



Colonial dynamics limit climate adaptation in Oceania: Perspectives from the Marshall Islands

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ARTICLE INFO

Keywords:

Sovereignty
Climate Adaptation
Neocolonialism
Climate Migration
Oceania
Marshall Islands

ABSTRACT

In the island states of Oceania, colonial power dynamics profoundly shape climate vulnerability and response. Largely as a result of their colonial history, island nations are dependent on outside funders to adapt to climate change, reproducing colonial subordination by depriving island states of sovereignty over their adaptation strategies. We empirically demonstrate the sovereignty-depriving effects of the current adaptation process through a case study from the Republic of the Marshall Islands (RMI). Recent scholarship suggests that, without swift and large-scale adaptation, RMI will be uninhabitable by mid-century, threatening a population-scale forced migration. Our research indicates that Marshallese leaders are committed to adapting in place in order to preserve national identity and sovereignty, but they view reliance on external funding as a major barrier to implementing the measures that could enable RMI to survive in the face of climate change. Marshallese decision-makers in this study perceive that aid institutions discount the existential implications of failing to pursue aggressive adaptation, assuming instead that migration is inevitable, economically rational, and even desirable. Such a proposal is particularly painful given the history of forced migration in RMI caused by U.S. nuclear weapons testing there. These neocolonial dynamics not only deprive island states of sovereignty over their adaptation strategies but also threaten permanent abrogation of national sovereignty and self-determination through loss of a habitable territory. To uphold global commitments to decolonization and human rights, our research indicates the need to return sovereignty over climate adaptation decision-making to affected states.

1. Introduction

Climate change poses an existential threat to low-lying island states. Though adaptation remains technically feasible for even the lowest-lying states (e.g., Esteban *et al.* 2019), dominant international discourse tends to assume that entire island nations will inevitably be lost and their peoples forced to flee as ‘climate refugees’ (Barnett, 2017; Farbotko and Lazrus, 2012; Mortreux and Barnett, 2009). With this view widespread, migration is increasingly viewed by international agencies, policy makers, and researchers not as a failure to adapt but as an effective adaptation strategy (Betzold, 2015; Doherty & Roy, 2017; Gromilova, 2016). The presumption that islanders will eventually migrate away impedes the pursuit of adaptation in place, the response

preferred by many affected communities (Barnett, 2017; Farbotko & Lazrus, 2012; Mortreux & Barnett, 2009).

Climate adaptation, or “adjustments to human systems in response to the actual or expected impacts of climate change” (UNFCCC, 2019), has largely been framed as a technical response to apolitical physical hazards (Barnett, 2017; Eriksen *et al.*, 2015). But people do not exist in ahistorical, apolitical space. Climate vulnerability, or “susceptibility to physical damage” (Farbotko & Lazrus, 2012), cannot be uncoupled from pre-existing social processes and institutionalized inequalities (Cameron, 2012; Eriksen *et al.*, 2015). Likewise, the decision to designate a given response to climate change, such as migration, as adaptive or not is inherently political.

In the so-called “small island developing States” (SIDS) of Oceania,¹ colonial power dynamics profoundly shape climate vulnerability and

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¹ This class of nations is more widely known as the Pacific “small island developing States.” Following Epeli Hau’ofa, we choose instead to use the term “Oceania,” which contests the colonial depiction of islands as “tiny isolated dots in a vast ocean.” The term “Oceania” reflects the Pacific ontological view of the region as an expansive “sea of islands.” (1994).

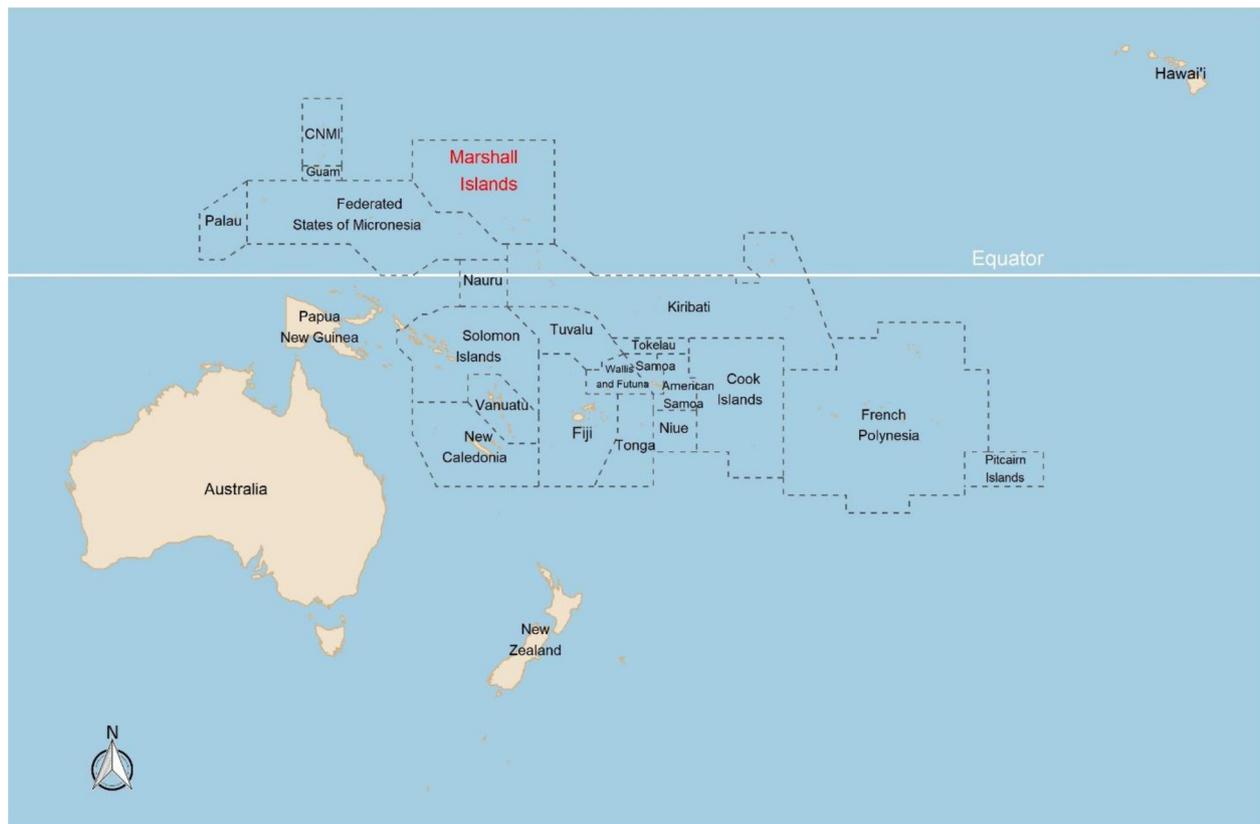


Fig. 1. Map of Oceania. Boundary lines represent exclusive economic zones.

response. All of the "SIDS" in Oceania were under colonial rule within the last century (United Nations, 2018; United Nations, 2017). In fact, the SIDS designation is itself inherently colonial, reflecting the false narrative that islands are peripheral and unsophisticated. It is a label that many Pacific states have rejected, preferring the term "Large Ocean States," which references the authority they exercise over vast ocean territories (EEZs) (e.g., Powers, 2019; Chan, 2018). Colonial conduct—including policies of dispossession, forced relocation, and assimilation—has left many of these states more vulnerable to climate change hazards and with less adaptive capacity; i.e., ability to adjust to climate change (e.g., Siders, 2019; Davis, 2015; IPCC, 2018).

