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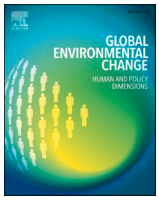

Integrating power, justice and reflexivity into transformative climate change adaptation

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ABSTRACT

Transformative adaptation requires transformation among those who fund, plan, implement and evaluate interventions. In response, we emphasise the need for donor and implementing organisations to self-reform to create the necessary space and support for adaptation projects that embrace a transformative ethos. We argue that projects can appropriately centre justice as the primary goal of transformative adaptation by (1) confronting power relations, (2) embracing knowledge pluralism, (3) fostering bottom-up coalitions, and (4) recognizing trade-offs and unexpected outcomes. At the heart of this reflexive approach is the foregrounding of learning processes targeted towards shifting knowledge and power that is critical to avoid adaptive outcomes that exacerbate the vulnerability and exclusion of already marginalised groups.

In response to growing concerns about 'maladaptive' outcomes within climate change adaptation projects (Eriksen et al., 2021), a new generation of approaches are increasingly focused on transforming the socio-economic and political structures that produce vulnerability as a central pillar of sustainability (Carr, 2019, Vogel and O'Brien, 2022). This ethos is reflected in the concept of 'transformative adaptation' which advocates for deep-seated social, institutional, technological and cultural change that strategically build the capacities of impacted communities to engage climate challenges (Kinley, 2017). By raising complex questions about whose values, knowledge and agency are foregrounded within mainstream adaptation planning, the agenda of transformative adaptation has significantly challenged prevailing adaptation practices and the power relations that underpin them (Eriksen et al., 2015, Mikulewicz, 2017). However, the evocation of transformative adaptation also poses complex challenges concerning how its core values of justice, empowerment and sustainability should be enacted. There is therefore a pressing need to draw from examples of reflexive practice to help inform transformative adaptation at a project and programming level.[i]

In response, our core argument is that transformative adaptation requires a deeply reflexive approach wherein key assumptions, beliefs and judgements within adaptation projects are continually assessed in an ongoing manner. To do so, we position adaptation as an engaged learning process that empowers grassroots actors within and through the design, implementation and evaluation of projects to support the central ambition of placing justice at the heart of transformative adaptation (Shi and Moser, 2021). Adaptation interventions here include actions and decision-making processes from projects, policies and strategies which can be implemented at multiple levels, including community, ecosystem, and different levels of political administration, through a diversity of actors, from socially diversified populations to local leaders, businesses, civil society organisations, government and administration. To attain just outcomes requires building justice into the process of adaptation itself by opening up space for contesting the uneven power

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relations and the worldviews and practices that underpin them (Eriksen et al, 2015). In short, addressing justice and equity in process requires questioning dominant societal narratives and 'business-as-usual' approaches in order to position people in vulnerable situations at the centre of adaptation efforts (Colloff et al., 2021; Schipper et al., 2022). Building on this sentiment, we outline four key operational principles towards better embedding justice into the processes of adaptation planning and practice (Fig. 1) and we substantiate these principles through a breadth of case study references. After introducing each of these four principles, we provide a concise table that identifies common challenges associated with current practices and some examples of specific actions that can help to overcome these challenges.

1) Contest Power Relations

Power relations in multiple dimensions are evident throughout adaptation projects and their exercise shapes who has influence to set agendas, who can marshal and distribute resources, who commands legitimacy to speak on behalf of others, and who determines what counts as success. Power suffuses adaptation practice; yet, it is rarely addressed explicitly within the process of planning or programming (Nagoda and Nightingale, 2017). As a result, power relations are typically obscured even when implementation authorities are keenly aware of their presence and often tacitly use them to try to speed up project execution and generate a clear path towards externally designated targets (Nagoda and Nightingale, 2017). For example, research upon a climate-resilient village project in southern India by Taylor and Bhasme (2021) highlighted how project implementers relied heavily upon collaboration with village elites with whom they had pre-existing relationships and shared similar epistemic approaches. For project managers, such elite farmers were easier to work with and could deploy their influence to help jump-start projects, ensure local participation and demonstrate rapid 'success' on a schedule required by outside agencies. The unreported outcome, however, was that these farmers positioned themselves at the forefront of the most lucrative elements of the project, therein exacerbating extant inequalities (see also, de Vente et al., 2016).

