DEVELOPMENT IN PRACTICE
https://doi.org/10.1080/09614524.2025.2581867

Routledge
Taylor & Francis Group

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Voices of change: public narrative storytelling communicates climate resilience actions in Kenya

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ABSTRACT

Powerful stories can inspire people to take action on climate change by using relatable lived experiences people connect with. In the "Voices of Change" project, the CGIAR Research Initiative on Climate Resilience (ClimBeR) partnered with a local non-governmental organisation leading climate-resilient advocacy in Kenya, the Centre for Minority Rights Development (CEMIRIDE), to amplify community stories of climate adaptation. Our study used public narrative storytelling, employing a three-part "story of self, story of us, story of now" framework. Public narrative storytelling incorporates people's personal stories with those of others, connecting storylines to clear policy and call-to-action goals. Our study demonstrated how Indigenous communities can bring their experience of what works in a local context to decision makers, and how doing so may successfully lead to a better match between local ideas (which align with national priorities) and global priorities on climate adaptation, thus showing the importance of local knowledge at global level.

ARTICLE HISTORY
Received 3 November 2023
Accepted 22 September 2025

KEYWORDS
Storytelling; climate resilience; locally led climate adaptation; Indigenous knowledge; dryland Kenya

SUSTAINABLE DEVELOPMENT GOALS
SDG 13: Climate action; SDG 10: Reduced inequalities; SDG 17: Partnerships for the goals

Introduction

Localised impact of the climate crises, and its increasing effects in Kenyan communities, is demonstrated in the growing literature on climate change impact and adaptation (Gebre, Amekawa, and Fikadu 2023; Liguori, Onyango, Jonsson et al. 2023). Evidence shows that poor and marginalised people disproportionately experience the worst climate impacts (Birkmann et al. 2022). Social science scholarship acknowledges how the resulting vulnerabilities and abilities to adapt to climate change events are shaped by social differentiation (Hellin et al. 2022; Hellin et al. 2023; Rahman et al. 2023). Critical adaptation literature further underscores that historical inequalities and power relations lay the foundations upon which susceptibilities to climate change multiply (Kashwan and Ribot 2021; Ribot 2022). Extreme climate change events, therefore, expose and add to already existing vulnerabilities that affected individuals and their communities face.

Recognition of the importance of Indigenous knowledge at the global level is growing. The significance of embodying Indigenous knowledge in adaptation efforts is gaining traction in research and climate policy (Rahman et al. 2023; Scoones and Mohamed 2023). Indigenous knowledge is defined as the "understandings, skills and philosophies developed by societies with long histories of interaction with their natural surroundings" (Hurlbert et al. 2019, 755). Embedded with an

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ingrained relationship to an individual's environment as well as the changes within it, the knowledge is local and context specific, based on earlier generations' observations, inquiry and practice, and often passed on through oral history (Nyong, Adesina, and Osman Elasha 2007).

Incorporating Indigenous voices from diverse geographies in decision-making forums is a key step in fostering adaptation outcomes such as food system sustainability (Ng'endo and Connor 2022). This is particularly the case for high-level forums, where alternative pathways for delivering the economic transformations needed to put people and planet first can be adopted at global scale. The policy space that informs climate decision-making includes not only governments, but also researchers who can strengthen and support the voice of Indigenous communities to enable transformative change (Hellin et al. 2022), as well as practitioners such as Non-Governmental Organisations (NGOs) working towards targeted climate action interventions informed by socio-cultural and socioeconomic factors. This study contributes to addressing these gaps by demonstrating collaboration between two Indigenous communities from Baringo county in Kenya with a local advocacy NGO, Centre for Minority Rights Development (CEMIRIDE) and the CGIAR Research Initiative on Climate Resilience (ClimBeR). Baringo is a dryland area located in the Rift Valley region. The community groups that CEMIRIDE and ClimBeR worked with come from the Ogiek and Endorois peoples, who are predominantly hunter-gatherer forest dwellers and agro-pastoralists, respectively. The Ogiek and Endorois communities were selected as they aligned with prior work that CEMIRIDE had conducted in Baringo, where the organisation had supported to initiate climate actions that benefitted these communities, and in turn the community members could communicate authoritatively on the tangible results. Elaboration on the process of identifying these target communities is in the methodology section.

Using public narrative stories, our study shows how community voices can be amplified at policy level. Stories allow us to express our values not as abstract principles, but rather as lived experiences, having the power to move others to action. The language of emotion is the language of motion – in fact, emotion and motion share the same root word; that is, "motion" (Ganz 2011). Our study adapts the "story of self, story of us, story of now" public narrative storytelling framework, which has the triple benefit of engaging the heart, head and hands, translating to motivation, strategy and action (Ganz 2011). Our study argues that public narrative storytelling, by connecting values with emotions, leads to action.

The use of a public narrative storytelling approach can set the foundations for impact. The "Voices of Change" outputs have continued to be of use in different decision-making levels intended to inform climate action. At the local level, CEMIRIDE is planning a training for Indigenous youths on climate change negotiations in the coming three years, in partnership with the African Group of Negotiators Expert Support (AGNES Africa), which offers a strategic platform to use the "Voices of Change" video series as a powerful training tool (Ohenjo 2023). At the national government level, the "Voices of Change" videos were used to demonstrate how Indigenous people can be supported to participate in national-level policy action during the National Climate Change Action Plan workshop in August 2023 (KNCHR 2023). The work also featured at the continent-level Africa Climate Summit and Africa Climate Week (ClimBeR 2023c). The outputs were also presented at the International Association for Feminist Economics Annual Conference in July 2023 (Ng'endo 2023) and the Tropentag conference in September 2023 (ClimBeR 2023b). The "Voices of Change" outputs contributed to the 2023 International Day of the World's Indigenous Peoples (ClimBeR 2023a) and International Youth Day (ClimBeR 2023d). In late October 2023, CEMIRIDE hosted a side event at the 77th session of the African Commission on Human and Peoples' Rights in Arusha, with a focus on climate-resilient agriculture and Indigenous peoples' right to food. CEMIRIDE positioned "Voices of Change" as a key tool for advocacy, demonstrating the ability of Indigenous communities to speak to audiences far beyond their homelands (CEMIRIDE 2023). On 8 December 2023, ClimBeR in collaboration with CEMIRIDE ensured the perspectives of those most affected by climate change were represented in high-level discussions when one of the "Voices of Change" participants was a panel member at the UN Framework Convention on Climate Change Conference of the Parties (COP) in Dubai (COP28

2023). Our "Voices of Change" work has achieved impact at a global level, thus justifying the importance of this approach that creates links between the local and the global.

