CLIMATE CHANGE ADAPTATION AND POLICY IN PACIFIC SMALL ISLAND STATES: SAFE HAVENS OR ADRIFT AT SEA?

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ABSTRACT

Pacific Small Island States (PSIS) are in the precarious position as some of the first jurisdictions to grapple with the current and forecasted effects of climate change, such as forced migrations and loss of culture. Yet, islanders' viewpoints are neither often fully understood nor heeded by those at the international decision making levels. Therefore, how and to what extent are PSIS successfully preparing for climate change?

This completed study used a mixed methods approach that examines nissology – how islanders view and understand themselves – and its relationship with successful (discussed and defined within the study) adaptation planning. The study also used a mixed methods approach to juxtapose the findings of the nissological and success analyses with a second research question: an in-depth study and analysis of regional and global policymaking entities, and the degrees to which they may influence islanders' preparation for climate change.

The study examined 18 PSIS and their Climate Change Adaptation Plans (CCAPs) and then interviewed PSIS' representatives at their respective Missions to the United Nations in New York City to evaluate how PSIS view and foresee current and future policies regarding climate change at the global, regional, and local levels. Then, fieldwork was performed within the United States Territories in the Pacific: American Samoa, Guam, and the Northern Mariana Islands to obtain on-the-ground information regarding implementation of plans, policies, and projects.

The study attempted to address two specific gaps in the literature via the triangulation of methods and data: the relationship between an island-centric viewpoint of

CCAPs and successful climate change as well as how policymaking in the Pacific at the local, regional, and global levels either assisted or hindered successful climate change adaptation policy.

The results suggested answers to these two key questions as well as several unexpected or emergent findings. Regarding the two principal research questions, PSIS that crafted their CCAPs in a more nissological or island-centric manner were indicative of states that were foreseen to be more successful in adapting to current and future climate change effects. Next, PSIS that were part of AOSIS, the various regional associations, and those PSIS that had complete sovereignty (independent) were indicative of those PSIS expressing greater overall success at preparing for climate change than those PSIS not meeting these criteria. However, not all PSIS had the opportunity to become members of AOSIS or certain regional organizations for various reasons.

Finally, a policy document was created at the end of the study to illustrate some of the best practices based upon this study's findings. Immediately preceding the policy document are other emergent findings indicative of future areas of research and exploration within the realms of nissology, regional associations and partnerships, and successful climate change adaptation.

To the islanders of the world.

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CHAPTER 1
INTRODUCTION TO CLIMATE CHANGE AND ISLAND STATES

Problem Statement

Pacific small island states (PSIS) are Earth's *frontline states,* acting as early warning systems for global climate change and situated at the forefront of emerging policy-based solutions (Betzold, 2010, p. 139–140; Lata & Nunn, 2012, p. 170–171; Petit & Prudent, 2008, p. 175). There is no denying the far-reaching environmental and legal issues imposed by the effects of climate change. These difficult implications include loss of sovereignty and culture, forced migration, and disruptions of national and cultural institutions when islanders can no longer inhabit their independent and self-governing states (Lange, 2010, p. 613).

The 18 PSIS in this study anticipate and react to climate change via state climate change adaptation plans (CCAPs), policies, and projects that are robust and forward thinking. This research describes how the responses within the susceptible region are constructed, examining the roles of *islandness* – or *nissology* – as a lens through which plans are developed, the roles of regional organizations and governance-related influences in shaping the CCAPs and associated policies and projects, and finally better understanding and comparing PSIS' vulnerabilities. Although PSIS' actions are currently commanding and influential, the research aims to uncover the degree to which their strategies are successfully operating.

The study will also discuss the importance of a nissological understanding of islands within climate change preparation and adaptation strategies. This understanding will be juxtaposed with regional and global decision making networks that currently emphasize varied, semi-functioning solutions. The urgency and seriousness of the study

brings several climate change issues to the forefront that are forecasted to be addressed in a few months at the next United Nations Framework Convention on Climate Change's (UNFCCC) Council of the Parties in late 2015.

While disparate areas of the globe are already feeling the effects of climate change, current state-specific and regional responses regarding climate change tend to be reactive and not based in prevention. In other words, some of the plans are not designed to promote long-term resilience and stability. PSIS "are already adapting to the impacts of climate change at an individual or community level," however these adaptations "must be recognized as reactive adaptation" and states "must undertake anticipatory planning to enhance resilience and reduce vulnerability . . . beyond the community level" (Brewer, 2004, p. 163). Although regional "cooperation through alliances such as the Alliance of Small Island States (AOSIS) has been fundamental in the promotion" (Brewer, 2004, p. 155) of PSIS' predicaments, "more work needs to be done to develop response strategies and to adopt appropriate planning and adaptation measures for the [Pacific] Region" (Brewer, 2004, p. 174). The planning process regarding PSIS and their plans has begun, and while "Pacific Island governments . . . state that they are committed to long-term and sustainable solutions to the environmental challenges of the future," they consistently "appear preoccupied with short-term reactive and commonly event-driven responses" (Lata & Nunn, 2012, p. 182).

A large problem is that PSIS lie within the global commons where all nations emit pollution, consume finite resources, and produce goods. Yet, smaller states exhibit difficulty with allocating resources to deal with the negative externalities of the global commons because of their sizes and limited budgets (Government of Papua New Guinea,

2012, p. 25). Sometimes regional bodies "can potentially overcome the commons dilemma of overuse and mismanagement," but this requires successful establishment of such an agency at a particular scale (Gerlak, 2004, pp. 116–117). Not only has an "unequal distribution of past and present emissions, between developing and developed countries . . . been at the core of the dispute," so too have population-based quandaries of inhabitants and their activities (Bošnjaković, 2012, p. 639). Essentially, issues of cooperation, influence, and negative environmental externalities have been at the root of the problems faced by PSIS.

A Brief History of Global Climate Change Policy and Adaptation Plans

Global climate change policy can be placed into five distinct periods (Gupta, 2010). Global climate change was first formally addressed in the international sphere during the 1979 World Climate Conference in Geneva. In that first decade from 1979 through 1991, the issue was framed and "triggered off a series of scientific and political conferences" (Gupta, 2010, p. 636). The World Climate Conference concluded the meeting by stating it essential for "all nations to strongly support . . . immediate strategies to assist countries to make better use of climate information in planning for social and economic development" (Zillman, 2009, pp. 143–144). The quest continued with follow-up meetings in the 1980s which mostly helped to educate about greenhouse gases, global warming, and "the role of carbon dioxide . . . in climate variations and associated impacts" as well as discussing the nascent concepts of climate debt, responsibility, and leadership as key focus areas (Gupta, 2010, pp. 638–689; Zillman, 2009, p. 144). By the end of the 1980s, just 9 years after the World Climate Conference, "the World Meteorological Organization and United Nations Environment Programme joined to form

the Intergovernmental Panel on Climate Change (IPCC)," standing as the vanguard of climate policy today (Jacobs, 2005, p. 108).

The second period during the mid-1990s formalized that the global issue should be left to the United Nations rather than lower bodies of power and that differences between developed and developing states needed to be clearly articulated. With political and environmental ambiguities throughout the agreements, details related to technology transfer and reducing emissions were open to alternate interpretations and were easily swayed by more powerful members of the negotiation teams (Gupta, 2010, pp. 639–642). AOSIS "became one of the most vocal participants in the negotiations" (Betzold, 2010, p. 131) and "advocated a further agreement with stronger commitments, particularly emission targets" for developed countries. AOSIS succeeded in achieving binding targets, and the targets were not robust and were viewed as a halfway point between AOSIS's point of view and those countries not wanting set targets (Betzold, 2010, p. 138).

The years 1997–2001 marked the middle period of global climate change policy, which focused on three themes: (a) whether concrete action should take place, (b) the codified calculations by which to base these actions with concern to developed countries' requirements, and (c) overall disagreement as a forceful policy document neared (Gupta, 2010, p. 645). The Kyoto Protocol was officially adopted in 1997 to reduce greenhouse gases for a set target period that started a decade later. Just as the previous two periods illustrated, it led to both fundamental and calculated disagreements reaching back to the very foundations of the agreement that was called weak with regard to its targeted reduction rates. Somewhat expectedly, factions arose, representing regional and sociopolitical points of view. AOSIS, the United Nations' G-77 group of developing

countries, and even small oil-exporting nations described the Kyoto Protocol as "weak" (Kyoto Protocol to the United Nations Framework Convention on Climate Change, 1998). This period marked an expansion of the definition of climate change, including the concepts of reductions and sinks, with "more attention being given to adaptation because the global community would already be facing certain impacts and . . . increasing demands for assistance on adaptation" (Gupta, 2010, pp. 643–645). These expansions highlighted the fragility of the agreement, with the United States' withdrawal, as well as the opportunity for an anticipated strengthening "in the next commitment periods and was complemented by more limited regional agreements" (Grasso, 2006, p. 254).

The next period in the mid-2000s marked the withdrawal and absence of the United States from Kyoto. However, the growth of the United States' presence in alternate market and environmental treaties via bilateral and multilateral treaties grew. Subnational environmental control regimes grew at the regional, state, and city level within nonparticipating countries because of a thirst for implementable solutions when it became obvious that Kyoto was not promising any extraordinary results (Gupta, 2010, pp. 646–648). Overall, a growing sense of frustration and lack of momentum prevailed; discussion began in earnest in 2005–2006 regarding recognition in international law of the still contested term *environmental migrant* because of climate change. Although much has been discussed and written about this subject, there were passionate viewpoints from both sides of the aisle, and to this day, it is "hard to foresee any realistic consensus on an expanded definition" of what is a *refugee* (Brown, 2007, pp. 25–26).

Finally, from approximately 2008 onward, policies and politics continue to be surrounded by uncertainty. The uncertainty began with further dilution of climate

protocols when errors in data were sensationalized, casting entire Intergovernmental Panel on Climate Change reports into doubt, and the Copenhagen Conference of the Parties meetings failed to secure tangible targets after the first reporting period ended in 2012. A lack of enforcement or forced administration continued to prevail within the Kyoto system, leading to questions of other legal routes for vulnerable populations (Gupta, 2010, pp. 648–650). Weakening agreements and amendments have continued to keep the Kyoto Protocol alive, but its future is unclear. Although the actions of the past 25 years have perhaps helped curb emissions, the situation of PSIS continues to be exacerbated by global climate change. A rise in greenhouse gases unabated by protocols and conventions has "not yet managed to halt the global increase in the quantities of greenhouse gases released into the atmosphere," although the prospect of future bilateral or global treaties could result in "stabilization and eventual reduction in greenhouse gas concentrations in the atmosphere" (Yamamoto & Esteban, 2011, p. 41).

