



A Country in ‘Fight and Flight’ – Analysis of the Challenges of a Hybrid Adaptation Policy for the Republic of Kiribati

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Table of Contents

- Abstract..... 3
- Table of Abbreviations..... 4
- Table of Figures..... 4
- Positionality Statement..... 5
- 1. Introduction..... 6
- 2. Literature Review..... 8
 - 2.1. Climate Change Migration Nexus..... 8
 - 2.2. Adaptation and Migration..... 8
 - 2.3. In Situ and Ex Situ Adaptation..... 11
 - 2.4. Historical Assessment of Relocations and Adaptation in Kiribati 12
- 3. Relevance and Aim of Research..... 13
- 4. Methodology..... 14
 - 4.1. Framework..... 14
 - 4.2. Limitations..... 16
- 5. Context of the Case Study..... 17
 - 5.1. Projections for Kiribati..... 17
 - 5.1.1. Climate Projections..... 17
 - 5.1.2. Demographic Projections and Development Issues..... 18
 - 5.2. Past and Current Adaptation Policies..... 19
 - 5.2.1. MWD policy..... 19
 - 5.2.2. In Situ Adaptation Policy..... 20
 - 5.3. Analysis and Implications of Policy Shift..... 21
- 6. Challenges of Hybrid Adaptation Policy..... 23
 - 6.1. Economic Challenges..... 24
 - 6.1.1. Funding..... 24
 - 6.1.2. Implications for the I-Kiribati Economy..... 26
 - 6.2. Political Challenges..... 27
 - 6.2.1. Design of Hybrid Adaptation Policy..... 27
 - 6.2.2. Challenges for Decision-Makers..... 28
 - 6.3. Legal Challenges..... 29
- 7. Conclusion..... 31
- 8. References..... 33

Abstract

The influence of climate change on migration flows is a highly disputed topic in the academic sphere. Furthermore, the discourse about whether migration is a failure to adapt or an adaptive strategy emerges. The Republic of Kiribati has imminent adaptation needs due to the high dependency of the population on local ecosystems for subsistence and income, prevailing development issues, rapid population growth, and projected climate change impacts. The previous and current Presidents and their respective administrations deployed otherwise opposing adaptation approaches. Namely, ex situ adaptation, which inevitably leads to relocation, and in situ adaptation policies, approaches deployed ‘in the place’ of living. Nevertheless, the significant negative implications of a sole prioritisation of one of these approaches suggest an alternative policy. This research argues, alongside other scholars, the emergent need for a hybrid adaptation policy and aims to answer the question if in situ and ex situ adaptation approaches can be harmonised or are due to their inherent characteristics incompatible in practice. This dissertation uses qualitative literature research on the single case study of Kiribati to answer the research question. This question is approached from a practical perspective, focusing on the challenges such a hybrid adaptation policy encounters, namely, the economic, political, and legal challenges. The findings suggest that, in theory, in situ and ex situ adaptation approaches can be harmonised. Deployment of adaptive management, a tool supporting decision-making under climate change uncertainty, can alleviate arising political challenges. However, due to the practical limitations stemming from the economic challenges and the lack of international law frameworks supporting cross-border migration, these adaptation approaches cannot yet be united to a hybrid adaptation policy in Kiribati.

Keywords: climate change migration, in situ adaptation, ex situ adaptation, hybrid adaptation policy, Kiribati

Table of Abbreviations

AF	Adaptation Fund
AR5	5 th Assessment Report of the Intergovernmental Panel on Climate Change
GCF	Green Climate Fund
GDP	Gross Domestic Product
INDC	Intended Nationally Determined Contribution
IPCC	Intergovernmental Panel on Climate Change
KJIP	Kiribati Joint Implementation Plan
LDC	Least Developed Country
MWD	Migration with Dignity
NAP	National Adaptation Programme
SIDS	Small Island Developing State
SLR	Sea level rise
TLUD	Temaiku Land and Urban Development
UNEP	United Nations Environment Programme
UNFCCC	United Nations Framework Convention on Climate Change

Table of Figures

Figure 1: Diagram of the applied framework.....15

Positionality Statement

The fate of Kiribati is a matter close to my heart. During the implementation of the later on cited ‘migration with dignity’ policy, I lived in South Tarawa, Kiribati. I worked closely together with the younger generation, often experiencing the close connection of the I-Kiribati¹ to the land of their ancestors and the already showing effects of climate change on their livelihoods. Acknowledging that my personal connection can bias my research in a particular direction, this dissertation uses a top-down perspective on the relevant approaches and policies.

¹ ‘From/ of Kiribati’, also used as a plural or singular noun for people from Kiribati in the Gilbertese language

1. Introduction

In the 21st century, climate change is a globally experienced phenomenon whose consequences hold unforeseen opportunities and risks. Today, the discussion about climate change is no longer simply about mitigation measures such as reducing greenhouse gases and the transition of societies and economies toward a more sustainable approach. In fact, with a changing climate, the whole human habitat is changing with considerable impacts on the world population. The need for more effective and sophisticated adaptation emerges. ‘Adaptation’ is hereby defined as the ‘process of adjustment to actual or expected climate and its effects [...] in human systems, adaptation seeks to moderate or avoid harm or exploit beneficial opportunities.’ (IPCC, 2014, p. 118).

In recent years, Small Island Developing States (SIDS) became more vocal about their specific vulnerabilities and adaptation needs, particularly in the Pacific. The Pacific Island Forum (2018, p. 6) declares that ‘climate change remains the single biggest threat to the livelihoods, security and wellbeing of the peoples of the Pacific’. In 1990, the Intergovernmental Panel on Climate Change (IPCC) warned that ‘in small island nations, inundation due to sea-level rise and storm surges could lead to significant movements of people ’ (1990, p. 55). Moreover, the 5th Assessment Report (AR5) of the IPCC further stressed the likeliness of large scale human movement due to climate change (Nurse *et al.*, 2014). Nevertheless, the climate change migration nexus is a highly disputed topic. To date, there is no robust empirical evidence of a climate change-induced migration flow (Campbell, 2014).

However, climate change impacts increasingly threaten the livelihoods of SIDS in the Pacific, including the Republic of Kiribati. The close linkages between climate change-induced disasters and development in the Pacific suggest that relocation due to such impacts and to climate change projections might become an inevitable strategy for Pacific island nations by the 2040s (Kupferberg, 2021; Nalau and Handmer, 2018). The question is whether people migrating due to the decline of their livelihoods or climate change-induced natural disasters fail to adapt or are adapting to climate change. The academic discourse is vastly divided on this topic and distinguishes between two adaptation approaches for countries: (1) adopting an in situ adaptation policy course, the ‘in place’ adaptation, which implies that migration is maladaptation or a failure to adapt; or (2) an ex situ adaptation policy, of which migration is a vital component, which most likely leads to planned retreat and relocation (Bardsley and Hugo, 2010).

The growing concern of the islands' capability to support its inhabitants' livelihoods in Kiribati led to the implementation of the Migration with Dignity (MWD) policy under the 4th President Aote Tong. This policy aimed to prepare the I-Kiribati for a gradual and voluntary relocation to other Pacific nations, allowing a dignified migration rather than a hectic ad hoc relocation (McNamara, 2015; Silberman, 2016). In 2016, incumbent president Taneti Maamau took office, and the MWD policy was replaced by an in situ adaptation policy grounding in economic prosperity, technological fixes, and faith (Kupferberg, 2021). Nevertheless, in situ adaptation approaches only tend to a specific range of climate change impacts. Therefore, an over prioritisation exposes the risk of maladaptation to the I-Kiribati.

This dissertation argues, alongside other scholars (Campbell, 2014; Leckie, 2013), that in situ and ex situ adaptation do not have to be alternatives to each other but both parts of a more extensive holistic adaptation policy. Furthermore, implementing such a hybrid adaptation policy, including the short-term in situ adaptation to climate change with keeping the option open for ex situ adaptation, holds significant opportunities for the I-Kiribati. Therefore, ex situ adaptation, including planned relocations, is seen as an option of last resort, not as an option of last-minute. Due to their position in the migration and adaptation nexus, can these two opposing adaptation approaches be harmonised, or are they inherently incompatible? The economic, political, and legal challenges of such a hybrid adaptation policy are thoroughly examined to answer the research question.

