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Climate Mobility: A Catalyst for East Caribbean Development?

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Acronyms and Abbreviations

AOSIS	Alliance of Small Island States
CARICOM	Caribbean Communities
CIA	Central Intelligence Agency
CSME	CARICOM Single Market Economy
FMA	Free Movement Agreement
ICT	Information and Communications Technology
OECS	Organisation of East Caribbean States
SDG	Sustainable Development Goals
SFDRR	Sendai Framework for Disaster and Risk Reduction
SIDS	Small Island Developing States
STEM	Science, Technology, Engineering, and Science
TVET	Technical and Vocational Education and Training

Executive Summary

Grenada, a small tri-island nation in the East Caribbean, faces significant challenges due to high poverty and unemployment rates. Neighboring Trinidad and Tobago, which hereby will be referred to as Trinidad, is the most prosperous island in the East Caribbean and one of the two most climate-vulnerable islands within the region. As the coastal economy is Trinidad's primary economic driver, climate vulnerability has the cascading effect of livelihood vulnerability primarily for the petroleum sector's workforce. This policy brief explores the theory that Grenada can attempt to catalyze its own development by incentivizing coastal Trinidadian workers, whose livelihoods may be precariously impacted by the effects of slow-onset climate change, to migrate to Grenada to fill some of the skills gaps in key development sectors.

The emerging academic field of climate mobility is a growing concern in the Caribbean and Pacific regions due to the forecasted impacts of climate change. While weather events are not the primary factor for climate mobility, poor safety nets, weak governance and institutions, grim livelihood outlooks, and unstable climates and environments provided to a host nation's citizens exacerbate the choice to migrate voluntarily or forcibly. Grenada and Trinidad are parties to regional mobility agreements utilized in extreme sudden climate events such as hurricanes; however, no actual protections are built into these agreements to facilitate labor mobility for slow-onset climate events such as flooding and erosion.

Tuvalu and Australia's recent bilateral climate mobility and resiliency treaty, the first known treaty of this kind, serves as a case study for the potential benefits and outcomes of climate mobility labor agreements. The author argues that such an agreement is transposable, and its framework is easily adaptable within and without a Caribbean context. The recommendations include an example of what such an agreement may entail for Grenada and Trinidad's specific context.

This brief recommends that Grenada's governance focus specifically on providing a mobility pathway for Trinidad's coastal livelihood workforce with directly transferrable skill sets that could be utilized in underdeveloped Grenadian sectors, such as the transposition of the petroleum workforce to certain Science, Technology, Engineering, and Science (STEM) positions, information and communications technology (ICT) experts to aid in the stagnated development of Grenada's digital economy, and agriculturalist operating climate-resilient technologies such as commercial hydroponics and vertical farming.

1. Introduction

Image Source: Grenada and Trinidad and Tobago. Google Earth, n.d.

Grenada, West Indies, a tri-island nation comprising the main island Grenada and the islands of Carriacou and Petite Martinique, is the most poverty-stricken nation in the East Caribbean, with a 37% poverty rate (World Bank, 2021), a 29% unemployment rate (pre-Covid) (Central Intelligency Agency [CIA], 2024a), and a 13% rate of extreme poverty (World Bank, 2021). Grenada has a population of only 113,000 inhabitants (CIA, 2024a), making its drastic poverty levels concerning. Directly south of the island is the nation of Trinidad and Tobago, which boasts a 4.3% poverty rate (CIA, 2024b) and a .06% extreme poverty rate (United Nations Development Programme, 2023) for its population of 1.3 million people.

However, Trinidad is also one of the two most climate-vulnerable islands in the Caribbean due to the amount of land mass that is measured to be <2 meters above level and flood-prone (nearly 80%) (Jeppesen et al., 2015) and how precariously Trinidad's economic outlook currently remains in the face of sea level rise, as 70% of its economy centers around coastal livelihoods, predominantly the oil and gas industry (Ministry of Planning and Development: Trinidad, 2021). Even the most minute percentage of climate-induced outmigration rate from Trinidad to neighboring islands such as Grenada will have significant socioeconomic implications due to the smaller island's vast population difference and high economic vulnerability. Small Island Developing States (SIDS), such as Grenada, with less climate vulnerability but significant economic vulnerability, must capitalize on incentivizing the types of skilled labor that will best catalyze the island's development stability and economic prosperity.

A slight uptick in Trinidad migration to Grenada during societal duress has already been witnessed within the past five years, giving Grenada credibility as a viable mobility option for Trinidadian residents. The Venezuelan invalid election crisis of 2018-2019 ("Venezuela opposition weighs election run after talks end," 2018) led 24,000 Venezuelans to flee to Trinidad and Tobago (United Nations Department of Economic and Social Affairs, Populations Division, 2021). During this time frame, Trinidadian to Grenadian midyear migration escalated from a 1.18% increase between 2010-2015 to a 4.15% increase between 2015-2020 (United Nations Department of Economic and Social Affairs, Populations Division, 2021. Grenada's stagnant net population growth of -1.9 between 2013-2019 hit equilibrium during this time of Trinidadian population growth (United Nations Department of Economic and Social Affairs, Population Division 2022).