These kinds of examples highlight the need for adaptation planning and implementation to embrace dialogue-based, multi-stakeholder learning processes to shift extant power relations (Chambers et al., 2021). The case highlighted by Reid et al. (2016) is instructive. Operating across four pastoral ecosystems in East Africa, a team of researcher practitioners sought to develop a continual engagement model that over time could build trust and empowered participation with communities to facilitate them as co-actors in both research practice and policy development. A central lesson of the process was that asymmetries of power and access to information must both be *recognized* and then *addressed* within the operations of the programme itself. By explicitly acknowledging the sources of their power and proactively addressing them through deliberate information sharing, project agencies began to move towards a collaborative learning culture that was better positioned to correct power differentials and improve outcomes. Only then were scientists and facilitators able to discuss and then work appropriately with community-led teams to co-develop research questions, collect data, and analyze information.

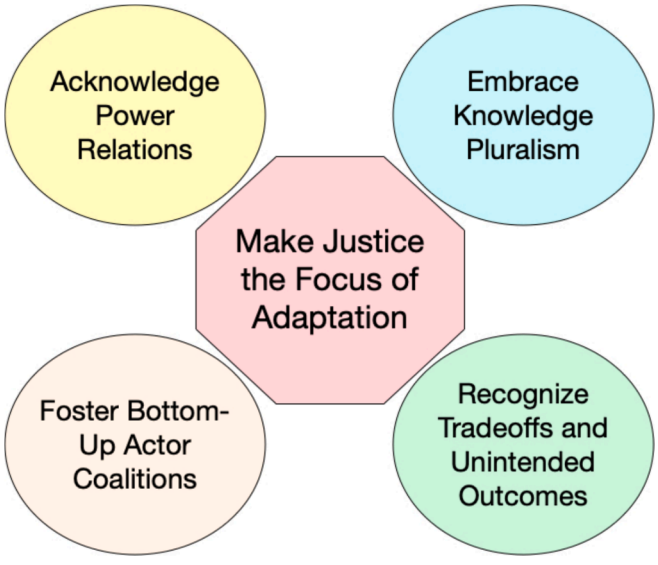

Fig. 1. Elements of a reflexive approach to adaptation.

To be clear, the acknowledgement of power within adaptation processes does not make it disappear: it is impossible for donors and implementing agencies to simply step outside the remit of their own authority and resources, or to adequately redress inequalities in voice among target populations and communities. Yet the starting point of adaptation must be greater reflexivity about how power in multiple dimensions shapes the goals and processes of adaptation and the potentially uneven distribution of gains and costs. Contesting power relations must then be incorporated into the practice of adaptation planning so that privileged individuals do not limit engagement or bias outcomes. Notably, the existence of power relations at the local scale means that, while the localisation of decision-making through political decentralisation and devolution can open up space for democratic engagement in local decision-making processes (Fischer, 2021), it is on its own insufficient to address inequality and marginalisation within adaptation programming (Muok et al., 2021; Taylor and Bhasme, 2021; Rahman et al., 2023).

To avoid the kinds of elite capture that can occur through an unreflexive decentralisation of processes, proactive measures must include the engaged representation of a diversity of stakeholders; facilitation of discussion including structured methods for aggregating information and balancing power dynamics among participants; and provision of information and decision-making power to all participants (see de Vente et al. 2016). For example, the Promoting Sustainable Partnerships for Empowered Resilience (PROSPER) project in Malawi undertook a sophisticated targeting process that sought to ensure participation from different categories of households and avoid elite capture. It first undertook community wealth ranking exercises before creating long-lists for participation. The project's process evaluation found that, although resource intensive and time-consuming, the transparency of this process promoted better inclusion and avoided elite capture of benefits (Leavy et al, 2022).

2) Embrace Knowledge Pluralism

Closely coupled to contesting power relations is the recognition that adaptation processes must engage a plurality of knowledges beyond those constituted by dominant western notions of expertise (Chakraborty et al., 2021). In this respect, there has been a steady and growing emphasis on the incorporation of local and/or indigenous knowledges into adaptation strategies. Implementation of this broader goal, however, remains patchy and hesitant. One study indicates that only ten percent of African governments included indigenous and/or local knowledge about water resources in adaptation planning (Zvobgo et al., 2022). At the same time, other studies suggest that even when recognised, local or indigenous knowledge tends to remain subordinated as a supplemental resource that can be drawn upon to improve operational efficiency (Ojha et al., 2016, Westoby et al., 2021).

