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Partial planned relocation and livelihoods: Learnings from Narikoso, Fiji

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Abstract: *Pacific Island Countries (PICs) are vulnerable to climate change impacts, including sea level rise, extreme weather events and other environmental changes. Planned relocation can be an adaptive response to climatic threats. In Fiji, six communities have already relocated. While there is growing interest in planned relocation, there are few empirical case studies from which to learn. Narikoso village, in the Kadavu Province of Fiji, undertook partial relocation in 2020. Drawing on qualitative research (interviews, group discussions, observation), informed by Vanua methodology in 2022, this study examines the impacts of partial planned relocation on people's lives and livelihoods. Seven sustainable livelihood assets – or forms of 'capital' – are explored: natural, social, financial, human, physical and cultural, with the addition of spiritual. Our research found that planned relocation altered forms of capital that underpin sustainable livelihoods, leading to both benefits and problems. We argue that planned relocation must not only reduce exposure to climatic and environmental risk, but promote and preserve the integrity of local ecosystems, value continuity of culture and sustain and develop diverse assets that support sustainable livelihoods. This demands deep engagement with climate change-affected communities to ensure that planned relocations sustain people's livelihoods, dignity and survival.*

Keywords: *cultural assets, Fiji, planned relocation, spiritual assets, sustainable livelihoods, Vanua methodology*

Introduction

Low-lying coastal areas in many parts of the world are threatened by sea level rise, flooding, storm surges and coastal erosion (IPCC, 2022; Ekoh *et al.*, 2023). Even with rapid global decarbonization, by 2050 sea level rise will affect tens of millions of people in coastal regions, with substantial losses of land, livelihoods, infrastructure, community assets and cultural heritage (Schewel, 2020; Boston *et al.*, 2021). In some places, sea level rise and other climate change impacts already necessitate risk reduction and adaptation measures including human migration and mobility (Nurse *et al.*, 2014; Warrick *et al.*, 2016; Beyerl *et al.*, 2018). Climate-related relocation of populations and infrastructure is increasingly likely to be necessary (Foresight, 2011; Clement *et al.*, 2021; Ratcliffe and Stubbs, 2023).

Planned relocation – the systematic relocation of people and assets to areas of lower environmental risk – is an adaptive strategy to reduce exposure to climate change impacts and to safeguard or augment human security (Albert *et al.*, 2017; Hino *et al.*, 2017; Yarina and Wescoat, 2023). It is a form of adaptation particularly in response to slow-onset changes such as sea level rise (McLeman, 2018; Doberstein *et al.*, 2020). However, drivers of planned relocation include not only single climate-related risks or 'events' (e.g., coastal erosion, floods), but overlapping environmental hazards and intersecting environmental and non-environmental (social, political, economic, demographic) factors (Dannenberg *et al.*, 2019; Marter-Kenyon, 2020).

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Planned relocation is often characterised as an adaptation strategy (McAdam and Ferris, 2015; Grealy, 2022), and a coherent response to risks including 'slow' climate disaster (Paprocki, 2018; Ferris and Weerasinghe, 2020). Yet relocation may result in maladaptive outcomes for relocated people, such as new hazard vulnerabilities, marginalisation, heritage loss and decline in livelihoods (McNamara *et al.*, 2018; Piggott-McKellar *et al.*, 2019). Given potential adverse consequences, planned relocation is often considered a 'measure of last resort' after other adaptation options are exhausted (Office of the Prime Minister Fiji, 2023).

Planned relocation affects livelihoods (Cernea, 1997; Terminski, 2012; Piggott-McKellar *et al.*, 2019). The term livelihood refers not only to employment and income, but also capabilities, assets and activities required as means for living (Chambers and Conway, 1992). Planned relocation affects the capabilities, assets and activities that are required for sustainable lives and livelihoods (Mallick and Sultana, 2017). These are derived from different types of capital, including natural, social, financial, human and physical capital (Soltani *et al.*, 2012; Piggott-McKellar *et al.*, 2019; Nguyen, 2020). Cultural and spiritual capital are understudied aspect of livelihoods (Adger *et al.*, 2013) and are also essential to consider in relocation contexts (Piggott-McKellar *et al.*, 2019). This research draws on the livelihood capital framework to explore outcomes of partial planned relocation across different dimensions of capital (see Piggott-McKellar *et al.*, 2019), with the addition of spiritual capital given its importance in the Pacific Islands context (see Table 1).

Evidence suggests that livelihood outcomes are improved when there is careful planning and when affected communities drive, participate and engage in decision-making (Guadagno, 2016; Lei *et al.*, 2017; Bower *et al.*, 2023). Yet even with best-practice principles and social safeguards in place, the complexity of relocation – such as diverse socio-cultural costs – can result in adverse outcomes for people's lives and livelihoods both in the short-term and over time (De Sherbinin *et al.*, 2011; Wilmsen and Webber, 2015; Seebauer and Winkler, 2020; Felipe Pérez and Tomaselli, 2021). Relocation outcomes differ based on population, place, time, relocation drivers and events, governance and decision-making and willingness to relocate (Piggott-McKellar and McMichael, 2021; Weerasinghe, 2021). Adverse impacts are likely where planned relocation is not participatory and residents have limited role in decision-making (Seebauer and Winkler, 2020; Bronen and Cochran, 2021), human rights are not protected (Bower and Weerasinghe, 2021), livelihoods and income sources are lost or decline (Hino *et al.*, 2017), community structures are disrupted or dismantled (Binder *et al.*, 2020), place attachments are disrupted that are fundamental to cultural and spiritual identities including among Indigenous peoples (McMichael and Katonivualiku, 2020; Yee *et al.*, 2022a, 2022b) and where planned relocations are motivated by other political agendas (Kothari, 2014; Bower and Weerasinghe, 2021). It is commonly understood in resettlement literature and practice, that the implications for livelihoods of affected people can be disastrous (Scudder, 2005).

