TAKAEANG, ARANUKA

A community case study on climate (im)mobility from Kiribati

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1. Research Context

Climate change is intensifying with a wide range of challenges to the sustainable development and resilience of all Pacific Island countries. Pacific political leaders collectively and individually continue to underscore that climate change remains the single greatest threat to the livelihoods, security, and wellbeing of the peoples of the Pacific. Community leaders also emphasise the need to mitigate and adapt to the effects of climate change because communities want to continue living in their own countries, for as long as possible.

Mobility has always been a part of Pacific ways of living and is part of our resilience. This means that mobility is a measure of last resort when other options for the ongoing flourishing of life have been exhausted. In the context of climate change, mobility includes a broad range of responses influenced by individual, family, and community circumstances. It can include temporary movement of people within and between countries to support community resilience (e.g., via internal recruitment for work and international labour mobility schemes), relocation of people and communities within a country (whether voluntary or not, including in response to climate-related hazards), and permanent migration across the Pacific or further afield.

Consideration of climate-related (im)mobility also needs to account for other common forms of human mobility such as displacement, where people are forced to leave home to save their lives, and immobility, where people and communities adapt and respond to climate change without everyone moving, whether that 'immobility' is voluntary or not.

Climate change is adding to existing drivers of mobility, especially economic mobility, in the Pacific and elsewhere. Attributing current mobility decisions to the direct effects of climate change can be difficult, but climate change-related hazards will impact Pacific Island peoples' wellbeing including their heritage, culture, language, and ancestral connections to land; security, including water shortages, the actual loss of land and increased risk to life from intensifying extreme weather events; and livelihoods, including saltwater intrusion affecting agricultural production.

This case study is one of 17 undertaken as part of a comprehensive research project, funded by the New Zealand Ministry of Foreign Affairs and Trade (MFAT), known as Climate Immobility Research in the Pacific. The overall goal of the research is to "enhance Pacific resilience and well-being and ensure the livelihoods, security and well-being of the peoples of the Pacific are protected in the context of climate change" (MFAT, 2021, p. 25).

This case study was undertaken in the Independent and Sovereign Republic of Kiribati, an island country with a permanent population of 119,000 inhabitants (2020 census). Kiribati is in the central Pacific and comprises 32 atolls and one raised coral island. Most people live on Tarawa atoll. The community chosen to participate in this case study was Takaeang on Aranuka which is about 200 km south of the capital Tarawa. Appendix 1 contains country context in more detail.

2. Takaeang, Aranuka

The place

Aranuka atoll is in the central cluster of the Gilbert Island group[1]. Aranuka has a population of just over 1,000 people living on one of two large, inhabited islands, unusual for an atoll. Takaeang lies nearly 8 km west of the main island and is home to approximately 270 people according to latest census data (Government of Kiribati, 2015). Takaeang islet is only accessible via boat from the main island of Buariki, Aranuka.

Due to the size of the atoll and its highest elevation being about 3 m, there are no surface sources of water. Instead, rainfall soaks through the surface creating a lens of freshwater floating on high density saltwater beneath the ground. This is accessible through wells, although these are being affected by saltwater intrusion. Increasingly, households rely on rainwater tanks for drinking water.

Aranuka is not directly influenced by tropical cyclones. However, the atoll is influenced by dominant easterly trade winds that generate persistent open-ocean waves. During El Niño phases, winds are more variable and can come from the west (Wasserman &

[1] The Republic of Kiribati is made up of three main island groups: The Gilbert, Phoenix and Line Islands, and one isolated raised limestone island, Banaba (Ocean Island).

Rankey, 2014). Except for Banaba, atolls across Kiribati have nutrient-poor soils. With a high alkaline and coarse texture, the coral-derived soil makes it a difficult environment for growing a variety of crops. However, atoll life has long sustained I-Kiribati, who, particularly in the outer islands, have intimate knowledge of how to grow and harvest crops. Staple crops in Takaeang include pandanus, breadfruit, coconut trees, and swamp taro, known locally as babai.

Figure 1: Map of Takaeang, Aranuka Atoll Kiribati

Takaeang islet was chosen as a case study location due to the mobility history of the community living there, and that it is a community that is likely to stay in place.[2]

[2] The current research draws on four broad mobility types: staying in place, voluntary relocation, informal relocation, and environmental displacement. Staying in place is understood as a state of relative immobility but includes day-to-day movements to and from work, school, livelihoods, fishing grounds, and

The people

Participants in this case study were hesitant to share the history of how they came to be settled on Takaeang (see Section 4); however, census data reveals that the community of Takaeang has an interesting mobility history, with many of those living there descendants of I-Kiribati who had migrated from drought-prone islands in the south and Aranuka. There are also a small number of teachers, nurses, and clergymen who have settled there from Tarawa and other outer islands.

All residents of Takaeang speak te taetae ni Kiribati, the Kiribati language. Most households engage in subsistence and cash-income activities. Copra is a significant source of income for households, along with the drying of locally sourced food, for example te ibo (seaworms) and te tari (fish).

3. Methodology

The University of Auckland research project, *Climate (Im)mobility in the Pacific*, was co-designed to generate knowledge using formal and informal Indigenous qualitative social science methods. For each country, the research approach was informed by methodological contributions from Indigenous scholars. This was to ensure consistency with Indigenous research principles.

Relationship building, ethics and community approval

The research team obtained University of Auckland Human Participants Ethics Committee approval on 29 March 2023.

The team obtained a research permit through the Office of Te Beretitenti (The Office of the President [OB]). At the time of application, the Government of Kiribati was introducing a new research-permit process, which included the establishment of a new research-

agricultural sites. Also included are temporary internal and external migration of individuals, family groups, and community groupings for work, education, and health/wellbeing purposes. The concepts of 'stay or go,' 'stay and go,' and 'go to stay' were expressed in various languages. This also includes the voluntary and involuntary nature of 'staying in place' where communities and/or groups of community choose to stay in place or choose to go, but, for various reasons, at particular times, they are unable to move. These reasons include prioritising family obligations 'at home,' not having the money to travel, or transportation not being available. Most of the atoll communities are categorised as staying in place and most of them had 'origin stories' or living memory stories that bound them emotionally to the place.

permit committee. This resulted in a delayed start to the research, but as one of the first projects to go through this new system, the research team were able to work closely and develop a good relationship with the OB. The government requested that the project incorporate a member of the OB to accompany the research team for capacity-building purposes. Further, guidance from the OB ensured that the scope of this case study was in line with the government's current national approach to climate change; that of building climate resiliency and in situ adaptative capacity.[3]

To carry out the research in Aranuka specifically, the team sought permission from the local island council via email. Upon arrival in Aranuka, the research team were required to meet with the island council to organise the fieldwork and to conduct the research on Takaeang. All research projects on outer islands in Kiribati must get approval through the respective local government. An initial meeting was also held with the island mayor to formalise the fieldwork and participants.