Furthermore, colonial policies induced economies of dependency (Aguon *et al.*, 2019; Hezel, 1968; MacLellan, 2015), creating steep power differentials between Pacific nations and the outside institutions—both multilateral aid organizations and wealthier countries—they rely upon for funding. The concentration of power in the hands of outside actors has tended to weaken the sovereignty of Pacific nations over their own development, perpetuating neocolonial relationships of dependency (Hau'ofa, 1993, p. 14; Bordner, 2019; Overton & Murray, 2011; Williams, 2000).

We examine the Republic of the Marshall Islands (RMI) as a case study to explore the ways in which colonial dynamics persist in the climate adaptation context. Recent scholarship suggests that, without radical adaptation, RMI will be uninhabitable by mid-century (Storlazzi *et al.*, 2018). Our study focuses on power dynamics between Marshallese decision-making bodies and the funding entities involved in climate adaptation in RMI.² We find that while

² Within any decision-making framework, the importance of transparent and inclusive participation of individual community members is of utmost importance and has been insightfully written on by others (e.g., Farbotko & Lazarus, 2012; Eriksen *et al.*, 2015). That is not, however, the focus of this study.

Marshallese leaders are committed to adapting in place in order to protect sovereignty and identity, power differentials between funders and Marshallese decision-makers impede Marshallese from pursuing the type of large-scale adaptation that could ensure the nation's long-term survival. Because a habitable territory is a requirement of independent statehood (Montevideo Convention on the Rights and Duties of States, 1934; Burkett, 2011), this power dynamic not only impedes Marshallese sovereignty over the nation's adaptation strategy but also threatens permanent abrogation of sovereignty and self-determination through loss of the islands to rising seas. We conclude that decision-making should be returned to RMI and similarly positioned Pacific states in order to prevent the continuation of colonial injustices.

2. Colonial history and climate vulnerability in the Marshall Islands

The Republic of the Marshall Islands is an independent nation in Oceania comprised of 29 coral atolls and 5 islands that span over 2.1 million square kilometers of ocean between Hawai'i and Australia (Fig. 1). Originally settled at least two-thousand years ago (Kayanne, 2011), the islands fell under colonial rule in the early nineteenth century, passing from Spanish, to German, to Japanese control (Hezel, 1995). The United States seized the islands from Japan in 1944 and, in 1947, the Marshall Islands formally became part of the Trust Territory of the Pacific Islands, a non-self-governing territory administered by the United States through the U.N. Trusteeship System (U.N. Security Council, 1947). As administering power, the United States "accepted as a sacred trust" the obligation to ensure the well-being and eventual self-determination of territorial inhabitants (United Nations Charter 1945, art. 73–76).

Instead, from 1946 to 1958, the United States tested sixty-seven nuclear weapons in two inhabited atolls in the Marshall Islands, Bikini

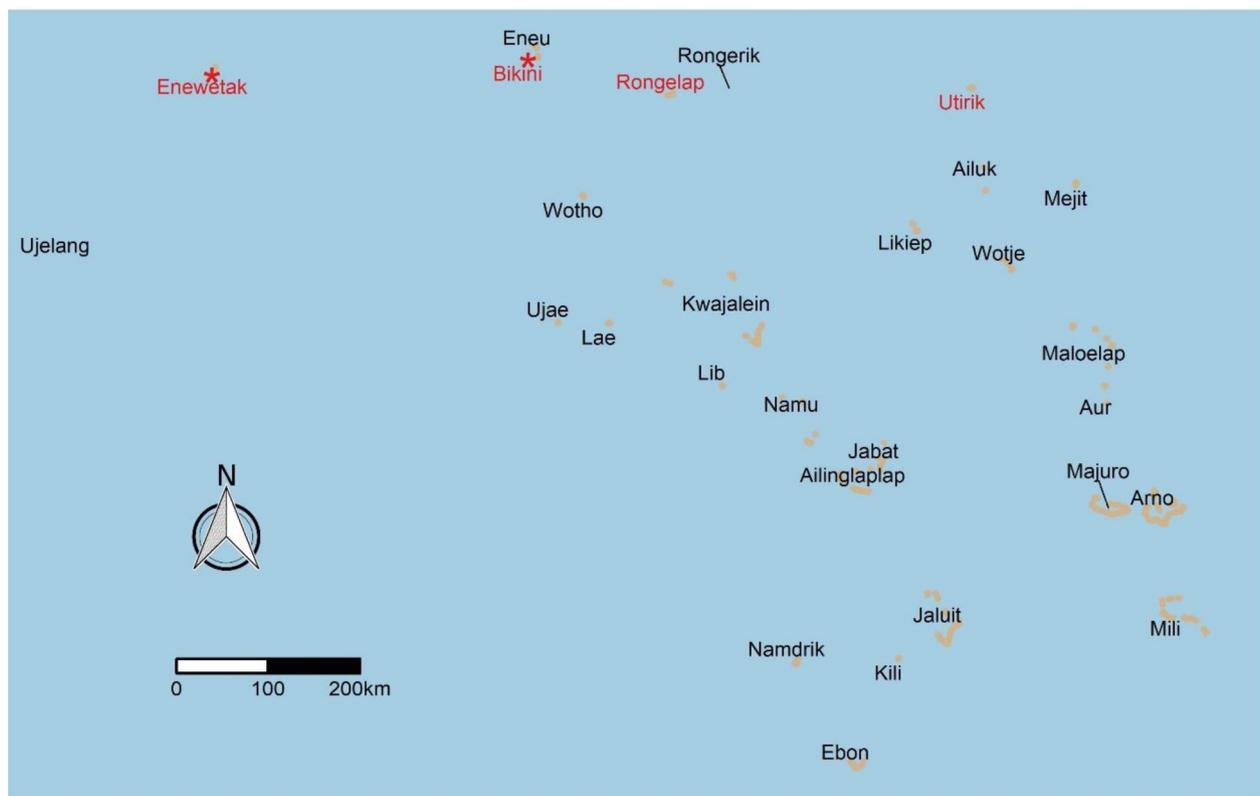


Fig. 2. Map of the Republic of the Marshall Islands. Atolls subject to forced migration as a result of U.S. nuclear testing are indicated in red. Enewetak and Bikini Atolls (asterisked) were used as ground-zero for nuclear weapons tests.