The current iteration of observed climate mobility studies has observed indirect, small-scale local migration instead of the earliest hypotheses of lineal mass migration (Boas et al., 2022). Climate-induced mobility contextually depends on existing power relationships and societal inequality (Boas et al., 2022). With conditional social protection programs that do not mandate the majority of rural and informal livelihoods to buy in (Robles & Vargas, 2012), Trinidad's coastal livelihood-dependent and low-income populations are most at risk of experiencing climate vulnerabilities. Based on Boas' assumptions, it can be hypothesized that Trinidad's coastal-dependent populations must choose between adaptation strategies, internal displacement, or migration.

Due to the lack of formal displacement policies, Caribbean SIDS have primarily undertaken migration and displacement on an unplanned or responsive basis (Thomas & Benjamin, 2017). According to scholars Lilian Yamamoto and Miguel Esteban, studies over the past two decades have suggested that bilateral agreements are a more pragmatic approach to the issue of climate-induced mobility rather than an international agreement that cannot be context-specific (2021). The Pacific SIDS have several examples of mobility frameworks the Caribbean could glean from and adapt to their needs, such as Kiribati and Tuvalu's regional agreements with Australia and New Zealand (Thomas & Benjamin, 2017), of which the new Tuvalu and Australia bilateral treaty will be explored further in this brief.

Several Caribbean free movement agreements exist for the region that tangentially address weather-related mobility without addressing climate change explicitly. The Caribbean Community's (CARICOM) Single Market Economy Free Movement Agreement facilitates a six-month visa stay for skilled laborer CARICOM citizens within the borders of a host country, with the possibility of being granted indefinite entry (Francis, 2019). The Organisation of East Caribbean States (OECS) version, titled "Free Movement of Persons in the East Caribbean," provides indefinite visa stays for seven protocol members (Antigua and Barbuda, Commonwealth of Dominica, Grenada, Montserrat, Saint Kitts and Nevis, Saint Lucia, and Saint Vincent and the Grenadines), recognition of drivers licenses, social security provisions, the ability to work without a permit, and contingent rights (OECS, 2020).

During the 2017 hurricane season, CARICOM, as the Caribbean's primary intergovernmental agency, and the OECS provided victims entry to other islands sans travel documentation if lost or damaged, granted access to skilled labor markets, and the right to stay indefinitely to some persons (Francis, 2019). While this agreement was utilized in a series of sudden-onset disasters that followed the 2017 season, it also bears the potential to facilitate mobility in the age of slow-onset climate-induced mobility (Francis, 2019) without changing many of the already enacted policies. Francis also hypothesizes that CARICOM's framework for free movement between islands is replicable in other country contexts (2019).

This policy brief aims to determine how Grenada, an island with fewer flood and erosion climate vulnerabilities but more significant human capital needs, may design a livelihood exchange agreement with neighboring islands of greater climate vulnerability that incentivizes skilled labor immigration. It will also examine whether such an agreement could serve as an economic and development catalyst without displacing its population economically. Furthermore, this brief will explore the applicability of such an agreement within and without a greater Caribbean context.

Table 1: Comparison of Caribbean Free Movement Agreements and Protections

Agreement	Signatories	Protections
CARICOM CSME FMA	Antigua and Barbuda, Bahamas, Barbados, Belize, Dominica, **Grenada,** Guyana, Haiti, Jamaica, Montserrat, St. Kitts-Nevis, St. Lucia, St. Vincent and the Grenadines, Suriname, and **Trinidad and Tobago**	Six-month visas for skilled laborers (verified through certification). Grounds for refusal based on security concerns, public order, or potential for person who would require a reliance on safety nets and social protections
OECS Free Movement of Persons in the East Caribbean	Antigua and Barbuda, Commonwealth of Dominica, **Grenada,** Montserrat, Saint Kitts and Nevis, Saint Lucia and Saint Vincent and the Grenadines	Indefinite stay for OECS citizens, recognition of driver's license and other identification documents, social security benefits, and social protection rights

Source: OECS n.d.; Francis, 2019

2. Literature Review

Several critical theories and terminology governing this policy brief's thesis are discussed below.

Climate Mobility: Definitions through History and Measurability

While the term 'climate refugee' is utilized in the mainstream to describe the phenomenon of displacement of populations due to sudden or slow-onset disasters, the general scholarly consensus is that this terminology is inaccurate. Between 2000 and 2015, twenty unsuccessful administrative and judicial cases were brought before Australian and New Zealand courts, arguing on behalf of Pacific Islands that protection should be given to their citizens as well as the ability to relocate under refugee law due to climate change (Francis, 2019). In 2012, Carol Farbotko and Heather Lazarus presented evidence that Pacific SIDS have advocated for the legal recognition of the term within international law to prompt international fiscal assistance with the relocation of populations. However, their conclusion remained that without a clear claim for persecution as defined in the 1951 Convention Relating to the Status of Refugees, it is unlikely that in the near future, we will see a re-emergence of this argument for equal protection under international law (Kolmannskog, 2012).

