loans, stretching the household budget and cutting back on meals (also see Crease et al., 2019; Tatlonghari and Paris, 2013).

The young women’s group of Merkado rate their barangay’s adaptation capacity at three, the lowest of all the FGDs. For the young women, it seems that their stocking up “on essentials” and “warnings of an approaching typhoon” do not merit a high rating. Some testimonies speak to the young women’s stronger education and less climate-sensitive work opportunities compared to the older women who joined the study, which may be raising their expectations of their community’s adaptation needs. A 23-year-old college graduate relates how during difficult times they do “side-hustles” in addition to regular jobs: “After my shift at the call center I do tutorials.”

In sum, to showcase the study’s rigor, we highlighted here a participatory learning activity and insights afforded by bridging comparative and contextualized findings about adaptation capacity. The inter-community results on adaptation capacity provide a valuable vantage point from which to interpret and weigh the different ratings and experiences shared by Merkado’s middle-income and young women, the latter of whom may be less connected to aid channels and less encouraged by their barangay’s typhoon preparations. A practical implication that follows is that women of different generations need to be targeted differently in climate risk messaging and community action.

3.3. Responsiveness

Epp and Otnes’ (2021, p. 163) final criteria, responsiveness, calls for illuminating the learning process and showing how the research adapted “to concerns and critiques as the project unfolds.”

After collecting data in Kenya, the first pilot country, we immersed ourselves in reading the fieldnotes, developing the coding framework, starting data coding, distilling initial findings, and refining the data collection methods. During this work, we spotted thinness in evidence on adaptation capacity and revised the questioning to ground study participants’ reflections about climate change more strongly in livelihood experiences, and we introduced the adaptation rating activity discussed above.

The Ladder of Wellbeing activity, conducted with the two low-income FGDs, stimulates a learning process that privileges local people’s interpretations of and experiences with moving out of poverty and with remaining poor, and these linkages to adaptation capacity. We delve into this participatory learning activity because it offers a powerful learning tool about inequities, especially for study participants themselves. Having introduced Merkado, we present highlights of the women’s ladder testimonies from this barangay.

The women created five steps on their ladder to depict Merkado’s various wellbeing (and illbeing) categories. The worst-off households at the bottom step, step 1, are described as “just relying on [men] being laborers” while “the wives just stay at home,” “children only reach elementary level,” “don’t have own toilets” and eat “twice a day.” The good news is that the women testify to step 1 households disappearing from Merkado over the past ten years. All these very poor households—which they estimated to comprise 20 % of the barangay’s households a decade ago—climbed up to step 2.

The less encouraging news is that step 2 households are still quite poor and perceived by the women to total half the community in the current period. Unlike step 1, these households feature women generating income such as by selling cooked vegetables, and men pedaling tricycles for hire. Their children “stay in school,” but they “don’t have any savings” and their bamboo housing is vulnerable. None of these households are perceived to have escaped poverty in the past decade. By way of explaining the stickiness of local poverty, a 30-year-old farmer in

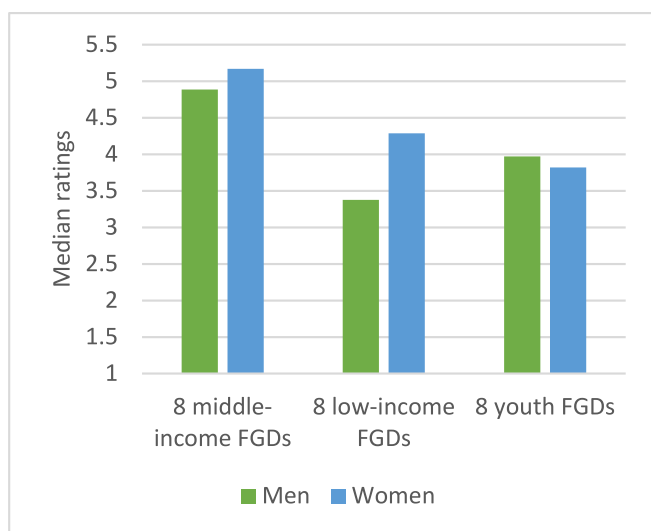


Fig. 4. Perceptions of local adaptation capacity, Median ratings (on scale of one to six), individual members of 24 FGDs, Philippines.

the women's low-income FGD shares: "Because their income is just enough for their daily needs."