and Enewetak.³ U.S. nuclear testing caused a ripple of forced migrations that continue to impact Marshallese life today. The peoples of Bikini and Enewetak were forced to sacrifice their homelands to the U.S. nuclear testing program “for the good of mankind” (Johnson, 2013). The peoples of Rongelap and Utirik Atolls were also forced to evacuate their homelands after they were contaminated by radioactive fallout (Barker, 2012), and the people of Kwajalein Atoll were dispossessed to make way for a U.S. military support base (Davis, 2015).

The peoples of Bikini and Rongelap remain in exile from their dangerously radioactive homelands, while the peoples of Utirik and Enewetak have been resettled on atolls that many fear to be unsafe. The community in Enewetak lives just twelve nautical miles from Runit Dome, a nuclear waste repository constructed by the U.S. military in the crater of a vaporized island (Hamilton, 2013). The Dome is leaking highly radioactive waste (Gerrard, 2015; Rust, 2019); climate change is expected to exacerbate this leakage as sea levels rise and storms intensify (Gerrard, 2015). Though the peoples of many other atolls also reported fallout depositing on their lands, the U.S. government maintains that only Bikini, Enewetak, Rongelap, and Utirik were “exposed.” (Barker, 2012).

Nuclear testing affected the entirety of the Marshall Islands, “ripping apart the fabric” of Marshallese society by destroying the close social, political, and cultural ties between Marshallese people and their land (de Brum, 2015). The testing also caused severe health and environmental impacts that continue to affect Marshallese throughout the nation today (e.g., Simon et al., 2010; Bordner et al., 2016).

In 1986, the United States and the Marshall Islands entered into a treaty, the Compact of Free Association (COFA), which established the Republic of the Marshall Islands (RMI) as an independent nation “freely

associated” with the United States (Compact of Free Association, title 2, art. I, § 212, U.S.-Marsh. Is 1983). Currently, RMI has a population of about 80,000. Approximately two-thirds of Marshallese live in RMI and the remainder primarily reside in the United States (van der Geest et al., 2019). In RMI, most people live in two population centers: the capital, Majuro (~30,000) and Ebeye (~20,000), a 0.25 square-mile islet off the coast of Kwajalein (van der Geest et al., 2019). Other Marshallese live throughout the outer atolls (Fig. 2).

The independence enjoyed by RMI under COFA is not absolute. Rather, the United States maintains military control over RMI and the power to review Marshallese foreign affairs decisions (COFA, 1986). Aid from the United States constitutes the “mainstay” of the Marshallese economy (The World Factbook 2019). While this aid is critical to the functioning of the country, it tends to entrench Marshallese dependency on the United States. COFA also allows Marshallese citizens to travel to the United States and remain indefinitely as “nonimmigrant residents” without a visa or permit (COFA, 1986). Tens of thousands of Marshallese have migrated to the United States under COFA to pursue jobs, education, and healthcare not available in RMI. One of the largest populations of Marshallese in the United States today can be found in Springdale, Arkansas, where poultry-packing factories readily hire Marshallese workers without English fluency (Schwartz, 2015).

Today, RMI is internationally recognized as a symbol of the adverse impacts of climate change (Barnett, 2017). As a low-lying atoll state, RMI is one of the geographies most immediately susceptible to the physical impacts of climate change; without aggressive adaptation, the entire nation could be lost within decades (Storlazzi et al., 2018). However, adaptation strategies that could save the islands exist, including filling lagoons, raising islands, and engaging with Marshallese knowledge that has enabled islanders to adapt to environmental change for thousands of years (e.g., Esteban et al., 2019).

But climate vulnerability is not purely—or even primarily—a function of the biophysical characteristics of a place. The legacy of U.S.

³ For a more detailed accounting of the U.S. nuclear testing program and its impacts, please refer to this article’s supplementary materials

colonialism in RMI has increased vulnerability to climate change, both exacerbating susceptibility to harm and constraining possibilities to adapt. The forced removal of peoples from their homelands, coupled with colonial assimilative policies, increased vulnerability by destroying local institutions, concentrating populations in overcrowded and resource-poor urban centers, and inducing social problems including heavy disease burdens (e.g., Dye et al. 2018; McIver et al., 2015; Yamada et al., 2016). The effect of U.S. conduct on climate vulnerability is perhaps starkest in the case of Bikinians, who were forcibly relocated to Kili Island and have been living in exile for over 70 years. Kili is a place Marshallese have long viewed as uninhabitable due to its small size, limited freshwater, lack of reef or lagoon system, and lack of coastal protection (Hezel, 1995); these same characteristics make Kili exceptionally vulnerable to climate change impacts including sea-level rise, increased storm surges, and flooding.

Colonialism has also constrained the adaptive capacity of RMI. U.S. economic policy in the TTPI was characterized by large injections of aid in the absence of support for the development of a self-sufficient economic sector (Hanlon, 1998). This policy cultivated an economy of dependency that left the territory without any opportunity to “learn to walk on its own” (Hezel, 1968). Post independence, decades of neoliberal international aid interventions only entrenched that state of dependency. As a result, Marshallese are largely unable to pursue adaptation projects without heavy reliance on outside aid (Betzold, 2016; Barnett, 2017; Hau'ofa, 1993).

Aid explicitly tied to climate adaptation in RMI is limited. In Oceania, regionally, adaptation funds constitute a negligible fraction (~3–4% in 2012) of total aid flows (Donner et al., 2016). The majority of this funding (~64% in 2012) is dedicated to regional, rather than country-specific, initiatives (Donner et al., 2016). The efficacy of such regional programs to meaningfully address climate adaptation needs in any one country has been called into question (e.g., Barnett, 2017; Betzold, 2016). In RMI, country-specific adaptation funding comes primarily from donor countries including the United States, Australia, and ROC/Taiwan, as well as from multilateral organizations such as the World Bank, the Global Environmental Facility, and the Asian Development Bank (Subbarao & Mucadam, 2015). From 2008 to 2012, explicit adaptation funds to RMI averaged 0.6 million USD per year (Donner et al., 2016, tbl. 1).