Recently, the US and China announced a bilateral accord; the US and India, too, have pledged joint efforts (Friedman, 2015, p. 1). These bilateral agreements have the potential to lower emissions from major emitters; at the same time, greater reliance on bilateral agreements would represent a major shift from the global strategy of the past 40 years, likely leaving PSIS marginalized with respect to influencing global climate change and policy planning.

Predicament of Small Island States and Pacific Region

Even with the Kyoto Protocol and other international climate change agreements in place, a lack of efficacy, timely results, and action have led to growing difficulties for PSIS in adapting to climate change. This state of inaction exacerbates natural and human-

induced features extant to PSIS and island groupings throughout the world, increasing vulnerability while matters (or policy) remain unsettled.

Sinking islands are an aspect of climate change that captures the world's interest and imagination concerning the Pacific Region and other island groupings. Although this scenario has occurred within very localized areas of PSIS, it is truer to depict a situation in which atoll island residents are forced to relocate long before the ocean is lapping at their front doors – because of frequent saltwater intrusion into drinking water, loss of arable land, and increased flooding (Tompkins, Nicholson-Cole, Hurlston, et al., 2005, p. 20). Two PSIS that are often cited are the "so-called 'sinking islands' of Kiribati and Tuvalu," because they are low-lying atolls. These islands' reactions to climate change are "less likely to be in the nature of sudden flight, and more likely to be pre-emptive and planned," but the logistical, legal, and political ramifications of the causes and eventual migration is what places PSIS in a very precarious position (McAdam, 2010, p. 1).

Scant land area, isolation, and lack of travel options and accessibility lead to increased vulnerabilities of islands in PSIS. Nauru, Palau, and Tuvalu have such small land areas that if the three countries were combined, the landmass would be approximately 82 km^2, about half the size of Washington, D.C. (Tutangata & Power, 2002, p. 874). When the elasticity or resilience to certain climatological events is stretched, it can lead to increased vulnerability when PSIS' options are severely limited in land area and there is simply no other place to move (Tuvalu Department of Environment, 2007, p. 13). Larger islands and high islands can have the advantage of greater land areas where "facilities and infrastructure could be moved inland to reduce risk," but "low-lying portions of high islands will be much the same as those experienced

on low islands" (Keener, Marra, Finucane, Spooner, & Smith, 2012, p. 80). Further highlighting the small amount of land area is a lack of nissological (island-centric) understanding. Large continental countries are not familiar with small, finite, nonexpansive swaths of land comprising a sovereign state simply because of large countries' learned experiences of living on large landmasses (McCall, 1996, p. 82).

A further dilemma is the inability to adapt to the current and forecasted effects of climate change because of regional and political agreements—or lack thereof. On a regional scale, a dearth of intercountry transportation, limited wealth, visa and employment issues, and limits to free movement quash a potential stressor release: free movement (Bedford, 2008, p. 5; Ware, 2005, p. 236). Although the degree of insularity—how much an island looks outward toward the world or inward toward itself with little outside interaction—can affect regional cohesion, the lack of robust international standards addressing climate change can stop cooperation at political boundaries. How should climate debt be allocated? To those emitting the most emissions currently, at 1990 levels, in the past, or even those that stand to gain the most by a reduction of greenhouse gases into the global commons (Page, 2008, p. 556)? Because these questions have neither an accepted nor an internationally recognized answer, the predicament continues.

The issue of climate adaptation and mitigation policies is difficult to assess in terms of successful methodologies and prudent approaches. The question of what constitutes success in addition to the ideological approaches to differing adaptation and mitigation plans forms an important crux for PSIS when approaching climate change.

> [The] success of an adaptation strategy or adaptation decision depends on how that action meets the objectives of adaptation, [and notwithstanding that] an action that is successful for one . . . organization or level of government may not be classed as successful by another. [The success]

> can be argued to depend not only on its effectiveness in meeting defined goals, but also on issues of equity and perceived legitimacy . . ..” (Adger Arnell, & Tompkins, 2005, pp. 78, 82)

This means that the goals are subjective to the initiators and their planned beneficiaries whereas the same action in an adjoining jurisdiction could be detrimental (Adger et al., 2005, p. 82).

Status of Climate Change Policy in PSIS

Along with almost every other country, PSIS have signed and ratified the Kyoto Protocol; however, the mitigation-based effects of the protocol are slow, in the pipeline, and do little to accelerate the adaptation-based policies needed to address such factors. PSIS have—oftentimes with the assistance or in tacit association with the United Nations—created siloed CCAPs that are moderately individualized to the particular PSIS in question (Republic of the Marshall Islands, 2011 p. 12; Government of Niue, 2012 p. 12).

Although individualization of climate change plans is beneficial, it underscores the notion that all PSIS are independently attempting to address a global issue. When the smallest of the PSIS are preparing for rising sea levels, or when the topographically flat atoll states attempt to move infrastructure away from vulnerable areas, where do they go? In Tuvalu, one of the PSIS projected to be hardest hit because of its severely low elevation and number of islands, the government is attempting to protect its shoreline, prepare for shortages of water, and introduce salt-tolerant crops, among other adaptation methods (Tuvalu Department of Environment, 2007, p. 38). Samoa has different goals based on its particular environmental concerns on island, including loss of community

assets (Samoa Ministry of Natural Resources Environment and Meteorology, 2005, p. 14).

Although AOSIS advocates at the United Nations level on behalf of PSIS politically, the Council of Regional Organizations of the Pacific (CROP) "exists to ensure that regional organizations pursue their collective aim of achieving sustainable development in the Pacific Island Countries and territories," and is composed of the Secretariat of the Pacific Community (SPC), the Applied Geoscience and Technology Division, the Pacific Islands Applied Geoscience Commission, South Pacific Applied Geoscience Commission, and other associated agencies (Pacific Islands Applied Geoscience Commission, 2014, p. 1). The SPC was founded immediately after World War II to "restore stability to a region that had experienced the turbulence of the Second World War, to assist in administering their dependent territories and to benefit the people of the Pacific" (SPC, 2011, p. 1). Until Samoa gained independence in 1962 the SPC was leading an area that was almost completely non-sovereign. Over the past 50 years, the scales have tipped so that independent PSIS outnumber territories and possessions.

For CROP to achieve this sustainability its focus areas involve fisheries management, developmental programs, environmental policy, education, power generation, and regional relationships that help to create economies of scale in the large geographic region (the Pacific Islands Applied Geoscience Commission, 2014, p. 1). CROP addresses climate change and assists in guidance, funding, and tools for implementation rather than directing overarching regional policy. This strategy underscores the individualistic and varied adaptation approach to climate change in each PSIS through CROP agencies like SPREP, the Secretariat of the Pacific Regional

Environmental Programme (SPREP, 2014, p. 1). Although branches of CROP habitually work with PSIS in their climate change endeavors and have similarities within their implementation schemes, the projects and activities are at the discretion of the PSIS.

Defining Success: Hypotheses, Objectives, and Methods

This research explores how the formulas of climate change adaptation among 18 PSIS differ based on their components and actions, the regional dynamics, and their perceived and actual vulnerabilities. The objective of the research is to understand and evaluate the success with which states address climate change and to determine how and why some states more successfully address climate change. The definition of what constitutes successful adaptation needs to be determined first.

Many researchers have sought to define success and its relationship to an array of factors, but the definition is subjective and difficult to pinpoint. With "no consensus on the overall objective of adaptation and with little scope for defining the success or failure of adaptive actions," the lack of definition could be caused by a "lack of consensus" where "observed adaptation and its impacts on sustainability, equity and resilience use many criteria as their yardstick of success" (Doria, Boyd, Tompkins, & Adger, 2009, p. 810). There have been efforts "to define and find measures of successful adaptation" while simultaneously understanding that "unsuccessful adaptation need not mean that adaptation has significantly increased vulnerability – it may simply mean an action did not work" (Barnett & O'Neill, 2010, p. 211). Doria et al. described "successful adaptation as any adjustment that reduces the risks associated with climate change, or vulnerability to climate change impacts, to a predetermined level, without compromising economic, social, and environmental sustainability" (p. 815).

This research study used the definition by Doria et al. (2009) combined with the definition put forth by Adger et al. (2005) designating climate change success as being "both on the spatial and the temporal scale, and should not simply be assessed in terms of the stated objectives of individual adaptors . . . [a]daptation to climate change, therefore, can be evaluated through generic principles of policy appraisal seeking to promote equitable, effective, efficient, and legitimate action harmonious with wider sustainability" (Adger et al., 2005, p. 80). The combined definitions offered a comprehensive and specific subset of policy analysis research on which to base the study's forthcoming analyses and triangulation.

Next, the study analyzed the success of the PSIS using a modified version of the framework set forth by the 2009 address by Preston, Westaway, Dessai, and Smith, *Are We Adapting to Climate Change: Research and Methods for Evaluating Progress?* In place of where Preston et al. placed their "guidance instruments," the study substituted the 18 PSIS. Where Preston et al. placed their inputs, processes, and outputs, the study substituted 36 key characteristics of climate change adaptation success, labeled as Success Indicator Questions (SIQs) within the spectrum of the aforesaid success definition (Preston, 2009, p. 10).

Because the definition of success is broad, the 36 SIQs (see Appendix E) were evaluated for each PSIS. Many of these characteristics were derived from *Successful Adaptation to Climate Change: Linking Science and Policy in a Rapidly Changing World,* which itself scoured the broad range of what defines success, what may categorize the absence of success, and related policy and ambiguities where the frameworks intersect (Moser & Boykoff, 2013). Moser and Boykoff deeply scrutinized hundreds of

past, present, and planned studies and climate change strategies throughout the world. They admit that defining successful adaptation is difficult, because

> whether an adaptation is a success or not is ultimately determined by whether or not it has reduced the amount of loss or damage that may have arisen from climate change in the absence of adaptation [where a] counterfactual is hard to determine (Moser & Boykoff, 2013, p. 37).

Moser and Boykoff acknowledged that there is no list or recipe to evaluate successful climate change adaptation because of problems such as monitoring or evaluation or measurement for desired outcomes. However, through their research about which strategies begin to lean toward achieving or failing in climate preparation, three dozen key characteristics were ultimately derived specifically for this study (2013, p. 9).