The research team

The research team are all of I-Kiribati descent and most are fluent in te taetae ni Kiribati. The in-country research team are all residents of South Tarawa with extensive experience in government, nongovernment organisation, and community work. Although the research team do not have Indigenous ties to Takaeang, the team are keenly aware of the nuances involved in conducting research in Kiribati. Having cultural and language skills enabled the team to build respectful and trusting relationships with government stakeholders and, more importantly, with the communities themselves. Additionally, one of the research team members has conducted research in Takaeang previously.

Methods

Maroro was the culturally appropriate and context-specific research method used for this case study. Maroro is an Indigenous Kiribati research tool used for the collection of primary data (see Namoori-Sinclair, 2020; Schutz, 2022; Teatao, 2015) and is akin to other

[3] For further information around Government of Kiribati national climate change policies please refer to the **Appendix 1**.

Indigenous research tools used in other case study research in the Pacific such as talanoa, tok stori and uri'uri manako.

Maroro is where two or more people tell or share a story about their personal experiences in a particular setting or context. Maroro allows for an open and free environment for participants to share their knowledge and experiences in addressing the research questions. Maroro also allows for an understanding of indirect speech. For example, in some parts of Kiribati, direct conversation can be considered rude and maroro can be laden with covert meanings that require an understanding of the Kiribati language and context to understand. Maroro can be conducted informally or formally and is an open dialogue allowing people to talk from their hearts without any preconceptions.

Figure 2: Takaeang community workshop youth participants

Takaeang, Aranuka. 2023. Photographer: Victor Itaea

Overall, 20 research community members from Takaeang took part in the research, including five key informants and members of the Aranuka Island Council. Three community maroro were conducted with groups of men, women, and youth. There were five community members in each workshop. Seven of the 20 community members were born outside of Takaeang, Aranuka. Male community members nearly outnumbered

female community members 2:1. Participant ages ranged from under 19 to 69 years old. (See **Appendix 2**.)

Data transcription, analysis and sensemaking

All interview and workshop data were transcribed into English and coded using NVivo data analysis software. Photographs and video clips were discussed so that all team members could share their insights. Research reports and reflections were produced and translated into English for dissemination of the findings.

In the next section, we present a history of mobility in Takaeang followed by our case study findings presented under themes identified during the design of the Climate (Im)mobility in the Pacific research study.

4 History of Mobility

Historical Settlement and mobilities (ancestral time/ancient memory)

While the ancestral stories of the Takaeang community are not fully centred in this research, there are numerous ancestral mobility stories in Kiribati.

Archaeologists believe the first settlers to reach Kiribati came from the west, travelling through the Caroline and Marshall Islands, and were probably related to the first Austronesian speakers to reach Melanesia (Macdonald, 2001). Within the Kiribati oral tradition there are accounts of ancestors who travelled to Kiribati from Tamoa (Samoa) in the 14th century and, after a series of wars, settled in the southern islands of the Gilbert group (Uriam, 1995).

Aranuka features within Kiribati creation stories and oral traditions. On the mainland of Aranuka, at one of their sacred sites, is an indentation in a rock that resembles a large footprint. According to the people of Aranuka, this is the footprint of Riiki, a being who was commanded by Nareau, the creator in Kiribati cosmology, to raise the sky on his shoulders. The name, Ara-nuka (our centre), thus refers to the centre of the Gilbertese world where Riiki stood when he raised the sky from the ground (Uriam, 1995).

An era of ruling dynasties or chieftainships in the 18th and 19th centuries is of historical significance for Aranuka. During this time, Aranuka and Kuria (an atoll about 10 km to the west) were under the domain of the ruling uea (high chief) of Abemama (about 40 kms to the northeast) (Roberts, 1953). Ongoing interisland conflict in the late 19th century decimated the population of Aranuka and Kuria, with many being killed or fleeing to other islands for refuge (Bedford, 1980). The influence of the uea eventually declined after the introduction of Christianity and colonisation as missionaries challenged the 'evils' of the high chiefs and in many ways stripped them of their power and influence. This reorganisation of political and social power saw the introduction of power structures like those in the islands in the south, where unimwane (a council of male elders) hold decision-making authority. This system is in place in Takaeang today.

Recent settlement and mobilities (living memory time)

Participants were hesitant to share their stories of how they came to be settled on Takaeang. Participants emphasised that they were the descendants of those who had migrated from islands in the south, and as such felt it was not their place to share this story. The research team respected this and did not push participants to share more. Although participants did not share this history, a member of the research team had come across this story through conducting census research previously in Takaeang. As an incidental finding, it was revealed that the community on Takaeang are descendants of those who had moved from southern drought-prone islands and had purchased the land.

Whilst the details of this mobility history were not shared with the research team, stories of mobility due to drought in southern islands reflect recorded instances of historical resettlement and relocation. Colonial understandings and concerns around environmental stressors and overpopulation in the southern islands saw the resettlement of families to the Phoenix Islands. Under the Phoenix Island Resettlement Scheme, I-Kiribati families gave up rights to their traditional lands and were moved to the Phoenix Islands due to fears of overpopulation on their home islands. There is also evidence to suggest that, during this time, I-Kiribati were encouraged to migrate to other islands that were less populated, such as Aranuka and Kuria (Bedford, 1967), which could reflect the movement and settlement of the Takaeang community.

More detailed descriptions of mobility histories are provided in **Appendix 1**. National policies and government vision on climate adaptation are also described in **Appendix 1** to provide a broad context for the topics discussed in this document.

5. Challenges and Movements

Takaeang has been classified as the most vulnerable area on Aranuka, according to the latest integrated vulnerability assessment (IVA) report. This is because significant coastal erosion, sea-level rise, and saltwater intrusion.[4] The most pressing issues for this community are coastal health, water security, security of place, and income security (Government of Kiribati, 2019a). Findings from maroro confirmed these issues are having a significant impact on those living in Takaeang. However, findings from maroro also highlighted community perceptions and examples of resilience in the face of such impacts.