Climate mobility primarily occurs within national borders over short distances, with only a few of the more wealthy or educated citizens granted the opportunity to cross borders, more often to a nation with greater economic opportunity (Francis, 2019). This concept was first recognized by the United Nations through the 2010 United Nations Framework Convention on Climate Change (Francis, 2019). Scholars' consensus has considered the term climate mobility preferable to climate migration, as it includes the forced displacement as well as the voluntary movement of populations brought on by climate events (Yamamoto & Esteban, 2021).

The recently acknowledged phenomenon of climate mobility is complex and multifaceted, and its existence and validity as a research subject are still being questioned (Boas, 2021; Nicholson, 2021). Climate mobility is often not the driving push factor for migration but is driven by an amalgamation of exacerbations, such as poor economic institutions, societal/cultural norms, climate, and political policies and safety nets (Thomas & Benjamin, 2017). Because of these factors, providing estimates of potentially displaced populations due directly to climate events is intricate, and the generally utilized methodology for doing so is assessing the risk exposure of the region rather than analyzing localized net mobility data and environmental change over time (Barnett & Webber, 2010).

Migration Development Nexus; Climate Migration Human Development Nexus

The two theories behind the migration-development nexus are that migration benefits all parties (host country, originating country, and migrant) or is solely in the interest of the strongest economic actor (Hermele, 2021). Climate-induced mobility is less simplistic than either of the presented narratives. While it is acknowledged that the emigration of skilled people harms development in emigration countries (Hemele, 2021), climate-induced mobility provides additional benefits for the originating country, such as the net fiscal benefit of remittances, which often supersedes the loss of taxation and the cost of social services provisions for the migrant (Ratha & Maimbo, 2005). Often, the barrier to mobility is the high cost of travel to the host country (Ratha & Maimbo, 2005); however, the exorbitance of that cost is mitigated through the more fiscally feasible South-South migration of which the intraregional Caribbean circular economy is a part of (Carte et al., 2018).

Diana Hummel conceptualized a new iteration of the migration development nexus in 2016 based on research conducted in rural West Africa Sahel. The concept argues for the acceptance of planned migration as a valid climate adaptation policy. It demonstrates how such policies could incur actual net positive outcomes for both the host and origin nations through not only remittances but also transnational skill exchanges, education, and skill-based employment (Hummel, 2016). While the former nexus focused on low-income to high-income migration, Hummel's study focused on nations of similar low-income backgrounds, Mali and Senegal, which both benefit from the labor mobility exchange despite climate change's effect on agriculture and, subsequently, the economy.

Climate Mobility as Adaptation

As coastal Caribbean areas are projected to face the greatest vulnerability to climate-induced loss and damages, regional and national migration, adaptation, and relocation strategies should be integrated into national development strategies (Betzold, 2015; Thomas & Benjamin, 2017). Planned migration through circular, temporary, and permanent livelihood agreements as a portion of a preemptive adaptation strategy has multiple fiscal and cultural benefits, such as preservation of dignity, seamless transitory migration, and casualty-free mitigation, to name a few (Thomas & Benjamin, 2017). However, these benefits come with a cost to the host population if resource and livelihood security are not stabilized in these planned migration areas.

Settling climate-displaced or migratory populations also comes with a host of cultural challenges. Historically, forced or coercive resettlement of SIDS populations has disrupted land tenure agreements and social cohesion, leading to conflict (Corendea, 2016). Thankfully, the social ties between Grenada and Trinidad and Tobago are quite strong due to the 166 km distance between the island, current solid cultural networks, existing circular migration patterns, and approximately 16% of the foreign-born population being Grenadians (United Nations Population Fund, 2017).

Caribbean Migration, Resilience, and Adaptation Strategies

Adelle Thomas and Lisa Benjamin interviewed four Caribbean negotiators from the Alliance of Small Island States (AOSIS) and found that all respondents acknowledged that climate-induced displacement is occurring in their respective countries. These occurrences were dealt with on the individual level, without any national policies governing relocation efforts. When reviewing the Nationally Determined Contributions for each Caribbean member state, only St. Lucia mentioned vulnerability priority mapping but did not include a relocation plan for the populations within these vulnerable areas (Thomas & Benjamin, 2017).

Guyana and Dominica are leading the Caribbean field in climate action planning, with the former becoming the first island to produce a standalone Climate Resilience Strategy and Action Plan and the latter a Climate Risk Assessment Framework (Thomas & Benjamin, 2017.) While Grenada does not have a Climate Risk Assessment Plan nor a Resilience Plan, both concepts are integrated, albeit sparsely, into the nation's National Sustainable Development Plan 2020-2035 (National Plan Secretariat, 2019). Trinidad plans to conduct a Climate Risk Assessment within the next six years according to its Vision 2030: The National Development Strategy of Trinidad and Tobago 2016-2030 (Ministry of Planning and Development, n.d.) However, to date, no Caribbean nations have included planned mobility or displacement within these plans.