There are also significant institutional barriers that impede RMI from accessing and utilizing climate adaptation funds. RMI must devote time, energy, and resources to apply for funding. Within this system, the preference of funders constrains the types of adaptation projects under consideration. In particular, funders tend to employ strict social and environmental safeguards for their projects, which limit the range of adaptation options that RMI and other aid-dependent sovereigns are ‘allowed’ to pursue (e.g., World Bank, 2016). To date, funders have only supported small-scale projects, such as flood warning systems and improvements to tidal forecasting (EPA, 2018).

In the face of these challenges, Marshallese are not passive victims. RMI's Joint National Action Plan for Climate Change Adaptation & Disaster Risk Management pledges a firm commitment to adapting the islands to future climate scenarios, emphasizing the importance of maintaining culture and sovereignty within the Marshall Islands (Republic of the Marshall Islands, 2015). This commitment to surviving in place is foundational, enshrined in the preamble of the RMI Constitution (Republic of the Marshall Islands Constitution):

This society has survived, and has withstood the test of time, the impact of other cultures, the devastation of war, and the high price paid for the purposes of international peace and security. All we have and are today as a people, we have received as a sacred heritage which we pledge ourselves to safeguard and maintain, valuing nothing more dearly than our rightful home on the islands within the traditional boundaries of this archipelago.

On the international stage, too, Marshallese have been leaders in the

push for climate action. For example, Marshallese representatives have been prominent in United Nations Framework Convention on Climate Change (UNFCCC) proceedings, instrumental in establishing the “well-below 2° C” warming target in the Paris Accords and the mechanism to compensate for climate change loss and damage within the U.N. climate change framework (e.g., Burkett, 2015; Climate Vulnerable Forum 2018; Wewerinke-Singh & Salili, 2019). Marshallese climate activists such as poet Kathy Jetmil-Kijiner have also been powerful international advocates.⁴

Despite the strength of Marshallese voices, global discourse largely presumes that RMI will inevitably be lost to rising seas and that Marshallese are destined to experience another forced migration, this one irreversible (e.g., Burkett, 2011; Storlazzi et al., 2018; Shea et al., 2020).

3. Conceptual framework

Empire is characterized by politics of difference (Burbank & Cooper, 2010). In Oceania, false narratives established hierarchies between ‘sophisticated, civilized Westerners’ and ‘simple, backwards islanders’ (Davis, 2015; Hau'ofa, 1993; Oldenzil, 2011). The wardship of colonial powers, so the story went, would help islanders achieve a degree of self-determination and autonomy they were incapable of realizing on their own (U.N. Charter, 1945; Hau'ofa, 1993; Williams, 2000). But the expressed desire to ‘improve’ islanders in the image of their colonizer sat in tension with the colonial conception of islanders as fundamentally inferior and, therefore, as expendable (Li, 2007). Far from promoting self-determination, colonial policies throughout Oceania inflicted devastation on islanders and islander institutions, reifying the narratives of dependency that justified colonial rule in the first place (Davis, 2015; Hau'ofa, 1993).

In the 1960s, with the rise of human rights in global consciousness, the social acceptability of colonialism began to sour (Moyn, 2010). Narratives of dependency could no longer justify the political subordination of entire populations (Williams, 2000). Rather, it was recognized that all peoples have a right to self-determination and that “no inadequacy of political, economic, social, or educational preparedness should . . . serve as a pretext for delaying [their] independence” (U.N. General Assembly 1960). The end goal of decolonization is the realization of self-determination: the peoples' right to make free and genuine choices about their own status and futures (ICJ, 1975; Bordner, 2019). Considered a “precondition for the enjoyment of all other human rights,” self-determination encompasses the rights of a people to exercise permanent sovereignty over the natural resources within their territory and to determine their own political status—including the choice to operate as an independent, sovereign nation (UN, 2013; International Covenant on Civil and Political Rights art 1973, ICESR, 1966). Decolonization is thus an ongoing process, fully realized when formerly colonized peoples enjoy “the inalienable right to complete freedom, the exercise of their sovereignty and the integrity of their national territory” (UN Res. 1514, 1960). The norm of self-determination for all people—and particularly for decolonizing peoples—has been enshrined in legally binding human rights conventions, U.N. Declarations, judgments of international and regional tribunals, and legal scholarship, such that it has become a peremptory principle of customary international law (International Law Commission, 2014 see, e.g. ICJ, 2004; ICJ, 1992; UNGA, 2011). This shift in global norms towards decolonization, human rights, and equal sovereignty for all “placed a time bomb under the concept of empire as a legitimate political form” (Mayall, 1989). Over the next several decades, colonies

⁴ Jetmil-Kijiner has written extensively on issues of forced migration, colonization, and nuclear and climate justice. You can learn more about her poetry at kathyjetnilkijiner.com. She has also published a book of poetry, *Iep Jaltok: Poems from a Marshallese Daughter* (2017).

worldwide, including most of the states in Oceania, gained formal independence (UN, 2019).

However, “the hoped-for era of autonomy following political independence did not materialize” (Hau’ofa, 1993). In place of the dichotomy between the colonizer and the colonized came the concept of ‘developed’ and ‘developing’ states (Hau’ofa, 1993; Williams, 2000). Where the yoke of formal colonization has been cast aside, the colonial politics of difference persist. Designations of developed and developing reinforce notions of formerly colonized peoples as less sophisticated and less able than their metropolitan counterparts (Cameron, 2012; Li, 2007). This self-reinforcing narrative of dependency continues to justify neocolonial subordination of islanders to international aid institutions, which were themselves created and continue to be controlled by colonial powers (Catharine Weaver 2007).

Just as colonialism worked to deprive island peoples of autonomy, so too does the current neocolonial aid regime. Largely as a result of their colonial history, most Pacific states are heavily reliant on outside aid (Williams, 2000; Overton & Murray, 2011; Overton et al., 2018); in many of these countries, including RMI, outside aid accounts for more than 25% of the national GDP (Feeny & McGillivray, 2010). As a result, outside aid institutions exercise a significant degree of control over the nations they support (Williams, 2000). Outside funders have routinely used this power to intervene in the internal affairs of developing states, implementing projects of their own design to impose Western ideas of proper political, social, and economic arrangements (Williams, 2000).