Coastal erosion

Community members emphasised that the end of Takaeang islet, known as Takariaria, is being badly affected by coastal erosion. The primary school located at Takariaria has been significantly impacted, as a community member described:

> *There have been huge changes in the village as compared to back when I was young, the biggest change is in the school as erosion has started from the southern part of the school compound and now has extended to the northern side. The teachers' quarters had to be relocated to where the school playground is and so the school no longer has a playground for the students. (Key informant)*

Coastal erosion is likely to continue affecting this site, particularly with the increased occurrence of king tides and associated inundation. As well as the erosion occurring at the school compound in Tekariaria, participants discussed a historical case of erosion where an islet disappeared entirely.

[4] For more national level impacts and projection details refer to https://climateknowledgeportal.worldbank.org/country/kiribati

The islet [Bikentai] used to be big and there used to be a building on the islet, we use to have the copra shed in the middle of the island, now it is in the ocean. (Key informant)

The copra shed at Bikentai was used by the Takaeang community to weigh copra before sale. Copra cutting and processing is a major source of cash income for many outer island communities in Kiribati, particularly with the introduction of a national copra subsidy in 2017, which has incentivised local production and processing (Cauchi et al., 2021).

Given the lack of employment opportunities in Takaeang, and in Aranuka more generally, environmental challenges such as coastal erosion pose significant challenges to livelihoods reliant on natural resources.

Although the processing of copra has been impacted by coastal erosion, the Takaeang community has adapted to this challenge by utilising other traditional skills. One participant shared that an alternative livelihood source arose from the loss of the copra shed. Where the land eroded, sea worms began to inhabit the sand where Bikentai once stood. The participant described this occurrence as, "Iai te kabaia man te kanaki arei, bwa e a rawata te ibo," which, in English, can be understood to mean that a blessing arose from the coastal erosion. Seaworms, or te ibo, are commonly eaten in Kiribati and residents of the Takaeang community began drying and selling them as an alternative to weighing and selling copra. The practice of drying and salting foods has long been employed to prepare for times of drought in Kiribati; for example, in the southern islands such as in Beru and Onotoa there are deep rooted traditions of frugality that have been developed to cope with environmental stress, including the storing of dried foods (Mallin, 2018).

When asked about the kinds of solutions that villagers were enacting to address coastal erosion, they shared about the construction of a traditional seawall, known as te buibui, to prevent coastal erosion. Te buibui is made from local materials; coconut tree logs are often used as a frame that is filled in with coconut fronds and other kinds of green or nonbiodegradable waste. Te buibui can be a good alternative to a concrete seawall, particularly for those in outer islands where it is difficult to access building materials. The

construction of te buibui was one that the whole community gathered behind, as one participant noted: “all villagers contributed to the building of te buibui by providing logs” (Member of women’s workshop). However, despite the construction of te buibui, participants noted that this was a temporary solution as it could be washed away particularly during king tides. Participants noted they required funding assistance for a long-term solution, for example to construct a concrete seawall.

Although coastal erosion impacted the processing of copra, members of the Takaeang community possessed traditional skills that have enabled them to adapt. The role of traditional practices for climate change adaptation is not well captured within the literature, or within vulnerability assessments in Kiribati, yet could provide important knowledge for informing policy and climate change-adaptation measures.

Figure 3: Unimwane showing the area affected by coastal erosion

Takaeang, Aranuka. Photographer: Victor Itaea

Freshwater quality

Participants in Takaeang also noted that the quality of freshwater has been severely impacted by saltwater intrusion. Again, the school compound was most affected by this:

> *Yes, as our Tekariaria site is being eroded, we also noticed that there is water scarcity associated with coastal erosion, this has led to brackish water. This is not*

safe for our children and our teachers who lived down there. (Member of men's workshop)

The declining quality of freshwater is impacting vegetation in the affected area. As observed by several participants:

Trees used to grow in that area, trees like coconut trees, and breadfruit but now nothing can grow there because it is being affected by seawater. (Key informant)

We are experiencing freshwater shortages as most of our underground water are salty. And, for some plants and trees are not growing well due to the poor soil, water brackish and excessive of heat. (Member of men's workshop)

Some plants and trees are no longer there. They uprooted and got washed away. Primary school buildings are not in good conditions and can be seen that, maybe for another year or less, there will be water everywhere in that place. (Member of men's workshop)

Within the latest Aranuka IVA report, water security was identified as a key issue for the Takaeang community. Across Aranuka, both wells and rainwater capture are the main sources of water. Communities, including Takaeang, indicated that there is no backup water supply to use in times of disaster. A lot of households do not have proper sanitation facilities in the house, and during heavy rain, wells overflow and are subject to pollution. Takaeang had the lowest score for water security in comparison to the other two villages on Aranuka.

In 2019 land was surveyed in Takaeang for the construction of a desalination plant by the Ministry of Infrastructure and Sustainable Energy. The site identified was located at the far end of the islet, close to the primary school (KNEG, 2019). The desalination plant had not been installed at the time of the research.

Despite the vulnerabilities and challenges Takaeang face, in particular coastal erosion and poor water security, the community remains resourceful and resilient employing traditional practices for climate change adaptation and modifying income sources to respond to the changing environment.

6. Decisions and Peace

Except for the mobility histories of their ancestors, the community living on Takaeang has not had to relocate off-island due to the impacts of climate change, nor are there plans as a community to move in the future. However, small scale internal relocations have occurred. One participant described moving their home:

> *The place where we built our house was near the shoreline during the 1980s. The impact of coastal erosion was so prevalent our family had to move away from there. Many families along the shoreline that were affected also did the same. In my estimation the shoreline has moved about five to eight meters from its original place. (Key informant)*

When it comes to community decisions around moving or staying, te botaki n unimwane, the council of male elders, plays an important role. In the case of the aforementioned teachers' quarters being affected by erosion, teachers first raised their concerns with te unimwane who then made a timely decision to move their quarters closer to the village.

> *A decision was made to relocate the teachers further inland. This was all done in one day because the elders did not want children to miss out in school. It was hard to move the school because the structure was made of bricks, but it was easier to move the teachers' quarters. (Key informant)*

Generally, when it comes to climate change-related decisions on outer islands, these are made by local government, known as island councils, which work very closely with the respective unimwane in each village (Cauchi el al., 2021). This was demonstrated in Takaeang:

> *That decision is also given to island council to decide; however, the council also consider the villagers' opinion on where to have the school relocated. For instance, the council wanted to relocate the school to the land owned by the council, but it was very far from where the village was and villagers prefer to have near the settlement, this is why the council applied for disaster funding to build a seawall for the school. (Key informant)*

The unimwane is a traditional, male dominated decision-making structure. Whilst women and young people are not represented within this structure, the unimwane are a respected authority amongst the Takaeang community and are able to make decisions for the entire community. Successful climate initiatives, including planning for climate mobility, require a good understanding of local contexts. As Piggot-McKellar and colleagues (2020) showed in the context of a climate adaptation project in Abaiang atoll, climate adaptation and mobility planning must identify and meaningfully acknowledge local contextual factors, including local governance and decision-making structures.