According to recent reviews, hundreds of planned relocations – also referred to as resettlement, retreat, realignment – have occurred globally in recent decades in response to environmental risk and disaster (Bower and Weerasinghe, 2021; Ajibade *et al.*, 2022;

Table 1. Forms of capital that support sustainable livelihoods in contexts of planned relocation (adapted from Piggott-McKellar et al., 2019)

Forms of capital	Definitions
Natural	Natural resources and services for livelihoods, such as land, water and climate.
Social	Social fabric and networks through which people interact, build relationships and share resources.
Financial	Financial resources people use to achieve livelihood objectives.
Human	Skills, knowledge, ability to work and good health that enable people to pursue different livelihood strategies.
Physical	The basic infrastructure and goods needed to support livelihoods.
Cultural	Values, customs, moral frameworks and shared ways of feeling, thinkingand acting.
Spiritual	Beliefs – including in supernaturalism (totems, spirits, ancestral gods) and a Christian God – that have power to save, protect, pardon, reward and punish.

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Balachandran *et al*., 2022; Adade *et al*., 2023). To date, however, only a few planned relocations are linked to climate change, whether through local people's accounts of climate change risks or through policy and programme framing. In Pacific Island Countries (PICs), some communities are already undertaking climate-related relocation away from sites of risk, including in Fiji (Janif *et al*., 2016; McMichael *et al*., 2019; Bertana, 2020), Papua New Guinea (Edwards, 2013; Lipset, 2013), Kiribati (Roberts and Andrei, 2015), Samoa (Beyerl *et al*., 2018), Solomon Islands (Albert *et al*., 2017; Tabe, 2019) and Vanuatu (Dannenberg *et al*., 2019).

The Government of Fiji is a global forerunner in planned relocation (Betzold, 2015), advancing national-level policies (Rıos *et al*., 2017; Fiji Ministry of Economy, 2018; McMichael *et al*., 2019). In 2018, the Fijian Government endorsed Planned Relocation Guidelines (Fiji Ministry of Economy, 2018) to guide and advance processes of planned relocation, with associated Standard Operating Procedures launched in 2023 (Office of the Prime Minister, 2023). The Climate Relocation of Communities Trust Fund Act was established in June 2019, a financial mechanism for state-supported relocation activities. While relocation is 'an option of last resort', 830 communities in Fiji are identified as potentially requiring relocation with 6 communities already relocated and 42 considered in urgent need of relocation due to climate change threats (McMichael and Katonivualiku, 2020; Lund, 2021; Chand, 2023).

This paper explores the impacts of partial planned relocation in 2020 on the lives and livelihoods of residents of Narikoso village, Fiji. First, it provides an overview of Narikoso, the case study site. Second, it presents the research methods with particular focus on Pacific research methodologies. Next, informed by the concept of sustainable livelihoods, it presents research findings and highlights the impacts of partial relocation on livelihoods. Finally, it discusses lessons learned for planned relocation initiatives with a focus on circumstances that support or constrain sustainable livelihoods. While focused on an in-depth case study, findings are relevant for current, emerging and future planned relocation initiatives that aim to relocate people and assets with dignity in a warming world.

Study site

Ono Island is a member of the Kadavu Group, an outlier to Kadavu Island, to the south of Viti Levu (see Fig. 1). Separated from Kadavu Island by the Ono Channel, this volcanic island is enclosed by the Great Astrolabe Reef and covers an area of 30 km^2. Its maximum altitude is 354 m. There are seven villages: Vabea, Waisomo, Narikoso, Naqara, Nabouwalu, Buliya and Dravuni. No roads connect Narikoso to other communities on Ono Island; transport is by boat or on foot to neighbouring villages and farmland.

Narikoso is an iTaukei (Indigenous Fijian) village of 30 households with a population of between 95 and 109 people. Residents are from the Yavusa (tribe) Raviravi and there are five Mataqali (clans): Muanicake, Nawailio, Ravita, Tote and Tilivaweleti (in Suva). Their ancestors lived in different sites on Ono Island, before settling in the current site several generations ago (exact timeframes unknown). Villagers report that previous moves were a response to interfamily disputes and earlier experiences of coastal erosion (Barnett and McMichael, 2018). Mobility and migration are still common; residents move within Fiji and internationally for work and education; and people move to the village following marriage with local residents.

In most households (95 per cent), sewerage is disposed of through water reticulation systems that flush to septic tanks. One small store sells basic commodities, and the closest commercial centre is 45 minutes away by boat in Kavala Bay on Kadavu Island. Electricity is provided intermittently by a diesel generator, and most households own solar energy units. Villagers fish, harvest bêche-de-mer (sea cucumbers) for export to Hong Kong and mainland China, and practice semi-subsistence agriculture and small-scale cash cropping (e.g., root crops, honey, Kava/Yaqona). Narikoso is close to the Great Astrolabe Reef, a 100-km-long reef popular with recreational divers and tourists, and nearby resorts provide employment for some villagers and purchase small amounts of crops and fish. A few households generate income by hosting paying guests (homestays).

Narikoso has experienced coastal flooding, inundation particularly during king tides, shoreline erosion, saltwater intrusion and storm surges (see