To counter these tendencies, a reflexive approach to transformative adaptation must emphasise knowledge co-production as continual engagement through which a diversity of actors representing distinct forms of knowledge can work iteratively toward common vision and action (Nel et al., 2016, Vincent et al., 2018). Although there are varied methods of enacting co-production, most seek to enact coordinated steps that collectively and reflexively build the institutional phases for reframing a problem, illustrating different bodies of knowledge that are relevant, and excavating the wider social and political constraints to engaging it. Ideally, co-production occurs with an ethic of mutual reciprocity and equality to help create inclusive and transformative spaces

with decolonial potential and a specific emphasis on gendered inequities (Turnhout et al., 2020, Morchain et al., 2019, Bonatti et al, 2018).

In practice, heightened reflexivity raises a series of questions concerning how power hierarchies can be proactively contested within the co-production process (Tschakert et al., 2016, Pardoe et al., 2020; Falzon, 2021). Stirling et al. emphasise how co-production is not simply a question of including people who wouldn't normally be invited. Rather, it entails taking proactive and transparent steps towards equalising relationships of knowledge production. In short, reflexive adaptation processes must afford respect and agency in the knowledge production process to those most impacted by the potential outcomes of adaptation research and programming (Ely, 2022). When reflexively facilitated, a participatory process of knowledge co-creation helps build capacity that allows diverse social groups confidence to assert their perspectives – including oral histories, religious and spiritual practices, and shared livelihood experiences – into higher-level adaptation measures, thereby challenging prevailing knowledge hierarchies (Ziervogel et al., 2022)).

In this vein, co-production does not entail synthesising varied forms of knowledge into a singular, unitary perspective. Rather, co-production must recognise and validate knowledge produced from different epistemological bases even as it refuses to align neatly with dominant approaches (Chakraborty et al., 2021). Discussions of change often raise epistemic questions in which different ways of 'knowing nature' and 'knowing society' collide (Temper and Del Bene, 2016). On this basis, the co-production of knowledge constitutes a political act that requires collective reflection on who participates in the process, as well as providing a conducive environment for active and inclusive engagement of and consideration of the voices, perspectives and worldviews of the participants (Dilling et al., 2019; see also Vincent 2022). Part of the importance of local knowledge produced by grassroots actors is that it speaks to the situated experience of power and, for this reason, practices of co-producing knowledge must explicitly seek to (1) enhance grassroots agency to transform existing structures of power within knowledge-making, governance and valuation (Mehta et al., 2021); and (2) provide a commitment to act upon the knowledge that is co-produced, even as it challenges hegemonic norms including gendered inequities (Vincent et al., 2018).

3) Foster Bottom-Up Coalitions

To help embed the potential for lasting transformative outcomes, projects need to explicitly foster social networks that can promote, value and sustain the knowledge and priorities of local peoples, including those who might otherwise be marginalised in local decision-making processes. To this end, a core element of transformative adaptation is to help build combinations and alignments of actors most affected by climate change impacts in ways that actively privilege grassroots networks and give them a more robust institutional form. This represents a reversal of much of the 'outcome' orientation of adaptation planning that privileges the accomplishment of a set, easily countable series of results. In its place, transformative adaptation must put greater weight on grassroots coalition building to shift the political terrain that presently constrains transformative change (Ely, 2022).

For example, working in the context of *peri*-urban India, Marshall et al highlight how privileging grassroots knowledges required building coalitions between researchers, activists, nongovernmental organisations (NGO), and community groups (Marshall et al., 2018). Two elements of this process were key. First, strategies were employed to build the legitimacy of grassroots knowledges across overlapping environmental, health and poverty challenges to create a broad-based counter-hegemonic knowledge base. Second, the project sought to mobilise networks that supported grassroots actors to transform how knowledge is produced, transferred, and used at multiple scales. For this purpose, successful alliance building rests upon establishing mutual trust and an appreciation of differences and complementarities of diverse approaches across broad coalitions. Establishing this political basis for subaltern knowledge is vital given how dominant actors and institutions command significant resources that translate into oversized access to and influence over policy. As a result, if alternative pathways are to be politically and practically viable, transformative adaptation projects must place emphasis and resources on uniting coalitions of actors and institutions that can collectively mobilise grassroots knowledge (van Zwanenberg et al., 2018).