Merkado's nonpoor households populate steps 3, 4 and 5, according to the FGD members. Those on step 3 currently (and a decade ago) comprise a quarter of Mercado's population, and have "small savings," "half-concrete" housing, "high school graduates"; and men operate from "vehicles" and women from "stalls for selling fish." What further distinguishes the non-poor households are desirable conduct and social relations, such as "hardworking" (step 3) and "generous," "good interpersonal relationships with everyone" and "well-behaved children" (step 5). From the women's vantage point, the good relations that are hallmarks of fairness and an ability to save appear to require ending poverty.

When asked how the effects of climate change differ for the community's men depending on the ladder step, both the women's and men's low-income FGDs testify to how their barangay's nonpoor households are well prepared because they have "savings" (women's FGD), "money" (men's FGD). In their testimonies women report climate-related hardships to affect Mercado's women more than men because women shoulder responsibility for ensuring the household budget can cover the family's daily needs, and climate change is making this harder. "The men just remit their earnings, and then that's it" (26-year-old fish vendor); but women "have to make adjustments in the budget" and "have to apportion the food," reducing the "usual servings" ... "when you know it's not enough" (42-year-old fish vendor). The women say they also borrow money and pay it back "the next payday."

These gendered struggles to cope with climate change help to shed light on the lack of poverty reduction perceived in Mercado despite its seemingly favorable local opportunity structure.

The study's responsiveness is nurtured by its pilot learning mode and participatory methods, which are vital qualities given the urgency of the climate crisis affecting smallholder communities. The women's ladder testimonies speak directly to how gender and socioeconomic status interact to (differentially) shape experiences with climate change, and point to potentially strategic actions in their community that i) enable low-income women and men to accumulate and maintain savings; and ii) work to relax and shift norms that task budgeting duties solely to women.

3.4. Resonance of learning

Given the study's objective to nurture social equity and transformative adaptation, we address Tracy's (2010, p. 840) call for research that holds resonance because it "influences, affects, or moves ... a variety of audiences through: aesthetic, evocative representation; naturalistic generalizations [and]; transferable findings." In the case of our research, resonance flows from the participatory, co-learning processes embedded in our methodology, from the diverse women and men who contribute their insights and experiences, and from how the approach and data it yields can inform more effective and equitable program designs and partnerships for implementation.

Extensive evidence suggests that equity-generating processes are rare and highly locational, but an intersectional lens that engages social and gender norms provides a high-powered navigational tool for learning about and nurturing these transformative dynamics (Petesch et al., 2018b; McDougall and Ojha, 2022). The methods were not designed to evaluate specific climate initiatives, but the diagnostic data collected signaled entry points, such as local norms that encourage fairness or women's lending and savings networks, upon which future initiatives can learn from to nurture equitable adaptation capacity.

The women's FGDs of Mercado all refer to preparing evacuation bags, suggesting the guidance was valued; and one participant reported that the bags were promoted in a seminar associated with a national public assistance program (the Pantawid Pamilyang Pilipino Program or "4Ps" conditional cash transfer program). When viewed through an equity lens and numerous study participants' issues with targeting, the

seminar's outreach to low-income women raises various risks that include reinforcing inequities among women, tightening rather than easing norms that ascribe reproductive roles to women, adding to the women's household budgetary burdens as they assemble and maintain needed supplies, and seemingly relieving men of obligations to contribute to these preparedness measures. In addition, the Mercado's women's FGDs refer to cash and technical assistance with home gardening ventures but this was conditional on their owning land, which may be out of reach for many types of women but especially those with the greatest food insecurity. In one FGD, nevertheless, support for a communal garden is referenced, and merits further investigation for its contribution to equitable adaptation. Moreover, as men also cultivate vegetables commercially and for household use, there may be avenues for engaging them in ways that do not discourage but rather strengthen women's opportunities and cooperative gender relations.