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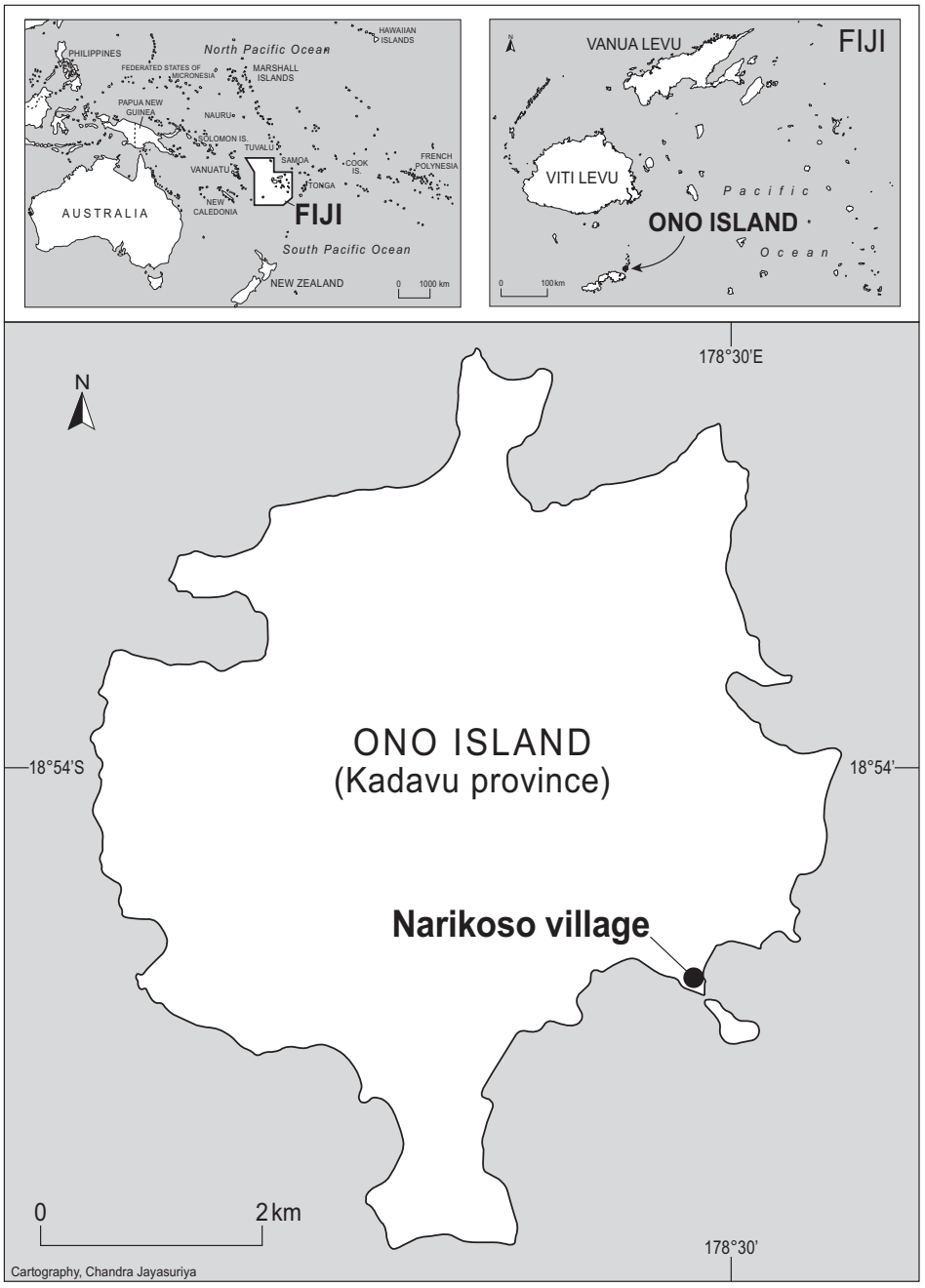


Figure 1. Map of Ono Island showing Narikoso village, Fiji (prepared by Chandra Jayasuriya)

Figure 2) (Barnett and McMichael, 2018; Bertana, 2019; Anisi, 2020). During high tide, the foundations of properties closest to the sea are inundated, and more extensive flooding occurs during king tides and storm surges (Jolliffe, 2016). Local residents report that the shoreline has receded by about 15 m over the past 30 years (McMichael *et al.*, 2019). According to vulnerability assessments (performed by the Geoscience Division of SPC), various factors may have exacerbated coastal erosion and sediment loss in Narikoso including seawalls first built by the community in the 1960s, shoreline protection using large boulders and removal of coastal mangroves.

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Figure 2. Storm surge entering Narikoso village 'red zone' in 2022 (photo: Kelepi Saukitoga) [Colour figure can be viewed at wileyonlinelibrary.com]

In 2011, Narikoso village sought government assistance for a new sea-wall to prevent coastal erosion and flooding. However, the Government of Fiji proposed relocation as a preferred adaptive strategy. Groundwork activities at the relocation site by the Royal Fiji Military Forces caused environmental damage and, at the end of 2012, the project was terminated due to poor planning and lack of funds (Anisi, 2020). In 2013, Narikoso village council asked the Government of Fiji and Pacific Community (SPC) and Deutsche Gesellschaft fur Internationale Zusammenarbeit (GIZ) to reassess the site and assist with relocation plans. A cost–benefit analysis in 2016 identified partial relocation of seven households in the 'red zone' (facing highest coastal risk exposure) as the most feasible option. Many residents expressed a preference, including to donor agency and government staff, to relocate the village as a whole (McMichael *et al*., 2019). However, it appears that project-based funding limitations, as well as risk analysis, played a role in restricting relocation in Narikoso to just seven households (Anisi, 2020).

The Narikoso relocation project resumed in 2016 – co-funded by the Government of Fiji, the European Union and GIZ – and by 2020 seven new houses had been built for those households living in the red zone (Figure 3). As this new site (site A) does not have sufficient space to accommodate the remaining 23 households, another nearby site (site B) has been demarcated by the Ministry of iTaukei Affairs for their possible future relocation; however, there is currently no planning for this. The project cost $1.2 million FJD. The land for the new site (site A) has been gifted by two village Mataqali – Tote and Ravita – and all relocated households belong to Ravita clan. The SPC/USAID Food Security project funded the planting of 1000 vetiver grasses, 2000 pineapple tops and 80 tree seedlings to stabilise the new site (site A).

Methods

The research was guided by Indigenous Pacific methodology that adheres to respect, humility and traditional cultural protocols (Nabobo-Baba, 2006, 2008). Vanua research, the main sinnet woven through the study involves methods grounded in 'Indigenous Fijian values, protocols of relationships, knowledge and ways of knowing' (Nabobo-Baba, 2006: 24). Talanoa – a process in which two or more people talk together and share their time, interests and emotions – embodies Fijian information-sharing protocols (Nabobo-Baba, 2006; Vaioleti, 2006). Vaioleti (2006: 23) translates the word Talanoa from a Tongan context: 'Tala' means to inform, tell, relate, command, ask or apply; 'noa' means of any kind, ordinary, nothing in particular, purely imaginary or void. In Fiji, the term 'Tala' means to offload and 'noa' means yesterday, with Talanoa meaning yesterday's stories. Talanoa is an appropriate way of sharing and collecting information within Pacific Indigenous cultures with strong oral tradition, including Fiji cultures (Nabobo-Baba, 2007).