This dissertation is structured as the following: The literature review frames the research question in engaging with the significant discourses around this issue, primarily, the adaptation and migration discourse, historical relocations of I-Kiribati, and the assessment of I-Kiribati adaptation plans toward its obligations under the United Nations Framework Convention on Climate Change (UNFCCC), the Cancun Adaptation Framework, and the Paris Agreement. Subsequently, the research question is placed in the specific context of Kiribati's case study, including the country's adaptation needs and the previous and current national adaptation policies. In addition, the analysis of the sudden shift of Kiribati's adaptation policies and the potential implications thereof showcases the need for a hybrid adaptation policy. The analytical section examines and discusses the three overarching challenges of a hybrid adaptation policy, namely economic, political, and legal challenges. The dissertation concludes with remarks on the pitfalls of the proposed hybrid adaptation policy approach and an outlook on future research on this topic.

2. Literature Review

2.1. Climate Change Migration Nexus

The climate change migration nexus has been subject to heated debates in the literature, resulting in splintering and diverse opinions on this topic. General agreement in the academic sphere is that a multitude of factors usually drives migration. Therefore, attributing climate change as the sole causal factor to migration is a challenging quest. To date, there is little empirical evidence to support the argument of large-scale migration due to climate change impacts (Campbell, 2014). Nevertheless, there is growing consensus that the impacts of climate change will increase the magnitude of all other contextual pressures leading to an increase in global migration flows (Black *et al.*, 2011; McAdam, 2011; Nalau and Handmer, 2018; Nurse *et al.*, 2014). Climate change and its impacts will influence people's movement, although the influence's scale, location, and severity cannot yet be accurately established (Bardsley and Hugo, 2010; Campbell, 2014).

Bronen (2014) categorises three drivers for climate change migration: (1) sudden-onset events, also labelled as extreme weather events, such as tropical cyclones, flooding, or droughts; (2) the depletion of ecosystem services by slow-onset environmental change, such as sea level rise (SLR), and (3) a combination of frequent sudden-onset events and slow-onset climate changes exacerbated by the aforementioned sudden-onset events. Each of these drivers will cause different patterns of human movement, which depends on the demographic of the affected population and the length of the migration. Scholars project that internally migrating people will make up the initial majority of climate change migrants (Bardsley and Hugo, 2010; Biermann and Boas, 2010; Kupferberg, 2021; McAdam and Ferris, 2015). The case of cross-border migration almost exclusively happened in the Pacific, the first such example being the relocation of the entire population of Pitcairn Island to Norfolk Island, present-day Australia, in 1856, initiated by the British Empire at the time (Kupferberg, 2021).

2.2. Adaptation and Migration

In the discourse about the relation between adaptation and migration, two opposing opinions are distinguished. On the one hand, scholars, predominantly migration researchers, view migration as an adaptation strategy, which implicates a higher level of agency and capacity to act for the affected population (Ferris, 2019; Gemenne and Blocher, 2017; McLeman and Smit, 2006). Migration is regarded as less of a reaction to immediate stress stemming from the onset

of a natural disaster than a proactive and anticipatory diversification strategy to cope with such impacts in the future or with a decline in livelihoods in the long term (Bardsley and Hugo, 2010). Therefore, migration has a positive potential to generate income, diversify livelihoods, spread household risks, and generate social or financial remittances for the migrating population (Ober and Sakdapolrak, 2017; Vinke *et al.*, 2020). This reframing of migration as adaptation, initiated by the International Organisation of Migration, integrated well in the academic as well as the policy community. Prominent actors of climate change governance like the IPCC took up this understanding as well as strategic documents like the Cancún Adaptation Framework, the Sendai Framework for Disaster Risk Reduction, and the Global Compact for Migration (Vinke *et al.*, 2020).

The question of which countries might deploy migration as an adaptation to climate change impacts opens the discussion on climate justice. Vinke *et al.* (2020, p. 629) argue that ‘when migration is framed as adaptation, the responsibility is implicitly shifted away from the societal system to the individual or household.’. Their moral questioning of the responsibility for adaptation resonates with the perspective shared among some scholars. With this in mind, it can be argued that normalizing migration as adaptation is a neoliberal narrative invoked by Western countries to opt-out of responsibility for climate change mitigation and adaptation (Kniveton, 2021). Similarly, Biermann and Boas (2010) note that developed countries, the significant contributors to global warming, could have the adaptation measures, such as reinforced coastal protection, changes in agricultural production, and water supply management, to prevent mass migration to climate change impacts. However, developing countries are unlikely to operationalise sufficient adaptation means, and climate change migration might be an inevitable strategy for many regions. Leckie (2013, p. 40) raises the concern that an over prioritisation of migration as adaptation rather than addressing contemporary development issues ‘stands a good chance of transforming what could be a possible future scenario for the people into what will actually occur’, thus, leading to a self-fulfilling prophecy. This argumentation implies that people are encouraged to flee the country due to an overall decline of livelihoods, which could be alleviated by focusing on sustainable development rather than migration.

The opposing scholars in the adaptation and migration discourse support the notion that migration results from maladaptation or failure to adapt to climate change impacts. Simply put, if a population fails to adapt or employ inappropriate adaptation approaches in their place of living, the reaction is them migrating elsewhere to search for a place that can support their

livelihoods (Dekker, 2003; Warner, 2009; Zoomers, 2012). These scholars view migration in a rather negative light, arguing for prioritisation and focus on general development issues and adaptation in the place of living. Furthermore, they remark that framing migration as adaptation in an unambiguous way provides minimal opportunity for the affected population to ‘lead the kind of lives they value in the places where they belong’ (Adger and Barnett, 2005, p. 328). Thereby they neglect the level of agency of the affected population described by the scholars promoting migration as adaptation. In addition, they argue that migration cannot be successful adaptation as it disrupts the social fabric of the affected population, resulting in deep uncertainties and damage to traditions, social orders, indigenous knowledge along with rights to land and culture (Adger *et al.*, 2011; Adger and Barnett, 2005; McNamara and Des Combes, 2015).

This dissertation’s main point of critique on this notion is that this narrative perpetuates the underlying issues. The negligence of the aforementioned positive opportunities by viewing migration as a failure to adapt prohibits the appropriate preparation of the population for leaving a place that would be better decommissioned. If leaving a place due to the onset of a natural disaster or a decline in long term livelihood is inevitable, and the affected population is not prepared, these people are maladapted. Therefore, their migration can be seen as the result of a failure to adapt.

Maladaptation is also a possible outcome of migration. Vinke *et al.* (2020, p. 631) note that the framing of migration as adaptation implies that the affected population can live ‘equally well or better after their migration’. While for some migrants, under certain circumstances, migration is an effective form of adaptation, for others, it could mean that they could be worse off and less resilient to climate change impacts in their new place of living than they had been before. Factors such as the population’s sense of belonging, cultural and land rights, and national identity have to be considered in discussions about which adaptive strategy is most appropriate (McNamara and Des Combes, 2015).

Therefore, whether migration is considered an adaptation or a failure to adapt highly depends on the outcome. If the affected population is similar or better off after migrating, it is regarded as adaptation. If this is not the case, migration is considered a failure to adapt. Migration due to climate change exists on a continuum, from a failure to adapt to an adaptation strategy. Migration can be regarded rather as a strategy to cope with different environmental circumstances done intuitively and creatively than solely a reaction to external stimuli

(Kniveton, 2021). Due to the perpetuating effect of the narrative that migration results from maladaptation or failure to adapt, this dissertation picks up on the notion that migration is an adaptive strategy. Nevertheless, keeping in mind that it exists on a continuum and that the movement could worsen the affected people if the migration processes are not effectively planned or implemented.