The key questions guiding the "Voices of Change" study were:

(1) How can people communicate what climate adaptation actions work in a local context to high-level decision makers?
(2) How can Indigenous knowledge used in local climate adaptation inform global climate action?

The remainder of this paper is structured into the following sections: (i) literature review, (ii) methodology, (iii) results, (iv) discussion, and (v) conclusion and implications for practice and policy.

Literature review

Indigenous knowledge and its links to climate adaptation

Indigenous communities in drylands have established well adapted traditional agroecological actions that advance adaptation (IPCC 2019). Such Indigenous practices contribute to not only responding to climate change effects but also fortifying livelihoods. They may involve agroforestry, crop rotation, manure use, mulching, crop diversification, planting deeper than usual, rotation grazing, use of traditional medicine and seasonal migration (Filho et al. 2023). Additionally, African smallholder communities tend to use Indigenous knowledge for predictions of the weather and climatic hazards which then inform the decision-making related to adaptation (Adanu, Abole, and Gbedemah 2021; Muyambo, Bahta, and Jordaan 2017; Radeny et al. 2019). To illustrate, in Borena, a semi-arid zone in southern Ethiopia, pastoral and agro-pastoral communities rely on Indigenous weather forecasting indicators that include intestinal reading, animal body language reading, and plant body language reading. If drought is predicted, the adaptation response would include measures like water and pasture saving which contribute to vulnerability and risk reduction as well as cost-effective management (Ayal et al. 2015).

In their review of adaptation studies, Filho et al. (2023) recommend incorporation of Indigenous knowledge into modern adaptation strategies as well as capacity improvement for affected communities and implementing authorities to enable the complementary use of Indigenous knowledge alongside formal climate change strategies. Indigenous knowledge systems lend themselves to participatory processes and farmers' efforts in seeking climate information and discussing forecasts have the potential to improve the understanding, dissemination and uptake of applied science (Marx et al. 2007; Nyong, Adesina, and Osman Elasha 2007; Roncoli 2006). For example, farmers' forecasting observations, some of which are consistent with modern science, may offer information to meteorologists and thus contribute to scientific knowledge. Further, the social nature of Indigenous knowledge could aid relevant institutions to create new modes of communication and dissemination of climate-related information (Orlove et al. 2009). Consolidating Indigenous knowledge with modern knowledge, especially in farming and pastoral communities where Indigenous knowledge is entrenched, can increase trust in and inclination to adopt scientific information. Additionally, it could also bolster the accuracy and use of climate information (Radeny et al. 2019).

Examples of Indigenous knowledge use in Kenya: the Ogiek and Endorois peoples

Community groups taking action to address climate risks, especially in dryland areas, are considered not only to represent collective views but also to act as the gatekeepers in informal social protection networks, especially in conflict-affected contexts (Kim et al. 2022) such as Baringo county. These contexts are more prone to conflicts mainly because as the climate crisis worsens, Indigenous communities are at the forefront of its impacts, which amplify their vulnerabilities and exacerbate existing

challenges such as land tenure issues, social marginalisation, and lack of access to formal education and health care. The erosion of Indigenous knowledge, which has historically been adaptive, is now threatened as the pace and scale of climate change outstrip communities' ability to respond effectively (IPCC 2019; Nyong, Adesina, and Osman Elasha 2007).

The Ogiek community, residing primarily in the Indigenous Mau forest complex of Kenya, has historically thrived through their hunter-gatherer interactions with the forest ecosystem. Dating back to the colonial period, the community's marginalisation has been sanctioned by the state, with evictions from the forest on grounds of conservation, confiscation of their livestock, and destruction of their beehives and honey barrels (Kimaiyo 2004). In turn, the cover of the Mau forest has reduced over decades due to land excision and encroachment. In what has been termed as "environmental apartheid", the forest's "resources are exploited by a small minority (local and international large-scale farmers) to the exclusion of the majority (the Ogiek and other smallholder subsistence communities)" (Mutugi and Kiiru 2015, 688). Climate change impacts such as alterations in precipitation patterns and prolonged droughts are aggravating and imposing unprecedented pressures on the Ogiek's traditional livelihoods.

Similarly, the Endorois community, native to the Lake Bogoria area in the Rift Valley, have historically based their livelihoods on fishing, farming and livestock rearing. Again, just as with the Ogiek, the Endorois community have been subjected to evictions from their Indigenous land around Lake Bogoria. In the 1970s this was done to establish a game reserve for tourism (ESCR 2018). After bringing a case against the government to the African Commission on Human and Peoples' Rights, the commission ruled in favour of the Endorois. It found the Kenyan state in violation of the African Charter on Human and Peoples' Rights, and recommended the recognition of Endorois ancestral land, and unrestricted access to the land by the community for religious and cultural rites, and to graze their cattle (ACPHR 2010). The changing climate endangers the delicate balance of the community's ecosystem, adding to pressure from the socio-political risks imposed by their marginalisation.

Interconnections of Indigenous knowledge systems with storytelling

Ensuring that Indigenous knowledge is not merely co-opted but genuinely integrated into formal or modern strategies demands collaborative and participatory approaches (Hellin et al. 2024). In turn, these approaches also require careful consideration of power dynamics, context-specific vulnerabilities and the fluidity of community boundaries. While community ownership of the design and implementation of adaptation plans ensures sustainability, vulnerable communities often have the least proximity to decision-making power or resource mobilisation capacities. When such communities are consulted, there is a danger of solely engaging "expert voices" who may sometimes undermine other voices in the community (Lokot 2021). This process can lead to systems of power that allocate certain statuses to particular social identities, which can further marginalise (or elevate) these identities. While there is no universal indicator for tracking global climate adaptation success, unlike in the climate mitigation space, empowering local communities to create metrics that matter to them, including the use of creative qualitative approaches such as storytelling, could be used to track local perspectives on adaptation. It is vital to take the time to listen to many different voices in the interest of equity (Dilling et al. 2019) to introduce action perspectives into climate science.