This methodology design initiative focused on social equity and climate adaptation is now being taken forward in a new locally-led R&D partnership to strengthen adaptation planning in Luzon, with plans to extend into further geographical areas. The partnership contributes to the Philippine government's nation-wide community-based adaptation initiatives that encourage local communities to develop and implement measures suited to their specific agricultural contexts. To inform these initiatives, several research and government organizations are using a participatory climate risk mapping tool called Climate-Smart Mapping and Adaptation Planning (CS-MAP). The planning initiative encourages a locally-led process of identifying climate-related risks, delineating vulnerable areas and developing location-specific adaptation plans (Yen et al., 2019). The CS-MAP can be readily integrated into local planning and contribute to the adaptation capacity of local agricultural production systems.

The authors have been involved in CS-MAP exercises through work being carried out by IRRI and IIRR with the Department of Agriculture and local authorities in a growing number of municipalities and provinces, including in Luzon where this diagnostic social equity research was undertaken. Despite the best intentions, it became clear that consideration of equity issues in the mapping exercise needed strengthening. While different climate risks are well identified the information obtained does not always capture the nature and severity of the risks faced by more marginalized farmers. Better understanding is needed of the vulnerabilities flowing from inequities in the distribution of resources and opportunities, and of how to identify climate adaptation pathways that account more effectively for agro-ecological and socio-economic heterogeneity. As a result, both the social equity methodology and findings from this research are informing a refinement of the CS-MAP approach, such as measures to ensure that risks and appropriate adaptation pathways are analyzed from the perspectives of diverse farmers and account for gender and other social group differences in types of risks and opportunities faced.

The resonance of our approach can be seen in how our theory and methods shine a light on why and how equity-generating change may sometimes take hold and grow. Work is on-going but this is an example of how an equity lens can feed into practical action, through an R&D model that invests in ongoing participatory action learning from diverse smallholder communities alongside external partners (see Colfer et al., 2022). Such an approach complements growing interest among researchers and development practitioners in locally-led climate adaptation (Vincent, 2023; Westoby et al., 2020), including specifically in the Philippines (Jamero et al., 2018).

4. Conclusions

We presented our initiative to develop a participatory qualitative and comparative methodology that aims to advance social equity and transformative adaptation in smallholder communities. Both our theory and methods are rooted in the idea that it is through social relations that aspire to "put the last first" by which transformative pathways emerge

that fuel social equity and sustainability (Chambers, 1997). Integral to our approach is concern for the gender and social norms that enable participatory parity as a (potentially) powerful driver of equitable terms of recognition, distribution, representation, and intergenerational security. In their nurturing of participatory parity, the study's theory and methods reinforce one another and contribute to R&D practice.

Criteria for strong qualitative research structured our discussion of results:

In terms of relevance, we have shown how our multidimensional theory of social equity provides a valuable prism for learning from local people's own understandings of and experiences with social equity and adaptation to climate change. Recognition, distributional and representational concerns for equality in how people treat one another and access resources and opportunities, including aid, weigh heavily on conceptions of fairness and social equity. Due especially to accountability issues, study participants express clear preferences for inclusive practices that do not specifically target the neediest but open opportunities for all. Community-level R&D partnerships that are poorly equipped to learn from and address local perceptions and experiences risk generating adaptation pathways that are inequitable, with least benefits to the poorest, most marginalized, and most vulnerable to climate risks. Our findings suggest that locally-led and inclusive climate adaptation efforts *will* be challenging, and likely to require ongoing experimentation with strategies that not only learn from but actively work to reduce gender, socio-economic, and generational inequities in adaptation capacity.