Juxtaposed with the success indicators, McCall's eight principles of nissology served as a model to examine the content and view of each state's CCAP and associated plans, policies, and projects and how they align (or not) with the principles of nissology (Figure 1, McCall, 1996). A nissological approach is evaluated because it studies the uniquely island-centric viewpoints of islands versus more continentally driven strategies. Continental-based (non-island) viewpoints pervade in international policymaking because of PSIS' often peripheral and indirect influence. Nissological research examines how integrating the "nissological way" into "broader interdisciplinary (geographical) approaches" is key to understanding the multifaceted systems at work in islands and whether using this type of method leads to climate change adaptation and preparation for island states (Christensen & Mertz, 2010, p.285).

In evaluating the regional dimensions of the CCAPs, this research uses hypothesis testing to postulate observable outcomes seen within the PSIS via semi-structured qualitative interviews based on the behavior and cooperation between individual PSIS

and the region (King, Keohane, & Verba, 1994). Interviews were conducted with decision makers from the regional group AOSIS, based at the United Nations Missions in New York City and with residents and officials involved with climate change planning in the United States Territories in the Pacific.

Eight Principles of Nissology

- Islands have a clear delineation of land borders, but a less-firm comprehension of watery and maritime boundaries (LB).
- Significance is placed on ocean resources (SR).
- Recognition of past (or present) forceful acquisitions and use of island lands/territory by continental states (CC)
- The perceived scarcity of land quantity and resources increases as does the distance between the island and continent (PS).
- Islands are seen as culturally delimited and bounded lands, disparate to expansive continental states and cultures (BE).
- A sense of moderation or limitation can pervade islanders' thinking if they adopt a continental resource perspective (SL).
- Cooperation and creativity can be fostered within small islands because of close relationships and smaller populations (PP).
- Migration forms a large anxiety for island states—whether based on immigration or emigration (MT; McCall, 1996, pp. 82–83).

Figure 1. Eight principles of nissology.

The two hypotheses that this dissertation examined are as follows:

1. PSIS that use a CCAP based more deeply on a nissological understanding of "islandness" will have more successful plans, policies, and projects than PSIS with a neutral or more continentally derived CCAP.
2. PSIS that participate in AOSIS and the regional organizations will have more successful plans, policies, and projects for current and forecasted climate change adaptation than PSIS with a neutral or more continentally derived CCAP.

Significance of Study

Previous PSIS' studies have focused on dire climate change forecasts, imminent exposure to climate change effects, and the lack of political and related resources for coping with those effects (Betzold, 2010; Docherty & Giannini, 2009; Jacobs, 2005; Schofield, 2009). This study, however, examined not only the sensitivities of the islands but also their resiliency, factors they to which they are exposed, and how they incorporated these characteristics into their climate change plans. This study advances research on how PSIS address climate change through states' plans, policies, and projects. In its examination of some of the first states to anticipate and address complex and novel climate-related issues, the study advances research regarding creation of successful climate change responses and the factors that affect their creation.

Nissology is a relatively new framework by which to analyze and understand island states in particular (McCall, 1996). The analysis and derivation of success indicators is a difficult and contested area that can only predict a PSIS' success when the most appropriate proxies are used and implemented. Together, these human, societal, and environmental dimensions address complex issues regarding climate change and the local, regional, and global implications. The research provides a new multidisciplinary approach for understanding how responses within the region are constructed via CCAPs. It aids other states, island groupings, and regions facing similar issues to address current and forecasted impacts of climate change by filling in a gap regarding a comparative analysis of CCAPs. The successes and failures outlined within the study identify how PSIS and the region can better and more successfully plan for their own future at the frontline of climate change by using island-based plans, policies, and projects.

CHAPTER 2
LITERATURE ANALYSIS

The two central topics in the research are (a) nissology, also known as an island-centric lens, and (b) regional associations and partnerships. Through their theoretical understandings and collective foundations, the success of PSIS' CCAPs were analyzed and evaluated principally (but not exclusively) within the contexts of the literature on these topics. The topic and subject matter of success and successful adaptation was analyzed and discussed in the previous chapter as it directly related to the study's hypotheses and research methodologies; therefore, it is not replicated within the literature analysis.

Nissology, Island-Centric Lens, and Insularity

The conceptualizations of islands are packed with connotations, expectations, and beliefs underlain with numerous viewpoints. For these reasons, in addition to a lack of distinct theoretical framework for studying and interpreting islands, a branch of island-centric theory, study, and analysis has emerged over the past few decades: *nissology*, the study of islands on their own terms.

Nissology

A nissological perspective is "a short-hand way of reminding continental dwellers that island reality is not theirs; that an island world view is not theirs; and that an island integrity belongs to Islanders" (McCall, 1996, p. 82). These forceful statements, along with the general views of supporters of nissology, are illustrative of a society frustrated with others' norms framing issues. Islanders and islands are unique and the proposition of having their own methodology of analysis could be considered similar to casting off former colonial rulers dictating how islanders should live.

McCall identified eight areas in which islands are conceptually different from continental entities, and were paired herein for succinctness of discussion. The first pair includes a delimited shoreline where the land-sea boundary is clearly visible and extensive exclusive economic zones (EEZs) that contain hundreds of thousands of square miles of territory and rights extending 200 miles from the shoreline (McCall, 1996). The second pair of characteristics is the understanding that islands are often sought by continental powers as possessions because of their outpost status, and, as the distance between continent and island increases, so does the perception of land scarcity (McCall, 1996). The third pair of characteristics concerns the conceptualization of being bound or stuck and the idea of being limited by land area but not by sea (McCall, 1996). The last pair of characteristics is the idea of smallness in social relations and cooperation and the idea of migration from and to islands (McCall, 1996).

These concepts in isolation are not unique to islanders but cohesively weave together disparate features that can be taken collectively to create an area of study that did not exist before and where analysis of the eight features (and others) was formerly evaluated by the contextualization of continental (non-island-based) theories and frameworks. Godfrey Baldacchino expanded on McCall's framework, stating that nissology "suggests a process of empowerment, a reclaiming" from processes where "islands are treated as fair game for mainland subjugation and organization" (Baldacchino, 2008, p. 37–38). Baldacchino references McCall, who suggests advocating nissology as a "subaltern discourse" (Baldacchino, 2008, p. 49) because of the "alternative conceptualization" (Depraetere, 2008) that may need to be written by islanders to address how they have often been ill-framed in literature and study.

Island-Centric Lens

Baldacchino identifies five "dilemmas" that complement McCall's eight areas of nissological differentiation, presenting goals or topics for islanders to approach and discuss within a nissological framework (Baldacchino, 2008, p. 44; McCall, 1996). The five dilemmas can be problematized: (a) continuing extended colonial relationships by islands, (b) the uneasiness associated with discussing problems in a small insular atmosphere, (c) communication and language, (d) islands seen as threatened curiosities, and (e) an inherent imperialistic tendency of others (Baldacchino, 2008, p. 44–47).

The concept of nissology is controversial. Without an island-centric perspective, characterizations of islanders would be from others' viewpoints, and investigators would study subjects who are unable to offer their own explanations. Conversely, "nissology appears to be another variation of the classical place-based and interdisciplinary approaches in human geography and analytical framework" (Christensen & Mertz, 2010, p. 285). Further, the authors state that a new type of disciplinary approach is not needed, but that integrating the "nissological way" or framework into "broader interdisciplinary (geographical) approaches" is key to understanding the multifaceted systems at work in islands (Christensen & Mertz, 2010).

Insularity

Francois Taglioni explored the concept of insularity and how island states are actually smaller types of spaces that grapple with or excel at the notion of being somewhat removed from the world (Taglioni, 2011, p. 45). He explained the frequency of island occurrence and the small, insular size of islands. For example, 80% of all the islands of the world yields only 10% of the land area that islands occupy. On the

contrary, the largest 10% of islands by size contain 90% of the lands occupied by islands on Earth (Taglioni, 2011,p. 50). With obvious outliers like Greenland and Australia, the calculation still reinforces the vast sprinkling of smaller-sized locations throughout the world where Taglioni characterized different typologies of islands and their interaction with continental entities.

Taglioni further postulated three types of insularity to categorize islands—hypoinsularity, insularity, and hyperinsularity (2011, p. 56). The *hypoinsular* category contains independent or territorial islands that are "integrated into an industrialized mother country" or composed of a principal island "within an archipelago" that references the main island, and, therefore, has a considerable number of connections and networks (Taglioni, 2011, p.56). The second category, *insular* islands, describes "developing island states" or groups of islands within a developing archipelago, that have started to make linkages among themselves and perhaps to other areas, but to a lesser degree than the hypoinsular states. Lastly, the category of *hyperinsular* islands portrays "[s]econdary islands within a developing archipelago" or far-off, "non-coastal islands without a port or airport" where isolation is the norm although not necessarily sought (Taglioni, 2011, p. 56).

To address the question regarding whether additional place-based distinct theoretical applications such as nissology are essential to proposed research on climate change and small island states, one could answer that yes they are essential but more so as a guide than distinct doctrine. The conceptualizations proposed by nissology and scholarly work surrounding island research are useful to frame proposed research and

analysis, because they examine properties of islands that otherwise go unnoticed or unstudied.

To date, the nissological community is small, originating in the formal sense with McCall in the mid-1990s "propos[ing] as a counter to this mistaken continental thinking the concept of 'Nissology,' the study of island on their own terms" (McCall, 1996, p. 76). In the past 20 years, the precepts of nissology have been evaluated and analyzed with arguments for and against, but the principles have not been used in a study similar to this dissertation. One reason for this lack of practice is that nissological principles are embedded in island societies without anyone officially naming them before the last 20 years: they have been called island customs, or rituals, or points of view rather than nissology.

The value of studying and analyzing the nissological framework is that the epistemological or knowledge-based understanding of nissology is fraught with the same criticisms as other placed-based studies. Nissological scholars admit that there is no perfect paradigm by which to measure islands in a "hybrid, glocal, shifting" world with ever-increasing blurred definitions of what constitutes an island or an islander (Baldacchino, 2008, p. 50). Because the viability of islands and islanders is sometimes dependent on those outside, studying and evaluating nissological tendencies of plans can illustrate the continued value of the nissological framework (Baldacchino, 2008).