Narrative inquiry is a research methodology that provides fuller representation by accommodating the participation of many voices in an equal, non-hierarchical manner (Byrne 2017). Storytelling, a type of narrative inquiry, is not only a socialising activity, but also a theory-building one that studies and interprets human experience (Ochs et al. 1992). There are many types of storytelling, mainly categorised by media type. One of the illustrative (rather than exhaustive) categorisations highlights at least four key ways to communicate stories: (i) digital storytelling, (ii) oral storytelling, (iii) visual storytelling, and (iv) written storytelling (Ingov 2024). Our study made use of the first two aforementioned storytelling types, by mixing Indigenous (oral storytelling) with modern approaches (digital storytelling).

Digital storytelling creates and shares short audio-visual narratives. While it can take many forms, it flexibly refers to any narrative created and shared using a mix of digital tools, resulting in short audio-visual narratives conveyed through the internet (Davis, Waycott, and Schleser 2019). Digital storytelling has been popularised by, among others, the US-based StoryCenter and UK-based Storytelling Academy at Loughborough University. Digital storytelling has also been used in the climate adaptation space, including two storytelling videos from work developed recently in Kenya (Liguori, Onyango, Jonsson, et al. 2023; Liguori, Onyango, Warwick, et al. 2023).

While digital storytelling is not an Indigenous approach to storytelling, digital storytelling is a narrative method that harnesses the authenticity, preservation and promotion of Indigenous oral stories in a shareable and virtual format, thus serving as a conduit of storytelling in a digital age (Cunsolo Willox, Harper, and Edge 2013). Similar to our study's bridging of Indigenous with digital storytelling, case studies in other settings have also illustrated the usage of digital storytelling in Indigenous contexts. In northern Canada, the use of digital storytelling among individual Indigenous Inuit community members enabled them to take control of the research process and in their own voices, share their nuanced lived experiences when assessing the impacts of climate change on health and well-being (Cunsolo Willox, Harper, and Edge 2013). Among the disadvantaged urban poor living in informal settlements of CapeTown in South Africa, collective digital storytelling strengthened collective agency, capabilities and inclusiveness as it enabled community members to articulate collective concerns and generate new ideas from local perspectives. The outcomes were the co-design of community-based projects, including creation and popularisation of a fundraising video to generate funds for the local community-led radio station (Lorini, Sabiescu, and Memarovic 2017).

Digital storytelling is typically orientated as individual person-centred or collective public-centred. The person-centred digital storytelling videos typically follow a four-step "issue-idea-solution-implementation" structure (Liguori, Onyango, Jonsson, et al. 2023). An alternative form of digital storytelling is public-centred digital storytelling, also known as public narrative storytelling, which the current study employed, using a "story of self, story of us, story of now" structure (E. Aiello and Sorde-Marti 2021). By linking these three stories together into one, public narrative storytelling differs from personal narrative storytelling by incorporating both one's own and others' stories. This public narrative storytelling framework has predominantly been used in the campaign space in the global North. Its most popular use was by former president Barrack Obama's campaign volunteers in California (CampObama 2007), as well as in Obama's keynote address at the 2004 Democratic National Convention (CNN 2013). Actor Tom Hanks wrote an opinion piece supporting a bill to fund community colleges that tell "stories of self, us and now" (Hanks 2023). This three-part storytelling framework has also been used in leadership skills training contexts (Ariel Group 2023). In the global South, the three-part public narrative storytelling framework is still in its infancy.

Public narrative storytelling features

Public narrative storytelling is a leadership-centred storytelling framework that translates values into action by linking the three elements of "story of self, story of us and story of now", connecting these storylines to clear policy and call-to-action goals (E. Aiello and Sorde-Marti 2021). The "story of self, story of us and story of now" framework is composed of storylines on personal purpose (why I am called), communal shared values and experiences (why we are called), and communal urgency (why we are called to act now) (Figure 1). A unique feature of the public narrative storytelling framework is that it translates values into (motivation for) action by, for example, transforming inertia into urgency by activating and enhancing both individual and communal capacities (E. Aiello and Sorde-Marti 2021), a much-needed ingredient in climate action efforts. Pertaining to the need to provide a non-hierarchical representation that places the voice of participants, researchers and literature on an equal level within the whole research story (Byrne 2017), public narrative storytelling gives agency to local communities to find solutions that fit and reflect their everyday realities, a key reason for its selection in our study.

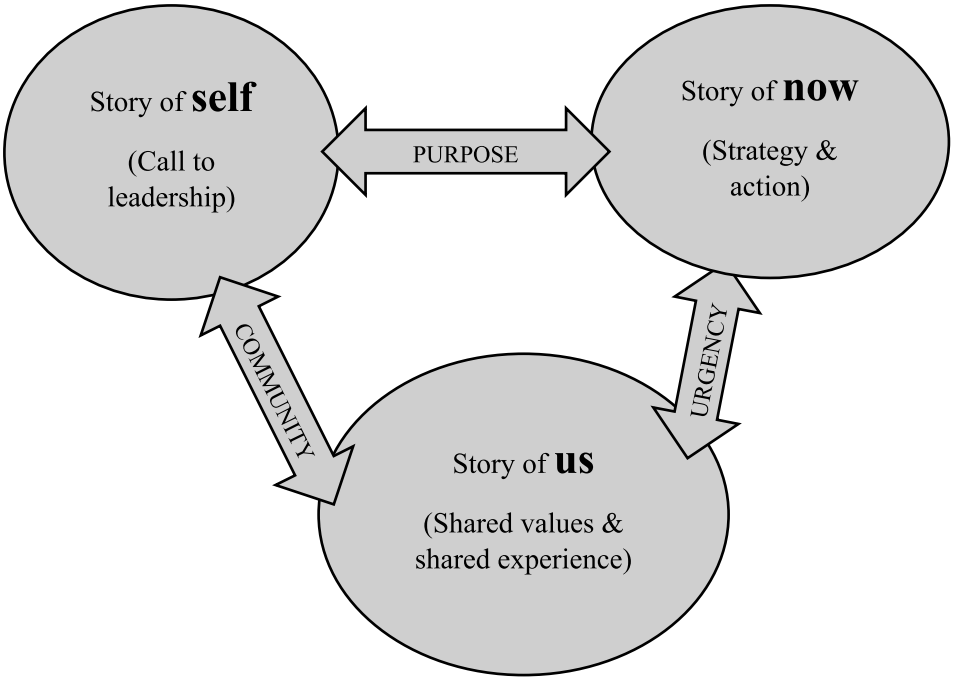

Figure 1. "Story of self, story of us, story of now" framework. Source: Ganz (2011).