Overton and Murray propose that such aid interventions have the effect of divesting Pacific states of sovereignty over their own development (2011). Specifically, they propose that, even while more attention is given by donors to the rhetoric of state control and ownership, the effect of aid as currently implemented is to undermine local sovereignty by imposing neoliberal economic policies and conditioning receipt of aid on rigid requirements that inhibit recipient countries from pursuing independent ways of working (Overton & Murray, 2011; Murray et al., 2018). This has produced a situation in which—nominally for the benefit of Pacific nations—outside aid organizations exercise greater control over development than do their own governments. The authors have termed this colonial dynamic the “inverse sovereignty effect” (Murray and Overton, 2011; Murray et al., 2018).

idvestiture of sovereignty through neoliberal aid interventions “is no less significant than more coercive, assimilative, or disciplinary modes of domination. It is an extension and modification, not a departure from, colonial forms of power” (Cameron, 2012). By perpetuating dependency, these aid interventions impede decolonizing states from achieving true equality with their former colonizers. In the words of Epeli Hau’ofa: “Is this not what neocolonialism is all about? To make people believe that they have no choice but to depend?” (1993).

In the context of climate change, too, aid is informed by “a long and distinctly colonial history of imagining” islanders as less sophisticated than Western aid institutions, resulting in power dynamics that tend to deprive island states of sovereignty over their own adaptation strategies (cf. Cameron, 2012). The political nature of climate adaptation is seldom acknowledged in the academic literature (Cameron, 2012 (citing Li, 2007)), despite the fact that in Pacific states and many other geographies highly vulnerable to climate change, the adaptation process is carried out in communities that are “profoundly shaped by colonization and movements toward decolonization and [] self-determination” (Cameron, 2012). Without acknowledging the colonial dimensions of climate adaptation, even the most well-intentioned interventions tend to “take the form and function of the dominant, colonizing society,” thus perpetuating the structural subordination that induced vulnerability in the first place (Cameron, 2012; Eriksen et al., 2015).

For RMI and other low-lying states, climate adaptation is a matter of life and death (Heine, 2019; Jetnil-Kijiner & Niviāna, 2018). Without large-scale adaptation, island peoples risk losing their habitable

territory and, with it, the sovereignty and self-determination that they were denied during colonial rule (Bordner, 2019; Burkett, 2012).

Recent scholarship has proposed a reframing of climate adaptation that explicitly addresses the political nature of climate change vulnerability and of the adaptation process itself (e.g., Eriksen et al., 2015). Such a reframing recognizes that any and all adaptation actions will have social ramifications that advantage some while disadvantaging others (Eriksen et al., 2015). Our study adopts this approach by examining how power dynamics between funders and Marshallese leaders shape climate adaptation in RMI. We follow Eriksen and Cameron in calling for a reframing of climate adaptation to acknowledge its inherently political nature and to address climate impacts in ways that promote equity, justice, and human rights (Cameron, 2012; Eriksen et al., 2015).

4. Methods

This empirical case study has been produced by an interdisciplinary team of researchers with legal, social science, and engineering expertise. We selected RMI for this case study because the climate adaptation challenges there epitomize those of states throughout Oceania. RMI relies on outside institutions to fund adaptation, was recently under the rule of a colonial power (and, to some extent, is still under the thumb of that power), and is among the states most immediately and severely threatened by climate change. Empirical results are based on thirty-three semi-structured interviews in the Marshall Islands and Springdale, Arkansas.

Potential interview participants were identified through stakeholder mapping to identify influential actors in relation to climate adaptation. At the local (atoll) level, we conducted semi-structured interviews with mayors and council members who have been elected or appointed to represent their communities, including in adaptation decision-making ($n = 7$). At the national level, we conducted semi-structured interviews with political appointees and administrators tasked with implementing executive functions related to climate change adaptation ($n = 6$), as well as representatives of the U.N. International Organization on Migration, Majuro Office ($n = 2$). In order to seek perspectives of key stakeholders in climate adaptation, we conducted a further twelve semi-structured interviews with educators ($n = 2$), NGO representatives ($n = 9$), and a journalist ($n = 1$). Finally, we felt it important to incorporate the voices of nuclear survivors ($n = 6$) in conversations on migration in RMI. These life history interviews were less structured to allow survivors to tell their stories however they wished.

We seek to share Marshallese perspectives as wholly and directly as possible. We therefore do not challenge the accuracy of participants’ perceptions, choosing instead to share them on their own terms. As an extra precaution, we attempted to give each participant the opportunity to review the quotes associated with their names before submission of the manuscript. We opted to include the names of participants because, in the close-knit Marshallese community, leaders occupy prominent roles, making true anonymity impossible for many participants in this study. Furthermore, many participants, as vocal and active leaders passionate about raising awareness of the challenges facing their communities, preferred to have their names included rather than remain anonymous.

We are not Marshallese, but outside scholars. We follow Adger (2006) and Farbotko & Lazrus (2012, p. 384) in adopting a “listening disposition.” We attempt not to speak for or “give voice to” Marshallese leaders, but to amplify their voices in global discussions around climate adaptation. Placing the voices of Marshallese leaders at the center of our inquiry is “necessary in the interests of advancing, even if only minutely, the enormous imperative of climate justice” (Farbotko & Lazrus, 2012, from Adger 2006, p. 384).

5. Results

5.1. Attitudes around climate migration in RMI are informed by the history of forced migration caused by U.S. nuclear weapons testing

The threat of forced migration due to climate change cannot be uncoupled from RMI's history of forced migrations due to U.S. nuclear weapons testing. The legacy of forced migration and persistence of radioactivity informs how leaders think about their communities' futures: for some, cementing a commitment to stay and, for others, spurring a desire to leave. This section shares perspectives on climate migration from the leaders of communities who were forced to migrate from their homelands due to nuclear testing: Bikini, Rongelap, Enewetak, and Utirik Atolls.

Leaders from some of these atolls wish to relocate their communities, but not because of climate change. The peoples of Utirik and Enewetak are currently living on islands they know to be contaminated. In the case of Enewetak, many residents fear that contamination is increasing due to leakage from the nearby Runit Dome. In light of the persistent and growing threat of exposure to unsafe levels of radiation, some Enewetakese view migration as the only viable way forward for their community. A leader from Enewetak who requested anonymity explained:

Enewetak Leader: *I just want to take them somewhere. But then we have limited [funds]. So we cannot just stand up and go. So we are stuck out there.*

Interviewer: *So, you want to move away from Enewetak?*

Enewetak Leader: *Of course.*

Interviewer: *Because of radiation?*

Enewetak Leader: *Because of the radiation.*

Likewise, Mayor John Kaiko of Utirik observed that many of his people are already taking migration into their own hands in response to the "lingering residue of the poison":

Roughly half of them are migrated to USA, for various reasons. Some for health, looking for healthcare and education. Better living, better jobs and all that. For some, they want to avoid living [on Utirik] knowing that their children might be affected by the lingering residue of the poison.

In these cases, the push to migrate is spurred by concerns about lingering nuclear contamination rather than climate change impacts. According to Kaiko, his people view abandoning RMI and migrating in response to climate change as unacceptable:

I don't think there was any discussion like that so far [regarding migration]. I don't think that people, either the government or the people, they don't like to go away . . . They would rather fight the climate change rather than accepting it . . . adaptation, yeah, we got to do something like that because we have no other choice.