This emphasis on fostering coalitions and alliances helps distinguish what has been called 'locally-led adaptation' from earlier approaches to community-based adaptation (Westoby et al., 2021; Vincent 2023). As an example, Charli-Joseph and collaborators created a knowledge alliance building initiative in Xochimilco, Mexico, that sought to establish a transformative and decolonial space for the discovery of new pathways for environmental change (Charli-Joseph et al., 2018). Key to this approach was the identification of actionable social networks by leveraging previous social movements, capacity-building projects, collective projects and institutional affiliations. This process helps make visible to participants the nature of their individual and collective agency and encourages them to consider new alliances that can provide the political foundations for the mobilisation of knowledge in settings that normally would be closed (see also Ely and Marin, 2021).

4) Preempt Tradeoffs and Unexpected Outcomes

In any given context, the distribution of benefits and potential risks from adaptation projects are likely to be unevenly distributed across social groups – not least along gendered lines – and manifest themselves unevenly across time. Moreover, the attempt to empower some will almost inevitably result in the relative disempowerment of others whose privileged positions are challenged (Mosse, 2011). Within most project planning literature, such tensions are silenced for the purposes of securing donor and governmental backing for projects. The tendency to project positive-sum outcomes precludes a serious examination of tradeoffs and interrupts the process of learning from the unintended impacts of projects. For example, in the realm of climate-smart agriculture, interventions are often promoted as accomplishing 'triple wins' of fostering productivity, adaptation and mitigation (Ellis and Tschakert, 2019). A systematic review of the literature on climate-smart agriculture in sub-Saharan Africa, however, emphasised how various practices and technologies involved complicated tradeoffs over time between competing objectives (Akinyi et al., 2021). This is reinforced by studies of climate-smart agricultural interventions which indicate the complexity of outcomes over time across different social groups, including strongly gendered differences (Newell and Taylor, 2017, Karlsson et al., 2018, Taylor and Bhasme, 2021).

As noted in Eriksen et al. (2021), projects repeatedly generate unintended outcomes that are maladaptive in part because marginal groups typically are not afforded the voice to bring potential risks of projects to the planning stage. This suggests that adaptation projects need to embrace a heightened reflexivity towards two elements: first, the potential for unanticipated outcomes and tradeoffs across various stages of implementation; and, simultaneously, how unexpected impacts are unevenly experienced by distinct sections of the target communities, in both positive or negative ways (Fig. 2).

Without doubt, increasing attention is now being paid to the mechanisms of monitoring and evaluation of adaptation (New et al., 2022). One of the barriers to working with unexpected change and outcomes, however, is that adaptation projects typically ascribe a narrow set of project outcomes over a strictly delineated timeline (Li, 2007). In contrast, the goal of being adaptive to unexpected consequences indicates that planning needs to be flexible and find ways of constant self-evaluating as it moves along a process of continual learning, particularly as unintended aspects typically have unacknowledged equity implications.

To embed such reflexive learning within monitoring and evaluation procedures, systems must be purposefully designed to enable it. This involves creating dedicated learning spaces that exist within and across the full plurality of parties involved in designing, implementing and participating in adaptation interventions, and experiencing their outcomes. These learning spaces must seek to foster deeper reflection to