Methodology

Operationalising and designing public narrative storytelling of Indigenous voices

Operationalising public narrative storytelling of Indigenous voices involved six steps, with all activities lasting ten months (October 2022 to July 2023). First, an exploratory engagement with potential partners to identify a suitable non-governmental organisation partner to work with took one month (October 2022); this led us to CEMIRIDE. The second step was the preparatory pre-field "phase zero" stage which took five months (November 2022 to April 2023). Thirdly, CEMIRIDE and ClimBeR embarked on a field visit to the identified Indigenous community members, which took one week (between 8 and 12 May 2023). In the fourth step, for about two weeks after coming back from the field (from 15th to 31st May 2023), transcription of meeting notes and editing scripts on storylines generated during the field visit were done. After the edited scripts were ready internally, the fifth step entailed hiring an editor from a media company to support the teams to compile the edited stories into videos, which took one month (June 2023). Disseminating each of the Indigenous community member videos to a broader audience was the last step, which took one month (July 2023).

After the one-month exploratory engagement with NGO partners in October 2022, the iterative and laborious "phase zero" pre-field preparatory stage took five months (November 2022 to April 2023). This considerable length of time needed to build trust, co-learn to build strong ties and rapport with the identified Indigenous community members is a glimpse of what it can take to conduct responsible research. In relation to how this present study design impacted voice, representation, participation and gender in research, our study was cognisant of the need to enhance local capacity and foster interactions among different actors with unequal power relationships (Ghimire and Chhetri 2022). While phase zero did not yield tangible results that could be fed into conventional monitoring and evaluation reporting systems, it was a crucial make-or-break step. The process entailed preliminary interactions with several potential Indigenous community groups taking

action to address climate risks. This was a necessary step that enabled eventual careful partnership formation (Steger et al. 2021). Identifying target Indigenous communities went through an iterative process, exploring various suggestions, with a shortlist of potential Indigenous communities across three locations: hunter-gatherers in Laikipia (the Yaaku), a mix of hunter-gatherers and agro-pastoralists in Baringo (the Ogiek and Endorois, respectively), as well as a mixed fishing and rice farming community in Busia (the Abanyala). CEMIRIDE and ClimBeR finally settled on the Endorois and Ogiek communities (Figure 2), which aligned with prior work CEMIRIDE had conducted in Baringo. The next step was to identify local community groups taking action to address climate risks that – in part supported by external civil society organisations – had initiated actions that benefitted the community, which they could communicate about authoritatively. In the end, seven participants were selected, four men and three women. While six were older than 35 years, one Ogiek local champion was under 35 years of age at the time and therefore categorised as a youth in Kenya. A physically disabled middle-aged woman represented people with disabilities from the Ogiek community. Four out of the seven participants had completed secondary education and one Endorois agro-pastoralist man was in full-time employment as the chief executive officer of the Endorois Welfare Council. Once the target Indigenous community participants were identified, joint discussions were held on how to approach the work. The ClimBeR-CEMIRIDE-Indigenous communities' case study entailed capacity building. The core elements of capacity building were a four-step process entailing needs assessment, design, implementation and monitoring (Thapa, Matin, and Bajracharya 2019). Co-design, – development and – delivery are also increasingly being used in climate adaptation work as a way of building stakeholder relationships and capacity for all parties to actively participate (Fleming et al. 2023). During this phase zero period, our study also implemented other

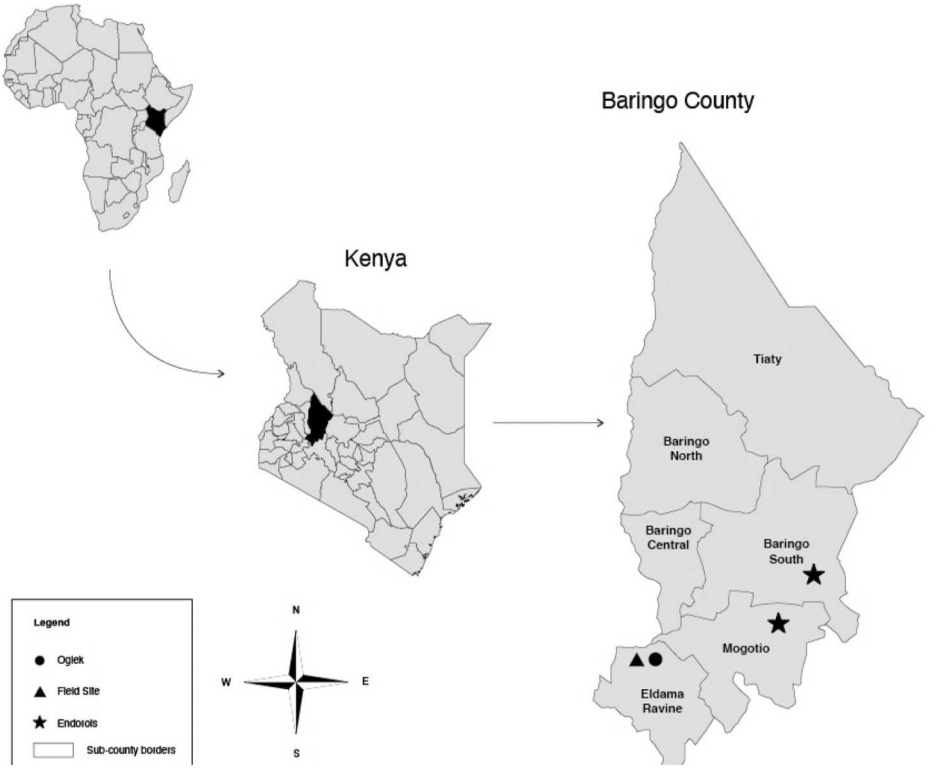

Figure 2. Map of study area (dark shades in the inserted maps), showing location of the Ogiek (circle symbol) and Endorois (star symbol) as well as field visit site (triangle symbol). Source: Author's own.

documented best practices of selecting the case study, understanding the case context and agreeing on conditions for meeting (Horcea-Milcu, Leventon, and Lang 2022). Once logistical elements had been addressed, in terms of who, where and when we would meet in the communities, CEMIRIDE, ClimBeR and the selected Indigenous community members discussed the need to conduct interviews in Kiswahili, which all the research participants understood, with video subtitles to be in English. This phase zero step ended with ethical clearance, at an institutional level, by signing and adhering to CEMIRIDE's ethics and security protocol. This embedded a systematic informed consent process, with each participant signing a written consent form (CEMIRIDE and ClimBeR sought oral informed consent on the first day of the field visit).