2.3. In Situ and Ex Situ Adaptation

In this discourse, scholars often refer to ex situ and in situ adaptation measures. This dissertation defines in situ adaptation approaches as actions undertaken to enhance climate change adaptation within a place rather than including the movement of populations away from that place (Bardsley and Hugo, 2010). Therefore, it relates to adaptation ‘in place’, including reducing socio-economic vulnerabilities, building adaptive capacity, enhancing disaster risk reduction, or building long-term climate resilience (Nurse *et al.*, 2014). This approach contrasts with ex situ adaptation, which includes the mobility of people, systems, and assets from a place of increased vulnerability and exposure (Bardsley and Hugo, 2010). Populations that apply ex situ adaptation approaches would primarily be those who reside on small islands, riverine, or coastal terrain and lose their place of living to changing environmental conditions, particularly permanent immersion due to SLR or erosion through major events such as flooding or storm surges (Bardsley and Hugo, 2010). These approaches connect to the framing of migration as a failure to adapt versus migration as an adaptive strategy. Following the in situ adaptation argumentation, if relevant institutions or individual people fail to adapt, they have to move. Thus, migration is a failure to adapt. On the contrary, human mobility is a vital component of ex situ adaptation. Therefore, migration is seen as part of an adaptation strategy.

The ex situ adaptation approaches include planned relocations, a top-down and state-led approach to deal with a long-term decline in livelihoods and habitability of a particular place. The term ‘planned relocation’ is defined as a ‘solutions-oriented measure, involving the State, in which a community (as distinct from an individual/household) is physically moved to another location and resettled there.’ (UNHCR, 2014, p. 10). This dissertation understands planned relocations as anticipatory movement of people rather than an ad hoc movement resulting from natural disasters. They have been subject to long-term adaptation planning, which results in a relocation sensitive to factors other than the mere absence of a natural disaster or climate change impacts. Furthermore, the definition highlights the importance of the state in the processes of relocations. Therefore, this understanding of the decision-making level contrasts with the one

in ‘traditional’ migration, which is understood as being at the household and individual level (Campbell, 2014).

2.4. Historical Assessment of Relocations and Adaptation in Kiribati

The Republic of Kiribati is a SIDS and a Least Developed Country (LDC) and highly vulnerable toward climate change due to its prevailing underdevelopment, population growth rates, fragile economy, and projected climate change impacts. Therefore, the question of how long the country can support the livelihoods of its inhabitants, even with in situ adaptation approaches, emerges. The limitations on physical land due to its size and shallow elevation are introducing a rather complicated issue, namely, that relocations, if inevitable, would in most cases imply leaving Kiribati, therefore, crossing of sovereign borders. The knock-on consequences on the national identity in international law are highly disputed in the literature around relocations of populations due to climate change impacts (Nalau and Handmer, 2018).

Relocations are not a new process in Kiribati. The two historical cases of relocations in Kiribati include (1) the resettlement of the Banaban Island in the Gilbert and Ellice Islands Colony, present-day Kiribati, to the Rabi Island in Fiji in 1945, and (2) the relocation of the Gilbert Island’s inhabitants to the Phoenix Islands, present-day Kiribati, and resettlement once again of the same population group to the Wagina Island, present-day Solomon Islands, in the 1960s (McAdam, 2014a; McAdam, 2014b; Tabe, 2019). These resettlements had negative knock-on consequences for the affected populations, which persist till today. These overly negative past experiences of resettlement could be the reason for the non-nomination of planned relocation in their National Adaptation Plan for Action (NAPA), introduced by the UNFCCC’s 7th Conference of the Parties in Marrakech, and National Adaptation Programme, an approach established under the Cancun Adaptation Framework, the so-called Kiribati Joint Implementation Plan (KJIP), of Kiribati (*Kiribati Joint Implementation Plan for climate change and disaster risk management 2014-2023* 2014; *National Adaptation Programme of Action* 2007).

Interestingly, in the Intended Nationally Determined Contributions (INDC) of Kiribati from 2016, obligated under the Paris Agreement, overseas resettlement is listed as one of the five headlines to strengthen the country’s capacity to cope with impacts of climate change (*Intended Nationally Determined Contribution* 2016). Contrary to the past efforts of former president Anote Tong for the MWD initiative and concept (Kupferberg, 2021; Silberman, 2016), the current prioritisation of ex situ adaptation approaches by the current I-Kiribati government

under Taneti Maamau is very low. The current administration aims to enhance Kiribati's in situ adaptation ability through a strategy based on economic prosperity, climate change adaptation through engineering means, and mitigation (*Kiribati 20-year Vision 2016-2036* 2016; Kupferberg, 2021).

Therefore, the adaptation policies in Kiribati have been subject to a drastic turn from one extreme, the ex situ adaptation approach, to the other extreme, adaptation through in situ approaches, of the adaptation and migration discourse. Leckie (2013, p. 34) notes that a harmonised policy, herein referred to as hybrid adaptation policy, could 'positively transform Kiribati both in socio-economic and human rights terms, but also in terms of long-term viability as a nation in their fight against climate change.'. Leckie is not alone in arguing that in situ and ex situ adaptation policies do not have to be alternatives to each other. Campell (2014) similarly suggests that a hybrid form of adaptation policy would be an appropriate adaptation strategy for SIDS to cope with climate change impacts in the long term. This dissertation picks up on this suggestion and explores the challenges that this form of adaptation encounters in the context of Kiribati.

3. Relevance and Aim of Research

In the last few years, SIDS became more vocal about their specific vulnerabilities and adaptation needs. The unique vulnerability and the adaptation needs of SIDS in the Pacific, including Kiribati, are increasingly recognised in climate change governance treaties, for instance, the Paris Agreement in 2015, and prioritised in major reports, such as the AR5 of the IPCC. The climate change impacts on the human rights of I-Kiribati, the existential threat to the sovereign state, and the urgency of this issue make this research very relevant.

This dissertation aims to investigate whether ex situ and in situ adaptation policies can be harmonised or are inherently incompatible. This issue is addressed by exploring the practical challenges such a hybrid adaptation policy encounters in Kiribati. This research adds to the discourse of in situ and ex situ adaptation approaches, exploring the implications and challenges of a hybrid adaptation policy. Kiribati is an excellent example as the policies towards climate change adaptation set out by the previous and the current administration are on the two opposing sides of the adaptation and migration discourse. To date, precedence cases for a hybrid, or 'twin-track', adaptation policy are rare. Similarly, scholars have not yet explored this type of adaptation policy in detail. Therefore, this dissertation aims to fill this literature gap in taking

the first step toward exploring such a hybrid adaptation policy, namely, what challenges and implications this form of policy encounters.

4. Methodology

The methodology applied in this research is qualitative literature research of a single case. The case study uses the Republic of Kiribati as an example to showcase specific issues surrounding the implementation of a hybrid adaptation policy. Kiribati is a unique example of a country that had a recent shift in its adaptation policy approach and potentially must relocate its population across borders into another sovereign country. To date, it is the only case that portrays the challenges investigated in this dissertation to this extent.

The literature research builds on the systematic review of grey literature, namely, the most comprehensive adaptation report to date by the United Nations Environmental Program (UNEP, 2021); the review of projects approved and funded by the two most significant adaptation funds, namely the Green Climate Fund (GCF) and the Adaptation Fund (AF) (Adaptation Fund, 2021; Green Climate Fund, 2021); and the AR5 by the IPCC for scientific grounding of adaptation and climate change impacts (Nurse *et al.*, 2014); and other grey literature sources surrounding the topic of planned relocations and ex situ and in situ adaptation policies and measures. The research also includes the systematic review of essential policy papers for adaptation in Kiribati of the last few years, namely the KJIP, INDC, NAPA, and the 20-year Vision for Kiribati (*Kiribati Joint Implementation Plan for climate change and disaster risk management 2014-2023* 2014; *Intended Nationally Determined Contribution* 2016; *Kiribati 20-year Vision 2016-2036* 2016; *National Adaptation Programme of Action* 2007). The systematic collection and review of academic papers surrounding in situ and ex situ adaptation approaches, policies, and planned relocations allows for displaying the academic discourse on the dissertation topic.