3. Methodology

This policy brief utilizes a mixed methodology approach of a non-exhaustive review of scholarly texts on mobility and migration, development, national adaption plans, international and regional mobility agreements, grey literature from IOM, and a case study of Tuvalu's climate-based mobility agreement with Australia. The collected literature was limited to materials published between 2008-2023. This fifteen-year time span was chosen as the literature regarding environmental refugees, and environmental migration (considered the first iteration of climate mobility literature) was sparse before 2007. Some literature that predates 2008 includes regional and bilateral treaties and agreements. The literature collection took place between October 2023 and March 2024.

The study began with the identification of keywords to utilize in the literature search in both Google Scholar and Brandeis University's collections database search tool OneSearch: climate mobility, climate migration, environmental migration, environmental refugee, and climate refugee. These were chosen through snowballing based on term appearances within the first round of climate mobility literature. Next, the terms Caribbean climate mobility, Caribbean mobility, Caribbean migration, Caribbean climate migration, and Caribbean migration agreements were searched to narrow the literature search to regionally specific mobility information. However, this search, after screening and removing duplications, returned thirteen regionally specific and useful (for this policy brief alone) peer-reviewed articles, so the search was expanded to include grey literature from sources such as the IOM and UN agencies.

The paper's hypothesis focuses on a positive correlation between skilled migration and host country human development. Therefore, the keywords migration and development and human development and migration were utilized within Google Scholar and OneSearch. This initial search led to the term human development nexus, which became the primary keyword for later literature searches. The term human development nexus Caribbean was also used; however, no articles helpful to this policy brief arose.

The search for sustainable development plans, risk reduction plans, and adaptation plans was limited to select from OECS and CARICOM nations only, as determined by previous mentions within the research previously conducted by Adelle Thomas and Lisa Benjamin. Grenada, Trinidad, Guyana, Dominica, and Barbados government websites were scoured for documents relating to the abovementioned plans. If absent, a search was conducted to verify a government plan's existence or lack thereof.

Choosing Tuvalu as a case study resulted from the first climate mobility search, as the nation's climate vulnerabilities and multiple labor treaties and agreements with other Pacific Islands were mentioned in multiple climate mobility and mobility agreement articles. The appropriate chapters of agreements addressing mobility were downloaded from Australian and New Zealand government sites and compared for similarities, differences, and legal gaps. Articles from the keyword search that included Tuvalu labor mobility or migration agreements were then consulted to determine the scholarly consensus on the impact of these agreements on both the host and origin nation.

Grenada's skilled livelihood needs were determined by reviewing the nation's Sustainable Development Plan 2020-2035, highlighting the skills and sectors that require an educated labor force to achieve the plan's vision within the allotted timeline.

4. Findings and Discussion

Existing Caribbean Climate Mobility Agreements and Policies

Caribbean islands are a party to several international and regional agreements that directly or indirectly address climate-induced mobility. Sustainable Development Goal (SDG) target 10.7 calls for states to "facilitate orderly, safe, and responsible migration and mobility of people, including through implementation of planned and well-managed migration policies." The Sendai Framework for Disaster Risk Reduction (SFDRR), which directly includes migrants as a stakeholder in disaster reduction policies and acknowledges relocation as a resiliency strategy, was ratified by CARICOM in 2017 (United Nations Office for Disaster Risk Reduction, 2023). The Paris Agreement (2015) includes a compulsory norm on climate displacement (Yamamoto & Esteban, 2021). The Global Compact on Migration, endorsed by most of the Caribbean, recognized that national and regional actors are best suited to determine their own mobility agreements (Francis, 2019). In 2014, Latin American and Caribbean countries agreed on a roadmap to combat statelessness by addressing asylum, labor mobility, and regional cooperation strategies to be nationally decided upon and implemented by 2024 (Francis, 2019). None of these agreements are binding, however.

As the introduction mentions, CARICOM and OECS have established regional labor agreements utilized in previous Caribbean disasters and hazardous events. However, these provide no stipulation for mobility in the instance of slow-onset climate-related events (Francis, 2019). The primary goal of both CARICOM and OECS's Free Movement Agreement (FMA) is to support regional economic integration and continuation, not environmental disasters and relocations. CARICOM, comprised of fifteen member states, was established in 1973 to eliminate barriers to regional trade and create a common market (Francis, 2019). A Revision to the original treaty in 2001 established a norm of free movement of all citizens of member states regardless of employment status and an additional amendment granting specific categories of "skilled" workers temporary access to all CARICOM labor markets without a work permit (CARICOM 2001; Francis, 2019).