Making timely decisions on climate-related matters is well served by the unimwane structure on Takaeang. The willingness of the Takaeang community to work within this structure demonstrates the community's commitment to social coherence, community wellbeing, security, and sustainability. Support for and meaningful acknowledgement of local-level community structures and decision making is essential for climate-related (im)mobility planning.

7. Land and Marine Tenure, Use, and Planning

The ocean

In Takaeang, land and marine governance systems are like those for the whole of Kiribati. Prior to colonisation, each island had a unique system of traditional marine tenure that included deliberate conservation strategies and different fishing rights in specific parts of the sea, and which allowed people to live in harmony with their environment (Teiwaki, 1988). In the latter half of the 20th century, this began to change. The introduction of local government to the islands brought in the principle of open access to fish anywhere and at any time, irrespective of traditional norms (Atanraoi, 1995; Johannes & Bing, 2000; Teiwaki, 1988). The principle of open access marine tenure significantly impacted traditional communities in the 'urban' areas of South Tarawa, as opposed to those in outer islands. Although many communities in the outer islands still practise their own marine resource management, there have been concerns about the ability of villages or islands to enforce their management practices without formal mechanisms in place (Campbell & Delisle, 2017).

In Takaeang, community members shared that they use the local government-initiated 'open access' principle for marine resources:

> *As for the ocean, it is open and is used by everyone. (Key informant)*

Although little was shared around traditional marine tenure practices, the Takaeang community still had strong connections to their ocean environment. Community members in Takaeang expressed their reliance on the ocean and its resources, particularly for subsistence and generating cash income.

> *For marine and sea, this is where we fish for our food and some of us for income. The sea provides its resources to us to utilise in a way that we can all benefit from it. (Member of men's community workshop)*

> *The term maiu raoi [a good life] is what our land and sea give us. From land, we intend to use plants for consumption as well as the sea. If we have more harvest from both land and sea, we intend to sell them for generating income. (Member of women's community workshop)*

The land

Like other parts of the Pacific, land is of fundamental importance to I-Kiribati and considered an essential part of existence. Land is inextricably linked to those who inhabit the land. This logic is expressed in te taetae ni Kiribati by a single term that encompasses both land and people, *te aba*. Today, all land in Kiribati belongs to I-Kiribati, except for the Phoenix and Line Islands, small portions of reclaimed land that belongs to the state, and land belonging to the Catholic and Protestant churches. In contemporary times, the sale of land is more common; however, the sale must go before the Lands Court for consideration and approval.

Currently, land erosion mainly occurs on the school grounds. Because a majority of the Takaeang community live further away from the school, this is not affecting land use at present. In the community maroro, few issues were raised regarding land tenure, use, or planning. This participant expressed what land means to the community:

> *We have not come across dispute or conflict here about land boundaries among families. I have been here for a long time and have not witness it. Here our values*

and each other is much more important than land, because when you die you will inherit a very small piece of land for yourself. "Abara aio, ti bane ni tarau iai" the land that we have or using right is all own it on credit terms. There it is very important that we love each other. (Key informant)

Although little was shared in maroro regarding conflict over marine and land tenure, use, and planning, data in the IVA highlighted a potential area of concern. Coconut trees provide a main source of income for many in Takaeang and provide other essential resources. Due to land-tenure systems, many households are not interested in planting coconut trees unless they have a reliable water source on their land. According to the IVA report, most of the trees are reaching their maximum age, at which point they will become unproductive. The trees that are growing to replace these older trees are self-seeded and thus may not be as productive as trees that are cultivated. The IVA highlighted that this is a critical issue that may need proper consultation with landowners to better understand the future associated risks (Government of Kiribati, 2019a).

The Takaeang community have strong connections with the ocean and land and heavily rely on these resources for subsistence and to generate income. No concerns were raised by the community regarding threats to their ongoing reliance on these resources; however, the IVA report has highlighted a concern regarding productivity of the aging coconut tree resource (Government of Kiribati, 2019a).

8. Resilience and Wellbeing

The meaning of wellbeing was aptly described by young people in the Takaeang community:

The definition of wellbeing for us is being able to live without any problems or issues. Wellbeing is about being able to utilise the land and sea resources. (Member of youth community workshop)

A good life simply means greener plants and safe water. If you have this in your backyard, means that you have a good life. (Member of youth community workshop)

Youth in Takaeang highlighted that wellbeing is intrinsically tied to their environment, yet climate change impacts are already impacting the size of harvests from marine and land resources, for example reduced fish stock and declining quality of freshwater.

In Kiribati, noncommunicable diseases including diabetes and hypertension are now the largest burden of disease in the country and the primary cause of premature mortality (Cauchi et al., 2021). The increasing impacts of climate change are threatening important sources of protein and nutrients, vital for securing health and wellbeing. These threats to food sources are further exacerbated for rural communities such as Takaeang, as outer islands face challenges obtaining imported food due to irregular shipments and the extra cost of fuel involved.

Despite these threats to wellbeing and resilience, participants in the research did not necessarily see themselves as vulnerable. Community perceptions of wellbeing, in the face of environmental challenges, reveal the resilience of the Takaeang community and a sense of strong positivity:

> *The wellbeing of the people of Takaeang is not a problem here in Takaeang, people are receiving assistance from government (copra subsidy, welfare for elders, welfare for unemployed, etc), your wellbeing is only affected when you are wasteful, and you don't manage well. (Key informant)*

> *The wellbeing of the people is not affected as people are able to sustain their livelihood, we are very grateful "ba tinang maiu raoi" we are enjoying life and we are satisfied. Our main source of income is copra cutting and fishing for their livelihood. Fishing and dried seaworms is another source of income for the people of Takaeang. (Key informant)*

Resilience in the Takaeang community is also demonstrated by their willingness to adapt and change, for example make timely decisions about internal relocation and income diversity such as harvesting and drying seaworms.

Positive wellbeing and outlook are expressed in Takaeang across the generations despite the already evident impacts of climate change posing threats to resilience and wellbeing. The community do not see themselves as vulnerable and continue to turn challenges into opportunities.