4.1. Framework of the Dissertation

Theoretical and analytical frameworks used and suggested by academic papers surrounding the topics of in situ and ex situ adaptation policies are not appropriate for the scope of this research. Therefore, this dissertation follows a framework stemming from the observed trends and topics mentioned in the academic and grey literature.

This framework builds on the practical exploration of three pillar challenges surrounding the hybrid adaptation policy. They are:

- (1) **Economic challenges** of the implementation of a hybrid adaptation policy in Kiribati. The analysis thereof focuses on the practical feasibility, namely, the funding and the implications on the economy of Kiribati of the hybrid adaptation policy (King *et al.*, 2014; Kupferberg, 2021; Leckie, 2013).
- (2) **Political challenges** surrounding the hybrid adaptation policy concern the policy- and decision-makers’ limitations and cognitive dissonance in their attempt to harmonise two otherwise opposing sides of the adaptation and migration discourse. Particularly on what basis decisions are made and policies are formulated upon and the everlasting challenge of short-term versus long-term planning (Bardsley and Hugo, 2010; McAdam and Ferris, 2015).
- (3) **Legal challenges** are predominantly experienced in the ex situ part of the hybrid adaptation policy. In implementing such a form of policy there are significant and restricting limitations to the policy’s success (Kupferberg, 2021; McAdam, 2014a; McAdam, 2014b).

Figure 1 presents the relation between the hybrid adaptation policy and the surrounding challenges. The diagram further highlights that this policy does not exist in a vacuum but within the scope and limitations of the three identified challenges, which are connected to each other. While legal challenges predominantly limit the ex situ part, political and economic challenges affect both parts of the hybrid adaptation policy.

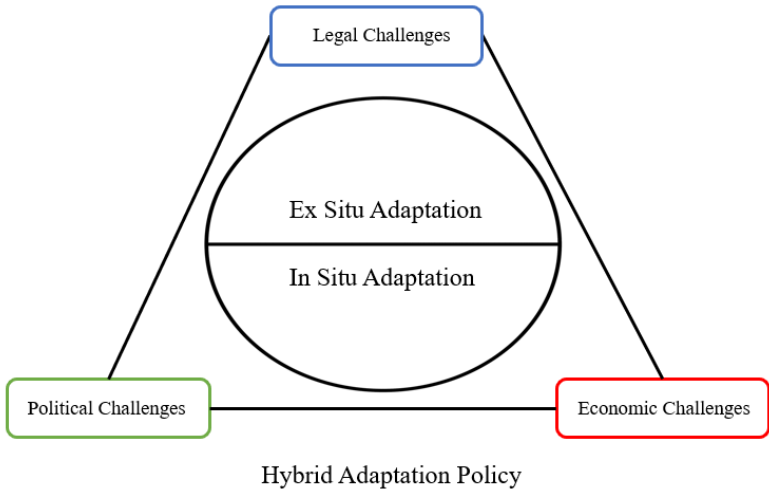


Figure 1: Diagram of the applied framework.

The focus on these three pillar challenges adds a practical lens to the research. This focus is necessary to analyse the harmonisation of two otherwise opposing policy strands in the reality of its complexity by focusing on the most significant and prevalent challenges. The framework feeds out of the methodology, namely academic, policy, and grey literature research, and is applied to the case study.

This dissertation understands policy-making as the formulation of a particular plan or course of action by the government, the outcome of which is a policy. In contrast, decision-making describes the act of selecting a particular plan or course of action from a set of alternatives, resulting in an action (Anderson, 2014). As policy work is a top-down approach, this dissertation also applies a top-down perspective.

4.2. Limitations of the Research

Investigating cross-border migration requires a closer look at legal frameworks and international law provisions. The legal consequences of cross-border migration of I-Kiribati are considered. However, they cannot be thoroughly examined. Acknowledging that the neglect of the legal factors surrounding this topic does not portray the challenges in the reality of their complexity, the set scope of this dissertation restricts going into further detail.

Cultural loss and inflictions on national identity are the primary concern in ex situ adaptation approaches, especially considering cross-border movements. These issues, including the particular strong connection of the I-Kiribati to the land of their ancestors, cannot be discussed in further detail as the set scope of the dissertation limits further investigation once again. Nevertheless, the surrounding implications on social and cultural issues will be acknowledged.

This dissertation does not cover the conceptual discourse about diverse definitions of, for instance, forced and voluntary movement, displacement, ‘climate change refugees’, ‘climate change migrants’, and ‘environmental refugees’. Firstly, there are no fixed and commonly accepted terms. Secondly, the scope of the research restricts the possibility to go into further detail. All relevant concepts and discourses for this dissertation are laid out in the literature review.

This dissertation considers in its *7.1. Economic Challenges* chapter only the funding from adaptation funds. It does not focus on bilateral funding agreements from other countries, as the set scope of the dissertation is not enough to cover every bilateral agreement of Kiribati to other countries.

5. Context of the Case Study

As mentioned above, the case study of adaptation policies in Kiribati is unique and portrays a specific example of how adaptation can be approached. The following chapter aims to give context to the case study by: (1) presenting the demographic and climate projections coupled with the prevailing development issues in Kiribati; (2) discussing the different policies taken; and (3) analysing the sudden shift in adaptation policies and its possible implications.

5.1. Projections for Kiribati

5.1.1. Climate Projections

The livelihoods of the I-Kiribati are increasingly threatened by both sudden and slow onset events. The climatic projections suggest:

- (1) **Increase in land and sea surface temperatures** poses difficult challenges to marine ecosystems, and water and food security for the I-Kiribati population, which is highly dependent on ecosystem services for subsistence and income.
- (2) **Increase in annual precipitation** resulting in flooding, which poses a threat to the I-Kiribati's water and food security, health, infrastructure, and settlements.
- (3) **More extreme climatic events** such as heatwaves and extreme rain, resulting in flooding. These impacts pose significant challenges to their food and water security, health, infrastructure, and settlements.
- (4) **SLR** poses a threat to the coastal infrastructure and settlements. Furthermore, SLR exacerbates the risk of flooding at exceptional high spring tides, also known as 'king tides', and the connected implications on the I-Kiribati.
- (5) **Increase in ocean acidification** threatening marine ecosystems, which are a vital component for the livelihood of the I-Kiribati (Government of the Republic of Kiribati, 2021a, 2021b; Office of Te Beretitenti, Republic of Kiribati, 2021; SPREP/ SPC/ GIZ, 2016).

SLR is projected to be the biggest threat to Kiribati and its inhabitants. Consisting of atolls, except for one risen volcanic island, Kiribati's highest elevation point is approximately 5 m above sea level. The effects of coastal erosion, saltwater inundation, and groundwater contamination are already experienced and will most likely intensify in the future. If the impacts of climate change will further deteriorate the fragile ecosystem on the islands, the land will no

longer support its population. Studies have shown that low lying atolls will not be inhabitable before they become eventually fully inundated (Leckie, 2013; Nurse *et al.*, 2014; Tabe, 2019).

5.1.2. Demographic Projections and Development Issues

Kiribati as an LDC still has prevailing development issues such as poor health infrastructure; water and food insecurity; severely limited employment, educational, and other economic opportunities; insufficient infrastructure; and poor solid and liquid waste management. Therefore, the everyday life of the population and the government are straining already. Projections suggest climate change impacts to further exacerbates these development issues (Leckie, 2013).

Coupled with the current rapid population growth that Kiribati experienced in the last decades, the pressure on the island ecosystems to support its population is increasing. The population counted 120,740 I-Kiribati in 2021, with a population growth rate of + 1.68 % (Pacific Community Statistics for Development Division, 2021). The growing population diverts into urban dwellings, leading to even more rapid urbanisation, especially in South Tarawa. Fastly evolving urban squatters are especially vulnerable to climate change impacts, which further deteriorates the country's resilience to climate change (Nurse *et al.*, 2014).