Caribbean citizens who qualify under recognized skillsets, such as university graduates, teachers, nurses, and artists, can apply for a Certificate of Recognition of Skills Qualification to obtain employment in other OECS or CARICOM member states (Francis, 2019). While only 10% of the population from CARICOM nations fit the definition of skilled citizens, intraregional migration to Antigua and Barbuda, Barbados, Belize, Dominica, and Grenada (in spite of its poverty and economic prospectives) has increased under this agreement (Francis, 2019).

OECS's FMA differs from CARICOM by extending the right to seek indefinite residence and labor in all OECS nations outside the nation of origin. This has been utilized extensively for post-disaster contexts, such as 2017's Atlantic Hurricane season, which displaced 3 million people within a month (Francis, 2019). However, the downfall of these free movement agreements is that immigration officials are given discretion as to who should be allowed admission under the lax migration policies of many of the signatory nations (Francis, 2019). Third-country nationals are vulnerable, such as the case of St. Lucian and St. Vincent medical students during Hurricanes Harvey and Irma, where one-third of international students were unaccounted for (Francis, 2019). Lastly, the cultural integration of the Caribbean makes distinguishing between cultures and countries nearly impossible when legal identification is not present. With the aforementioned lax

policies and discretion of immigration officials, innocent citizens may be turned away from entry due to resembling, sounding, or displaying stereotypical behavior of a non-OECS country resident.

As a plethora of studies have predicted an increase in hazardous weather events in SIDS, resiliency strategies and plans have become a central focus of Caribbean and Pacific Island governments (Yamamoto & Esteban, 2021). However, these policies and national plans neglect to address or incorporate displacement, migration, and planned relocation strategies that may aid in increasing resiliency (Nansen Initiative, 2015; Yamamoto & Esteban, 2021). Kiribati's government has expressed human mobility as a favorable adaptation strategy, as it aids in building its citizens' education and skills. If the island's outlook is not as dire as portrayed in extreme projection models, its citizens abroad can assist in human development through skills exchange, circular migration, and/or remittances (Yamamoto & Esteban, 2021). Caribbean nations now possess the opportunity to follow suit in such paradigm shifting thinking.

Human mobility, driven by the current and future climate outlook, should be viewed as a resiliency-building strategy by alleviating population density during disasters and high-risk climate events. Caribbean nations should address and analyze the effectiveness of the current view of mobility as a disruptive process that requires restriction rather than a recognized adaptation strategy with the probability of providing net benefits to the host and origin country. After a thorough analysis of the mobility frameworks between Tuvalu and Australia, we will analyze the situations of Grenada and Trinidad for a case study of how a regional mobility framework can benefit both nations and what policies can be gleaned from the Pacific Island agreement to aid in skilled labor transfers for industries vulnerable to climate change events.

Tuvalu and Australia's Bilateral Agreement: Australia-Tuvalu Falepili Union Treaty

The Australia- Tuvalu Falepili Union treaty is a recent agreement between both nations signed in November 2023. This first bilateral climate mobility agreement allows for the resettlement of a maximum of 280 Tuvalu citizens annually in Australia via a specialty visa, assistance with Tuvalu's climate resilience and climate event response, with Tuvalu promising to assist Australia with any defense needs such as border protection, cyber security, and energy infrastructure (Australia-Tuvalu Falepili Union Treaty, 2023). Below is the text from the treaty's climate cooperation and mobility articles.

Table 2: Articles 2 and 3 of the Australia-Tuvalu Falepili Union Treaty

Article 2: Climate cooperation
(1) The Parties, in the spirit of friendship, mutual respect and support for enduring shared interests, including each other's stability, security, prosperity and resilience, commit to work together in the face of the existential threat posed by climate change. (2) The Parties recognise: (a) the desire of Tuvalu's people to continue to live in their territory where possible and Tuvalu's deep, ancestral connections to land and sea; (b) the statehood and sovereignty of Tuvalu will continue, and the rights and duties inherent thereto will be maintained, notwithstanding the impact of climate change-related sea-level rise; (c) that more recent technological developments provide additional adaptation opportunities. (3) The Parties commit to work together to help the citizens of Tuvalu to stay in their homes with safety and dignity, including by promoting Tuvalu's adaptation interests to other countries, including through regional and international forums.

Article 3: Human mobility with dignity

(1) Australia shall arrange for a special human mobility pathway for citizens of Tuvalu to access Australia which shall enable citizens of Tuvalu to:

(a) live, study and work in Australia;

(b) access Australian education, health, and key income and family support on arrival.

(2) To support the implementation of the pathway, Tuvalu shall ensure that its immigration, passport, citizenship and border controls are robust and meet international standards for integrity and security and are compatible with and accessible to Australia.

(3) Australia shall provide assistance to Tuvalu to enable it to meet its obligations under paragraph 2 of this article.