The third step entailed a one-week field visit which was undertaken jointly at Eldama Ravine in Baringo by researchers from ClimBeR and CEMIRIDE. The work was designed as a proof of concept, so the present study deliberately worked in only one location, making videos with seven individuals identified purposely from two communities (Endorois and Ogiek). During the field visit, the team comprising of CEMIRIDE, ClimBeR and the selected Indigenous community members undertook training as part of the public narrative storytelling process, culminating in video recordings on the last day of the field visit. Prior to completion of the field visit, CEMIRIDE, ClimBeR and the selected Indigenous community members held a participant reflection session to co-learn about what went well and what improvements participants would suggest to the team. The implication of this approach to broader debates around public narrative storytelling methodologies is in supporting learning which is a precursor to adapting. While knowledge exchange that integrates local perspectives is a complex picture, knowledge and its exchange needs to adapt accordingly (Kong, Stringer, and Paavola 2023). Besides the creation of new knowledge and capacities, there are gains in achieving time-bound goals, a joint agenda for action, increased trust, policy influence as well as international recognition (Österblom et al. 2022). Our study's approach to creating a reflection space relates with other literature in the field. Researchers at the interface of marine science and policy explicitly built and facilitated an inclusive and reflexive multi-location working environment that increased trust and fostered a culture of genuine knowledge co-production and consultative engagement (Karcher et al. 2022). As in our study, the importance of co-learning to build strong ties and an environment of trust between all actors was a key factor that facilitated the transmission of tacit information among communities in the mountainous regions of Swiss and French Alps (Blanco et al. 2023) as well as among participants from a diversity of socio-economic backgrounds in a three-country study across England, Nicaragua and Senegal (Bichler, Wach, and Ripoll 2020). The last day of the field visit entailed a joint meeting between the field teams, which comprised Indigenous community members as well as CEMIRIDE and ClimBeR teams, to reach a consensus on the next steps, a process that aimed to enhance authenticity and voice. Reaching a consensus entailed developing an agreed-upon joint roadmap for bridging digital and Indigenous storytelling. In this process, agreeability was not always what was sought, but rather unity, as there was also room for articulation of differences and disagreements.

The fourth step commenced after coming back from the field, where CEMIRIDE staff transcribed the meeting notes. Both CEMIRIDE and ClimBeR teams then drafted, validated and edited scripts on storylines generated during the field visit using a mix of text, audio, photos and videos. After the edited scripts were ready internally, the fifth step entailed hiring an editor from a media company to support the teams to compile the edited stories into videos, which took one month (June 2023). The editing process did not cut any original video content to ensure accurate representation of the participants' voices. To widen the reach of the videos, the teams allowed additional background information to be included. Video editing entailed including English-translated subtitle text, and checking the grammar and language of the subtitles, as well as co-institutional branding and aesthetics. At the start of each video, local voiceovers introducing the objective and summary of each video were also added. At the end of each one, a local instrumental sound track was incorporated, as well as co-institutional acknowledgement, disclaimer, licensing and citation sections.

When the videos of all the participants were ready, the final versions were hosted on CEMIRIDE's YouTube channel (ClimBeR and CEMIRIDE 2023), as well as on its website[1] so our partner could continue with the mission of actively using the videos. The videos were first shared with each participant post-production. Concomitantly, a short monitoring and evaluation component was conducted among the video presenters, which entailed following up with each participant on questions about using their individual videos.

The sixth and last step, which took one month (July 2023), entailed disseminating each of the individual participants' videos to a broader audience. Technical and communications teams from both organisations (ClimBeR and CEMIRIDE) worked together to share the videos via social media platforms for wider outreach. The teams also embarked on co-authoring a series of short blogposts, starting with an overarching post highlighting the overall "Voices of Change" series (Ng'endo and Ohenjo 2023), followed by individual posts highlighting each of the embedded video stories focused on a specific initiative theme, namely: bee-keeping;[2] saving seeds and planting Indigenous crops;[3] planting Indigenous drought-tolerant trees;[4] water conservation using a rights-based approach;[5] and using local knowledge for global decision-making.[6] As a result of disseminating these individual public narrative stories, further opportunities for dissemination started to emerge and continue to do so to date.

Adapting the public narrative storytelling framework and study design justification

Adapting the public narrative storytelling framework (Figure 1) for use with Indigenous communities, "story of self" narrated an Indigenous champion's personal journey; that is, their "why" for championing a cause addressing adaptation to climate risk. "Story of us" created a link between the shared values, goals and vision of the Indigenous champion and their community. "Story of now" was about the challenges the Indigenous community currently faces in relation to the changing climate and the choices that community members must make, as well as the hopes to which people aspire, culminating in a "call to action". Combined, there is explicit evidence of links across the three elements of self, us and now: why am I called, why are we called, and why are we called to act now (E. Aiello and Sorde-Marti 2021).

Our study design related to the "story of self, story of us and story of now" framework by providing a relatable way of authentically drawing out a blend of personal and public climate action storylines. While rural Indigenous champions best understand their climate realities and feasible solutions, it may be that the low visibility of their work may be partly because these rural innovators perceive that working is more important than talking about their work. Our study sought to create an enabling environment where the selected Indigenous champions would be open to and find it valuable to talk about their work in a non-intimidating way. The framework provided a logical structure to navigate storytelling among a novice target group. A natural icebreaker was starting with "story of self" that reflected on each individual's personal purpose that led into a call to leadership. This leadership experience also explored service to the Indigenous champion's community and brought out shared values and experiences, which formed the gist of "story of us" segment. The shared experiences culminated into generating a sense of urgency that highlighted the Indigenous champion's strategy and action, the essence of the "story of now" section. Thus, this stepwise approach joined together the building blocks of "story of self, story of us, story of now" framework.