Data were collected in Narikoso village during January and February 2022. The lead author presented a Sevusevu (traditional Yaqona presentation) to the Kadavu Provincial office and briefed the Roko Tui (executive head of the Provincial Council Office) before heading to Narikoso village. At Narikoso village, another Sevusevu was presented to the Marama ni Yavusa (Tribal chief) and the elders of the village. Data collection was conducted using Bauan dialect which is common in Fiji and (where preferred) English.

Data collection included group talanoa, individual talanoa and participant observation to

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Figure 3. (a) Narikoso relocation site (site A); (b) kitchen added to home; (c) poultry farm; (d) piggery shed (photos: Kelepi Saukitoga and author (Merewalesi Yee)) [Colour figure can be viewed at wileyonlinelibrary.com]

give context to Talanoa discussions and deepen understanding of everyday life. Thirty people participated in talanoa discussions: 15 participants across 3 group Talanoa with men ($n = 5$), women ($n = 6$) and youth ($n = 4$); and individual Talanoa ($n = 15$) with key members of the community, including leaders and church representatives. The inclusion of gender-specific group Talanoa allowed people to talk freely, which is especially important in Fiji as women do not always have opportunities to speak in group settings (Singh-Peterson and Iranacolaivalu, 2018). Participants were invited to participate with the support of the village headman and district representative and via villagers who recommended people with whom to talk. Both those that relocated and those that remained in the original village were included.

In keeping with Pacific values and research standards (Nabobo-Baba, 2008), Talanoa were set up informally in a suitable location. Talanoa included stories, metaphors, jokes, disagreements, agreements and explanations. Conversations were guided loosely according to an

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open-ended question guide, with the first author focusing conversation and listening for opportunities to delve into stories and jokes that address relevant themes. They involved discussion about environmental changes, people's lives and livelihoods prior to and following relocation, relocation decision-making and implementation processes and relocation outcomes. A sense of trust was developed, and participants were able to share openly. There was no time limit and talanoa lasted between 1 and 1.5 hours. While Talanoa involved wide-ranging exchange of stories, thematic areas of interest were examined in depth.

Group and individual Talanoa were digitally audio-recorded and later transcribed, with detailed notes taken. The research was approved by the University of Queensland Human Research Ethics Committee 2019003022/1954713.1 & 1955378.1, and adhered to academic ethical principles of informed consent, confidentiality and the right to withdraw. Given the research occurred in an Indigenous village, a research permit was required from the Fiji Ministry of iTaukei Affairs (MITA). A cultural research declaration acknowledging that the research relates to iTaukei (Indigenous) traditional knowledge was approved by the Permanent Secretary of MITA. Findings were reported to the community via a district representative and a member of a relocated household. Data were coded and analysed using NVivo software (Vaismoradi *et al.*, 2013), with reference to six forms of capital that provide a foundation for sustainable livelihoods: natural, social, financial, human, physical and cultural. In addition, a seventh form of 'capital' was coded – spiritual – which was identified during the research and talanoa as central to lives and livelihoods.

Findings: Livelihoods following relocation

Table 2 summarises various dimensions of capital that shape the capabilities, assets and activities of relocated households of Narikoso, and which influence their ability to build resilient and sustainable livelihoods.

Natural capital (Na I yau bula)

iTaukei land is allocated to the Mataqali and customary ownership is formally administered through the iTaukei Land Trust Board. The Mataqali have customary rights to land surrounding their home village. In Narikoso, a portion of land belonging to two of the five Mataqali of the village was gifted for the new village site following a traditional and consensual process. As one man explained, 'we discussed it as a clan, what amount and which part of the land must be given, and what is being agreed to in the village was then taken to members of our clan in Suva for them to re-check and agree on what we have discussed' (man, individual Talanoa).

Partial relocation in Narikoso was enabled through ready access to Mataqali land and there were no preexisting land disputes. A member of one relocated household explained that the land at the new site was 'legally and culturally declared as [within the] village boundary', and this provided them with long-term land security, and entitlement to use the land for 'agriculture, hunting, or other traditional practices that will support our well-being'. Furthermore, residents report that the relocation site is more protected from climate hazards and extreme weather events: 'We are restarting our life without fear. We no longer have to worry about the waves creeping into our yards. We are safer up here. Our children can play freely outside' (woman, group Talanoa).

Members of relocated households said there has been an increase in subsistence food production and food security in the new site. Having moved away from a low-lying site affected by saltwater intrusion, residents explained that the soil provided improved conditions for backyard gardening: 'We can plant vegetables around our houses up here which is so good like chilies, spinach, eggplant, and pineapples. This was never possible at the original site due to ongoing saltwater flooding our compounds' (woman, individual Talanoa). In addition, the new site is closer to Mataqali farmland, providing improved access to farmland for men and women. As one man explained, 'I spend most of my time going to our farm to do weeding and planting because now at the new site, it is more accessible for me to get there' (man, individual Talanoa). A few residents said that with less time spent on home repairs due to climate impacts and extreme weather events, they can now spend more time farming and growing foods and crops.

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Table 2. Impacts of partial relocation on livelihood capital in Narikoso

Capital	Dimensions	Brief description
Natural	Food production and security	Increased subsistence food production at new site
Yau bula		Increased access to Mataqali farmland
		More time for farming (less time spent on home repair after extreme events)
	Water security	Improved water security through provision of water tanks
	Land security	Long term land security on customary land
		Reduced exposure to climate hazards and extreme events
	Communal assets	Maintained access to marine and terrestrial resources
		Mataqali forest preserved for future building materials
Social	Community cohesion	Strengthened community cohesion among relocated families
Veiwekani		Less Yaqona drinking: more family time, reduce community time
		Inequity in resource access among households at original and new sites
	External partnerships	While initial groundworks caused environmental damage, residents developed strong relationship with government and NGOs
Financial	Livelihood diversification	New income sources: poultry and piggery farm; canteen; selling seasonal fruits and vegetables. Original houses used by some as homestay
Bula vaka I yau		
Human	Nutrition	Improved nutrition through backyard gardens and farmlands
Bula raraba	Health	Villagers continue to travel by boat to health services
		No psychosocial or emotional support pre, during and post relocation
	Education	Children continue to board at primary/secondary school (Sunday–Friday)
Physical	Infrastructure	Seven climate proof houses with shower, toilet, laundry and septic tan
Na I yau		Water leaks through louvres and door gaps when it rains
		Small houses (8 × 6 m); open layout affords limited privacy; no kitchen
		Improved safety through two solar-powered floodlights
		Access road is long; footpath inaccessible for elderly and people with disabilities
		Phone signal at relocated site is unreliable
		Solar unit supplies limited power; more powerful solar units at old site
Cultural	Traditional role	Continuity in traditional roles of relocated families
Na I tovo kei na I valavala e kilai tani na Pasifika	Village layout	No Rara (communal green space) in the new site
	Village fragmentation	Partial relocation weakens village cohesion; however, relocated families report strengthened familial bonds and solidarity
	Separation from family Yavu	Relocation weakens the connection of relocated households (whose previous houses have Yavu: that is, original house foundation) to their ancestors and their past.
Spiritual	Custodianship	Relocated families develop new attachments to place, nature and spirit
Bula vaka yalo	Emotional well-being	Spiritual beliefs and practices offer solace, hope and sense of purpose, supporting resilience