9. Climate Mobility-Associated Loss

As mentioned earlier, participants noted that the community were experiencing loss associated with climate change impacts. Of note were the loss of plants and crops such as coconut and breadfruit trees, a decline in freshwater quality, and the loss of land due to erosion.

> *The impact of climate change can be seen with what it has done to our land, resources, sea, and survival. As a result of costal erosion, there are houses and homes that have been damaged or washed away. Some plants and trees are no longer there. They got uprooted and got washed away. Primary school buildings are not in good condition. (Member of men's community workshop)*

Coastal erosion at Takariaria has had a particular impact:

> *There was once a seawall built in 1980s. It is built as a wall more than a seawall. Marking the boundary of primary school location on this site. But now it's buried underwater as a result of Tekariaria erosion over time. (Key informant)*
>
> *The teachers' quarters had to be relocated to where the school playground was and so the school no longer has a playground for the students. (Key informant)*

There is a perceived fear and uncertainty amongst the community that losses in the future will be far greater:

> *This is very sad because in the future places affected will disappear and this is very evident in the school compound Tekariaria, where houses are destroyed because seawater has gone inside. (Key informant)*
>
> *It can be seen that maybe in another year or less, there will be water everywhere in that place. (Member of men's community workshop)*

As a community that is likely to stay in place, without further support to adapt to these climate-related challenges, the risk of experiencing further losses is high.

The Takaeang community strongly feel the loss of infrastructure and express fears for the future as the impacts and effects of climate change play out on their island daily.

10. Conclusion

Takaeang people have a history of mobility but are not actively planning to move due to the impacts of climate change. Despite perceived and actual environmental challenges, the community do not see themselves as vulnerable. They continue to turn challenges into opportunities, even as they recognise them as temporary.

The resilience of the Takaeang community reveals the importance of taking local understandings and experiences of climate-related challenges seriously. Community lived-experience and knowledge needs to be central to policy and planning that seeks to address climate-related (im)mobility.

Findings from maroro reveal ways in which policymakers could work with and support existing Takaeang community systems. Coastal erosion is threatening marine and land resources, yet an abundance of traditional knowledge and skills enables the community to adapt in the face of these challenges. Support for diversifying livelihoods in island communities could help contribute to climate resiliency for communities wanting to stay in place.

Lastly, strong governance and decision-making structures have enabled the Takaeang community to facilitate a timely relocation of the school compound. The unimwane structure and willingness of the Takaeang community to work within this structure demonstrate the community's commitment to social coherence, community wellbeing, security, and sustainability. Further support for and meaningful acknowledgement of local-level community structures and decision making is essential for climate-related (im)mobility planning.

Appendices

Appendix 1: Kiribati mobility-related context and policies

> I want to make it very clear at the outset that my Government has decided to put aside the misleading and pessimistic scenario of a sinking/deserted nation, and has replaced it with a bold scenario filled with great faith in the Mighty Hand, that made our islands, coupled with our people's unwavering love for their home land, and great determination to fight and/or adapt to climate change, with the help and support of our international partners and the entire world community. (Maamau, 2017, p. 2)

The Republic of Kiribati, an atoll nation in the central Pacific, is often considered one of the most vulnerable to the impacts of climate change. Sea-level rise, king tides, and coastal erosion are compounding existing pressures on atoll life and present an existential threat to the future of Kiribati. Despite the ongoing impacts of climate change, the topic of climate-related mobility is highly politicised. Both staying put and moving abroad have been part of national policy over the last 2 decades, with different approaches under different leaders.

The government of Anote Tong (from 2003–2016) was well known internationally for the promotion of "migration with dignity." Under this plan, overseas employment of I-Kiribati citizens could lead to either permanent residency abroad or returning to Kiribati with skills and remittances to contribute to climate resilience at home.

Under the current national government, led by Taneti Maamau who entered office in 2016, Kiribati has focused heavily on staying in place. The emphasis by this government is on in situ adaptation rather than migration abroad.

Historical relocations

Mobility is not new to those living in Kiribati. Atoll life has long required I-Kiribati to be expert navigators of the ocean, traversing the region for resources, adventure, and opportunities. In more recent times, I-Kiribati have been employed overseas as seafarers on international fishing vessels and on seasonal work schemes in Australia and Aotearoa New Zealand. Also important for understanding the context of climate-related mobility in

Kiribati are the historical relocations of Banaban and I-Kiribati communities to parts of the Solomon Islands and Rabi, Fiji.

In the 20th century, the island of Banaba, currently part of Kiribati, was mined for phosphate by the Pacific Phosphate Company, jointly controlled by the British, Australian, and New Zealand governments. Extensive mining on Banaba resulted in the relocation of a vast majority of Banabans to the island of Rabi, in Fiji. Banabans on Rabi retain Indigenous and ancestral connections to their home island, as well as a measure of legal control through the Rabi Council of Leaders and Elders.

In 2022, a delegation from Rabi joined a group of Pacific civil society advocates to sign the Kioa Climate Emergency Declaration. In this document, the Rabi delegation highlighted the urgent lessons that need to be heeded from the forced relocation of Banabans:

> The history of the Banaba people is a lesson to the world. We were forcibly relocated by Australian, British and New Zealand governments from our island home in modern day Kiribati to an island in Fiji. Our relocation was a direct result of extractive industry and global trade. We bear testimony to the human cost and trauma borne by a community. We are what non-economic loss and damage looks like. We do not want any other community to go through what we experienced. (Kioa Climate Emergency Declaration, 2022, p. 1)

Under the Phoenix Island Resettlement Scheme, I-Kiribati families gave up rights to their land and were moved to the Phoenix Islands due to fears of overpopulation on their home islands. Ultimately this move proved to be ill-fated, due to untenable conditions on the Phoenix Islands, resulting in the British moving I-Kiribati to Wagina in the Solomon Islands. Today, there is a large community of I-Kiribati descendants from this resettlement scheme living in the Solomon Islands. These historical cases of relocation in Kiribati provide an important context for discussions around contemporary climate-related mobility issues.

National policies

Climate change-adaptation policies under the current government are focused on achieving sustainable development and economic growth, alongside climate change adaptation.