Regional Associations and Partnerships

Policy

Within the international environmental policy realm, various jurisdictions function differently; thus, their norms, infrastructure, and wherewithal could very well be

contrary to their neighbor. “When evaluating the potential for environmentally sound development policies, the nature of the state and its ability to implement . . . policies must be taken into account,” resonates with two distinct meanings (Lipschutz & Conca, 1993, pp. 37–39). The first interpretation can signify the assurance that resources are physically available to accomplish the work, whereas the latter interpretation realizes the current state of affairs—any unofficial policies that come and go or, for example, corruption—could affect those policies (Lipschutz & Conca, 1993). This leads to the oft-mentioned North–South debate where negotiations are “strongly influenced by the nature of the donor/recipient roles played by developed and developing countries,” which comes with the rhetorical question of why developing countries cannot develop, do, produce, and burn like developed countries did in the past (Lipschutz & Conca, 1993, p. 233)?

Speaking to collaboration and joint environmental decision making, “interstate cooperation around shared interests is said to be essential if ‘inherently transnational’ problems are to be addressed effectively” – but do all states view the effects of climate change as truly transnational (Lipschutz & Conca, 1993, p. 328)? Aside from intercountry differences in the creation of environmental policy, the “nonstate actors . . . influence the policies of individual state actors toward global environmental issues as well as the international negotiation process” (Chasek, Downie, & Brown, 2010, p. 113). In the case of the Kyoto Protocol, the previously mentioned kindling was the World Meteorological Organization and the United Nations Environment Programme initiating a conference eventually leading to reports that morphed into the Intergovernmental Panel on Climate Change, leading to the future implementation of the Kyoto Protocol a decade later (Chasek et al., 2010, pp. 182–187).

Although some parties (e.g., individual states like Japan and the Netherlands) agreed with the ideals of the report, like emission reductions, it met with opposition from other industrialized states. Through the insistence of nonstate actor coalitions, the issue of emission reductions was repeatedly pushed forward to reach an acceptable solution. This came to fruition with the formation of the (UNFCCC) in the early 1990s (Chasek et al., 2010,pp. 182–185). Hence, negotiations and joint environmental decision making could sometimes be the result of "outsiders" entering a normally sovereign process. This gave pause: can nonstate actors unknowingly sabotage certain agreements via their inability to navigate delicate situations?

The "precautionary principle," where potentially environmentally harmful situations are avoided, although it cannot be proven that they would occur if certain behaviors were allowed, is touted as a successful form of collaboration, negotiation, and joint environmental decision making in the late 20th century. The "precautionary principle is promoted as a common-sense approach that avoids unreasonable delays in taking action . . . that action should not wait until all uncertainties are resolved" (Montgomery & Smith, 2010, p. 410). Many agreements, such as the Montreal Protocol focusing on chlorofluorocarbons, Cartagena Protocol on genetically modified organisms (GMOs), and the Law of the Sea take certain liberties in the creation of their rules, but these liberties are taken to preemptively halt dreadful situations that could otherwise occur (Chasek et al., 2010, p.46–47). Just as not everything is known about GMOs and their potential effects on the human body, states now have the right to refuse to import such organisms even though the health outcomes of GMOs are not known.

Collaborative Governance

The importance of governance as related to collaboration, negotiation, and joint environmental decision making rests within the collaborative relationships between states, groups, or regimes. Yet, "interlinkages of parallel policies and regimes within a horizontally and vertically segmented governance system" can sometimes be the source of "divergent policies in global environmental governance" (Biermann, 2004, p. 12). Collaboration in this respect may not be a problem between issue-specific instances, but the general matrix in which an agreed-on subject lies could have disparate parties arguing over how to proceed. Some of the governance structures already listed have been in the situation of creating disparate policies. It is sometimes through the evolution to a new governance structure that the haze is lifted regarding specific concerns.

Some states actively seek a collaborative approach in environmental governance issues, such as Australia when evaluating PSIS' migration policies from vulnerable islands. In 2007, the Australian government evaluated whether to develop a state policy regarding Pacific Islander migrants. The Australian government declined, not because it thought the issue was unimportant, but rather because "without a collaborative approach with other countries, adopting such an obligation would be a unilateral act and therefore inconsistent with . . . international action" (McAdam, 2010, pp. 19–20). It may never be known if the rationale given by Australia was a pretext to remove itself from an uncomfortable situation, but the justification Australia references illustrates that in this case, there was a lack of effective governance regarding migration policies. In this example, an international dilemma and an international response were believed to be prudent by Australia. However, no matter how compassionate a state's intentions may be,

by acting alone, a state may not be able to support the amount of effort, money, or political heft needed for the policy to thrive.

When negotiating on an issue like climate change, one way to reach at least a minimally acceptable base would be "codifying a set of fundamental principles [which] would become the non-negotiable umbrella under which" the agreement would operate (Najam, Christopoulou, & Moomaw, 2004, p. 31). If that foundation were acceptable to all involved, it would anchor the group to a recognized mission, hopefully without misinterpretations. Meeting the minimum level at which all parties are comfortable might represent a watered-down agreement where everyone is slightly satisfied, but not content. Creating foundational agreements—assuming that all parties are genuinely satisfied with the principles—should be considered an achievement because often times "states are unwilling to change their behavior, while most are not capable of doing so on their own" (Najam et al., 2004, p. 32). In other words, non–state actors such as the UNFCCC or industry-based lobbyists (e.g., lobbyists for chlorofluorocarbon producers) are sometimes helpful negotiators but they do not always have the right or ability to enter into the process at the behest of a state.

The Law of the Sea Conference negotiations provided clues on how future climate change negotiations could be approached. One of the key items at the onset of negotiation strategies with the Law of the Sea was a "convention of expansion," whereas any accord on climate change policy will be a "convention on limitation" (Sjöstedt, 1993, p. 195). States may be more apt and eager to join in on a protocol that gives them more when they leave the table than when they initiated the conversation (e.g., more land, more minerals, more property). By contrast, climate change policy and associated reductions occurs

where the state has to trim back from policies that are already in place. Getting states to cut back policies that are generating wealth or power is much more difficult. Significant issue linkage is beneficial in negotiations. Without it, some states may want multiple articles within the protocol, so they can abide by the ones they want to follow and ignore the others. However, if the issue is enlarged and is linked synergistically then one can goad—to a certain degree—states to agree on issues where there would otherwise be disagreement in the large debate surrounding climate change policy and associated policies (Sjöstedt, 1993, pp. 200).

The effectiveness of governance through "compliance effectiveness" and "result effectiveness," differentiates between achieving what the rules state versus achieving the actual intent of the policy (Young, 1997, p. 115). When creating a governance structure to oversee regulations, it is important to not wander from the intent of the negotiations so that adherers comply not only with the rules, but also with the spirit and rationale for the accord.

Regional Associations

Regional-level structures and associations can be viewed "as a complement to other levels, notably the global and national levels"; as a mid-level composition of governance, they have the potential to collaborate with global, national, and local level stakeholders (Balsiger & Debarbieux, 2011, pp. 3–4). Further, research suggests a

> potential for the emergence of new environmental regions such as coastal deltas and island systems" [because] "such 'ecoregions' are essential for understanding . . . environmental governance because they constitute the areas within which the . . . most serious impacts of this [climate] change are actually felt. (Balsiger & Debarbieux, 2011, p. 5)

These statements illustrated a recently acknowledged viewpoint that issues of sovereignty need to be respected but not feared, because in many areas of the planet, humans have imposed artificial political boundaries atop regions that likely should not have been bisected by lines that remove the areas from more cohesive administration.

Although ecoregional administration may be environmentally superior, it does not always function administratively. Transboundary waters are fortunate to have assistance from the Global Environmental Facility, an "international environmental organization dedicated to building cooperation and resolving conflict" (Gerlak, 2004, p. 108). An explicit goal for the Global Environmental Facility is to "assist groups of countries to better understand the environmental concerns of their international waters and work collaboratively to address them" because sometimes stakeholders can become stuck on their own when trying to negotiate, or other systemic problems, hesitancy, or simple grudges can inhibit cooperation among potential alliances (Gerlak, 2004, p. 112). By having an outside environmental organization with no allegiance to any state, the procedures promoted, such as "inter-ministerial technical teams" assist with bridging gaps by forcing states to work together to come up with harmonious solutions for all involved (Gerlak, 2004, p. 122).

A majority of states are accustomed to negotiating at forums like the United Nations or via other governance structures in which they choose to participate. However, one of the largest failures according to the United Nations Development Programme, United Nations Environment Programme, World Bank, and the World Resources Institute is the "poor overall record" where few "environmental treaties contain specific targets and timetables or adequate enforcement provisions," which is characteristic of "single-

issue approach[es] toward environmental stewardship rather than an integrated perspective" (United Nations Development Programme, United Nations Environment Programme, World Bank, & World Resources Institute, 2004, p. 43). By carving issues into small, ad hoc agreements, the opportunities to construct synergies and comprehensively address certain issues fail. However, the contrary situation also exists, in which repetitive, broad-ranging bureaucracies at the state and regional levels offer repetitive and nonsynergistic issue linkage. Therefore, unless warranted, it is best to avoid multiple, bifurcated agreements when a single agreement has the potential to address a cohort of complex issues.

Addressing common issues in regional associations through joint environmental decision making is exactly what many small island states seek to accomplish. In the mid to late 20th century, "[r]egionalization was . . . considered to be the solution to the constraints imposed by smallness" within small islands (Grote, 2010, pp. 171–172). Through the ideals of economies of scale, such small jurisdictions should not replicate services or agreements, especially when they could jointly reach a common ground with their neighbors and have a more effective and less costly policy in place. Through these types of designs, islands or other regionally collaborative states can focus on "principles that make for more successful management of common pool resources at the local level," no matter whether the resource is migrating schools of tuna, carbon emissions, or agreements on sea level and state boundaries (Bernauer, 2002, p. 10). However, although admirable and executed with the best intentions, in *Governing the Commons,* Ostrom described several failures of joint environmental decision making of common pool resources. Agreements can sometimes tie decision makers' hands, keeping them from

achieving more or perhaps from achieving what the decision maker originally sought to entertain (1990, pp. 12–13).

An example of mixed results from the Kyoto Protocol is how AOSIS advocated on behalf of small island states for policies that would protect them and create better global conditions for their survival. However, because some members of AOSIS are not necessarily small island states—although they have similar susceptibilities in portions of their state—they are sometimes at odds with small island states. These divergent views could hurt the concerted effort of regional associations when it comes to joint environmental decision making (Betzold, 2011, p. 6).