Meanwhile, for leaders of Rongelap and Bikini—whose people remain in exile today—the trauma of forced migration due to nuclear testing has cemented a desire not to be dislocated again. Alson Kelen, a Bikinian community leader and commissioner on the National Nuclear Commission, expressed his desire to return home with his mother before her death, acknowledging that this would be "a sort of safe suicide." He expressed the importance of returning to Bikini in cultural terms: "We have a traditional saying, *kabit boken aelon*, which means, 'we'd rather die on our soil, on our own homeland, so our flesh will bless the soil.'"

Bikinian leaders see a direct connection between the nuclear forced migration and the threat of climate migration. As Bikinian Councilperson Peterson Jibas explained:

You're talking about moving a community, a culture, a language, an identity to a completely different world. I think that would be the second devastation or third from the nuclear testing on Bikini. You're talking about losing a Marshallese way of life . . . If we moved from Kili, that'd be the second part of our dislocation. I mean, when will this end? What did we do wrong? . . . If we have to dislocate these people, by God so be it. But nobody wants to do that.

Jibas explained that life on Kili, where many Bikinians live today, is growing increasingly untenable:

The worries on climate change has affected a lot of people to start to think about their own future. Just recently . . . our community on Kili Island got hit by a king tide, a combination of big waves and high tide and winds . . . that king tide killed many of our crops and destroyed pretty much all shoreline on the far east side of Kili. That was the first time we've ever experienced that type of king tide. So, the local council passed two resolutions: one to seek other places to relocate these people . . . two is to ask [the U.S.] Congress to fund that movement because our funding is inadequate to move a whole community.

Kira is a Bikinian who was forced to flee her homeland in infancy and currently lives on the small island of Ejit. Kira longs to leave Ejit, which she says is "like a prison" with insufficient food and water. But she is clear that when she leaves Ejit, she wants to go home: "We don't want another island, we want to go back to *our* island."

Like Bikini, Rongelap remains uninhabited due to unsafe levels of radiation. Nevertheless, Mayor James Matayoshi is committed to preserving a future for his people on Rongelap. Working with private investors, Matayoshi has put forth controversial proposals to develop his radioactive home atoll, filling in the lagoon and transforming it into a "Smart City" he compares to Dubai or Hong Kong. For Matayoshi, Rongelap is running out of alternatives. As he put it, "would you rather sink under water or risk some compromise to the environment by sinking higher land elevation? I mean, you choose. When you are on a sinking boat, how do you survive?"

Nuclear testing has had devastating and long-term impacts on all of Marshallese society. Interview participants compared the threat of forced migration due to climate change to the environmental injustices caused by U.S. nuclear testing. Ben Graham, RMI's Chief Secretary and Climate Change Advisor, explained:

Fundamentally, this is history repeating itself: we are being impacted by an outside force that threatens our way of life, environment, health, and overall well-being and security. Just like the nuclear legacy, the climate change legacy is going to be massively disruptive and unfair; it will displace our people internally and externally, and it is unlikely that we will ever be made whole again.

Kelen feels similarly: "Different era, different name, but the same animal. In the 40s and 50s it was called The Atomic Bomb and now into the future it's called Climate Change."

The perseverance of Marshallese in the face of nuclear weapons testing demonstrates their resilience. As Kelen reminded us, Marshallese are extremely adaptive, having survived on the islands for centuries prior to colonization, having survived colonial rule, and having survived nuclear testing:

For our future, I would look at what happened in the past, and we've been warriors. We've been strong, strong people . . . If you close your eyes and think back 500 years, there was practically no food on these islands, except for fish and birds . . . We're adapters. We've adapted to the harshest living conditions since the creation of time. And even when the first animal came to this country, the first thunder, the atomic tests, we survived . . . If we can survive the atomic bomb, I'm sure we will survive the climate change. We'll adapt.

And Jibas assured us, "We may be small, but we will fight."

5.2. Marshallese leaders are committed to adapting in place to preserve national identity and sovereignty.

Participants indicated that migration would be an inappropriate response to climate change for RMI because wholesale migration poses an existential threat to Marshallese identity and sovereignty. Numerous participants discussed the impact of climate migration on identity. Mayor James Matayoshi of Rongelap Atoll fears the cultural loss associated with migration:

Let's say 100 percent of Marshallese people move into the U.S. and the clock starts ticking. And let's say within 20 years, every Marshallese becomes

a U.S. citizen. That is a huge impact: losing your identity and your homeland due to climate change.

Chris Belos, Climate Ambassador for the Arkansas-based NGO, the Marshallese Education Initiative (MEI), said that *manit* (Marshallese culture) cannot be fully practiced outside of the islands:

The islands are part of our manit — our culture, our way of life. The islands are a part of us . . . any people that have that connection to land would understand how unique that love is . . . There's so little [of our manit] that we can keep here [in Arkansas] because it's just so different.

National Energy Planner Angeline Heine-Reimers distilled the idea to simple terms: “If we lose our land, we lose our custom.”

Participants also explained the link between the place-based nature of Marshallese culture and their personal identity. For example, Angeline Heine-Reimers' sense of self is entwined with the islands:

People talk about migration, but for me personally, I cannot picture myself living anywhere else. I don't even allow my brain to even entertain that thought because the core of who am I is these islands . . . Just the whole topic of land for a Marshallese: it's your identity, right? It's who you are. When you ask a Marshallese, “Who are you?” you say, “What island are you from?” . . . I mean, can you imagine not having these islands? How do you describe yourself? You just become invisible.

For Mayor John Kaiko, “There is nothing special in the Marshall Islands, just that it is our home. That's where we were born, where we grew up, and this is where we want to die. It's very simple. It's that simple.”

Many interview participants also rejected the idea of climate migration because to abandon the islands would be to abandon RMI's sovereignty and self-determination. As Councilperson Jibas put it, “We're a sovereign nation here in the Marshall Islands, and I don't think we can stand to lose that sovereignty. I don't think anyone would want to lose their sovereignty.”

Mayor Matayoshi further explained the importance of Marshallese sovereignty, which he sees as deeply connected to Marshallese identity:

You have your own place, you have your identity, a form of government, and are part of the international community. You get to experience dealing with the ambassadors and presidents, even though we're a small country. People in [the U.S. territory of] Guam have lost a lot of their identity and . . . they have to go through Washington to deal with the global community.