The Kiribati 20-Year Vision 2016–2036 (KV20; Government of Kiribati, 2018), the country's 20-year development plan, aims for Kiribati to be a "wealthier, healthier and peaceful country. The KV20 lays out a development vision for the nation with a particular focus on bolstering the nation's economy through improved infrastructure, tourism, and other industries. The plan identifies environment and climate change as a key cross-cutting issues and highlights the critical need to mainstream climate change adaptation and mitigation across government policy and programmes (Government of Kiribati, 2018). While permanent relocation abroad is not a priority area for Kiribati, the current government does have a particular focus on increasing labour mobility, particularly under formal overseas labour schemes such as the Pacific Australia Labour Mobility (PALM) scheme and the Recognised Seasonal Employer (RSE) scheme in Aotearoa New Zealand. Labour mobility can be seen as contributing to in situ adaptation efforts via remittances.

In conjunction with the KV20, the current Government of Kiribati has launched several other policies and plans aimed at fighting climate change domestically. These include major infrastructure projects with the aim of advancing climate resilience such as the construction of two desalination plants in South Tarawa's most densely populated areas. Another plan includes a 30-year project to reclaim land and build a higher village on Temaiku Bight. However, the status of this plan is unclear, particularly with the withdrawal of New Zealand government funding in 2021 (Vance, 2022).

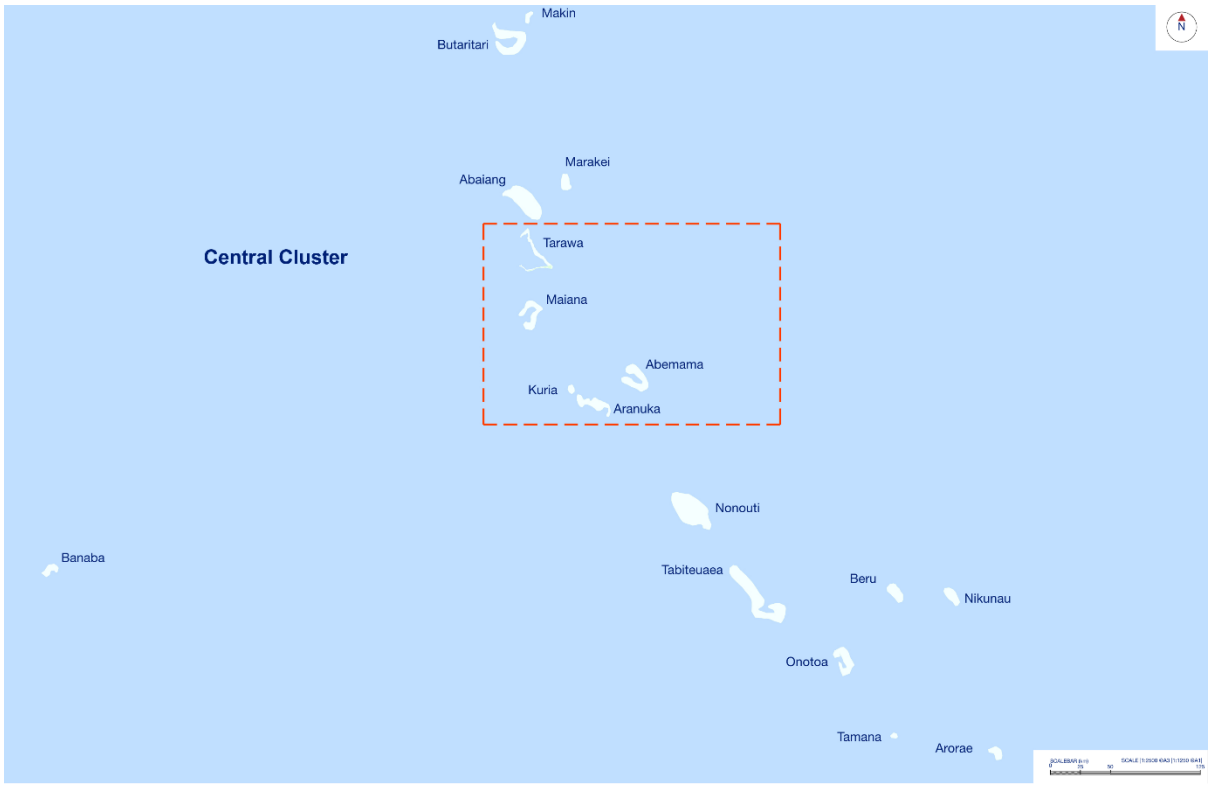
The Government of Kiribati has also developed an integrated series of plans aimed at building climate resilience, including the latest version of the Kiribati Joint Implementation Plan for Climate Change and Disaster Risk Management (KJIP) (Government of Kiribati, 2019b). The KJIP brings together multiple sectors for joint action on climate change action and disaster risk management. The purpose of the plan is to enhance coordination and access to financial and technical support to accelerate the implementation of actions on climate change and disaster risk reduction. The KJIP is

closely aligned with other government plans, including the *Climate Change Policy* (Government of Kiribati, 2019c) and KV20 (Government of Kiribati, 2018).

Current climate change-related national policies are as follows:

- Kiribati 20-Year Vision 2016–2036
- Kiribati Climate Change Policy
- Kiribati Joint Implementation Plan for Climate Change and Disaster Risk Management 2019–2028
- Kiribati National Development Plan 2016–2019
- Kiribati Integrated Environmental Policy
- Kiribati Integrated Energy Roadmap 2017–2025
- Intended Nationally Determined Contribution.

Figure 4: Gilbert Island Group, Kiribati



Appendix 2: Research participants

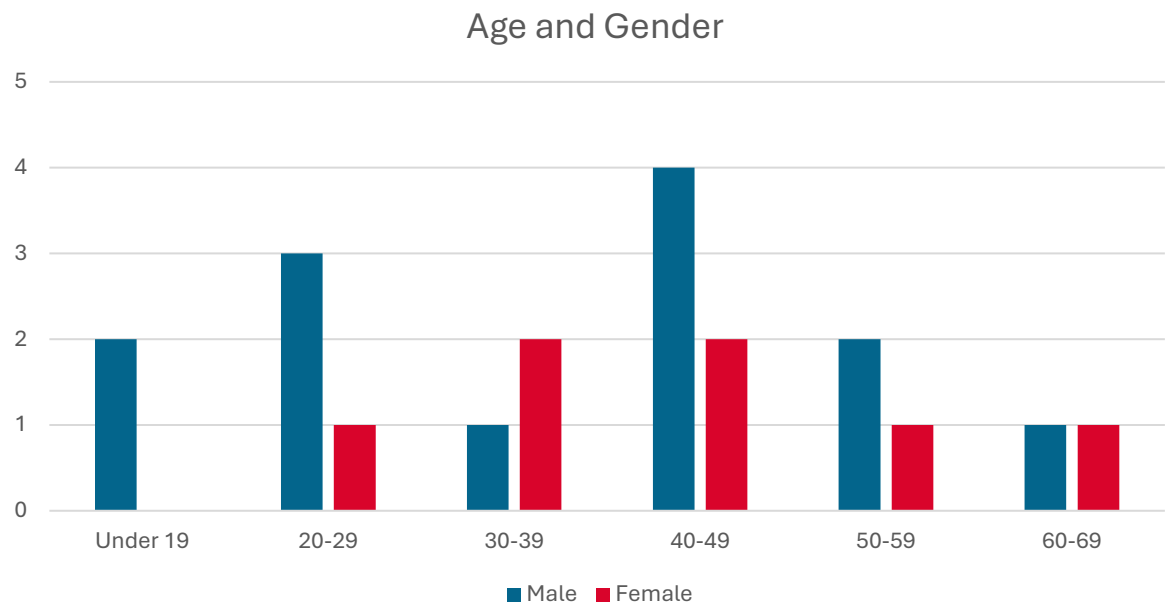
Overall, there were 20 research community members from Takaeang, including the five key informants and members of the Aranuka Island Council. Three community maroro were conducted with groups of men, women, and youth. There were five community members in each workshop. Seven of the 20 community members were born outside of Takaeang, Aranuka (see Table 1).