Scales of Adaptation

At the local, regional, and international scales, efforts to address climate change via adaptation and mitigation vary. An example that merges these scales of effort relates to the National Adaptation Programs of Action (NAPA), which are "local and national adaptation processes" (Tänzler, Maas, & Carius, 2010, p. 742). The programs aid states in identifying areas where they need to focus. The "conventional focus of the UNFCCC makes it difficult to develop regional approaches," because it focuses on the individual states and their plans (Tänzler et al., 2010, pp. 746–747). A look at Samoa's NAPA illustrates a thoroughly documented plan for the state, its goals, and its understanding of the changing environmental concerns. The Samoan NAPA's adaptation goals are placed into sectors of agriculture and food security, forestry, water, village community, health, biological diversity, fisheries, and more; however, the report speaks very little about engaging in the region (Samoa Ministry of Natural, 2005, pp. 18–19). This could be the nature of these types of documents, in which each state may self-prioritize and therefore

may have no reason to talk about what a neighboring state (or perhaps a competitive state) may be doing within their plans.

Because some stakeholders and agencies are under the impression that all small island states are in immediate, dire need for migration and relocation of their residents, they are unintentionally giving the message that agencies, islanders, and their leaders "had effectively given up on mitigation measures to avert future impacts of climate change" and are now looking for relocation assistance (McNamara & Gibson, 2009, p. 480). This type of reaction dovetails with the opinion expressed by some entities about whether it is worth investing millions of dollars in a vulnerable PSIS that is home to 10,000 people versus using that money for a greater or more far-reaching project.

PSIS are regionally inclined toward working together and there are increasing examples of this occurring, especially under the auspices of SPC, the Pacific Islands Applied Geoscience Commission, and other CROP agencies. Although PSIS look toward "strong global mitigation efforts, adaptation to the adverse impacts of climate change has emerged as a clear priority for the region," because some of the climate change processes are already in the pipeline (McGoldrick, 2007, p. 47). In fact, AOSIS "recognizes a need to focus on adaptation as the most critical element of its response" to climate change while still regretfully realizing that "all of its adaptation efforts will be stymied by continuing opposition to emissions reduction" (Nurse & Moore, 2005, p. 104). From the viewpoint of AOSIS, the organization that most comprehensively represents islands states, when it comes to regionally approaching climate change adaptation, few options are available. AOSIS has proven effective at large meetings to react and remind the world

that small island states exist, but because of the diversity and membership of the group, it will not likely be particularly successful at "action taking" (Olson, 1971, p. 53).

Conversely, organizations focused on a particular geographic area like the Pacific may find that states can come together in a similar way to how they cooperated in the 1980s under the leadership of Vanuatu to establish the South Pacific Nuclear Free Zone (Boydell, 2008, p. 5). In that case, the act was mostly against French and U.S. nuclear programs in the region. These programs were similar to climate change in that what occurs on a testing site can travel beyond political boundaries and affect others with both instant and non-immediate effects. This was a unique situation because a common pool resource, the ocean, was shared across the world, but the states nearby had a disproportionate stake in their safety and their environment. When acting "independently in relationship to a CPR [common pool resource] . . . the total net benefits [a state] obtains will be less than could have been achieved if they had coordinated their strategies in some way" (Olson, 1971, p. 38). PSIS united around a common pool resource and cohesively declared that they did not want nuclear testing to take their resource (the one accessible healthy ocean), and they ultimately succeeded in keeping the resource safe.

Aside from AOSIS another organization that many of the states belong to is the South Pacific Forum, now known as the Pacific Islands Forum (PIF). The PIF functions as a strategizing, discussion, and meeting arrangement for PSIS to come together and discuss important issues. Although they do advocate on behalf of member states that need assistance—whether climate change related or not—one might consider the PIF akin to a United Nations of the Pacific, with rotating memberships and organization and dissemination of funds from various entities (Pacific, 2012, p. 1). Whereas PIF is a

worthwhile regional association, there are a variety of groups, associations, and memberships serving the Pacific, which may cause certain areas of overlap. Related to the idea of issue bifurcation versus a package deal addressing multiple issues (Law of the Sea), if citizens attend meetings for one group, but try to promote regional cooperation through a second, and concurrently seek funding from a third, PSIS may be diluting relationships.

From the local CCAPs to the regional associations and partnerships, up to the global level with AOSIS and the United Nations, PSIS have different scales of adaptation available to them with different strategies offered by each scale of adaptation. In the research, the forthcoming study and findings illustrated the advantages and shortcomings of nissology and the associations and partnerships that most PSIS use when currently attempting to address climate change.

The forthcoming chapter on methodologies illustrates the next and budding stages with which these perhaps seemingly disparate areas of literature and theory begin to mesh and influence each other. A triangulation of mixed methods develops as island literature, regional associations and policy, and dynamic behavior coalesce to portend potential intricacies that may bind their unrelated theoretical and hypothesis-driven bases together into more formalized and understood relationships.

CHAPTER 3
SELECTION AND METHODOLOGY

Case Selection of States

The research focused on the geographic area commonly referred to as the Pacific, and more specifically on 18 small island states and their plans, policies, and projects involving climate change. Historically referred to as the "South Pacific" per these islands' general geographic location, some of these states straddle the equator or lie to the north of 0° latitude and are located in the Northern hemisphere. Timor-Leste, one of the newest states in the world, lies between the Pacific and Indian Oceans, but it is often grouped with PSIS because of its recent independence, size, and colonial history.

Some organizations and past analyses have set limits for what constitutes small, but these limits vary and there is no consensus in definition (Taglioni, 2011, p. 48). For some PSIS, inclusion in the list of small states is easy—they have land areas, island numbers, and populations that are among the lowest in the world. For states like Papua New Guinea, the definition blurs because of larger population and larger land area.

Table 1 shows the 18 states analyzed in this study. It includes all independent states within the region aside from Australia, Indonesia, New Zealand, and the Philippines. The four states were excluded because of their larger sizes and geographical locations along the edges of the study area. Among the territories (which for the purpose of this study included territories, commonwealths, and any other nonsignificantly autonomous region, that is, one that does not deal with foreign affairs on its own without assistance) and semiautonomous regions in the area, the American, French, and New Zealander islands were included. They were included due to their populations, proximity,

and prevalence in the Pacific. Other territories, such as British, Costa Rican, Ecuadorean, and Chilean islands were excluded because of their remoteness from the PSIS.

Table 1

Pacific Small Island States (PSIS) Included in this Study

Pacific Small Island State	Two-Letter Abbreviation	Sovereignty Type
American Territories	AT	T
Cook Islands	CI	S
Federated States of Micronesia	FS	I
Fiji	FI	I
French Territories	FT	T
Kiribati	KI	I
Nauru	NA	I
Niue	NI	S
Palau	PA	I
Papua New Guinea	PN	I
Samoa	SA	I
Solomon Islands	SI	I
Timor-Leste	TL	I
Tokelau	TK	T
Tonga	TG	I
Tuvalu	TV	I
Vanuatu	VN	I

Note. I = Independent (n = 13); T = Territories (n = 3); S = Semiautonomous (n = 2); Total PSIS = 18. American and French Territories in the Pacific are clustered together for succinctness; each of these designations consists of many territories (or states). However, for the majority of the research, the territories will most often be discussed as a group designation. Within the non-interview portions of the dissertation, differences between them, if found, will be highlighted; however, for the purpose of research in PSIS, they will most often be referred to as a single PSIS.

Mixed-Methods Research and Design Overview

A mixed-methods research design enabled the dissertation to pull dually from quantitative characteristics of islands and to juxtapose them with the qualitative features derived from interviews, analyses, and other information discovery. A mixed-methods

design “represents research that involves collecting, analyzing, and interpreting quantitative and qualitative data in a single study” (Leech & Onwuegbuzie, 2007, p. 267). Further, it offers a unique spectrum and is “markedly different than monomethod designs” that fail to triangulate a research question (Leech & Onwuegbuzie, 2007, p. 272).

Research occurred in two phases. Initial research was conducted in the United States via qualitative and quantitative coding of PSIS’ CCAPs. The second phase was split between research conducted at PSIS’ Diplomatic Missions in New York City and then in the Pacific region, primarily in American Samoa, Guam, and the Northern Mariana Islands.

Phase 1

In the first phase of mixed-methods research, data were collected and catalogued from the 18 PSIS’ CCAPs. The data were evaluated on the nissological understandings of islandness. A nissological approach was used because the research evaluated whether more island-centric attitudes toward addressing issues such as climate change yielded higher success rates than using more continental strategies that do not account for the particularities of islands. Additional data were derived and created from seminal nissological literature regarding nissological principles and two indices derived specifically for this study.

Methods in phase 1 included using the eight principles of nissology (see Figure 1) from the literature to conduct an intensive content analysis and review of each PSIS’ CCAPs. This work culminated in an analysis of each state’s nissological characteristics via two indexed scales: a simplified nissological scale and a multifaceted nissological

scale. A family-resemblance concept structure was used so “substitutability” of like factors could be implemented in which “one dimension can be compensated by the presence of other dimensions” (Goertz, 2006, pp. 44–45). For example, the idea that a perceived lack of land quantity corresponds with a perceived lack of available resources is examined with regard to a state’s CCAP in a variety of ways. In this example, Palau could demonstrate the ideal of a perceived lack of land by discussing the state’s small size and limited crops and restricted arable land within the CCAP, whereas the Marshall Islands may not illustrate this notion by the pure avoidance of focusing on a lack of resources, which could arise because of its more expansive size or because it may not regard itself as lacking resources.

The first indexed scale of nissology, the simplified nissological scale, was created from 0 through 8. Since PSIS spoke about nissology in varying terms, a rubric was created to identify how several different ideals of nissology pertained to certain nissological principles, Figure 2. Each mention of a principle of nissology by a PSIS adds +1 to a state’s count, and a CCAP strategy not using nissology would add 0 to a state’s count. “When a measure has multiple indicators, these are combined most often” through additive measures because no principle was judged better or worse than another for this research, and they were treated equally with the same weight to raise or lower a state’s score (Goertz, 2006, p. 96). A score of 8 indicated that the plan heavily swayed toward a nissological viewpoint whereas a score of zero 0 indicated that the plan had highly continental, or nonnissological tendencies. An intermediate score for a nissological viewpoint of 4 indicated intermediate levels of a nissological or continental-type tendency, respectively.