Kiribati's economy ranks 202nd in the world Gross Domestic Product (GDP), being among the lowest income countries in the world (World Bank Group, 2021b). The national income comprises the export of copra², fishery, tourism, remittances from citizens working abroad, and approximately 20 to 25 % of foreign financial aid. Economic development is hindered by the isolation of the island state from the international economic market and the lack of skilled workers and weak infrastructure (Kiribati Climate Action Network, 2014).

To conclude, the above mentioned persistent development issues are exacerbated by projections of the changing climate in Kiribati, leading to a deterioration of ecosystem services for subsistence and income (Leckie, 2013; Office of Te Beretitenti, Republic of Kiribati, 2021). The fragile economy, coupled with the growing population rate and the high dependence on ecosystem services, suggest that the ability of the I-Kiribati to cope with climate change impacts is relatively low. Therefore, the long-term habitability of Kiribati is questionable. Some scholars highlight the same and suggest that SIDS in the Pacific, including Kiribati, may have

² Dried coconut flesh

to migrate to other, relatively low-risk areas as a long-term strategy (Campbell, 2014; Nurse *et al.*, 2014; Tabe, 2019).

5.2. Past and Current Adaptation Policies in Kiribati

5.2.1. Migration with Dignity

In 2014, in response to growing concerns about the livelihood security of Kiribati, I-Kiribati leaders took action and introduced the MWD policy. President Anote Tong, former president of Kiribati from 2003 until 2016, and some allies in the government increasingly prioritised a sophisticated long-term strategy to migrate the citizens of Kiribati to other places in the Pacific (Leckie, 2013). The policy builds on the idea of voluntary movement instead of forced and hectic displacement of its citizens. It includes two separate parts: (1) The creation of expatriate communities in various destination countries, such as Australia, New Zealand, or Fiji, to support the following migrants in the long term. The policy builds partly on the opportunity for remittances to be redirected back into the country. The second part enhances (2) specialised educational and vocational opportunities in professions that are scarce in the Pacific, such as nursing and automotive engineering. This approach aims to provide the emigrating I-Kiribati with the opportunity to ‘land on their feet’ in the place of destination building on the narrative that these specific skills will increase the employment opportunities of individual I-Kiribati who wish to migrate.

Furthermore, even if the I-Kiribati who receive the new educational chances wish to remain in the country, their new skill set will benefit the nation. (Leckie, 2013; McNamara, 2015). Although relocations are seen as a top-down approach, MWD’s demographic focal point is the individual and household level. In 2014, as part of the MWD policy, the government of Kiribati bought 20 ha of land on the island Vanua Levu, Fiji. For the time being, the land was supposed to be used for agricultural and industrial purposes. The MWD policy would have seen Kiribati’s gradual and voluntary relocation to this piece of land (Kupferberg, 2021; McAdam, 2014a).

In addition, MWD represents a concept that refers to the unrestricted ability of people to move before the worst impacts of climate change are being felt, guaranteeing a minimum standard of ‘good’ life (Kupferberg, 2021; Silberman, 2016). This notion draws a stark contrast to events wherein people are delineated as ‘climate refugees’ by sudden or slow onset events and are deprived of the freedom to choose where, when, and how they move. Anote Tong called on the international community, hoping that the countries responsible for global warming would fund

and aid adaptation, leading to the improvement of life quality of I-Kiribati until they inevitably had to relocate (Leckie, 2013).

However, further engaging with this policy, there are some significant limitations to be witnessed. According to McNamara (2015), especially the inclusion of people with minimal literacy skills, low education, or largely subsistence livelihoods is insufficiently safeguarded. Therefore, this policy fails to provide protective migration mechanisms for all citizens. Furthermore, if only I-Kiribati with high education and literacy skills would benefit from the MWD policy, this would encourage a brain drain from Kiribati into the destination countries, which would have significant negative implications to Kiribati's already fragile economy. This circumstance raises questions about long-term positive outcomes for both the sending and the destination countries.

The MWD policy is regarded as an ex situ adaptation measure. It focuses on gradually preparing the I-Kiribati population to relocate due to the island's increasingly threatened livelihoods. Nevertheless, Tong's vision did not exclude in situ adaptation approaches. The in situ measures were merely used to buy time for Kiribati to prepare to relocate eventually entirely (Leckie, 2013).

5.2.2. In Situ Adaption Policy

In 2016, after the incumbent President of Kiribati Taneti Maamau took office, the MWD policy mainly was abandoned. It was replaced by a more Christian faith-based policy course that focuses on economic growth and prosperity, national pride, and in situ adaptation approaches laid out in the Kiribati 20-year Vision plan (*Kiribati 20-year Vision 2016-2036* 2016; Kupferberg, 2021). Maamau's vision is to transform Kiribati into the 'Dubai or Singapore of the Pacific' (CBS News, 2017, col. 7) through measures such as increased fishery, ecotourism, and assistance and aid from developing partners (Kupferberg, 2021).

The most recent outcome of this policy course is the major infrastructure project 'Temaiku Land and Urban Development' (TLUD), which will take up to 30 years to complete. The Government of Kiribati, New Zealand Ministry of Affairs and Trade, and Jacobs Engineering Group are planning to increase the height of 300 ha of uninhabitable and swampy land on Kiribati's Temaiku Bight to approximately 2 m above the highest measured sea level (Jacobs Engineering Group, 2020). To date, this is the most extensive adaptation development initiative for small island nations. The project aims at tackling imminent development and adaptation issues in South Tarawa, such as limited water supply, inundation of land by king tides, rapid urbanisation,

population growth, and ecosystem services. Estimations are that this large-scale adaptation project will increase the adaptive capacity of roughly 35,000 people residing in Kiribati (Jacobs Engineering Group, 2020). The investors also expect funding from the GCF (Kupferberg, 2021). Maamau's administration also cooperates with New Zealand's National Institute of Water and Atmospheric Research to find a long-term strategy for Kiribati's coastal security. These approaches also include building an elevated road running the entire length of the capital atoll, South Tarawa (Pala, 2021).

These in situ adaptation approaches essentially buy time, approximately 50 or more years, for Kiribati's habitat security (Kupferberg, 2021; Pala, 2021). However, none of the suggested approaches has been deployed yet. In addition, this large-scale raising of the island in the TLUD project would most likely include sand dredging from the lagoon. This operation would have devastating consequences for the local marine ecosystem, especially corals (Pala, 2021).

The current adaptation policy course represents an in situ adaptation approach with a priority on technological fixes. It mostly abandoned the previous MWD policy focusing on how locally applied adaptation approaches can protect the long-term habitability of Kiribati.

5.4. Analysis of the Policy Shift and Potential Implications

The recent adaptation policy shift showcases how intertwined in situ and ex situ adaptation approaches are. The decision of whether to 'fight' or 'flight' is not an easy one. The shift in policies regarding the prioritisation to either ex situ adaptation, including the possibility of relocating the I-Kiribati population, or better adapting to projected climatic changes is a tricky balancing act.

The decisions of the I-Kiribati administration are susceptible to their beliefs and assumptions about the future risk of the country (Ranger, Reeder and Lowe, 2013). The past administration regarded the future path of Kiribati as leading to inevitable migration. The current administration paints a more hopeful picture. Therefore, the sudden shift in the policy course of Kiribati is seen as a political fluctuation due to the change in administration and their political agenda and their perception of the best way to adapt for the I-Kiribati. This sudden shift presents how borderline both opinions, 'fight' or 'flight', is.