Source: Australia-Tuvalu Falepili Union Treaty, 2023

The focal point of the treaty is to assist Tuvalu in establishing resilience and defense; however, both nations agree that a planned relocation component is an essential measure. In perspective, nearly 50% of the land area of Tuvalu's capital city, where approximately half of its 11,000 citizens reside, by 2050 is projected to be flooded daily by rising tides (Jackson & Jackson, 2023). If the maximum cap of Tuvalu citizens decides to relocate between this year and the 2050 projection, slightly more than one-quarter of its citizens, adjusted for the birth rate, would remain. The remittances from abroad citizens and the fiscal relief on Tuvalu's government from providing infrastructural services in the midst of depopulation, in theory, aid in the nation's ability to invest in resiliency and adaptation strategies.

Like Trinidad, Tuvalu's economic outlook is precarious due to extreme climate events. It relies primarily on the service industry and agriculture ("Tuvalu, 2024"). Planned relocation can benefit Tuvalu by building skills for diversified economic development and providing a more prospective job market for those already established within the agricultural or service industry, who can, in turn, provide remittances.

Tuvalu and Australia are both parties to the regional labor mobility-based agreement PACER Plus Agreement. However, despite its brevity, the bilateral Australia-Tuvalu Falepili Union Treaty provides more robust protections and assurances for both nations. The PACER Plus Agreement does not explicitly mention climate resilience or pathways for mobility outside of selective labor qualifications (Labour Mobility Arrangement, 2022).

Due to the conciseness of each article, this treaty's scalability within and without the Pacific is relatively simplistic. To transpose such a treaty to our East Caribbean context of Grenada and Trinidad, population imbalance, sectoral skill needs, and Trinidad's incentive to enter such an agreement must be addressed.

Grenada's Livelihoods Needs

Three areas directly pinpointed by Grenada's National Sustainable Development Plan 2020-2035 as skill gaps in the domestic workforce are Science, Technology, Engineering, and Math (STEM), Information and Communication Technology (ICT), and Agriculture Professionals (National Plan Secretariat, pg. 75, 2019) The plan acknowledges that Grenadian based Technical and Vocational

Education and Training (TVET) centers currently are not equipped to provide certification in a wide breadth of skillsets, especially in highly skilled sectors (National Plan Secretariat, 2019).

Trinidadian Transferable Skills

- **Transitioning from Petrol to STEM Professionals**

While the primary component of Trinidad's coastal economy is the petroleum sector, a resource Grenada does not produce, the skills required to work in these industries are highly transferrable beyond the energy sector. They can be utilized in Operations, as Technicians, Engineering, Project Management, Sustainable Business Development, Supply Chain Management, and Finance (Energy Transition Institute, 2021). The specialization required for the petroleum sector is technically STEM-adjacent, meaning a transitioning workforce could fill some of the skills gaps in this area.

- **The Digital Economy: Smart Small State Grenada, W.I.**

Grenada began its formal efforts to create a digital economic sector in 2000 as a strategy to catalyze sustainable development for the island. The plan envisioned a digital transformation in governance, education, and commerce to be accomplished by 2010 (United Nations Development Programme, 2021). However, the hurricanes in 2004 and 2005, which wiped out nearly 90% of the island's infrastructure, and an economic recession from 2007-2010 caused the Grenadian government to shift its focus, creating digital infrastructures for social protection and well-being programs instead (World Bank, 2019). To date, 78% of the island has access to the internet ("Grenada," 2024). As Grenada works to meet its new 2035 deadline for economic digitization, it is imperative that the island recruit skilled labor to upscale the current digitization process and then upskill the island's citizens enough for seamless formal and informal labor integration.

Compared to other East Caribbean islands, Trinidad is ahead in integrating its economy within the digital sector, with established coding and information systems and certifications (United Nations Development Programme, 2022). Moreover, Trinidad's efforts are advanced enough to warrant a standalone government ministry dedicated solely to digital transformation (United Nations Development Programme, 2022). By gleaning best practices from Trinidadian ICT experts, Grenada's learning curve can be greatly reduced.

- **Climate Resilient Agricultural Investment**

Trinidad has already surpassed Grenada technology-wise in the agricultural sector despite the sector's little direct economic impact, with the presence of multiple established hydroponic and vertical farms, which can help increase production without additional labor or recurring input costs on both commercial and smallholder scale (Green Age Farms, 2021; Di Pastena, 2022). Although vertical farming is not profitable (Ehmke & Zuckerberg, 2022), it may hypothetically assist in reducing Grenada's dependency on foreign export markets and offer produce varieties that are unavailable externally due to the island's unique climate. As Trinidad is already versed in establishing these climate-resilient technologies within a Caribbean climate, Trinidadian industry experts should be prioritized within the proposed labor agreement to assist in the securing of the smaller state's vulnerable food supply chain.

Incentivizing Trinidad and its Citizens

Planned relocation and labor mobility are voluntary in nature. In this current climate, the ethics and power imbalances associated with incentivizing a population to migrate are still being debated (Corendea, 2016).