Nissological Category	← Identifiable Characteristics of Nissology for Analysis →		
Land Borders (LB)	Clear border observable.	Shore naturally acts as an edge	EEZs and their ability to abut and overlap
Sea Resources (SR)	In the EEZ and surrounding areas	More surface area as a state via the marine territory versus land	Incongruity between sea-claims and terrestrial territory
Claims/ Colonization (CC)	Tendency to be occupied, taken-over, or not independent.	Seen as fortification of continental interests.	Viewed as peripheral settlement for continental influence/protection
Perception of Scarcity of Land (PS)	Mirrored in perception of lack of land resources	As distance from continent increases so does perceived lands scarcity	Marine resources are not viewed as scarcely as land resources
Bounded Entities (BE)	Clear contrast between on-island and off-island	Although, culture is not stopped at land's edge, can flow	Recognizes the start and ending of physical land.
Sense of Limitation (SL)	When viewed with reference to continental perspectives (large areas/resources)	Can go either way, but a lesser sense of limitedness appears with less continental influence	When keeping an island culture and sentiment, a sense of limitlessness can pervade
Particularistic Places (PP)	State-focused, island society-focused populations on immediate surrounding areas	Smallness of islands' populations leading to creative cooperation	Embeddedness of local opinions in localized projects, policies, and more
Migration (MT)	Emigration out or immigration in from other lands or to other islands within the area	Optional versus more forceable or necessary migrations	Relocation to continent or other islands and the ability to return

Figure 2. Derivation of identifiable characteristics from McCall's nissological principles to categorize CCAPs and nissological indices. EEZ = exclusive economic zones. The three columns do not have distinct meanings – they represent a spectrum by which to evaluate the corresponding row's nissological category.

The second indexed scale, the multifaceted nissological scale, ranged from 0 through 24; each of the 8 principles of nissology were evaluated on how profoundly they were used within states' CCAPs. Within this second scale, the states' scores were determined based on the intensity of the state's mention of the nissological principle. A state focusing on the significance of ocean resources within its CCAP received from 0 through 3 points for addressing that particular principle of nissology: 0 for no mention, +1 for a brief mention and slight emphasis, a +2 for significant mention with moderate emphasis, and +3 for repeated mention with heavy emphasis on the principle. Admittedly, there is subjectivity in the process as brief, slight, significant, moderate, repeated, and heavy are imprecise words that can be interpreted differently by different

researchers. Nevertheless, PSIS were evaluated alongside their peers so that any arguable impreciseness in evaluation of words was curtailed by comparing the depths and brevities of plans against others by the same individual coding the plans.

After completion of scoring, two numerical tallies were calculated for each of the 18 PSIS. PSIS' simplified and multifaceted nissological scores were compared with the other states. The scoring across the 18 PSIS provided a foundation on which PSIS were evaluated to determine whether states with more nissological undertones in their plans tended to favor certain policies and behaviors over others. How those scores ultimately related to their CCAPs' successfulness within the realm of nissological research was then evaluated.

The nissological score was juxtaposed with physiographical and contextual factors: number of islands, date of independence, current sovereignty, island heights, and direct commercial air accessibility. These analyses informed the results of nissology with respect to these factors and were used to help understand how certain jurisdictions addressed climate change more successfully than others.

Table 2 identifies the specific types of CCAP obtained for each PSIS. The process to obtain pertinent plans was conducted via several online databases, depositories, and portals that house PSIS' climate-related data in 2013. Institutions such as the Pacific Climate Change Portal, SPREP, the University of the South Pacific, United Nations, UNFCCC and other clearinghouses were evaluated to find the three most pertinent CCAP for each PSIS. Certain PSIS had plans that were labeled as CCAP while others had plans that were labeled as DRR, i.e. Disaster Risk Reduction plans, whereas others that were characterized as LDCs (Least Developed Countries) were required to

have NAPA, National Adaptation Programs of Action. Plans were read by the author of the research and coded appropriately per the process mentioned above.

Table 2

List of the 51 CCAPs Coded, Analyzed, and Examined as Part of Nissological Analyses and Indices Creation

State	CCAP	NAPA	ICC	Other
American Territories	X	–	–	X
Cook Islands	X	–	X	X
Micronesia, Fed. States of	X	–	X	X
Fiji	X	–	X	X
French Territories	X	–	–	X
Kiribati	X	X	–	X
Marshall Islands	X	–	X	X
Nauru	–	–	X	XX
Niue	XX	–	X	–
Palau	–	–	X	XX
Papua New Guinea	–	–	X	XX
Samoa	–	X	X	X
Solomon Islands	X	X	X	–
Timor-Leste	–	X	–	XX
Tokelau	–	–	–	XX
Tonga	X	–	X	X
Tuvalu	X	X	X	–
Vanuatu	X	X	X	–

Note. CCAP = PSIS in question had—in name—an actual climate change plan for their PSIS. NAPA = National Adaptation Program of Action, created for (Least Developed Countries; ICC = In Country Consultations (on behalf of United Nations and subsidiaries); Other = Another type of CCAP addressing climate change, but not a CCAP in name; – = 0 No plan; X = 1 plan; XX = 2 plans.

Phase 2

The second method used to determine the success of climate change adaptation within PSIS was site visits and semi-structured interviews to aid in triangulating whether PSIS' plans, policies, and projects were indeed working toward their goals. The open-ended questions focused on a state's rationales for decisions behind climate change plans regarding chosen methods of approaching climate change. The interviews sought to

determine whether the projects and plans mentioned within the official documents were being implemented within the state or whether the document was merely a blueprint. The objective was to evaluate the meshing of plans and policy with actual implementation.

Climate change policies vary considerably among AOSIS members states; beyond the content analysis of documents described earlier, these differences are seen in their responses to the interview questions. The interviews sought information on how AOSIS' climate change plans, policies, and projects came into effect—whether they were disseminated from the collective point of view of PSIS or whether greater weight lies within independent members. Interviews were conducted at PSIS' diplomatic missions in New York City or at a private location suggested by the PSIS if a mission did not exist or was not available. These interviews were normally held with the PSIS' ambassador, counsellor, or a knowledgeable decisionmaker appointed by the Mission, and were voice recorded for later transcription. An approved oral consent was given by each interviewee, and they also received contact information for team study leaders in case they should have any questions or complaints about the research process.

Site visits and semi-structured interviews were conducted in the American territories (AT): American Samoa, Guam, and Northern Mariana Islands, or at an alternate location suggested by the PSIS. These interviews were normally held with islanders who were involved with climate change planning on the island. Initial contacts were usually found through a list of stakeholders in their CCAP or most appropriate document. Additional interviewees were found by asking already-interviewed islanders about additional people on island to contact that were involved in any aspects of climate change planning or preparation, ranging from a formal position to a community leader –

the snowball method. The spectrum of interviewees ranged from residents of the island, to territorial and federal employees to environmental organization members, business associations, companies and others. Interviews were conducted at a private location suggested by the interviewee and voice recorded for later transcription. As with the New York City interviews, an approved oral consent was given by each interviewee, and they also received contact information for team study leaders in case they should have any questions or complaints about the research process.

The interview questions for both the UN based and AT based interviews are located in Chapter 5. Institutional Review Board (IRB) approval was received from Temple University; these approvals would normally cover all participants within the United States. However, American Samoa and Guam both required additional IRBs to conduct human research (interviews) on their islands, even if a home institution had already given approval. In total, IRB approval was received from all necessary entities: Temple University, the American Samoa Department of Health, and the University of Guam (Appendix B).

The interviews ranged from approximately 30-45 minutes in length, although interviewees were able to – and did – conclude the interview early or speak at a greater length. The data were stored behind password-protected drives. Participants were told as part of oral consent that the foreseeable risks or discomforts were discussing a timely issue on which they may have a strong opinion; they were also notified that the benefit they could obtain from the research would be to contribute to the better understanding of climate change policy in PSIS.

The researcher provided participants with confidentiality by neither identifying United Nation members' states, nor identifying which of the American Territories (American Samoa, Guam, or the Northern Mariana Islands) the interviewees hailed from. Only the researcher had access to a list of participants' PSIS; the data was protected via password-protected drives.

The second phase of research used two different methods to determine the success of climate change adaptation within PSIS by studying the actions and relationships among the individual states' climate change plans, policies, and projects at the state and regional levels. Data originated from organizational literature, interviews with the majority of the 18 PSIS' representatives knowledgeable about their states' role in AOSIS, and other associated sources.

Semi-structured interviews were conducted with decision makers from the United Nations, of which the majority are also AOSIS members or observers. AOSIS members often work through their New York City diplomatic missions because AOSIS acts as a "coalition of small island and low-lying coastal countries that share similar development challenges and concerns about the environment, especially their vulnerability to the adverse effects of global climate change" and functions as a negotiating bloc at the United Nations (AOSIS: Alliance of Small Island States, 2015, p. 1). The open-ended questions focus on each state's roles, goals, and initiatives pertaining to their individual structure and the relationship (or lack of relationship) between those roles, goals, and initiatives and climate change plans, policies, and projects at AOSIS. A semi-structured interview "allows the researcher to cover a specific list of topic areas" with the flexibility to follow up on and explore the answers given by the interviewee (Jarratt p.9, 1996). In

situations with only one opportunity to interview a person, semi-structured interviewing "maintains discretion to follow leads" and is guided by a standard interview method that the researcher uses during the process (Bernard, 1988, p. 205).

The rationale for site visits and interviews in the American Territories was fivefold. First, the American Territories are located over vast areas of the Pacific and might have illustrated how distant island states facing similar issues can cooperate in addressing comparable issues. Second, the territories are located near independent states and the collaborative links (or their absence) might have elucidated certain characteristics regarding PSIS' plans, policies, and projects. Third, because of time and logistical constraints, not all PSIS could be visited. Fourth, research in almost all of the foreign PSIS requires extensive government permitting as well as government oversight and review and, in some cases, persistent evaluation, which might have detracted from the objectivity of the reporting as well as the research process. Last, in depth climate change research in the American Territories was sparse in both information availability and accessibility to the islands by US citizens and ever more so by non-nationals; thus, there was an exclusive prospect to study in a disproportionately understudied location.

CHAPTER 4
NISSOLOGICAL SUCCESS AND ISLAND CONTEXTUALITIES IN CLIMATE CHANGE ADAPTATION: INITIAL RESULTS AND ANALYSIS

Rationale and Variables

There are contrasting viewpoints regarding the efficacy and necessity of nissology; the first research question sought, among other items, to identify any links between a nissological viewpoint and successful adaptation. The second portion of the initial research question examined nissology to determine whether there was a rationale for the relationship between PSIS' nissological scores and contextual characteristics of PSIS.

Nissological Coding Results

Three CCAPs for each of the 18 PSIS were analyzed and coded to quantify the level of nissological thoroughness used within a particular PSIS' plan, totaling 51 plans[1] analyzed together.[2] During the reading of the analysis it may be helpful to refer back to Figure 1 and Figure 2, which illustrate the eight nissological principles and their identifiable characteristics for analysis.