Miriam de Brum, a leader of the Marshallese NGO, Women United of the Marshall Islands, described the national commitment to preserving Marshallese sovereignty:

Without our land and our place, where would be our sovereignty? Where would it be? So that's what the government is planning for, to make sure that even if the rest of the Marshall Islands will be underwater, there would be a few raised islands where the people will be able to live and survive and maintain the sovereignty of the Marshall Islands.

Given the existential threats posed by migration, Marshallese leaders are committed to long-term adaptation in place. To that end, the national government is developing plans to fill land, raise islands, and consolidate people in population centers. Secretary Graham explained, “in order to remain as a sovereign country, a member of the global community, that requires that we look at these more radical approaches to adaptation: reclamation, elevation, consolidation.”

The local leaders we spoke with also emphasized their desire to fight for the survival of their communities. Bikinian Councilperson Peterson Jibas explained that the Bikini Atoll government is considering “every other option” to avoid migration for their people:

There's a lot of people, they don't want to move. They would rather stay here and fight for their right to survive . . . this local council is trying to look at any option—every other option—they can to make sure that these people can survive.

Similarly, Mayor Matayoshi believes that Marshallese, like other peoples, ought to have “the option of living in your home country instead of migrating to the U.S. or other places.” He supports the sort of radical approaches envisioned by Secretary Graham:

In 50 years, people are saying that we will be underwater because of

climate change, and part of the solution in this development concept is to do a landfill. Imagine the lagoon here, you know, off this atoll. We want to close it out and create more lands and elevate the land.

Mayor Nika Wase of Likiep Atoll is also actively pursuing plans for her people to adapt in place. She is “trying to build something on the reef site so [her people] don't lose any more land [due to higher] sea level.”

Civil society leaders, including those who have migrated to Arkansas, are likewise committed to adapting in place.. For Winona Kisino, a program coordinator with MEI, the idea of migrating in response to climate change is entirely unacceptable: “I don't really believe in migrating from climate change. I believe in making it stop so that we don't have to migrate. I don't think that's a choice.” And Francynne Wase-Jacklick, a leader of Kora In Okrane, a Majuro-based NGO, returned home to work on climate change issues so that her children can have a future in the islands: “I would want them to have the same life, this island life. It's scary thinking about it with all these climate change issues . . . but that's why we're striving to work so hard, so that they can have a better future here.”

5.3. RMI's reliance on outside funding is perceived as a barrier to appropriate adaptation

Our research suggests that Marshallese leaders have a strong sense of how they would like to respond to climate change: by adapting in place. However, RMI lacks the resources to independently do so and must instead rely on outside aid. Participants see this reliance on external funding as a major barrier to implementing adaptation measures that would allow RMI to survive as climate change impacts intensify.

As noted by Secretary Graham: “How can the RMI possibly [proceed with large-scale adaptation]? Let's just assume it's several hundred million dollars at a minimum to build here on Majuro . . . Where would we possibly get the financing for that?” He further explained that, at this critical juncture, the survival of the country will hinge on acquiring funding for drastic adaptation, even more than on aggressive global climate mitigation: “There was a joke going around, this whole idea of ‘1.5 to Stay Alive,’ that we need to contain global warming to 1.5 degrees. Somebody said we need to flip that to ‘\$1.5 billion to Stay Alive.’”

A major perceived barrier to appropriate adaptation is the disconnect between the priorities of Marshallese leaders and the priorities of the entities they must rely on to finance adaptation. Many participants perceive that funders come to the islands with their own agendas and do not genuinely listen to local priorities. Ange Saunders, an official with the International Organization on Migration (IOM) Majuro office, feels that identifying needs is easy but “finding a donor who would want to fund something like that [i.e., what Marshallese want] can be much more challenging.” National Energy Planner Angeline Heine-Reimers, whose work includes implementing climate change adaptation and mitigation in the energy sector, elaborated:

There's also that barrier of donors coming in with their own objectives and agenda. And I think the most stressful part of my job is trying to convince people that although they are experts in their area, they're not expert here.

Heine-Reimers explained that funders appear more interested in visibility than in supporting community needs:

Everybody wants to fund solar But nobody wants to assist in terms of buying generators . . . I guess because it's not visible to people to see them put their flag there . . . they can't tell the whole world, ‘Oh, we helped RMI use fuel generator engines!’ You know? They want to say, ‘We gave them six megawatts of solar!’ . . . The donors know that we have that immediate area that needs assistance . . . but nothing . . . It's not flashy enough.

A focus on “flashy” technology diverts funds from needs identified by RMI leaders, including a diversion of funds from much-needed adaptation to mitigation. Secretary Graham put it frankly: “I love solar panels, but they don't work underwater.”

Participants also indicated that funders often fail to engage meaningfully with Marshallese decision-makers and experts to understand local needs and priorities. Rather, funders tend to implement projects based on their experiences elsewhere. Jack Niedenthal, Secretary General of the Marshall Islands Red Cross, explained:

[Funders will say,] 'Okay, we did this in the Philippines, so let's do this in the Marshall Islands.' And sometimes it's just so inappropriate, a lot of the technology. Inappropriate technology is almost like a way of life out here for us. We've seen it millions of times.

In discounting local perspectives, funders may not realize that Marshallese leaders already have plans in place and may even act in ways that conflict with local initiatives. As Heine-Reimers put it: "We have a plan, people! Don't just come in with your plan. We do have a plan." When asked what her ideal interaction with funders would be, Heine-Reimers proposed a simple idea: "Maybe just come in with some funding and just sit and listen. Not dictate . . . If you really want to help, just sit and listen."

Participants reported that the type of large-scale adaptation Marshallese leaders wish to pursue is technically feasible and is already being pursued elsewhere. In the words of Secretary Graham:

It's not rocket science. I mean, China is building islands by the acre every day as we speak and fortifying them . . . Denmark is going to build nine artificial islands to put a new Silicon Valley type of development there, and we've done lots of reclamation here too [specifically referencing the U.S. military base on Kwajalein] . . . So, it's not new, but it is expensive and it's environmentally damaging.

Participants perceive that the adaptation strategies being pursued elsewhere are viewed by funders as prohibitively "radical" in RMI, identifying several institutional factors driving funders' hesitancy. First, as IOM's Ange Saunders explained, the project time horizon of financing entities is incompatible with the time horizon necessary for long-term adaptation projects:

One of the challenging things for facing climate change is a lot of donors, there's funding cycles, there's elections, there's all of this, so [projects] are usually short-term. You know: "Here's a year [of funding]." [Sarcastically] Great.

Second, the costs of such ambitious measures, both fiscal and environmental, may be prohibitive for funders. When asked what barriers exist to funding long-term adaptation, Secretary Graham pointed to these costs, as well as the novelty of the engineering required:

I mean, they [funders] do coastal protection, but not building entirely new islands . . . So those are the two main reasons: the cost and the environmental impact. But the third one is really just the novelty of it or the very radical [nature of it].