The "story of self, story of us, story of now" reflects broader literature on public narrative storytelling with multi-actor perspectives to accelerate desired change (M. E. Aiello 2020; Ajayi 2025; Crabtree-Condor 2020; Jabbar, Molnar, and Sinha 2019; McCall et al. 2021). Public narrative entails intentionally using storytelling for the practice of public leadership, where this three-part framework makes sense of both individual and communal realities by linking the three elements of self, us and now, which in turn conceptualises leadership as a relational and experiential practice, involving others, triggering multi-agent orientations that can help

translate values into motivation to act, transforming isolation into solidarity and inertia into urgency for climate action (E. Aiello and Sorde-Marti 2021). Our study showed that local initiatives led by communities and amplified by external actors, especially international organisations, can shape local solutions in powerful ways. Like ClimBeR's role of increasing community visibility in this present study, other global decision-makers have also amplified community voices through storytelling. These include the multi-institutional Global Landscapes Forum (GLF) comprising 49 core partner organisations and 33 charter members with an aim of scaling up contributions to sustainable and low-emission development aspirations of Agenda 2030. Collaboration with the multi-institutional GLF has led to the increased visibility of two Kenyan community initiatives on water conservation and wetland management in Lake Victoria area of Kenya, through a video tagged "Saving Mother Earth" (amazon theatrix 2022) and a theatrical performance labelled "Zovu: frontline stories for climate change" (Global Landscapes Forum 2023a, 2023b). As part of their scaling activities, GLF has since 2022 organised an African Youth Storytelling contest to amplify critical voices from across the African continent, dubbed "The stories of Africa" (Global Landscapes Forum n.d.). Conservation International is another example of a global decision-maker making use of storytelling to champion nature conservation through various initiatives. Similar to our "Voices of Change" approach, Conservation International supported amplifying messaging on the importance of a women-led beekeeping initiative in Bolivia and Ecuador, dubbed "Knowledge Exchange: Reproducing Bees and Knowledge" (Conservation International 2023). These examples, among many other local voices amplified by international organisations, are starting to put local initiatives on the global map, which is a crucial first step in scaling solutions.

In summary, the present study selected public narrative storytelling not only for its flexibility but also because it has been used among marginalised communities to support community self-representation (Davis, Waycott, and Schleser 2019). Moreover, public narrative storytelling also gives voice to Indigenous communities to articulate their interests and find solutions within the overarching climate resilience research agenda.

Results

The "Voices of Change" series comprises public narrative stories from each of the seven participants that draw on Indigenous knowledge. The seven individual perspectives are different at the level of "story of self", as they narrate each individual's call to leadership journey. These seven individual viewpoints converge at the level of "story of us", which has a focus on strategy and action. There is consensus around four key perspectives, championing the following initiatives: (i) bee-keeping (Two videos represent this theme; that of an elderly Endorois man and of a young Ogiek man, where both reflect on the benefits of bee-keeping), (ii) saving seeds and planting Indigenous crops (Two videos are captured. The first video is of a young Ogiek woman explaining how seed saving bolsters what actions the youth can take at the national level. The second video is of a middle-aged Endorois woman sharing her experiences of intercropping pasture with sorghum on her farm); (iii) planting Indigenous drought-tolerant trees (Two videos are grouped under this theme. The first video is that of a middle-aged Ogiek woman describing how her tree planting journey was borne out of physical disability. The second video is that of a middle-aged Endorois man who also uses tree planting for community benefit); (iv) water conservation using a rights-based approach. There is further convergence at the level of "story of now", where the aforementioned perspectives merge into one, that is, championing the use of local knowledge to influence global decision-making. Table 1 provides more information on each of the seven perspectives, detailing each of the public narrative storytelling themes, communication purpose, links to the videos as well as illustrative quotes from each of the videos.

Table 1. Voices of Change public narrative storytelling themes.

Public narrative storytelling theme	Links	Communication purpose	Illustrative quotes from the videos
Championing a bee-keeping journey. Jackson Kiplagat, an elderly Endorois man, and Kibet Kipsang, a young Ogiek man, reflect on the benefits of bee-keeping.	Link to Jackson's video: https://youtu.be/gZTBExTvZvA?si=KNbAhwcfk95qIqVp Link to Kibet's video: https://youtu.be/md3a377FREA?si=8s1UPDQe_QaaIB8y Link to blogpost: https://www.cgiar.org/news-events/news/voices-of-change-keep-the-bees/	These stories convey how bee-keepers from the Endorois and Ogiek communities educate people about the value of preserving the forest, how to keep bees and the many ways bee-keeping benefits the environment.	Jackson Kiplagat: *"Bee-keeping protects the environment. No one can cut trees around where there are bees. This is because, when you try to cut a tree, the bees become annoyed; you will be stung by bees, and you will forget what you're doing. You will never come back. … Nowadays, instead of saying," "Do not cut trees", I say, "Keep beehives."* Kibet Kipsang*: "I encourage the youth in the bee-keeping cooperative that I belong to, to keep many beehives. I tell them, "Protect the forest around you so that your beehives can be in a cool environment. This also helps to ensure that beehives do not abscond due to climate change when it gets really hot." So, now, most young people don't see the need to cut trees, but instead, they want to keep beehives for honey."*
Championing seed saving and planting indigenous crops. Judy Kipkenda, a young Ogiek woman who is also the founder of the Koibatek Ogiek Women and Youth Network, explains how seed saving bolsters what actions young people can take at national level. Likewise, Jane Chepkwony, a middle-aged Endorois woman, shares her experiences of intercropping pasture with sorghum on her farm.	Link to Judy's video: https://youtu.be/lWjzDrzsI7A?si=tMq7xVvXXf6wAx6t Link to Jane's video: https://youtu.be/cH4pG2NY6d4?si=1DRU_ayp7kLh0hMj Link to blogpost: https://www.cgiar.org/newsevents/news/voices-of-change-save-seeds-plant-indigenous-crops/	The stories convey how women and young people preserve seeds, teach others about locally appropriate farming practices, and demonstrate how leaders connect with and advocate on behalf of their communities.	Judy Kipkenda: *"My interest has been in working with women and young people, both female and male. I focus on them because when you look at so many aspects, it is women and youth who will go to the farms and carry out forest restoration in our community. We are currently advocating for seed saving and seed sharing at the policy level … We have also joined forces with other organisations, and gone to court to fight against the law forbidding seed sharing – so, we are engaging at the national level too."* Jane Chepkwony: "*I have a dual role as both a lead farmer and a role model who leads by example. My home is a demo. There are usually drought-tolerant crops in my home even during the drought season. I lead a group that grows sorghum and engages in pasture. You will be surprised to learn that the majority of the ones who voted for me for this leadership role were men, as they could get time to visit my farm and saw the good work I was doing. I am also a trainer and train those who are not yet involved in drought-tolerant farming. I am a leader, a role model, and a connector, connecting groups with organisations."*
Championing planting indigenous drought-tolerant trees. Julia Yegon, a middle-aged Ogiek woman, describes how her tree planting journey was borne out of physical disability. Jeremiah Kobetbet, a middle-aged Endorois man, also uses tree planting for community benefit.	Link to Julia's video: https://youtu.be/HcL5KfPcGHg?si=XC5G3d5h1M23PaTC Link to Jeremiah's video: https://youtu.be/dKVi91IvLUk?si=pvYiJJeJVo6p2rux Link to blogpost: https://www.cgiar.org/news-events/news/voices-of-change-plant-indigenous-drought-tolerant-trees/	The stories show how the close relationships Indigenous people from the Ogiek and Endorois communities have with forests and land, and how the value assigned to trees and conservation, can become socially and economically beneficial to the lives and livelihoods of these communities.	Julia Yegon: *"I was a teacher and, upon retirement, I had to go to Nairobi for almost a year to receive treatment for a spinal tumour. Two joints of my spine were removed, but I am getting better with time. Now, I can even stand and use one crutch instead of two. During that time when the spinal injury happened, my compound didn't have trees. I asked myself, when I want to sit outside and it gets too hot, will I be able to keep chasing after the shade? To make it worse, one time the wind was so strong that it blew away the roof of my house, and I knew I had to learn how to plant trees and bring others alongside. You see, I come from the Ogiek community and we are forest dwellers. At the time, we used to go to the forest for firewood and this would destroy the forest. I advised the community to start planting indigenous drought-tolerant trees, such as* Melia volkensii*, an indigenous drought-tolerant and multipurpose tree species endemic to the arid and semi-arid areas of eastern Africa, for firewood purposes. During the dry season, we would also not have vegetables. What would we do? We came up with the idea of harvesting vegetables during the rainy season and then drying them for use during the dry season. We are now also growing our own food including bananas, and we engage in chicken rearing. All these, including dried vegetables, are sold when in surplus."* Jeremiah Kobetbet: "*Currently, I am an environmentalist. I work in ecotourism and why I work there is because we wanted ecotourism to be a conservation tool, because when we talk of tourism, there are many forms of tourism. Ecotourism is an alternative form of tourism, whereby it is not about marketing the big tourist*