Within each column, there are two numbers in an "Inst (Rigor)" position format. The "Inst" refers to the number of times or *instances* a certain nissological principle is mentioned within the PSIS' plans. The "Rigor" position indicates the rigorousness with which the nissological principle is mentioned—the relative importance given to that principle within that PSIS' plans. Seen in Table 3, the land borders column (LB) for the Federated States of Micronesia is marked as "12 (3)" which indicates 12 instances of the

[1]Three PSIS (American Territories, French Territories and Tokelau), only contain two pertinent CCAPs each to analyze.

[2]The 51 CCAPs appear in Appendix XX.

Table 3

Instances and Rigor (Inst_Rigor) of Nissological Characteristics in the CCAPs

PSIS	LB Inst (Rigor)	SR Inst (Rigor)	CC Inst (Rigor)	PS Inst (Rigor)	BE Inst (Rigor)	SL Inst (Rigor)	PP Inst (Rigor)	MT Inst (Rigor)
AT	1 (1)	8 (2)	0 (0)	1 (1)	2 (1)	6 (3)	1 (1)	1 (1)
CI	6 (2)	7 (2)	2 (1)	1 (1)	4 (2)	3 (1)	1 (1)	2 (1)
FS	12 (3)	21 (3)	11 (3)	5 (2)	3 (1)	2 (1)	11 (3)	6 (2)
FI	5 (2)	9 (2)	0 (0)	1 (1)	1 (1)	4 (1)	5 (2)	3 (1)
FT	5 (1)	8 (2)	1 (1)	1 (1)	3 (1)	1 (1)	1 (1)	1 (1)
KI	7 (3)	18 (3)	1 (1)	1 (1)	4 (2)	6 (3)	4 (1)	3 (1)
MI	7 (3)	10 (3)	11 (3)	2 (1)	5 (3)	5 (2)	12 (3)	1 (1)
NA	5 (2)	7 (2)	3 (2)	2 (1)	4 (2)	10 (3)	1 (1)	2 (1)
NI	5 (2)	5 (1)	2 (1)	1 (1)	3 (1)	8 (2)	3 (1)	3 (1)
PA	7 (2)	24 (3)	5 (3)	0 (0)	4 (2)	2 (1)	1 (1)	2 (1)
PN	5 (2)	14 (3)	1 (1)	2 (1)	1 (1)	7 (2)	2 (1)	3 (1)
SA	5 (2)	9 (2)	1 (1)	1 (1)	2 (1)	5 (1)	3 (1)	1 (1)
SI	13 (3)	27 (3)	3 (1)	8 (2)	6 (2)	17 (3)	5 (1)	11 (3)
TL	4 (1)	13 (3)	6 (2)	17 (3)	2 (1)	4 (1)	4 (1)	0 (0)
TK	9 (3)	9 (3)	10 (3)	5 (2)	6 (3)	7 (3)	7 (3)	2 (1)
TN	3 (1)	10 (3)	1 (1)	9 (3)	4 (2)	6 (2)	7 (3)	3 (1)
TU	5 (2)	13 (3)	6 (3)	7 (3)	5 (3)	7 (2)	7 (3)	4 (3)
VA	1 (1)	7 (3)	1 (1)	6 (3)	2 (1)	4 (2)	9 (3)	5 (2)
Average	5.83 (2.00)	12.17 (2.56)	3.61 (1.56)	3.89 (1.56)	3.39 (1.67)	5.78 (1.89)	4.67 (1.72)	2.94 (1.28)

Note. LB = land borders; SR = sea resources; CC = claims/colonization; PS = perception of land scarcity; BE = bounded entities; SL = sense of limitation; PP = particularistic places; MT = migration; Inst = number of mentions (0–99+); CI = Cook Islands; FS = Federated States of Micronesia; FI = Fiji; KI = Kiribati; NA = Nauru; NI = Niue; PA = Palau; PN = Papua New Guinea; Rigor = rigor of mentions (0–3); SA = Samoa; SI = Solomon Islands; TL = Timor-Leste; TK = Tokelau; TG =Tonga; TV = Tuvalu; VN = Vanuatu; AT = American Territories; FT = French Territories.

Federated States of Micronesia mentioning land and marine boundaries within its plans. Because of the quantity and position of land borders in comparison to other PSIS, the Federated States of Micronesia received a 3 of 3, because land borders are often mentioned within the Federated States of Micronesia's plans.

As discussed in Chapter 3 Phase 1 research, this process is arguably subjective in the assignment of rigor scores: PSIS receive 0 for no mention, +1 for a brief mention and slight emphasis, a +2 for significant mention with moderate emphasis, and +3 for repeated mention with heavy emphasis on the principle. The variation in length or wordiness of documents is taken into account. A CCAP that may have mentioned sea resources (SR) only a few times in a brief document would be scored differently from a lengthy CCAP also having only a few sea resources mentions. The length, breadth, intensity, and emphasis all are taken into account to the best ability of the researcher in this 0-to-3 rating system.

Labeled in the average row within Table 3 are the average instances and rates for each of the 8 nissological characteristics used to observe the frequency and intensity with which an average PSIS describes certain nissological principles over others. There are many instances of SR being mentioned within PSIS' CCAPs—approximately 12 instances on average per PSIS—whereas migration (MT) policies and frameworks are less often mentioned. Although one principle is not considered to be more important than others, the table illustrates the concentrations PSIS focus on within their CCAP. The second-highest mention of nissological principles within PSIS' plans were land borders (LB) discussions, and the second-lowest mentions deal with islands being delimited and culturally different from continental or nonisland based societies (bounded entities or

BE). The sea resources and land borders columns are the only two with an average of 2.00 or higher; all other columns were between 1.28 through 1.89, illustrating less frequent reference to those categories. No categories received a score of 0 through 1.00, indicating that there were no categories largely devoid of use within PSIS' CCAPs.

Tallying the results reveals both expected and unanticipated results, as seen in an expanded table, Table 4. First, with regard to the number of times the 8 nissological principles were mentioned by the 18 PSIS, approximately 75% of PSIS mentioned all of the principles of nissology within their CCAPs. The other 25% of PSIS mentioned 7 of the 8 principles within their plans. There is no substantial quantitative difference among PSIS when their plans are analyzed this way. However, when examining the instances and rate with which each PSIS speak to particular nissological characteristics, some substantive differences are present. Because each PSIS can receive a score between 0 and 3 for each of the 8 principles of nissology, they can receive a nissological total of 0 through 24. After analysis, PSIS resulted in a spectrum ranging from 9 through 22.

With the information in Table 4, the continuum of nissology within PSIS' CCAPs can be more readily dissected. Because there is a divide among scholars as to whether nissological analysis is useful, the research question and results specifically analyzed this ongoing inquiry. The first hypothesis stated that *PSIS that use a CCAP based more deeply on a nissological understanding of "islandness" will have more successful plans, policies, and projects than PSIS with a neutral or more continentally-derived CCAP*. Thus the next part of the analysis quantifies the success of the 18 PSIS' CCAPs.

Table 4

Instances and Rigor [Inst (Rigor)] of Nissological Characteristics in CCAPs with Totals: 0–8 and 0–24 Scores.

PSIS	LB Inst (Rate)	SR Inst (Rate)	CC Inst (Rate)	PS Inst (Rate)	BE Inst (Rate)	SL Inst (Rate)	PP Inst (Rate)	MT Inst (Rate)	TOTAL Niss. 0–8	TOTAL Niss. 0–24
AT	1 (1)	8 (2)	0 (0)	1 (1)	2 (1)	6 (3)	1 (1)	1 (1)	7	10
CI	6 (2)	7 (2)	2 (1)	1 (1)	4 (2)	3 (1)	1 (1)	2 (1)	8	11
FS	12 (3)	21 (3)	11 (3)	5 (2)	3 (1)	2 (1)	11 (3)	6 (2)	8	18
FI	5 (2)	9 (2)	0 (0)	1 (1)	1 (1)	4 (1)	5 (2)	3 (1)	7	10
FT	5 (1)	8 (2)	1 (1)	1 (1)	3 (1)	1 (1)	1 (1)	1 (1)	8	9
KI	7 (3)	18 (3)	1 (1)	1 (1)	4 (2)	6 (3)	4 (1)	3 (1)	8	15
MI	7 (3)	10 (3)	11 (3)	2 (1)	5 (3)	5 (2)	12 (3)	1 (1)	8	19
NA	5 (2)	7 (2)	3 (2)	2 (1)	4 (2)	10 (3)	1 (1)	2 (1)	8	14
NI	5 (2)	5 (1)	2 (1)	1 (1)	3 (1)	8 (2)	3 (1)	3 (1)	8	10
PA	7 (2)	24 (3)	5 (3)	0 (0)	4 (2)	2 (1)	1 (1)	2 (1)	7	13
PN	5 (2)	14 (3)	1 (1)	2 (1)	1 (1)	7 (2)	2 (1)	3 (1)	8	12
SA	5 (2)	9 (2)	1 (1)	1 (1)	2 (1)	5 (1)	3 (1)	1 (1)	8	10
SI	13 (3)	27 (3)	3 (1)	8 (2)	6 (2)	17 (3)	5 (1)	11 (3)	8	18
TL	4 (1)	13 (3)	6 (2)	17 (3)	2 (1)	4 (1)	4 (1)	0 (0)	7	12
TK	9 (3)	9 (3)	10 (3)	5 (2)	6 (3)	7 (3)	7 (3)	2 (1)	8	21
TN	3 (1)	10 (3)	1 (1)	9 (3)	4 (2)	6 (2)	7 (3)	3 (1)	8	16
TU	5 (2)	13 (3)	6 (3)	7 (3)	5 (3)	7 (2)	7 (3)	4 (3)	8	22
VA	1 (1)	7 (3)	1 (1)	6 (3)	2 (1)	4 (2)	9 (3)	5 (2)	8	16
Average	5.83 (2.00)	12.17 (2.56)	3.61 (1.56)	3.89 (1.56)	3.39 (1.67)	5.78 (1.89)	4.67 (1.72)	2.94 (1.28)	7.78	14.22

Note. LB = land borders; SR = sea resources; CC = claims/colonization; PS = perception of land scarcity; BE = bounded entities; SL = sense of limitation; PP = particularistic places; MT = migration; Inst = number of mentions (0–99+); Rigor = rigor of mentions (0–3).