In addition, the possibility of new technologies to better adapt to a changing environment, for instance, the TLUD project, potentially tipped the scale in favour of in situ adaptation. Jacobs Engineering Group's principal environmental consultant Liddell, who is on the Board of the

project, expressed in an interview that ‘[p]reviously, they [I-Kiribati] only had migration...they technically did not have adaptation as an option. This is a game-changing project; it’s transformative.’ (Walters, 2019, col. 12). Therefore, the political will coupled with the access to new technology makes in situ adaptation not as utopian as it seemed.

However, the current policy course focusing on in situ adaptation bears significant negative implications. The effects of climate change hold many uncertainties and in situ adaptation measures only provide security for a specific range of climate change impacts. In the worst-case scenario, Kiribati’s population must migrate or relocate as their long-term strategy (McNamara and Des Combes, 2015). The affected people would then be exposed to much more significant risks, unnecessary retrofit costs, wasted investments, and lock-in into inappropriate adaptation means (Ranger, Reeder and Lowe, 2013). Alternatively, as Leckie (2013, p. 39) puts it, ‘[w]hy spend money on adapting to climate change and improving social and economic prospects of the country of the population is just going to leave anyway?’. If migration becomes inevitable, I-Kiribati risk being unprepared to move as most of their precious resources and planning went into inappropriate and insufficient in situ adaptation measures. Thus, according to the understanding of in situ adaptation, they are maladapted. The consequences of maladaptation due to wrongly chosen or insufficient in situ adaptation approaches are tremendous. This scenario would arguably lead to mass displacement, jeopardizing the cultural and personal identity as well as basic human rights of the I-Kiribati, compared to ex situ adaptation approaches, where the population, the economy, and other essential institutions are more prepared for this scenario (Kupferberg, 2021; McAdam, 2014a). Ex situ adaptation, particularly planned relocations, are predominantly communicated as an option of last resort (Leckie, 2013). However, considering the significant adverse consequences of negligence of this adaptation approach, this dissertation argues that ex situ adaptation should be the option of last resort, but not the option of last-minute for Kiribati.

To conclude, both policies bear significant risks and negative implications to the I-Kiribati, alongside and despite their specific advantages. The ex situ adaptation approach, leading eventually to population resettlement, disrupts the social fabric and poses challenges to national identity, culture, and international law regulations. Nevertheless, it is advantageous that the population and other relevant stakeholders are prepared for the worst-case scenario. On the other hand, in situ adaptation allows I-Kiribati to increase their adaptive capacity and resilience toward a changing climate in their place of living. Nevertheless, it does not prepare for the worst case, which could be that Kiribati eventually has to relocate vast parts of its population

due to insufficient or inappropriate adaptation strategies. Thus, the in situ adaptation approach is risky concerning the deep uncertainties of climate change impacts and calls for precautionary measures. Therefore, Campbell's (2014) and Leckie's (2013) suggestion for a hybrid adaptation policy seems to be an approach that holistically and precautionary prepares for all future scenarios. The policy promises to alleviate the potential risks arising from maladaptation due to insufficient in situ adaptation approaches and allows for the preparation of the option of last resort, namely ex situ adaptation.

6. Challenges for a Hybrid Adaptation Policy

The significant consequences of the sole prioritisation of in situ or ex situ adaptation policies highlight the need for a hybrid adaptation policy in Kiribati. This effort minimises the respective risks, which should be the imperative of adaptation policies. Nevertheless, precedence cases for such types of policies are rare. Before discussing the challenges of this type of policy, it is essential to set out what a hybrid or 'twin-track' adaptation policy would include.

The harmonisation of ex situ and in situ adaptation policies would focus on imminent development issues and adaptation needs and keep the options open for ex situ adaptation in case this measure becomes inevitable. Meaning that while adapting to already experienced climate change impacts, appropriate time-scale measures for the preparation for outmigration are realised. According to the MWD policy, these preparations would include the enhancement of educational and employment opportunities, which are helpful for the I-Kiribati in the case of emigration and will also benefit the country as a whole if this event never occurs. In addition, negotiations about possible places for resettlement would be kept open. However, the question remains, are the opposing approaches to adaptation to be merged or in their inherent characteristics incompatible?

This subsequent chapter analyses the challenges emerging in the formulation and implementation of a hybrid adaptation policy: (1) the economic challenges, including the adaptation funding gap as well as the implications on the I-Kiribati economy are analysed; (2) political challenges concerning the limitations specific for policy- and decision-makers are discussed; and (3) legal challenges, especially the ex situ adaptation part, surrounding the hybrid adaptation policy are examined.

6.4. Economic challenges

The limitations to the practical feasibility to provide both in situ, and ex situ adaptation measures, are significant. The challenge of Kiribati is to find the right balance between investing in adapting settlement toward SLR and flooding as well as providing water, food, and habitat security, and planning and preparing parts of the population to relocate to another area, which includes providing educational and employment capabilities and developing new settlements and infrastructure in the place of destination. Furthermore, ex situ adaptation may require purchasing land of other Pacific island states to have physical land to resettle. Each of these endeavours is cost-intensive in itself. The focus on both poses significant limitations to the practical feasibility to pursue both adaptation policies.

6.4.1. Funding

The governmental budget allocations to projects related to climate change from 2011 and 2013 were about 15.7 % of the national budget, namely US\$ 61 mill. The budget for disaster risk management programmes was US\$ 66 mill, which makes up 17 % of the national budget (Office of Te Beretitenti, Republic of Kiribati, 2021). Therefore, vast proportions of the I-Kiribati household budget were allocated to address the impacts of climate change. In addition, Kiribati's budget historically depends mainly on foreign aid and investments (Kiribati Climate Action Network, 2014; Pala, 2020). In 2013, Kiribati accessed less than US\$ 20 mill for climate change adaptation from development funding in addition to governmental budget allocations to climate change impacts (Leckie, 2013).

Considering past and present in situ adaptation measures further highlights the practical challenge. For instance, the government of Kiribati estimated that a sea wall surrounding South Tarawa as a whole would cost around US\$ 1 bill alone. Considering that Kiribati's annual GDP in 2020 was less than US\$ 200 mill and has accessed less than US\$ 20 mill in global adaptation funding, large-scale in situ adaptation measures for the preservation of the habitability of the whole country is not without practical limitations (Leckie, 2013; World Bank Group, 2021a). The latest outcome of Kiribati's current in situ adaptation policy course is the TLUD project. According to estimations, the project will cost in the initial stage, the land reclamation, US\$ 273 mill, which is more than the entire annual GDP of Kiribati in 2020 (Walters, 2019). Therefore, the project still further awaits funding from other investors (Kupferberg, 2021). As it is the first of its kind, large-scale adaptation project for an island nation, there is no precedence case to measure the costs and risks. Concluding from this data, it is evident that Kiribati's efforts

to adapt to climate change are significantly underfunded. The associated costs of in situ adaptation are considered too high to obtain by the island nations themselves due to their physical limitations in terms of water, land, and food resources (Tabe, 2019). Similarly, the IPCC (2014, p. 1639) states that ‘owing to the high costs of adapting on islands, it has been suggested that there will be a need for migration’.

Ex situ adaptation approaches require long-term planning and preparation. In a population relocation, settlements and infrastructure to preserve basic amenities, such as education and health care, have to be developed. Furthermore, abandoning the country of origin may require new skill sets, including vocational or educational skills, to set foot in the new environment (McAdam, 2014b). The MWD policy proposed enhancing skills rare in the Pacific region, namely nursing and automobile engineering, to avoid the relocated population being left without sufficient opportunities for stable livelihood in the new place of living. Such preparatory actions require year-long planning and also valuable resources, including financial as well as human capital. Therefore, relocations are very costly (McNamara and Des Combes, 2015).

Thus, if both in situ and ex situ adaptation measures are practically hard to obtain by themselves, how can focusing on both types of adaptation be obtainable? The burden of adaptation costs for Kiribati is similar to other developing countries relative to their GDP, further adding to their in more limited human, technical, and financial capacities (UNEP, 2021).