He continued:

The GCF [Green Climate Fund] and the World Bank are providing project financing for things like coastal protection . . . traditional projects. But whether they would support much more expensive and more radical projects like constructing new islands, I'm not sure. I hope so. Because it's going to be very expensive, probably to the tune of hundreds of millions of dollars.

Secretary Graham and many others perceive that funders would prefer the whole population migrate away, as the economically rational option, rather than adapt in place. Saunders expressed frustration with funders' emphasis on migration, which she feels disregards Marshallese values and culture:

So many funders come here and say, "Oh, the economically viable thing to do is to migrate away. It makes no sense to stay here." Well yeah, it makes no sense to you, but talk to the people here! This is a place-based culture.

Secretary Graham also expressed frustration with the emphasis on economics:

One of the first questions I get asked is, 'Okay, we'll need to do a cost benefit analysis.' I mean, so the benefit is avoided loss of a culture and a language over the long run and avoided dislocation of a country, non-existence of a country. The financial costs we can estimate . . . but I would assume the benefits exceed the costs, right?

But, as Secretary Graham explained, outsiders tend to take a different view: "There are those who say, you know what, your population is too small to spend half a billion dollars on it. Just relocate. It's not worth keeping your culture and your sovereign status."

6. Discussion

Our research suggests that, although RMI is now an independent country, colonial power dynamics persist in the climate adaptation process. The steep power differential between funders and Marshallese—with funders in control of the resources needed for climate adaptation—means that outside funders, not Marshallese, set the country's adaptation agenda. Marshallese leaders perceive their adaptation plans are discounted while funder priorities are given pre-eminence. This perceived discounting of Marshallese priorities and plans suggests a continuation of colonial narratives that islanders lack agency and capacity to exercise self-determination, to drive their own development, and, now, to adapt to climate change on their own terms.

These findings further suggest that the inverse sovereignty effect proposed by Overton and Murray in the context of development interventions is at play in climate adaptation interventions as well (2011 & 2018). Overton and Murray hypothesize that, by supplanting local values with capitalist norms and imposing burdensome conditions on the receipt of international aid, the implementation of aid interventions has the effect of depriving island states of sovereignty over their own economic development. Our study suggests that, likewise, the supplanting of local priorities and values with those of funders has the effect of reducing Marshallese sovereignty over RMI's response to climate change. Though such interventions may be well-intentioned, they reinforce dynamics of colonial subordination.

The transfer of decision-making authority from domestic leaders to external institutions is problematic in the context of any decision affecting the people, territory, or resources of a sovereign. But such divestiture of sovereignty is particularly difficult in light of RMI's recent colonial history, running counter to international legal commitments to protect the self-determination of decolonizing peoples (e.g., U.N. Charter, U.N. Res. 1514). Epeli Hau'ofa warned more than twenty years ago that, unless challenged, neocolonial dynamics between funders and Pacific states could result in the consignment of ostensibly sovereign nations to a "perpetual state of wardship" (1993). This warning takes on increased salience in light of the existential threat posed by climate change; neocolonial power dynamics in the climate adaptation process appear to be impeding the type of adaptation that could enable the continued survival of RMI as a sovereign nation.

It is also important to note the critical role of global climate mitigation in any discussion of adaptation. More aggressive mitigation would make adaptation much more achievable, while failure to do so may result in states reaching the limits of their adaptive capacity (IPCC, 2019). RMI and other Pacific states 'on the frontlines of climate change' have little practical control over mitigation, as they are responsible for only a "negligible" fraction of global greenhouse gas emissions (UNEP, 2019). Rather, the climate change mitigation pathway pursued by their former colonizers will determine the range of feasible adaptation options, as well as the cost and difficulty of their implementation. Given that colonial powers are responsible for many of the social conditions that have induced climate vulnerability and the vast majority of global carbon emissions, these powers have a moral responsibility to both aggressively pursue mitigation and assist with adaptation (Bordner, 2019; Wewerinke-Singh & Salili, 2019).

7. Conclusions

Our study reveals that population-scale migration is not an appropriate climate adaptation strategy for RMI, as migration poses an existential threat to identity and sovereignty. Marshallese leaders have made commitments to in-place adaptation. However, they perceive that

funders discount the cultural, political, and human rights implications of failing to adapt the islands to future climate conditions, assuming instead that migration is inevitable, economically rational, and even desirable.

Marshallese have only recently begun to reclaim their ability to be self-determining following centuries of colonial rule. Yet the sovereignty and autonomy of RMI is still impaired by aid interventions that are born of and perpetuate colonial notions about worth and agency. In order to move toward true repudiation of colonialism and realization of international human rights and decolonization norms, it is necessary to dismantle systems of dependency and move towards an aid system that supports the autonomy of decolonizing states. The need to make such a shift is urgent in light of the existential threat posed by climate change. By denying Marshallese authority over their own adaptation strategies, persistent colonial dynamics threaten to divest Marshallese of more than just their sovereignty over the adaptation process. With funders, to date, unable or unwilling to support the type of large-scale adaptation necessary to preserve the islands, colonial dynamics threaten a permanent loss of RMI as a nation and people. The loss of the islands would be particularly painful for Marshallese given their history of forced migrations caused by U.S. nuclear testing and the ongoing struggle of many peoples affected by those migrations.

The current situation, in which colonized peoples are being asked to sacrifice their recently re-gained sovereignty to rising seas, is unacceptable. Such a loss would not only be devastating for affected peoples, it would undermine the commitments to human dignity and worth, to equal rights and self-determination for all peoples, and to “the ardent desire to end colonialism in all its manifestations” that ostensibly undergird our international legal system (U.N. Res. 1514). Our research indicates the need to return sovereignty over climate adaptation decision-making to affected states in order to avoid loss of the most severe and permanent kind.

Author statement

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Declaration of Competing Interest

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

Acknowledgements

We wish to thank Bill Durham and Rebecca Miller for their review and feedback on the article. We also wish to thank Tadson Lang, Faith Lukon, April Brown, Peterson Jibas, and Hilliary Hosia for their assistance with translation and coordination. Finally, we wish to thank Anjana Richards, Ingrid Ahlgren, and Gregory Ablavsky for their advice and guidance throughout this project's research and writing.

Funding

This work was supported by the Emmett Interdisciplinary Program in Environment and Resources, Stanford University.

Supplementary materials

Supplementary material associated with this article can be found, in the online version, at [doi:10.1016/j.gloenvcha.2020.102054](https://doi.org/10.1016/j.gloenvcha.2020.102054).

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