(*Continued*)

Table 1. Continued.

Public narrative storytelling theme	Links	Communication purpose	Illustrative quotes from the videos
			ventures. This is the kind of tourism where the smallest things matter a lot. For example, we let people see how a tree can fall and become manure instead of cutting it or using it as firewood, by just letting it die slowly."
Championing water conservation using a rights-based approach. Championing a water conservation journey, Richard Kamng'oror, Chief Executive Officer of the Endorois Welfare Council, argues that a rights-based approach can help put people's lives at the centre of forestry and water conservation. Such insights are based on his experiences of chairing a forest committee and being confronted by corruption that led to illegal logging.	Link to Richard's video: https://youtu.be/lojEfBcLd60?si=xc7yjJckpAzTDGIu Link to blogpost: https://www.cgiar.org/news-events/news/voices-of-change-use-a-rights-based-approach/	This story provides practical policy-making contributions, emanating from a combination of forest and water conservation efforts. The story also provides inspiration on how such leadership efforts have led to more opportunities, such as the creation of tangible contributions to the national policy landscape to help local communities better cope with the effects of climate change.	Richard Kamng'oror: *"Let's protect and own the resources . . . . We should use a rights-based approach and own our stories. It is because of my efforts that I was later elected as the CEO of the Endorois Welfare Council, where I continued to utilise my leadership position to employ the services of a hydrologist to support water conservation efforts that have created more opportunities for the Endorois people. Having enough water has helped our community to solve water-borne diseases and in the process, the health of the community has also improved. The other benefit of water availability is that it has freed up more time for our women and children who used to go very far to fetch water. Now, they have more time to do other domestic and productive work, including going to school. As a community, we have also participated in developing the Lake Bogoria National Reserve Management Plan for 2019 to 2029, which is a ten-year program to ensure that the environment within our area is protected, by planting more trees. Apart from planting trees along these riparian areas, we also promote the planting of fruit trees within the farms, for which we get money to assist our farmers to improve their health and their economic status. We are currently promoting indigenous and exotic fruit trees such as tamarinds, mangoes, pawpaws, avocados and macadamias. We have a range of ecological sources, given the Endorois council region has land extending into the highlands of the Mochongoi area."*
Championing the use of local knowledge for global decision-making. The video series concludes with two examples of how bee-keepers engage with the research community to co-create solutions.	Link to blogpost: https://www.cgiar.org/news-events/news/local-knowledge-for-global-decision-making-weareindigenous/	This piece is an example of how Indigenous people can serve as agents of change. By changing the status quo of Indigenous people being relegated to the sidelines, we show how they are working side by side with scientists to co-create joint solutions.	Efforts by an Ogiek male youth bee-keeper: *"We have worked to anchor our county bee policy in the national bee-keeping policy, which was prepared but not implemented. We asked about it on 2 May 2023. We will also mention this during the World Bee Day, which is celebrated on 20 May. We plan to ask how far [along] this policy is and why it hasn't passed through the county assembly. This is the level we have reached. We are also championing research that is being led by [the] Kenya Agricultural and Livestock Research Organization (KALRO), and funded by the European Union. We are working together to do the research, including comparing local hives with improved hives. It is going to take six months and we had asked for an extension because we have just come out of the drought season and therefore we did not harvest the hive to see the volume [of honey] and then make a comparison. We also want to prove that these local hives have a lot of honey compared to the improved ones. That is how we are contributing to research knowledge."* Efforts by an Endorois male adult bee-keeper: *"Our group is comprised of 80 members. That is a big number in the community, given that each individual member also has a family of five to six members. That is how we are changing our society – starting from our homes, and looking for ways to solve our own problems. Even if the government is present, we can also engage with non-governmental organisations and other partners. For example, we have partnered with KALRO and [the] International Centre of Insect Physiology and Ecology (ICIPE) on bee-keeping, and we are currently working on setting benchmarks for the research together. This time, this piece of work is in Kitui county, while last season it was in Baringo county. This year, the international bee day will be conducted at KALRO at Marigat in Baringo county and we will support the research by displaying our honey. When people like and buy our honey, this is also another way to uplift our community."*