Australia's most significant gain from the bilateral treaty was the ability to approve any security or defense agreement Tuvalu wished to enter and, for Tuvalu, a semblance of fiscal and human security (Australia-Tuvalu Falepili Union Treaty, 2023; Su, 2024). The net benefits are not so obvious when determining within a Caribbean context. However, one key area Grenada may offer Trinidad an incentive for planned relocation is addressing the state's current non-national employment process.

Grenada's Foreign Nationals and Commonwealth Citizens (Employment) Act currently bars non-nationals from obtaining work permits without employers going through a rigorous process of verifying through extensive documentation that no Grenadian citizen can fulfill the employment opportunity (Legislature of Grenada, 2017). While protecting the domestic market, this same measure provides a barrier to capacity fulfillment in several critical development sectors. Utilizing a treaty to bypass the Employment Act for preselected skills and sectors may serve as an incentivizing factor for Trinidadian citizens considering transitioning from their climate-vulnerable livelihood outlook to participating in a burgeoning market.

Potential Trinidadian Concerns: Population Influx Concerns, Integration

Grenada has a higher population density rate than Trinidad, predominantly due to Grenada's small land mass of 367 square kilometers ("Grenada," 2024). Both population density figures of 389 persons per sq. km for Grenada and 297 per sq. km. for Trinidad (World Bank, 2024) are not so dissimilar to disrupt the quality of life for migrating Trinidadians. Grenada does not currently have the housing infrastructure to house a wide range of migrating populations, as vacant plots comprise 90% of all real estate sales (Century 21 Grenada Real Estate Valuations Division, 2023), a byproduct of Grenada's revitalized effort to establish land use policy (OECS & Global Climate Change Alliance, 2019). However, there are five planned developments for the Parish of St. David and a renewed campaign to incentivize non-nations investment in the construction of multi-use developments rather than the traditional single-family household for the island (Century 21 Grenada Real Estate Valuations Division, 2023).

While culturally, Trinidad and Grenada share many qualities, the ethnic and religious makeup of the two islands differs. For Grenada, people of African descent make up 82% of the population, and South Indians 2.2% ("Grenada," 2024). The South Asian population of Trinidad is relatively equal to the population of African descent, approximately 35% for each group ("Trinidad," 2024). While both populations are majority Protestant ("Grenada," 2024; "Trinidad," 2024), the South Asian population of Trinidad has Hindu practitioners whose religious needs and institutional accommodations must be proactively addressed and embraced.

5. Policy Recommendations

The primary limitation of this research is the lack of qualitative data regarding the probability that a Trinidadian citizen facing coastal livelihood vulnerability would consider Grenadian migration a viable avenue over labor displacement and domestic workforce adaptation. However, this should not deter government policymakers from establishing controlled proactive mobility measures that assist in education and skill building without overwhelming the infrastructural capacity of the small island.

Redefine Skilled Labor

Skilled labor, as defined by the CARICOM and OECS, is too narrow a definition for Grenada to adequately fill its current skilled labor needs as the nation attempts to upskill its domestic workforce rapidly. While the certification process offers standardization and verification of skill sets, this also serves as a barrier for those without access to TVET certification centers. The cost of certification may also be a sizeable barrier, especially for those who are successful within the less profitable agricultural field and have no formal training outside of workshops and knowledge exchanges. Expanding the definition beyond the certification process will allow coastal and agriculture sector entrepreneurs a pathway excluded to them by discretionary immigration. Extending the opportunity for small-business investment in underdeveloped Grenadian sectors has no downsides, with an increased federal budget for Grenada and remittances for coastal Trinidad.

Redefinition should not be limited to the sectors mentioned within the findings and discussion subsection of this brief but should be critically addressed every three to five years to determine underdeveloped sectors and the variations of skilled labor that might catalyze their development.

With the population of Grenada being a mere tenth of Trinidad's, policymakers must consider the size of the mobility cap and its projected impact on domestic citizens' employment and entrepreneurial outlook. Nevertheless, in the interim gap before Grenada is projected to meet its trained workforce goals, Grenada's governance should not shy from raising the cap to a maximum that supports the filling of current gaps, lest a widening occurs within those sectors or in upcoming ones.

Upscale the Inaugural Mobility Framework

The greatest value of establishing such a climate mobility bilateral treaty is its scalability within and without the Caribbean. The transference from the original Australia-Tuvalu Falepili Union Treaty to the proposed Grenada-Trinidad version listed below consisted of determining ideals and prioritizations suited to the country context, leaving room for duplication and transposition by other states to best suit their current development needs.

As Grenada's skills gaps primarily affect education, information technology, STEM, and the agricultural sector, applicants displaying verifiable proof of certification, education, or successful entrepreneurial endeavors in these sectors should be prioritized. However, as societies do not function solely around the success of these sectors, skilled labor from the fields of development, resiliency, resource security, and sustainability must be consulted to determine sectoral gaps that may exist outside the perspectives of government policymakers.