Regarding rigor, our study questions engage with complex social processes, but our theory and methods are fine-tuned to do this. The Ladder of Wellbeing questions that ask study participants to reflect on and compare the circumstances of their community now and in the past provide a compelling perspective on social processes that reinforce inequities, and these same testimonies may also spotlight pathways towards good change. Merkado's low-income women and men elaborate the crucial role of savings in enabling and maintaining not just escapes from poverty, but also recovery from major climate events. Interventions that equip smallholder and landless households with low incomes to accumulate and safeguard savings seem urgent for strengthening their adaptation capacity. Such initiatives, nevertheless, need to account for and work to shift the restrictive norms that disproportionately burden women with household budgeting as well other housework, care and productive responsibilities.

On responsiveness and resonance, how we distilled findings and adapted methods as the learning unfolded highlights the value of maintaining a pilot-mode to consolidate the methodology design based on learning from the empirical research. The opportunity to tease out initial findings and strengthen the FGD interview guides while fieldwork was still underway was valuable. The benefits of deeper and clearer contextual findings outweigh tradeoffs from somewhat reduced possibilities for comparative learning and lessons.

With respect to our action learning approach, we hope other researchers working on equitable adaptation at the local level will be inspired to mobilize their own learning partnerships to adopt and adapt the methodology and share their experiences. Collaborating with NGOs that the study communities trusted, and which were experienced with participatory methods, opened doors for our fieldwork and follow-up actions. This can be seen in our example of enhancing the CS-MAP planning by integrating a stronger equity lens.

Working with social equity was new for the NGOs as well as study participants, and it was encouraging to see them all engage meaningfully with the concept. The collaborative learning experience, nevertheless, revealed challenges, even for experienced researchers and NGO partners. Perhaps in expectation of some benefits following the study, some study participants likely perceived pressure to paint their community, and its leaders and organizations, in a favorable light despite their urgent needs. These are well-known issues of fieldwork of all kinds, and researchers' capacities for reflexivity and for learning from and

triangulating findings across diverse study participants and FGDs help to minimize biases associated with social pressures. Normative pressures are particularly an aspect of focus group dynamics, and testimonies in these settings reveal some of the norms weighing on pathways for nurturing social equity (also see White, 2019).

Beyond our tools, additional R&D investments are needed to strengthen external partners' capacity to learn from opportunities as well as constraints afforded by the contextual and fluid ways in which norms operate. Norms both enable as well as dampen participatory parity and the agency of women and other disadvantaged social groups; and initiatives that transparently prioritize, invest in and monitor diverse local people's perceptions of fairness and equity hold potential for nurturing stronger accountability to effective and sustainable climate responses. Closely related to this learning, R&D is needed to strengthen understanding of conditions that enable equitable development partnerships with a capacity to maintain fidelity to the very large rural poor populations with urgent needs due to climate change but who can easily be pushed to the end of the line.

CRedit authorship contribution statement

Patti Petesch: Conceptualization, Methodology, Writing – original draft, Writing – review & editing. **Eleanor Fisher:** Conceptualization, Writing – original draft, Writing – review & editing. **Olivia Ebenstål Almeida:** Writing – review & editing. **Jon Hellin:** Writing – review & editing. **Renee Bullock:** Writing – review & editing.

Declaration of competing interest

The authors declare that they have no known competing financial interests or personal relationships that could have appeared to influence the work reported in this paper.

E. Fisher and J. Hellin are Guest Editor's for VSI: Social Equity and were not involved in the editorial review or the decision to publish this article.

Data availability

Study produced sensitive human subject data, and can be shared according to collaborating institutions' protocols and their formal ethics reviews.

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Appendix A. Supplementary data

Supplementary data to this article can be found online at <https://doi.org/10.1016/j.crsust.2024.100272>.

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