In the original village site, spring water is piped (via a gravity-fed system) to households for drinking and cooking and rainwater is collected and used for washing and cleaning. At the new site, each of the seven relocated households was provided with a 10 000-l water-tank that is rain-fed based on roof catchment (and potentially exposed to droughts). The relocation of the new houses at the new site is lower than the spring that feeds the original village: 'We have never encountered any major water problems since the relocation … our water supply has been improved' (woman, individual Talanoa).

Communal assets – such as sacred sites, cultural heritage sites and traditional lands and sea – are collectively owned and managed by the village and hold significant meaning. While other studies have found that planned relocation can disrupt access to communal assets, the short-distance and partial relocation of households in Narikoso meant that villagers could sustain access. Members of relocated households explained that they had sustained access to traditional Mataqali land and fishing grounds that provide an important foundation for food security and livelihoods: 'The best part about this relocation is the distance. Because we only moved about 200 meters inland, we still had access to our traditional lands and seas, which means we still could go fishing for food and

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income and likewise farming in the plantation' (man, individual Talanoa).

Finally, partial relocation has negatively impacted natural resources and ecosystems through siteworks and construction materials, causing the removal of coastal mangroves and trees, and the use of dynamite for excavation. This adversely affected natural resources, including coastal reefs: 'Removal of mangroves and resultant sediments that flowed from the excavated site due to dynamiting ruined our coastal reefs which we depended on for survival' (woman, individual Talanoa). The excavated site was stabilised by planting vetiver grasses, fruit trees and other forest trees. In 2018, villagers built a seawall to protect their coastline and homes, and in 2022 they replanted mangroves. A portion of conserved forest has been allocated to the 23 families yet to relocate. During one Talanoa, men explained that if a remaining household wanted to move, they can 'cut the pine and choose a spot where they want to build'; however, the demarcated land at the relocation site has not been excavated. A Talanoa with youth highlighted the importance of monitoring logging for sustainability and reducing environmental impacts.

Social capital (Veiwekani)

Residents discussed the ways in which partial relocation was shaped by and affected local social networks and community cohesion, as well as their wider relationship with external partnership. As mentioned above, despite early plans to relocate the entire community, the funding agency, GIZ and SPC subsequently recommended moving only the seven most vulnerable households. Villagers of Narikoso were initially not in favour, expressing concern that partial relocation would fracture their community networks and disrupt their culture and way or life. As one man recalled during a group Talanoa, 'we were not happy with this new idea. Regardless of which side the ocean currents come from, we should move as one village. We are the Yavusa Raviravi. This is a clear indication that the implementing agencies don't know us, our culture and way of life'. Other earlier research conducted in Narikoso reported community unrest and disapproval of plans for partial relocation that would affect community cohesion and structure (Barnett and McMichael, 2018; Anisi, 2020; Bertana, 2020).

Following the relocation of seven households, relationships with villagers at the previous site had somewhat deteriorated. According to Narikoso village chief, the partial relocation plan created a rift between relocated and non-relocated villagers as the remaining households found it difficult to understand why the seven families agreed to relocate without the others; disagreements and tensions arose, reportedly eroding the sense of trust and shared purpose that once bound the community together.

Furthermore, since their relocation, members of relocated households are less inclined to participate in communal kava-drinking and talanoa sessions due to the distance from Narikoso village. One reason for this is that the footpath between sites is not well lit at night, – as one man explained, 'in the night, it becomes extremely difficult to see our way to and from the original village' – and because relocated households are now more focused on their families and immediate clan. Accordingly, sometimes the families at the new site are not aware of events happening in the original village. People indicated that there has been a steep decline in engagement between residents of the new 'upper' and older 'lower' village sites, with reduced opportunities for communal activities and social visits. Referring to their elderly mother, one person explained:

> At the old village site down there she was doing everything, farming, fishing, engaging in women's projects, visiting her relatives around the village. Ever since we moved up here it has been different, so she only goes down on Sunday for church service. Otherwise, she just remains up here in the relocated site. (Man, individual Talanoa)

The seven relocated families belong to one *Mataqali*: 'All seven households, our grandfathers are brothers. We all belong to one Mataqali' (man, individual Talanoa). These families were emphatic that connections within families and between Mataqali households had strengthened through the relocation process. As one woman explained, 'One thing about living here as one Mataqali is that our relationships and interaction amongst each other is good, the

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men and women and together with our children. I see our women are closer than ever and even our children' (woman, individual Talanoa). They report feeling well equipped to navigate challenges and stresses of daily lives and relocation, with renewed sense of family, community, sharing and co-operation. One person from a relocated household explained, 'We share with one another, we help one another, we love one another, we stand in for each other when the need arises. So, you see the men in this Mataqali, we all do household chores, we clean, we cook, we tend to the children' (man, individual Talanoa).

Beyond social capital and networks within Narikoso, their partial relocation also required extensive networks, negotiations and partnerships with funding agencies, and governmental and non-governmental agencies. This included the European Union, GIZ, the National Disaster Management Office, Royal Fiji Military Forces and the Kadavu Provincial Office. Villagers faced challenges in interacting with external agencies due to poor coordination, changes in project scope and delays. However, community leaders play a crucial role driving adaptation and partial relocation initiatives. The Turagani-koro (village headman) played a pivotal role in voicing concerns to provincial and national levels of government and donor agencies. Post relocation, villagers maintain relationships with stakeholders who assisted them. They stay in contact with outside organisations and notify the village disaster committee chairperson when bad weather is predicted, allowing the committee to activate the community and evacuate occupants if necessary. As summed up by one villager, 'that is why an effective adaptation starts from the recognition that people are the most active participants in determining their well-being' (woman, individual Talanoa).