Table 3: Outline of Potential Grenada-Trinidad Climate Mobility Labor Agreement

Proposed Grenada-Trinidad Climate Mobility Agreement Framework

(1) Grenada recognizes the impact of slow, onset climate change-related sea-level rise to Trinidad's coastal labor force. As many of these skills are transferrable to industries where Grenada is experiencing the most significant labor and development gaps, the following labor mobility agreement has been proposed:

(2) Grenada shall arrange for a human mobility pathway via a specialized visa for citizens of Trinidad to access Grenada's labor markets in specific areas, which shall enable residents of Trinidad to:

> **(a)** live, study and work in Grenada without the procurement of a work, study, or like visa;
> **(b)** access to Grenadian education, health, safety nets, and social protections on arrival.

(3) Priority will be given to skilled labor in Grenada's developing sectors of STEM professionals, ICT, vocational education, and agriculture professionals. Priority areas will be reassessed every three years and amended.

(4) Skilled is defined as having a formal education and certification within any of the aforementioned fields, or an entrepreneurial endeavor within the same aforementioned fields with no/limited education background, as long as verifiable evidence is presented of a successful 3+ year duration of entrepreneurial endeavors within the priority sectors.

(5) Resident is defined as citizens and non-citizens of Trinidad, who have established their residency within the nation for at minimum one year, verifiable through census records.

(6) The annual cap of the availability of these visas is .5% of the overall count of Grenada's labor force from the preceding year. Exemptions may be provided to entrepreneurs and TVET teachers within priority sectors.

(7) To support the implementation of the pathway, Trinidad shall ensure that its immigration, passport, citizenship and border controls are robust and meet international standards for integrity and security and are compatible with and accessible to Grenada.

Source: Adapted from Australia-Tuvalu Falepili Union Treaty, 2023

Wicked Problems, Collective Solutions

Development requires more resources than Caribbean SIDS can feasibly self-fund. Mobility requires more of the same, with the added risk of alienating domestic citizens who view the government's actions as favoritism of foreigners over the needs of their own communit ies. Herein lies an opportunity for Grenada to garner the support of non-governmental agencies and developed nations to assist in its planned relocation efforts fiscally. Firstly, Grenada may argue that investment in the island may decrease the need for regional investment from outside sources. By focusing on the nonprofit eye, specifically on the underdeveloped digital economy, STEM, climate adaptation, and agricultural technology sectors, Grenada can position itself as a Caribbean hub in these areas, drawing not only Trinidadian labor migrants but those of other precarious islands such as Barbados who, upon return provide knowledge transfer to their original nation, or provide increased remittances due to increased economic output. Grenada may also point out the cost-effectiveness of supporting short-distance, incremental migration in lieu of the predicted increase in mass, population-dense evacuations to the island in the midst of an extreme climate event.

6. Conclusion

The climate mobility-human development nexus has yet to replace the originating paradigm that migration flows primarily from low-income to high-income states. However, its hypothesis seems to hold true as livelihood vulnerability's indiscriminatory effect of states of all income statuses.

The CARICOM and OECS regional agreements, in which Caribbean islands are a party, have been utilized in the past to assist with relocation during severe climate events (Francis, 2017). However, direct protections to mobility in the case of climate change are not written into the agreement. Furthermore, they do not cover any citizens requesting relocation due to slow-onset climate-induced livelihood vulnerability. Rather than continue the Caribbean trend of excluding mobility and planned relocation from Disaster and Risk Reduction or Resiliency planning, Grenada has the opportunity to build capacity in key sectors lacking a skilled workforce by prioritizing and incentivizing the workforce of climate-vulnerable livelihoods to settle in a dignified context in a nation of similar cultural norms, while obtaining valuable education and skill sharing.

A treaty, similar to the one proposed within the Policy Recommendations subsection of this brief, supersedes the privileges and protections provided by the CARICOM FMA. It bypasses the probationary 6-month visa and promises cultural and fiscal integration assistance to relocating citizens. By accepting residents rather than Trinidadian citizens alone, third-country nationals are not left out of the conversation, as evidenced by their exclusion during the 2017 Hurricane Season (Francis, 2019).

The effects of slow-onset climate change will not escape Grenada. However, with its volcanic and mountainous terrain and the current executive administration's newly actionable focus on resiliency and sustainable development, livelihood resiliency may be more secure in Grenada, especially for the coastal and agricultural sector workforces, compared to Trinidad's current outlook.

Climate mobility as adaptation research has pointed to successful outcomes in Sahel, West Africa (Hummel, 2016), and is now policy for Pacific Islands (Australia-Tuvalu Falepili Union Treaty, 2023). Rather than rely on currently existing CARICOM and OECS frameworks to provide indirect protections or shields, Grenada must protect its own efforts of sustainable development through the rapid upskilling of its citizens, to which a climate mobility pathway provides a viable solution to do so while retaining the dignity of Trinidadian citizens faced with precarity in the forecasted future of coastal livelihood disrupting climate events.

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