In their Adaptation Gap Report from 2020, UNEP (2021) states that the adaptation finance gap is far from closing even though there is an increase in finance available for adaptation. Analysing the adaptation projects planned and implemented by the GCF, the AF, and the Global Environment Facility since 2015, discloses that more than 50 % have been implemented in LDCs and almost 15 % in SIDS (UNEP, 2021). Therefore, the initial assumption is that adaptation projects in Kiribati are likely to be approved and funded by the climate funds mentioned above. Climate finance and adaptation funding is an essential component for Kiribati’s long-term adaptation strategies. The systematic review of the past projects has revealed that the GCF has not yet approved a long-term adaptation project in a Pacific-based SIDS. The two exceptions are projects for coastline protection by building sea walls in Samoa and Tuvalu, which duration is over 25 years. Considering the high cost and the long duration of the TLUD project, it is argued that funding from the GCF, considering their approved past and current projects, is highly unlikely. In terms of the hybrid adaptation policy, there has not

been a single project approved by the GCF that has mentioned migration as an adaptive strategy. The approved projects focus mainly on building up the adaptive capacity of the residing population (Green Climate Fund, 2021). Therefore, it is argued that due to the lack of funding on long-term adaptation projects and programmes considering migration as adaptation, the GCF would not assist in a hybrid adaptation policy in Kiribati.

In addition, systematically reviewing past projects in SIDS of the Pacific funded by the AF shows that this fund also seldomly invests in long-term projects. There is not a single project which has a duration of over nine years. Interestingly, in two projects implemented in Samoa and Micronesia, the possibility of village relocation has been mentioned as an option to explore. Nevertheless, the resettlement is internal and most likely within community boundaries (Adaptation Fund, 2021). Thus, Kiribati's long-term adaptation strategies run the risk to also fall into the adaptation gap cited above. Furthermore, in terms of the ex situ part of the hybrid adaptation policy, the financing of the relocation has to be secured by a clear and established link between the need for relocation and climate change needs (McAdam and Ferris, 2015).

6.4.2. Implications for the I-Kiribati Economy

A hybrid adaptation policy's aim implies the gradual resettlement of I-Kiribati over a long period. King *et al.* (2014) raise the concern that the impact of outmigration on smaller populations might have devastating implications for the economy of the remaining population, which would adversely impact their long-term resilience to climate change impacts. The fragile economy of Kiribati is therefore in danger of being further destabilised if parts of its population emigrate to other countries. On the other hand, the MWD policy in its first stage was building on the premise that the expatriate communities build in other countries would support the domestic economy with the remittances sent back to Kiribati (Leckie, 2013; McNamara, 2015).

However, the MWD policy was not sufficiently designed to include the parts of the population with very low literacy or education level (McNamara and Des Combes, 2015). Therefore, it is stated that the outmigration of parts of the population could lead to a brain drain of the skilled labour force of the I-Kiribati economy, leaving the parts of the population behind, which initially had significant barriers to participate in the ex situ adaptation preparation stages. The design of the ex situ adaptation policy has to safeguard the inclusion of all parts of the population. It should aim at providing realistic alternatives to all I-Kiribati, despite their individual vulnerability factors such as age, finances, occupation, and family or community commitments (King *et al.*, 2014). This approach aims to prevent those who remain in exposed

locations that ideally might be decommissioned, are the most vulnerable, and every I-Kiribati has a fighting chance for a minimally ‘good’ livelihood (Kupferberg, 2021).

6.5. Political challenges

The choice of which adaptation strategy is appropriate for a country poses immense pressure and expectations upon decision-makers. The decision-maker does not want to respond too little and fail to adapt or the other extreme, be too overly cautious and presumably lock in valuable resources in an inappropriate adaptation measure (Bardsley and Hugo, 2010). Theoretically, harmonising ex situ and in situ adaptation policies promises to alleviate these tricky challenges. However, adopting a hybrid adaptation policy does not alleviate some of the challenges. Furthermore, the formulation of such a twin-track adaptation approach poses significant challenges to the policy-maker as well.

6.5.1. Design of a Hybrid Adaptation Policy

The process of formulation and implementation of a hybrid adaptation policy introduces the question of on what basis decisions are made (McAdam and Ferris, 2015). Design and implementation of a hybrid adaptation policy concerns the tipping point to which an area is considered uninhabitable due to climate change. The IPCC (2014, p. 1634) notes that ‘[p]rojections of future climate change risks are limited by the lack of model skill in projecting the climatic variables that matter to small islands, notably [...] precipitation, sea level, ocean temperature, and ocean acidification; inadequate projections of regional sea levels [...]’. Therefore, the scientific uncertainty of climate change impacts on small island states translates directly into political decision-making. As mentioned before, the decisions taken by the I-Kiribati administration are susceptible to their understanding of risks arising from climate change to the country (Ranger, Reeder and Lowe, 2013). The establishment of thresholds and indicators that specific parts of the country are uninhabitable is significantly hampered due to the uncertainties concerning the impacts of climate change on the decision-making level. In addition, consideration of the relationship between these indicators and the coping capacity of Kiribati is essential in the establishment of these indicators (McAdam and Ferris, 2015).

‘Adaptive management’ can give insights into how to deal with decision-making under climate change uncertainty. This framework aims at providing flexible solutions by graduating actions through time to provide a liberated reaction to new information on an issue to avoid that decisions in the present are infringing future actions. Adaptive management is predominantly

used for large infrastructure projects (Ranger, Reeder and Lowe, 2013; Williams, 2011). The examples where adaptive management are used in policy design are rare. One unique example of a holistic deployment of adaptive management in policy design is the Bangladesh Delta 2100 Plan, which introduces risk reduction strategies until 2050 on a baseline study of 2015. Though the initial delta plan considers the actions until 2050, the plan has a long-term vision toward the end of 2100 (Climate & Development Knowledge Network, 2020).

The fundamental component of making decisions at different points over the next century, without infringing future actions, can suggest for policy-makers to design appropriate steps in an adaptation strategy. In this context, the harmonisation of ex situ and in situ adaptation policies and approaches must be designed around that component. In situ adaptation measures are taken to adapt to imminent risks, particularly in the most impacted sectors in Kiribati, namely, water, food, infrastructure, and health sectors, and attend to the general development issues, such as poor waste management. Furthermore, these actions should not infringe future pathways for ex situ adaptation measures, such as negotiations with other countries for potential relocations and enhancing educational and employment opportunities. These approaches will operate on the same timeline, like a ‘twin-track’ policy. If new climate information is available, the timeline and actions will appropriately be amended. This approach prohibits the lock-in of valuable resources and gives the strategy a certain ‘dynamic robustness’, aiming to build flexible strategies which can be changed over time as more information is available or as conditions change (Ranger, Reeder and Lowe, 2013).

6.5.2. Limitations of Decision-Makers

A hybrid adaptation policy requires short- as well as long-term planning. Decision-makers are often in their role for a specific period. In Kiribati, the President can only serve three four-year legislative periods, adding up to 12 years in the office. The ministers, who make up the rest of the cabinet, also serve for four years, but do not have a limitation in how often they can be appointed (Government of the Republic of Kiribati, 2021). Therefore, the decision-maker’s challenge, or arguably the limitations, consists of equally prioritizing short-term and long-term planning. Short-term planning includes primarily in situ adaptation. However, the first phases of the ex situ adaptation, namely the preparations of the population to relocate and the outreach to possible new places of living. The long-term planning mainly considers the ex situ adaptation approach and the in situ adaptation in, for instance, the 30-year long TLUD project. Policy-makers must consider this timely limitation on the relevant decision-makers and the given

timeline of the hybrid adaptation policy stages. These considerations promise that the formulated policy is sustainable, lasting, and robust over a long and uncertain period.