Discussion

Indigenous voices can inform high-level discussions on climate action

Climate stories, especially about how people are responding to challenges to make a difference in their communities, are scarce (Razavi 2023) – a gap that our study sought to fill. Following public narrative storytelling training, this study shows how Indigenous voices can be used to inform climate action. This use of first-person Indigenous voices through digital storytelling contributes to the discussion on responsible research by asking "who tells development stories?" Our study showcases a decolonial approach to citizen science in climate change work that provides a platform for voices of those directly impacted by climate change to be heard, thus breaking down uneven relationships and power dynamics that permeate development research. This type of work is a proof that contributions of the locals are valuable, necessary and seen. As in our study, the use of digital storytelling in Indigenous knowledge processes has contributed towards the decolonisation of research methods in other settings (Cunsolo Willox, Harper, and Edge 2013; Lorini, Sabiescu, and Memarovic 2017). Amplifying Indigenous community voices also benefits the locals by reinforcing the value and power of their own ideas in the global climate change discourse. It shifts the conversation to focusing on how people affected by climate change can bring their own experience and knowledge of what works in their local context to global decision makers, who are in most cases remotely located and far removed from everyday on-the-ground realities. Navigating such connections successfully could lead to a better match between local ideas and global priorities on climate adaptation. How so? The use of public narrative storytelling can help to bridge the gap between local ideas and global priorities on climate adaptation, as stories hold the power to drive climate action. Moreover, while climate stories are told from individual perspectives, a collection of stories from different perspectives has the potential to shift the narrative (Climate Generation 2023). In our study, storytelling from seven different individual perspectives at the level of "story of self" converged into four perspectives at the level of "story of us", and further merged into one overarching perspective at the "story of now" level. These perspectives enabled Indigenous communities to bring their experiences of and knowledge about what works in a local context to high-level decision makers. Concomitant with our study, the use of creative and memorable approaches to highlight locally led climate adaptation initiatives, such as the use of storytelling and participatory videos, has been shown not only to bring to life meaningful community contributions, but also to capture local perspectives and lived experiences (Dilling et al. 2019).

The videos in our public narrative storytelling study are slightly longer (about 5 to 7 minutes) than person-centred storytelling videos (which are usually 2 to 3 minutes long). While shorter videos might better compete for potential viewers' attention, in the grand scheme of things the longer duration of these public narrative videos positively impacts storytelling research by safeguarding participants' authenticity, voice and accurate representation (as video editing did not cut any original video content). The longer duration can also be explained by the aim of the public narrative storytelling approach, which is to build grassroots power by activating people not only through personal storytelling, but also connecting these stories to clear policy and lobbying goals (Ganz 2011). The result was that it gave voice to Indigenous communities to articulate their interests and find solutions within the research agenda, resulting in the "Voices of Change" video series.

Conclusion

Implications for practice and policy

Our study revealed evidence on the use of public narrative storytelling to communicate local actions to build climate resilience by showcasing how Indigenous communities in an arid region address climate risk. Moreover, the present study demonstrated how Indigenous community voices captured through videos can be impactful by informing global climate action. By way of a series of video stories, aptly entitled "Voices of Change", our study demonstrated how Indigenous communities

exercised their agency to address climate change. The videos showed how communities were using Indigenous knowledge and practices to build resilience to climate change and improve food security. In this "science with society" work, the locals shared their valuable insights with global decision makers who have the power to amplify real change on the ground that will enhance Indigenous communities' resilience and adaptive capacity as the threat of climate shocks and impacts further exacerbates the negative impacts on local people's lives and livelihoods. Our results open up an exciting new avenue for the hitherto largely unaccounted-for everyday adaptation that puts power back in the hands of Indigenous people on the ground, by allowing them to share homegrown initiatives using public narrative storytelling in science for impact. By creating channels for the integration of these Indigenous voices into scientific work, our study has contributed to visualising challenges that Indigenous people are facing in terms of building their resilience and how efforts at different levels, including efforts by scientists, can contribute to addressing these challenges.

Notes

1. https://www.cemiride.org/voices-of-change/.
2. https://www.cgiar.org/news-events/news/voices-of-change-keep-the-bees/.
3. https://www.cgiar.org/?post_type=news&p=430887&preview=true.
4. https://www.cgiar.org/news-events/news/voices-of-change-plant-indigenous-drought-tolerant-trees/.
5. https://www.cgiar.org/news-events/news/voices-of-change-use-a-rights-based-approach/.
6. https://www.cgiar.org/news-events/news/local-knowledge-for-global-decision-making-weareindigenous/.

Acknowledgements

We are grateful to all seven video presenters (Jackson Kiplagat, Jane Chepkwony, Jeremiah Kobetbet, Judy Kipkenda, Julia Yegon, Kibet Kipsang and Richard Kamng'oror), CEMIRIDE CEO (Nyang'ori Ohenjo), field support staff (Christine Ndegwa, Dianah Nyamweya, Grace Kananu, Jeptoo Kibichum and Salome Owuonda) for their participation in the work and to Prof. Eleanor Fisher and Dr Jon Hellin for their great research support throughout the work and comments on earlier drafts of this manuscript. We also gratefully acknowledge the extensive general support and useful comments from Anna Belli, Ana Maria Loboguerrero, Andrea Klaczko, Benson Mutuku, Bernard Rono, Daniel Mwanga, Edwick Orengo, Eric Kaigua, Giulia Caroli, Grazia Pacillo, Leonardo Medina, Martina Mascarenhas, Mwihaki Muraguri, Pauline Ndonga, Sabrina Rose, Stephanie Haase, and the Social Innovation Management 2022 class of Global Good x Amani Institute. We are also grateful to the anonymous reviewers for their invaluable comments that enabled the improvement of the final draft. Esther Kariuki acknowledges support from the Nordic Africa Institute, where she was employed as a member of the ClimBeR project team. The authors attest originality of the results and assume full responsibility for any shortcomings. The authors obtained oral informed consent from each participant in the survey through a yes/no procedure prior to beginning the interview. All participants were informed about the context of the study. Permission was sought from each respondent, and they openly and freely answered the questions asked.

Disclosure statement

No potential conflict of interest was reported by the author(s).

Funding

The authors disclosed receipt of the following financial support for the research, authorship, and/or publication of this article: This work was carried out with support from the CGIAR Research Initiative on Climate Resilience (ClimBeR) and the Climate Action Science Program. We would like to thank all funders who supported this research through their contributions to the CGIAR Trust Fund (www.cgiar.org/funders/).

Authors' contributions

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