Financial capital (Bula vaka I yau)

During the initial relocation planning phase, residents were involved in village-wide livelihood diversification activities proposed by SPC and the Integrated Human Resource Development Program to increase self-sufficiency and economic opportunities. These activities included agroforestry, organic farming, coastal rehabilitation, vegetable and pineapple farming, a greenhouse nursery and poultry farming. Many of these activities were discontinued or never initiated as described by one of the non-relocated participants:

> We lost momentum the minute we heard the change from full relocation to partial relocation. What we needed the most was for the government of the day to get us to safety from the impacts of climate change, and they didn't. All these elaborate activities would prove futile if we are living in fear and distress. (Man, individual Talanoa)

However, members of the relocated Mataqali have had opportunity to diversify livelihoods and income streams through a poultry and piggery farm, a canteen that supplies basic food items to relocated households and people from the original village and by selling seasonal fruits and vegetables to other residents of Narikoso. One person explained, 'we are much closer to our plantations and the forest, our sons go there to collect seasonal fruits, after sharing with the families here we sell the surplus to those in the original village'. Poultry are sold to members of the Yavusa Raviravi and provide a good income stream: 'The size of the chicken is equivalent to a size 22 chicken sold in the supermarket at $19.00' (man, group Talanoa). The additional income is reportedly used for their children's education, household expenses and building alterations and for community development tasks delegated by the Vanua. Each Indigenous Fijian person is a part of the Vanua, that encompasses a wide range of related meanings. As a result, Vanua represents more than only the physical concept of the natural environment, it also refers to the social bonds and kinship, ways of being, spirituality and stewardship of place (Yee *et al.*, 2022a, 2022b): 'Income from this project can help us with the extension of our homes here, partitioning of the house into bedrooms for better privacy' (women, group Talanoa). Some households are renovating and extending their original houses for ongoing use and to use as homestays: 'My husband's older brother has renovated the house in the red zone since it is their family house. The house is being extended on the sides of the house and re-painted' (woman, individual Talanoa).

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Relocated residents attribute the success of communal livelihood diversification ventures, like poultry and piggery farms, to their belonging to a single Mataqali which enables easier decision-making, regular communication and strong engagement. Funding for projects has been provided by a Mataqali member – that is, 'one of our uncles' – who lives and works in the United States. As one woman said, 'it is a Mataqali project, so everyone is involved in the project. The children, women and men all have assigned tasks to look after the two projects from cleaning the sheds, feeding the chickens and pigs' (woman, group Talanoa).

Human capital (Bula raraba)

Residents referred to three key dimensions of human capital: access to health and education services and health (nutrition and emotional well-being). Access to key services – that is, education and healthcare – is unchanged. Children in both primary and secondary school continue to attend boarding school in Vabea Primary School (on Ono Island, 20 minutes boat ride from Narikoso) and Kadavu Provincial Secondary School (on Kadavu Island, 45 minutes boat ride from Narikoso), typically leaving on Sunday and returning on Friday afternoons. Access to health services, such as Naqara nursing station and Naleca health station (both on Ono Island, a 25- to 30-minute boat ride from Narikoso), also remains the same. Narikoso residents rely on subsistence agriculture and kitchen gardens, with fruit and vegetables grown within village boundaries. Relocating to the higher site with good soil and improved access to plantations has reportedly improved diets and nutrition: 'At the original site, we could not plant around our house because our compound was often flooded during daily high tide. At the new site, we have our own back yard gardens so it's so much better I can say my family eats more vegetables now like spinach, and eggplants' (woman, individual Talanoa).

Nevertheless, some residents indicated that the mental health impacts of relocation were not adequately considered, with no psychosocial support prior to, during and post-relocation. The mental burden of relocation is evident in people's recollections: 'It was such an exhausting journey for us. So many hurdles along the way. It came to a point where we just wanted to give up. The decision makers were making decisions, but they didn't think of the people affected by the decisions. If only they could see into our hearts!' (man, individual Talanoa).

Physical capital (Na I yau)

Physical capital refers to assets such as infrastructure and technology. At the relocation site, the new houses are climate proof – as one man said, the houses are 'safe from effects of climate change' – and include an indoor bathroom, toilet connected to a septic tank, laundry, solar-powered electricity and lighting and a 10 000-L water tank. This is considered a significant improvement in housing infrastructure, with women in particular pleased to have access to well-designed water and sanitation facilities within their homes (as their previous houses had outdoor toilets). As one woman explained during a group Talanoa, 'we are happy our toilet is inside the house, because it's safe and clean. At the original village, it is outside, so it becomes so unsafe especially for us women and children going to use it at night and during unfavorable weather like heavy rain and cyclones'. Two solar-powered sensor floodlights have also been installed which increases the sense of safety and accessibility.

However, there are some concerns about the housing design and infrastructure. The solar power generation is often not sufficient to meet their needs, hence some whitegoods are kept in their original houses: 'When the technicians came to install the solar unit in the new house, we were told that this unit is stronger than the one installed at the original house. After moving in we noticed if it rains for a day, the unit becomes so weak and unreliable. For that reason, we have left most of our white goods like refrigerator at the original house because that solar unit is stronger' (woman, individual Talanoa). Phone signals are unreliable and uneven at the new site, which is particularly frustrating when people need to make an urgent call, as there are only 'certain spots at certain times of the day where mobile networks catch'.