Table 1: Birthplace of participants

Birthplace	Number of participants
Takaeang	8
Aranuka	5
Tarawa	3
Onotoa	1
Abaiang	1
Arorae	1
Buariki	1
Total	20

There were 13 male community members and 7 female community members (see Figure 5). Age was fairly well dispersed amongst the Takaeang community members. Ages ranged from under 19 to 69 years old (see Figure 5). The largest age group, with six community members, was 40–49 years old.

Figure 5: Participants by age and gender



References

Allgood, L., & McNamara, K. E. (2017). Climate-induced migration: Exploring local perspectives in Kiribati. *Singapore Journal of Tropical Geography*, *38*(3), 370–385. https://doi.org/10.1111/sjtg.12202

Atanraoi, P. (1995). Customary tenure and sustainability in an Atoll nation. In R. Crocombe (ed.), *Customary Land Tenure and Sustainable Development: Complementarity or Conflict?* South Pacific Commission and Institute of Pacific Studies (pp. 55–73). University of the South Pacific.

Bedford, R. (1967). *Resettlement: Solution to economic and social problems in the Gilbert and Ellice Islands colony.* [Unpublished master's thesis]. University of Auckland.

Bedford, R. (1980). Population estimates for Kiribati and Tuvalu, 1850–1900: Review and speculation. *Journal of the Polynesian Society*, *89*(2), 1–49.

Bedford, R., Bedford, C., Corcoran, J., & Didham, R. (2016). Population change and migration in Kiribati and Tuvalu, 2015–2050: Hypothetical scenarios in a context of climate change. *New Zealand Population Review*, *42*, 103–134.

Campbell, B. & Delisle, A. (2017). Exploring the use of bylaws as an enabling tool for sustainable community-based fisheries management in Kiribati. *SPC Fisheries Newsletter, 153*, 40–46.

Cauchi, J. P., Moncada, S., Bambrick, H., & Correa-Velez, I. (2021). Coping with environmental hazards and shocks in Kiribati: Experiences of climate change by atoll communities in the Equatorial Pacific. *Environmental Development*, *37*. https://doi.org/10.1016/j.envdev.2020.100549

Connell, J. (2021). Coral islands, climate change and distant destinies? The view from Kiribati. In S. Moncada, L. Briguglio, H. Bambrick, I. Kelman, C. Iorns, & L. Nurse (Eds.), *Small island developing states* (pp. 369–389). Springer. https://doi.org/10.1007/978-3-030-82774-8_17

Curtain, R., & Dornan, M. (2019). *A pressure release valve? Migration and climate change in Kiribati, Nauru and Tuvalu*. Development Policy Centre Crawford School of

Public Policy ANU. https://devpolicy.org/publications/reports/Migration-climate%20change-Kiribati-Nauru-Tuvalu.pdf

Curtain, R., & Dornan, M. (2019, February 15). Climate change and migration in Kiribati, Tuvalu and Nauru. *Devpolicy Blog*. https://devpolicy.org/climate-change-migration-kiribati-tuvalu-nauru-20190215/

Dekens, J. (2017). *Strengthening gender considerations in Kiribati's national adaptation plan (NAP) process*. NAP Global Network. https://napglobalnetwork.org/wp-content/uploads/2017/12/napgn-en-2017-strengthening-gender-considerations-kiribatis-nap-process.pdf

Eurich, J. G., Tekiau, A., Seto, K. L., Aram, E., Beiateuea, T., Golden, C. D., Rabwere, B., & McCauley, D. J. (2023). Resilience of a giant clam subsistence fishery in Kiribati to climate change. *Pacific Conservation Biology*, 30, https://doi.org/10.1071/PC22050

Eyles, O. S. S. (2021). *Climate migration and Kiribati: Discourse, development and New Zealand's role in the Pacific* [Master's thesis, University of Otago]. http://hdl.handle.net/10523/12202

Fiertz, N., Yozell, S., & Rouleau, T. (2022). *Climate risk summary report, Tarawa, Kiribati: Findings from a CORVI rapid assessment*. Stimson. https://www.stimson.org/2022/corvi-risk-profile-tarawa-kiribati/#:~:text=The%20CORVI%20Rapid%20Assessment%20identified,foreign%2Dflagged%20purse%20seine%20tuna

Frere, T., Mulalap, C. Y., & Tanielu, T. (2020). Climate change and challenges to self-determination: case studies from French Polynesia and the Republic of Kiribati. *The Yale Law Journal Forum*, *129*, 648–673.

Government of Kiribati. (2015). *Intended nationally determined contribution submitted to the UNFCCC Secretariat*. https://prdrse4all.spc.int/system/files/indc_kiribati.pdf

Government of Kiribati. (2018). *Kiribati 20-year vision 2016-2036*. https://president.gov.ki/images/kiribati-20-year-vision-2016-2036.sept.final.pdf

Government of Kiribati. (2019a). *Integrated Vulnerability Assessment (IVA) Aranuka Island, Kiribati*.