Another challenge to the decision-makers emerges considering the scenario if an I-Kiribati island may be unable to support the livelihoods of the present population but might be habitable for a smaller population. The decision to resettle a part of the population might be legitimate to reduce the pressure of climate change on the habitability of the island. Nevertheless, who decides which parts of the population should move – the population or the decision-makers? Particularly considering if some parts of the population wish to move but are slated to remain, and vice versa, some of the population wants to stay but is marked for moving (McAdam and Ferris, 2015). For a successful hybrid adaptation policy, foundation of trust in the I-Kiribati government and inclusive communication between the government and population, especially for illiterate and other vulnerable people, are essential. Therefore, clear communication about the short-term, in situ adaptation approaches, and long-term, ex situ adaptation approaches, aims of a hybrid adaptation policy are vital in safeguarding the trust in the government. This communication will prevent the I-Kiribati from becoming sceptical about any government decisions requiring them to resettle somewhere else (McAdam and Ferris, 2015). Therefore, the consent to relocation is a vital component in a hybrid adaptation policy to prevent the infringement of the civil and human rights of the inhabitants.

6.6. Legal Challenges

Legal challenges arise considering that a hybrid adaptation policy does not exclude migration as a form of adaptation. As Kiribati's territory has shallow elevation and size, crossing the border into another sovereign state becomes necessary. Therefore, these legal challenges are subject to international law contrasting to the case of internal migration. This circumstance elevates the whole discourse of ex situ adaptation in Kiribati on another level of complexity as it is a sovereign state migrating to another. The issues of nationality, citizen and human rights, and right to land and culture dominate this discourse (Kupferberg, 2021; McAdam, 2014a; McAdam, 2014b; McAdam and Ferris, 2015; McNamara and Des Combes, 2015; Nalau and Handmer, 2018; Tabe, 2019).

The issue of nationality on another sovereign country's territory is complex. Assessing historical relocations of I-Kiribati by the British Empire shed some light on how deep and prolonging the knock-on consequences are. The relocation to the Wagina Island, present-day Solomon Islands, portrays how issues surrounding nationality land rights still prevail after

decades (McAdam, 2014a; McAdam, 2014b). The resettlement was initiated by the British Empire in 1945 without sufficient safeguards on property rights of the affected population. This circumstance resulted in unresolved disputes about land wherein the relocated I-Kiribati are still unsure if their children will have the right to live and work on the land they were initially given (McAdam, 2014a).

The relocation of the Banaban Island, present-day Kiribati, to the Rabi Island, Fiji, in the 1960s resolved in a population under ‘two jurisdictions’. It is an unprecedented case in which the relocated I-Kiribati population has a special status in the Kiribati constitution as well as a high level of autonomy and self-determination in the Fijian jurisdiction. Nevertheless, the effects of decolonisation in the region significantly influenced this case. Therefore, it is argued that it will remain unprecedented (McAdam, 2014b). These past relocation experiences and their legal implications showcase the complexity of cross-border migration.

The legal challenges largely stem from the lack of an international framework addressing climate change migrants. However, Kupferberg (2021) offers some suggestions on how to solve the legal challenges partly. Firstly, in expanding the already existing and rather sophisticated labour migration schemes of Australia and New Zealand, which are initially providing working visas for seasonal workers from the Pacific. These visas are often presented as a beneficiary solution for both sending and host country and could play a significant part in how Kiribati could adapt to climate change in offering some alleviation on the immigration of I-Kiribati. Nevertheless, it is arguably too little to support the relocation of an entire sovereign nation to others. Furthermore, the opening and expansion of humanitarian visas from other Pacific island countries could also partly support the movement of I-Kiribati. For instance, since 2002, New Zealand permits permanent residency to 75 I-Kiribati who could not meet other requirements for immigration (Kupferberg, 2021). In addition, Kiribati would have to negotiate with other Pacific nations about potential resettlements to alleviate the migration flow pressure and safeguard a dignified migration. Thus, issues around nationality and the further existence of the sovereign state of Kiribati are far from being solved.

The legal challenges surrounding the ex situ adaptation are overwhelming. The hybrid adaptation policy, which includes the possibility of migration, is not an exception. Therefore, the absence of a legal framework supporting and protecting migrants leaving their country due to climate change impacts is a neck-breaking roadblock for a hybrid adaptation policy in its later stages of ex situ adaptation.

7. Conclusion

This dissertation aims to answer whether in situ and ex situ adaptation approaches can be harmonised or are due to their inherent characteristics incompatible in the practical context of Kiribati. The focus on the economic, political, and legal dimensions enables the thorough examination and discussion of the potential challenges such a hybrid adaptation policy encounters.

The I-Kiribati population is highly vulnerable to climate change impacts, particularly considering the prevailing development issues of the country and the projected population growth. Kiribati's previous and current adaptation policy approaches that emerged from this vulnerability are positioned on two opposing sides of the adaptation and migration discourse. The MWD policy is an ex situ adaptation strategy, whereas the current policy course is considered an in situ adaptation approach. The sudden shift in policies with the change of administration in 2016 occurred due to the current's administration perception of climate change risks for Kiribati, or in other words, different political will, and the introduction of new and more advanced technology for in situ adaptation. Nevertheless, this dissertation makes the case that due to climate change uncertainty, the precautionary principles must be used to protect the I-Kiribati's cultural and human rights if the in situ adaptation approaches prove insufficient or inappropriate. The ex situ adaptation approach must be an option of last resort, however, not an option of last minute to avoid adverse implications for the future generations of I-Kiribati.

Therefore, the suggestion of some scholars (Campbell, 2014; Leckie, 2013) for a hybrid adaptation policy, which includes both in situ and ex situ adaptation means, is understood as a risk minimising approach to both protect the cultural and social integrity of the I-Kiribati without infringing their long-term adaptation options. The precedence for such a form of policy is rare. Therefore, this dissertation first explores this policy option in defining three pillar challenges, namely, economic, political, and legal challenges.

The investigation of economic challenges revealed that the practical feasibility of such a policy in Kiribati is nearly impossible in the current circumstances. This issue originates mainly in the lack of governmental resources, especially human and financial capital, and the lack of funding and prevalence in similar projects from major adaptation funds. It is therefore questionable if these adaptation funds will ever approve of such a bipolar adaptation approach.

Political challenges stem mainly from limitations on decision- and policy-makers, namely, on what basis are decisions about adaptation made and policy are formulated upon considering climate change uncertainty and the everlasting struggle of short-term versus long-term planning. The implications of insufficient or inappropriate steps in decision- or policy-making range from maladaptation to infringement of I-Kiribati's civil, cultural, and human rights. Nonetheless, these negative implications can be alleviated by deploying adaptive management, a tool for decision-making under climate change uncertainty.

Potential legal challenges arise due to the inclusion of migration as an option in the hybrid adaptation policy. Due to the unique setting of the case study, this would include the crossing of sovereign borders, which makes this discussion subject to international law regulations of climate change-induced migration. Kupferberg (2021) suggestions for expanding labour visas and opening humanitarian visas in Pacific countries could offer some alleviation. Nevertheless, the issues around national identity and cultural and land rights are far from being solved. If not solved on the international level, these legal challenges can be a neck-breaking roadblock for the later stages of a hybrid adaptation policy.

To conclude, in theory, ex situ and in situ adaptation approaches can be harmonised, offering significant benefits for the affected populations. However, in practice, the example of Kiribati indicates that a hybrid adaptation policy is not yet obtainable. The economic challenges, which limit the practical feasibility, and the legal challenges, which prove to be a substantial roadblock, are considered fundamental challenges. At the beginning of the formulation and planning of a hybrid adaptation policy, these fundamental challenges make practical implementation difficult right from the start.

At the moment, Kiribati has still the advantage of having the time to prepare and consider possible and appropriate adaptation approaches, whether they will be in situ or ex situ adaptation approaches or even a hybrid one. Nonetheless, careful assessment of future risks and opportunities of the I-Kiribati is pivotal. If Kiribati chooses to follow a hybrid adaptation policy, appropriate adaptation funding mechanisms must be implemented to support nations with the means of endeavouring in situ and ex situ adaptation. Furthermore, international legal frameworks have to safeguard the cultural and human rights of cross-border migrants, that the I-Kiribati have the chance to migrate 'with dignity'.

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