Residents also report concerns about housing design and quality. The new houses are small

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and so residents have left many items of furniture at their houses in the 'lower village'. As one woman explained, 'we only brought what we can fit into this house as it is small, so most of our items are still in the house at the lower village (women, group Talanoa). The open layout limits privacy, which is problematic for households comprising parents-in-law and adolescent children: 'we built our houses in the original site for privacy. I am disappointed that these homes do not have that' (woman, individual Talanoa). There are no kitchens, as originally promised, so residents have built kitchens themselves as they provide an essential area for cooking and socialising:

> Please listen not only to the people but women as well. Our sanctuary is the kitchen, where [there is] adequate space for socializing, memories are created, and relationships are nurtured. This is one place where women's conversations flow. (Women, group Talanoa)

There are also leaks during heavy rain which damage housing materials and floor coverings: 'When it rains heavily the house is wet … the water enters the gaps in the louver frames and door and reaches the linoleum floor damaging it' (woman, individual Talanoa). These various concerns – small size, limited privacy, lack of kitchen, leaks – were frequently expressed by relocated residents.

Furthermore, physical access to the new site is challenging due to uneven footpaths, making it difficult for elderly and disabled individuals to move, engage in community activities, attend educational programs and participate in social gatherings. As one man with a physical disability explained, 'all should be able to access and reach their homes without any difficulty. I have only one leg and use crutches, and my aunty is old. For us, most of the time we are confined to living up here' (man, individual Talanoa).

Cultural capital (Na I tovo kei na I valavala e kilai tani na Pasifika)

Preserving culture during relocation is crucial in Narikoso, where residents report continuity and disruption to traditional values and practices. The seven relocated families maintain their traditional village role as Matanivanua, primary communicator of the Chief during external engagement. As one man said, 'our obligations to the Vanua still stand. Our family role is the "Matanivanua" village spokesman. It's in our blood so you will notice we all can talk here. That's our role that was passed down from generations'. Residents explained that they continue to maintain this inherited traditional role as Matanivanua: 'In the Fijian culture any ceremony with the chief being present the function won't proceed until the Matanivanua is present. So, any function at the village, we will be called to be present. We are one of the advisors to the chief. The relocation does not affect our Vanua protocols' (man, group Talanoa).

However, the traditional iTaukei village layout which embodies cultural heritage and identity has been disrupted. While the original village has a central *Rara*, the relocation site does not. Relocated people feel their iTaukei culture is not adequately expressed: during a group Talanoa, one man explained, 'The Rara is supposed to be in the center where functions are held, all are invited and can participate that's our way of life'. Further the traditional village layout with central facing houses and shared spaces promotes social cohesion and communal activities. Partial relocation of seven houses has altered and disrupted the village layout and structure, separating households across two sites. However, seven families report strengthened familial bonds, sense of kinship and Mataqali solidarity.

Spiritual capital (Bula vaka yalo)

Finally, Narikoso's partial relocation has affected people's spiritual worlds. Residents report a sense of spiritual connection and deep respect for the natural environment which underpins a commitment to custodianship of place. They refer to the interconnectedness of people, the natural world and the spiritual realm. The site of relocation is Mataqali land and relocated households have a sense of spiritual connection to the site. As one person explained:

> the land we relocated to is our customary land, therefore we are still very much spiritually connected to the land, soil where our ancestors lived and buried. This fosters a sense of

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> responsibility towards the environment and each other and promotes sustainable practices in the new location.

Furthermore, relocated people explain that their spiritual beliefs have been pivotal to their emotional well-being and resilience throughout the relocation process. Spirituality helps people to cope with change, loss and uncertainty; spiritual beliefs and practices offer solace, hope and a sense of purpose, enabling individuals to navigate the challenges of relocation. One woman explained that when their household was 'identified as urgently needing relocation' they had many questions and doubts and turned to God: 'God showed me that relocating is not only saving my children, but also saving my future generations and also my culture'. Older members of relocated households emphasised the importance of continuing to sustain spiritual beliefs, of intergenerational transmission of values, wisdom and spiritual heritage from parents to children: 'This transmission helps maintain the community's spiritual heritage and ensures the continuity of spiritual capital within the relocated community. This should begin in the family from parents to their children' (man, group Talanoa).

Discussion and conclusion

As climate-related planned relocation occurs in Fiji and beyond, it is important that relocation processes both reduce exposure to climate change risks and enable people to sustain and rebuild lives and livelihoods in new places (De Sherbinin *et al*., 2011; Hino *et al*., 2017). Yet few studies have explored the impacts of planned relocation in the Global South, including socio-cultural, economic and environmental impacts (Yeboah *et al*., 2022).

This paper examines planned relocation away from a low-lying coastal 'red zone' among residents of Narikoso, Fiji, with a focus on sustainable livelihoods. Here, 'livelihood' refers to the capacities, resources, capitals and activities needed to live. Based on research carried out two years after relocation of households, it looks beyond immediate processes and short-term outcomes (e.g., housing design) to understand longer-term consequences of planned relocation for lives and livelihoods (Piggott-McKellar *et al*., 2019; Piggott-McKellar and Vella, 2023). It examines the ways in which planned relocation has shaped diverse forms of capital that underpin people's livelihoods including natural, physical, financial, social, human, cultural and spiritual capital. The paper makes an important contribution to knowledge about the need to incorporate local and traditional values in relocation planning and implementation processes. It contributes to the limited empirical evidence about planned relocation processes and outcomes and how outcomes – including benefits and risks – are distributed unevenly within communities.

In Narikoso, a key enabler of partial relocation was access to ancestral land, a critical form of natural capital, as well as a cultural and spiritual resource (McMichael *et al*., 2019). The new site is located on customary land of the seven relocated households. In Fiji most land is held under customary tenure (Gharbaoui and Blocher, 2016; Office of the Prime Minister, 2023), and ancestral lands are associated with tangible and intangible elements of community origins, identity, and livelihoods. The importance of access to customary land has been documented in other sites of relocation and retreat in Fiji – such as Vunidogoloa, Denimanu and Vunisavisavi – where traditional land ownership rights have enabled movement of people and assets (Charan *et al*., 2017; Piggott-McKellar *et al*., 2019; Yamamoto, 2020). Conversely, there are other places, such as Togoru and Tukuraki, where communities do not have any or sufficient customary land to which to relocate (GIZ, 2020; Yee *et al*., 2022a, 2022b). In Narikoso, relocated residents have sustained access to natural resources, both from ancestral land and fishing areas, that underpin their livelihoods (e.g., land, ocean, fertile soil, food from farming and fishing, water). Ancestral land is a form of natural capital and provides a cultural and spiritual home. Protecting the rights and values of Indigenous communities during processes of planned relocation, including connection to place, is essential.