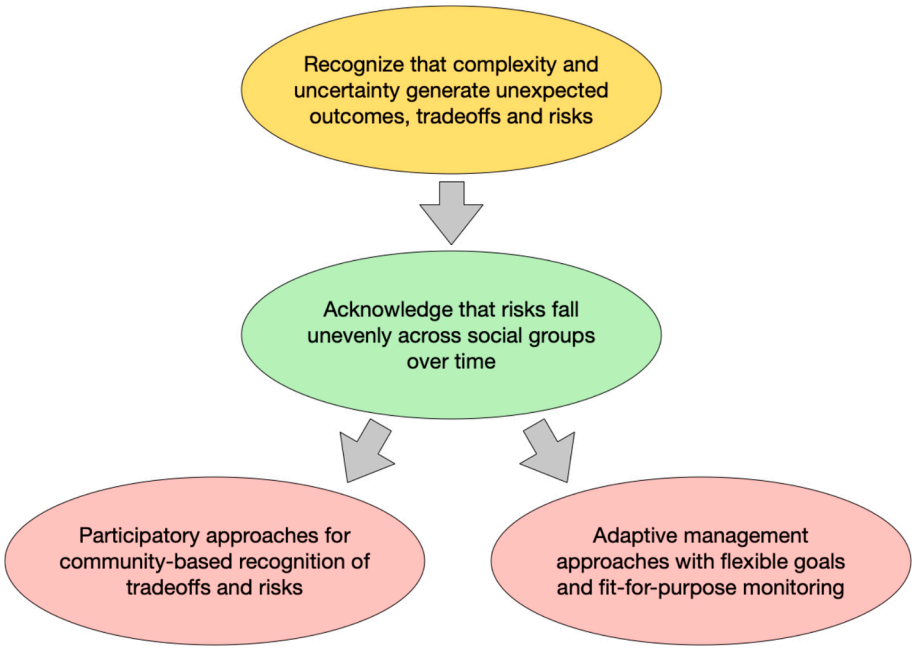

Fig. 2. Preempting uneven outcomes, tradeoffs and risks.

question the assumptions that drive how adaptation activities are monitored and evaluated, including the metrics used to determine success. For example, the study of post-adaptation assessment in 10 communities across Ecuador undertaken by Mills-Novoa (2023) demonstrated that community actors held different criteria for success compared to official agencies, with the latter focused on goals that did not sustain beyond the immediate closure of the projects. Through a range of ex-post assessment exercises designed to foreground the priorities, values, and worldviews of the grassroots collectives tasked with upholding adaptation initiatives, Mills-Novoa highlights the disjunctures and tensions between formal monitoring and evaluation and community-generated assessments.

Creating such pluralistic learning spaces is no easy task and would necessarily look different across the design and implementing process. However, it would usefully involve curating spaces for deliberative meeting practices to focus on what remains unknown and unseen about project outcomes, alongside identification of the processes and practices that silence such outcomes. Hence, rather than a venue for participants to demonstrate their capacity or internally compete for success, reflexive adaptation spaces must be created for collective inquisitive activities to engage with the limitations to capacity and performance. For those facilitating adaptation, this requires continually engaging grassroots actors openly about what we do not or cannot know about the intended and unintended impacts of our actions and adjusting our activities accordingly (Sharma, 2017, Nightingale et al., 2019, Mills-Novoa, 2023). Within such processes, fostering an examination of gendered dynamics and norms is imperative for strengthening practices geared towards equality (McDougall et al. 2021).

Conclusion

Transformative adaptation requires as much transformation among those who fund, plan, implement and evaluate interventions as among those who enact practices, politics and knowledges on the ground. Many of the standard ways of 'doing adaptation' – including linear planning models, tight timelines and externally set deliverables – are fundamentally antagonistic to core principles of transformation. In response, this review points to four key features within a reflexive approach to transformative adaptation that prioritises justice. By (1) confronting power relations, (2) embracing knowledge pluralism, (3) fostering bottom-up coalitions, and (4) recognizing trade-offs and unexpected outcomes, we emphasise the need for donor and implementing organisations to self-reform to create the necessary space and supports for adaptation projects that embrace a transformative ethos. Such shifts require that organisations make space for learning, deliberation and contestation of received wisdoms, dominant knowledges and underlying assumptions about 'good adaptation'. To do so, we encourage a move towards longer-term funding timelines to facilitate participatory processes, local ownership, and collaborative learning, the outcomes and impacts for which take longer than standard projects. While full exposition of turning these principles into practice is beyond the scope of this perspectives article, Table 1 provides some examples of actions that can help to overcome enduring challenges.

At the heart of this approach is the foregrounding of learning processes targeted at shifting existing knowledge and power relations. These are critical to avoid maladaptive outcomes that exacerbate the vulnerability and exclusion of already marginalised groups and thereby undermine sustainable outcomes. A priority is to create reflexive learning spaces within organisations that foster deeper reflection about the assumptions driving how we design, govern and implement adaptation activities. This would usefully involve spaces for different actors to interact across scales and work areas, engaging deliberative meeting practices to focus on what we do not know, what and who is unseen, as well as what processes and practices hold systems in place that hamper effectively addressing vulnerability. Opening up democratic space in decision-making processes for deliberation and representation of those in vulnerable situations is a prerequisite to socially just adaptation actions but in and of itself is not sufficient. Drawing on lessons from varied contexts, this paper has identified, key entry points for creating more pluralistic learning spaces that can more fundamentally help shift power relations within adaptation interventions and decision-making processes. Embracing a reflexive approach in this manner can help to reveal and redress the practices, attitudes and understandings through which some people and experiences of vulnerability garner attention while others are rendered silent.