Government of Kiribati. (2019b). Kiribati joint implementation plan for climate change and disaster risk management. https://unfccc.int/sites/default/files/resource/Kiribati-NAP.pdf

Government of Kiribati. (2019c). Kiribati climate change policy. https://www.president.gov.ki/presidentgovki/wp-content/uploads/2019/04/Kiribati-Climate-Change-Policy.pdf

Government of Kiribati. (2022). Nationally determined contribution (Revised). https://unfccc.int/sites/default/files/NDC/2023-03/221213%20Kiribati%20NDC%20Web%20Quality.pdf

Hermann, E., & Kempf, W. (2019). Adaptation and the question of migration: Directions in dealing with climate change in Kiribati. In C. Klöck & M. Fink (Eds.), *Dealing with climate change on small islands: Towards effective and sustainable adaptation?* (pp. 293–312). Göttingen University Press. https://doi.org/10.17875/gup2019-1221

Johannes, R., & Yeeting, B. (2000). I-Kiribati knowledge and management of Tarawa's lagoon resources. *Atoll Research Bulletin*, 489, 1–29.

Kioa Climate Emergency Declaration. (2022). https://www.caritas.org.au/media/kxck0z0g/kioa-climate-emergency-declaration-docx.pdf

Kiribati Government. (1999). Initial communication under the United Nations Framework Convention on Climate Change. https://unfccc.int/resource/docs/natc/kirnc1.pdf

Kiribati Government. (2013). Second communication under the United Nations Framework Convention on Climate Change. https://unfccc.int/sites/default/files/resource/kirnc2.pdf

Maamau, T. (2017). *His Excellency Beretitenti Taneti Maamau's statement* (On the occasion of the leader's event of COP 23 Bonn, Germany, 15th November 2017) UNFCCC.

Macdonald, B. (2001). *Cinderellas of the empire: towards a history of Kiribati and Tuvalu*. The University of the South Pacific.

Mallin, M. F. (2018). From sea-level rise to seabed grabbing: The political economy of climate change in Kiribati. *Marine Policy*, *97*, 244–252. https://doi.org/10.1016/j.marpol.2018.04.021

Ministry of Foreign Affairs and Trade. (2021). *Terms of Reference: Research investigating climate-related (im)mobility in the Pacific*.

Namoori-Sinclair, R. (2020). The impact of PAC policy on Pacific women's health and wellbeing: the experiences of Kiribati migrants. [Unpublished doctoral thesis]. Te Herenga Waka – Victoria University of Wellington. https://doi.org/10.26686/wgtn.17151248.v1

Oakes, R. (2019). Culture, climate change and mobility decisions in Pacific Small Island Developing States. *Population and Environment*, *40*(4), 480–503. https://doi.org/10.1007/s11111-019-00321-w

Piggot-McKellar, A.E, McNamara, K.E. & Nunn, P.D. (2020) Who defines "good" climate change adaption and why it matters: a case study from Abaiang Island, Kiribati. *Reg Environ Change, 20(*43). https://doi.org/10.1007/s10113-020-01614-9

Republic of Kiribati. (2016). Intended nationally determined contribution. https://unfccc.int/sites/default/files/NDC/2023-03/221213%20Kiribati%20NDC%20Web%20Quality.pdf

Rimon, A. (2022). Kiribati and climate displacement: How the Pacific Engagement Visa can help. *In Brief, 18*, 1–2. https://doi.org/10.25911/0FBP-GQ06

Rimon, B. (2011). *Kiribati domestic market study impact of the Import Levy Freight Subsidy on trade in horticultural products on South Tarawa domestic markets*. http://www.fao.org/3/a-an416e.pdf

Roberts, R. G. (1953). The dynasty of Abemama. *The Journal of the Polynesian Society*, *62*(3), 267–277. https://www.jstor.org/stable/20703382

Roland, H. B., & Curtis, K. J. (2020). The differential influence of geographic isolation on environmental migration: a study of internal migration amidst degrading conditions in the central Pacific. *Population and Environment*, *42*(2), 161–182. https://doi.org/10.1007/s11111-020-00357-3

Secretariat of the Pacific Community. (2022). *Kiribati census atlas*. https://sdd.spc.int/

Schütz, T. (2022). *Navigating health practices for I-Kiribati immigrants in New Zealand*. [Unpublished master's thesis]. Te Herenga Waka – Victoria University of Wellington. https://doi.org/10.26686/wgtn.19242600

Teaiwa, K. (2019). No distant future: Climate change as an existential threat. *Australian Foreign Affairs*, *6,* 51–70. https://researchprofiles.anu.edu.au/en/publications/no-distant-future-climate-change-as-an-existential-threat

Teatao, L. I. (2015). *Rebuilding lives: Intimate partner violence and Kiribati mothers in New Zealand* [Unpublished master's thesis]. Massey University.

Teiwaki, R. (1988). *Management of marine resources in Kiribati*. University of the South Pacific.

Thompson, M. A., Howden-Chapman, P., & Fougere, G. (2017). Policy changes: Kiribati migration and settlement. *Policy Quarterly*, *13*(2), 82–87. https://doi.org/10.26686/pq.v13i2.4716

Toatu, T. (2018). Statement by Minister of Finance and Economic Development, Honorable Dr Teuea Toatu. https://agendaforhumanity.org/sites/default/files/resources/2017/Jul/Statement_by_Hon._Dr.Teuea_Toatu,_Minister_of_Finance_and_Economic_Development_Republic_of_Kiribati-_Leaders_Segment.pdf

Uriam, K. K. (1995). In their own words: history and society in Gilbertese oral tradition. *Journal of Pacific History*. https://openresearch-repository.anu.edu.au/bitstream/1885/132637/1/JPH_In_Their_Own_Words.pdf

Vance, A. (2022). Government dumps $500 plan to raise sinking Pacific Islands. *Stuff*. https://www.stuff.co.nz/national/politics/128962826/government-dumps-500m-plan-to-raise-sinking-pacific-island

Wasserman, H. N. & Rankey, E. C. (2014). Physical oceanographic influences on sedimentology of reef sand aprons: Holocene of Aranuka Atoll (Kiribati), Equatorial Pacific. *Journal of Sedimentary Research, 84*(7), 586–604. https://doi.org/10.2110/jsr.2014.50

World Bank Group. (2021). *Climate risk country profile: Kiribati*. https://climateknowledgeportal.worldbank.org/sites/default/files/country-profiles/15816-WB_Kiribati%20Country%20Profile-WEB.pdf

Yates, O. E. T., Groot, S., Manuela, S., & Neef, A. (2022). "There's so much more to that sinking island!"—Restorying migration from Kiribati and Tuvalu to Aotearoa New Zealand. *Journal of Community Psychology*, *51*(30), 924–944. https://doi.org/10.1002/jcop.22928

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