However, Narikoso's partial planned relocation entailed complex opportunities and challenges across other domains of capital. Physical assets have been substantially altered; while there are improved water and sanitation facilities (e.g., indoor toilets and bathrooms, water

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tanks), new homes are smaller, have limited privacy, there are no kitchens, houses leak during heavy rain and the solar units provide limited power (Charan *et al*., 2017; Piggott-McKellar *et al*., 2019). The footpath between sites is inaccessible, particularly for elderly people and mothers with young children, which matters given that key amenities – for example, church, kindergarten, community hall, dispensary – are at the original site. Financial assets for relocated households have diversified: residents participate in new livelihood initiatives (e.g., poultry and piggery farm, original houses used as homestay) and use income to purchase building materials and improve the new site. Many aspects of human capital – nutrition, health, education – have been sustained or improved: for example, residents reported continued access to school and health services, and improved food production and food security. However, villagers suffered psychosocial stress during and following relocation, as with many relocation contexts (Cernea, 2004), yet no formal psychosocial support was provided. So, there are benefits and problems across diverse forms of capital including physical, financial and human assets.

Social capital has also altered, with relocated residents reporting increased and continued engagement with external partners and organisations, and increased cohesion and connection within and between relocated families. Yet importantly, both relocated residents and those at the original site highlight emerging social inequities in the distribution of relocation-related benefits and challenges. For example, relocated households have improved access to livelihood initiatives and improved water and sanitation infrastructure, yet there are no kitchens (perhaps because women did not participate in house design consultations). Similar experiences were reported in the planned relocation of Vunidogoloa in Fiji (Charan *et al*., 2017). Planned relocation can result in inequitable distribution of benefits and risks both in the short- and long-term (Nagle Alverio *et al*., 2021). Planned relocation processes must include multiple and diverse groups and ensure equitable avenues for all perspectives to be expressed (Ajibade, 2019; Piggott-McKellar *et al*., 2019; Owen, 2020). Equity goes beyond merely distributing resources and benefits equally; it can increase the effectiveness of adaptation initiatives, reduce vulnerability and ensure that social capital and networks are sustained and strengthened (Schipper *et al*., 2021).

Finally, both cultural and spiritual capital are central dimensions of Narikoso's planned relocation. Relocation planning must take account of cultural contexts, structures and values (Fernando and Jayasinghe, 2023). Throughout the world, Indigenous people have strong spiritual and emotional attachments to their traditional and cultural practices (Neef *et al*., 2018; McMichael and Katonivualiku, 2020; Lund, 2021). Yet in Narikoso some aspects of Indigenous culture and spirituality have been disrupted. The new site does not have a traditional village layout and lacks a *Rara*. Even though there is a Rara at the original site, the seven relocated households expressed the importance of having one in the new site. The *Rara* serves as the main site for social occasions where people of all ages congregate to interact, share stories, dance and engage in cultural rites (Ravuvu, 1987). It is considered a sacred place where traditional knowledge, customs and skills are passed down from elders to the younger generations. Preserving and respecting *Rara* is vital as this space holds significant value, supporting deep-rooted traditions and sustainable way of life in a village (Ravuvu, 1988). The Government of Fiji originally intended to relocate the remaining households at the original Narikoso village site, hence a Rara would need to be established anyway. This points to the complexities associated with relocation, especially when it is partial and the critical need for better connections between villages to maintain a sense of community.

Furthermore, with partial relocation – in which only seven climate-vulnerable households moved – the Indigenous social structure in Narikoso has been disturbed and fragmented. Partial community relocation disrupts social cohesion (Binder and Greer, 2016; Petz, 2017; Jessee, 2020). Members of relocated households felt excluded from decision making processes and not adequately informed about what decisions were made (Piggott-McKellar *et al*., 2019). Important factors were neglected – such as the need for a Rara, a safe path connecting the communities and suitable house designs causing concerns for relocated households over

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disruptions to cultural and spiritual beliefs, practices and values, and the intergenerational transmission of values, wisdom and spiritual heritage from parents to children.

Nonetheless, relocated residents of Narikoso have found ways to sustain and nurture their sociocultural and spiritual life-worlds. In Fiji, Indigenous people have a strong sense of tradition and spirituality, with intimate connections to land and ocean, a strong sense of community and communal values that focus on sharing resources and responsibilities. Indeed, in some sites in Fiji these traditions, values, beliefs and connections to place inform decisions to resist relocation (Yee *et al*., 2022a, 2022b). Despite the challenges mentioned above, relocated residents of Narikoso describe continuity of valued aspects of cultural and spiritual worlds: they remain close, albeit with some access challenges, to communal cultural resources (e.g., the church, community centre), they have continued commitment to their traditional roles particularly as the Chief's spokesman (as members of 'Matanivanua') and they have sustained access to customary land and sea that are important sites of spiritual and cultural attachment. This highlights the importance of understanding cultural contexts, mitigating cultural disruption and ensuring meaningful engagement with communities to support and sustain culture throughout processes of relocation (Downing and Garcia-Downing, 2009).

As Fiji looks to relocate more communities in the coming years, it is essential to learn from community relocations such as the partial relocation of Narikoso. While planned relocation is considered a form of adaptation, it can entail maladaptive outcomes including loss of and disruption to things that people value such as place attachments, access to resources, livelihoods and health and well-being (Bettini *et al*., 2017; McNamara *et al*., 2018). Our research underscores that processes of planned relocation must not only reduce exposure to climatic and environmental risk, but also promote and preserve the integrity of local ecosystems and environments, value cultural and spiritual elements of security, ensure continuity of identity, encompass equitable improvements, promote belonging and inclusivity, ensure well-being and sustain and develop livelihoods and the diverse forms of capital that provide a foundation for dignified lives and livelihoods (Henly-Shepard *et al*., 2018). This demands deep engagement with affected communities (Garimella, 2022; Bower *et al*., 2023) to ensure that planned relocations enable dignified and meaningful lives and livelihoods.

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Conflict of interest

The authors declare that the research was conducted in the absence of any commercial or financial relationships that could be construed as a potential conflict of interest.

Data availability statement

The raw data supporting the conclusions of this article will be made available by the authors upon request, without undue reservation.

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