Table 1
Entry points for pluralistic learning spaces that help centre justice in adaptation.

Principle	Common and persistent challenges	Actions addressing challenges exemplified
Contest power relations	Elite capture at community level Dominant focus on the physical resilience of infrastructure or economic losses as a main goal of interventions Privileging the high-value physical assets of richer groups rather than the smaller or intangible losses of poorer groups. Lack of recognition of the historical and current socio-political differences and injustices	*Community*: promote engaged representatives of diversity of stakeholders (Leavy et al., 2022) *Local administration/ ecosystems*: Support continued engagement through researcher-practitioners (Reid et al, 2016) *Project design*: focus on the resilience of rights, such as how project investments can support rights claims and secure access to resources, social and physical infrastructure in the face of climate events and climate change (e.g. rights and entitlements in urban resilience planning, Ziervogel et al 2017). *National planning*: Inclusion of mechanisms to examine losses and risks across social groups and identify which outcomes are to be avoided for vulnerable groups.
Embrace knowledge pluralism	Attitudes and understandings that situate groups as vulnerable and incapable recipients of adaptation performed by external experts, imposing externally defined problem understandings and solutions. Viewing 'local communities' as socially homogeneous with uniform knowledge and needs. Designating local/indigenous knowledge as 'supplementary' information that merely helps refine or legitimise scientific approaches. Local consultation as a tick-box exercise rather than authentic engagement in framing problem understandings	*Community*: Inclusive and representative participatory approaches can shift narratives and power dynamics (Morchain et al, 2019) *Local administrative*: Participatory processes of knowledge co-creation at city scale challenge predominant knowledge hierarchies (Ziervogel et al., 2022). *Project design*: take often-invisible issues (like disability, discrimination, violence) as an explicit entry point, for example assigning 'invisible groups' active expert roles in leading dialogues and sourcing the locally embedded sources of resilience and adaptation knowledges of these groups (Pertiwi et al., 2019). *National planning:* Ensure inclusion of indigenous/local knowledge in adaptation planning (Zvobgo et al, 2022)
Foster bottom-up coalitions	Lack of involvement of local communities leading to their shouldering the burden of reviving adaptation projects after their official end (as exemplified in Ecuador, Mills-Novoa, 2023). Localising as pushing responsibility for risk management to vulnerable individuals and groups.	*Community/across scales*: Project and planning emphasis on inclusion as partnership and relationship building (beyond consultation) (Leavy et al, 2022) *Local administration/ ecosystem*: Providing safe spaces for engagement of actors activated new agency in the Xochimilco urban wetland (Charli-Joseph et al, 2018). *National planning:* building multisector transformative spaces in the seed sector in Argentina (van Zwanenberg et al, 2018); coalitions are required between multiple actors including from grassroots (Marshall et al 2018)
Pre-empt trade-offs and unexpected outcomes	Marginal groups not afforded space in knowledge and decision-making processes, leading to unanticipated outcomes and maladaptationNational discourses crowding out needs of vulnerable groups at more local scale (e.g. with climate smart agriculture discourses, Karlsson et al, 2018) Short project cycles and reporting structures with predefined activities and outputs, that focus on efficiency of delivery rather than reflexive learning to assess and engage trade-offs and unexpected outcomes. Rigid monitoring and evaluation systems (often quantitative only indicators) do not provide scope for learning, or encourage flexibility as necessary	*Local to national adaptation interventions*: Commitment to monitoring, evaluation and learning, where learning takes place within project lifespans so there is capacity to apply adaptive management. Increased focus on qualitative monitoring and evaluation. Participation of stakeholders and target populations in framing monitoring, evaluation and learning procedures. Flexible and iterative implementation approaches (Tye and Suarez, 2021). *International and national*: Longer-term funding to allow time for outcomes and impacts to be realistically reached and trust and relationships to be built.

CRediT authorship contribution statement

Marcus Taylor: Writing – review & editing, Writing – original draft, Conceptualization. **Siri Eriksen:** Writing – review & editing, Writing – original draft, Conceptualization. **Katharine Vincent:** Writing – review & editing, Writing – original draft, Conceptualization. **Morgan Scoville-Simonds:** Writing – review & editing, Writing – original draft, Conceptualization. **Nick Brooks:** Writing – review & editing, Writing – original draft, Conceptualization. **E. Lisa F. Schipper:** Writing – review & editing, Conceptualization.

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.

Data availability

No data was used for the research described in the article.

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