Analysis of Nissological Coding Results

A challenging feature of coding the nissological tendencies of PSIS' CCAPS, Figure 2, is the subjectivity of the author. Uniformity of coding by the author is used throughout so that each PSIS is given credit for similar features within their plans. For example, did a CCAP mentioning too-small land areas for farmers fall into a perception of scarcity of land (PS) or a sense of limitation of resources (SL) with regard to continental perspectives? It depended on the context of the plan and is admittedly biased to coding based on the context. However, because the author coded and analyzed all the plans, there is uniformity in the decision processes aligning such classifications.

All 18 PSIS mentioned a total of seven or eight of the nissological points within their plans; however, the rigor and frequency with which they mentioned each principle varied greatly. For example, although they both obtained credit for plans mentioning a perceived land scarcity (PS) in their PSIS, Timor-Leste mentioned perception of land scarcity (17) times within its plans and the Cook Islands only mentioned perception of land scarcity once. Of course, the length of the plans discussing the principle and the ways in which perception of land scarcity are mentioned are taken into account in the nissology scoring from 0 to 24.

When PSIS' scores and distribution (Table 4) are evaluated on the spectrum of nissology, the results speak to the key differences between states. Instead of varying by a single number in the simplified nissological scale, PSIS vary between a nissological score of 9 through 22 in the multifaceted scale. In fact, the French Territories, with the lowest score had only a single category (SR) in which it did not score the lowest possible "rigor" score, whereas Tuvalu garnered the highest score possible in 75% of nissological

categories. The average score for PSIS was 14.22 out of 22. In other words, PSIS' CCAPs could be classified as 65% nissological in the manner and breadth in which they were created, on average. The plans consist of other features aside from nissological features, but the research sought to first understand the degree to which the plans were nissological and then to evaluate other facets of PSIS against these scores.

Table 5

PSIS' Nissological Scores and Rank

State	Nissology	
	Score	Rank
French Territories	9	3-LNS
American Territories	10	3-LNS
Fiji	10	3-LNS
Niue	10	3-LNS
Samoa	10	3-LNS
Cook Islands	11	2-ANS
Papua New Guinea	12	2-ANS
Timor-Leste	12	2-ANS
Palau	13	2-ANS
Nauru	14	2-ANS
Kiribati	15	2-ANS
Tonga	16	2-ANS
Vanuatu	16	2-ANS
Federated States of Micronesia	18	1-HNS
Solomon Islands	18	1-HNS
Marshall Islands	19	1-HNS
Tokelau	21	1-HNS
Tuvalu	22	1-HNS

Note. HNS = highly nissological states; ANS = average nissological states; LNS = low nissological states, illustrating a relatively even spread from 9 to 22, aside from 4 PSIS scoring 10. HNS contained scores from 18–22. In descending order from highest score, HNSs are Tuvalu, Tokelau, Marshall Islands, Federated States of Micronesia, and Solomon Islands. ANS had scores from 12–17, and in descending order from highest score are Tonga, Vanuatu, Kiribati, Nauru, Palau, Papua New Guinea, Timor-Leste, and Cook Islands. LNS had scores from 9–11 and in descending order from highest score are American Territories, Fiji, Niue, Samoa, and French Territories.

In Table 5, the multifaceted nissological scores are seen along with three breaks between the data points illustrating three groupings of PSIS: highly nissological states (HNS), average nissological states (ANS), and low nissological states (LNS) with 5, 8, and 5 states in each respectively, which are discussed more in-depth below. The actual eight categories of nissology evaluated as part of the analysis ranged in average intensity (0–3) from a low 1.28 in MT to a high of 2.56 for SR. After coding, the strength with which each PSIS discussed the eight categories of nissology were taken from each column. Therefore, SR had a strength of discussion within the plans of 2.56/3.00 followed by LB at 2.00, and SL with 1.89. By evaluating the columnar aspects of nissology before looking at success, the study analyzed which factors the PSIS concentrate on when they write CCAPs. All eight nissological principles are identified in Figure 3, showing a relatively high concentration between the rigor rates of 1.5/3 through 2.0/3. This finding signifies that, on average, nissological principles were relatively well mentioned within plans, although the two outliers—SR and MT—are located at the extremes.

Sea resources, with an average of 2.56/3.00, is the most intense category of nissology mentioned with PSIS' CCAPs and is also an outlier. The average number of mentions for the category is 12.17 mentions about SR per PSIS—ranging from items regarding fish stocks to environmental quality supporting marine wildlife to cultural activities regarding the sea—is more than double the next highest category, land borders.

Land borders (LB) focused on the delineation of land borders, discussions regarding maritime boundaries, and associated geolocation features of islands. With a

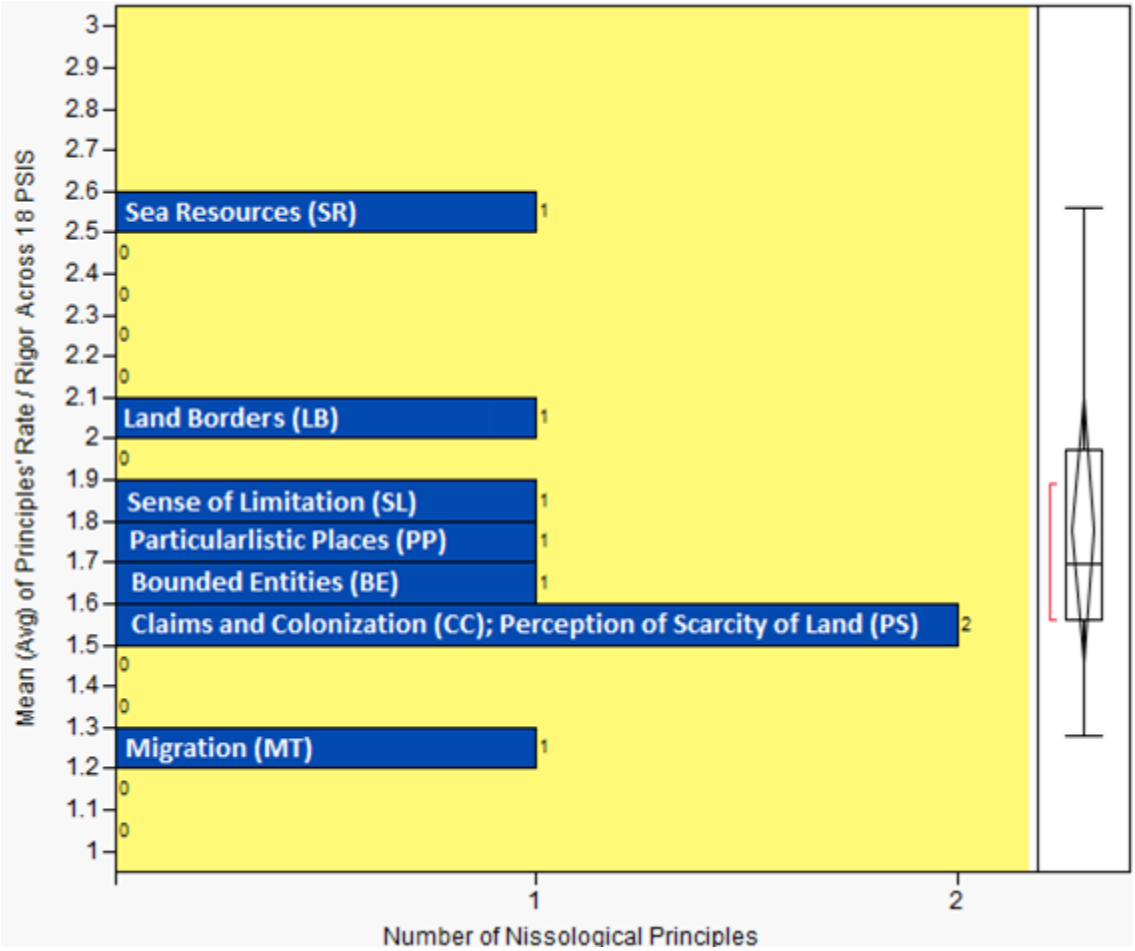

Figure 3. Histogram: Mean of nissological principles' rate/rigor across 18 PSIS.

rigor of 2.00/3.00 and with an average instance of 5.83 mentions per PSIS across their CCAPs, this category represented the demarcation of sovereignty (whether independent or territory) while also discussing economic and cultural aspects of PSIS that deal with borders.

The nissological principle of a sense of limitation (SL) with respect to a more continental resource perspective came in at third highest, with a 1.89/3.00 average rate with average instances at 5.78 per PSIS. A common reason for being coded SL occurs when a state believes they do not have the technology, transportation, food storage capacity, or other wherewithal compared with larger continental states. This category

offers a subdued tone that can be taken into two camps: the first being that the islands should be prepared because of their lower resilience (preparation can be interpreted as a part of overall resilience) and the second being that the islands are not as fortunate or well-off as their continental neighbors.

Cooperative, creative, place-based locales or particularistic places (PP) that aid in fostering cooperation in smaller island environments placed fourth of the eight characteristics, with an average rate of 1.72/3.00 with 4.67 instances on average per PSIS' CCAPs. This category approached the smaller environments of PSIS as assets where buy-in, cooperation, and a willingness to participate were common. There were also difficulties that depended on the size of an area, divergent viewpoints, and local versus nationalistic feelings. PP is usually discussed as a positive facet with respect to nissology and a unique characteristic of islands that can greatly assist them in moving toward fruition of plans.

Bounded entities (BE), meaning that islands are seen as culturally delimited or separate from continental states physically and culturally, have an average rate of 1.67/3.00 and an average of 3.39 instances per PSIS. Because items that fall into BE could easily be tipped into the favor of other categories, this characteristic does not score relatively high among nissological traits found in PSIS' CCAPs. Some examples in the CCAPs describe the world outside of PSIS, the incongruity of physical connection to other islands based on development, and jurisdictions that abut or overlap.

Perceived scarcity of land quantity or specific resources as the distance between PSIS' lands and the continent increases is similar to that of sense of limitation. However, the key difference in this category, which has a rate of 1.56/3.00 with 3.89 instances per

PSIS, is how the relevant issues are discussed as perceived land and resource scarcities as opposed to sense of limitation, which is in comparison to the continent. Although somewhat subjective in their difference, PS deals with a truer sense of limitation versus a comparative one. Examples of PS are food security issues or loss of land due to rising sea levels and global climate change. On average, PS is only discussed once within each of the three plans, possibly because of the lack of resilience or inability to outright combat some of the issues, because creating new land or making plants acclimate to finite agricultural zones are not widespread actions if available at all.

Claims/Colonization (CC) activities that take place or occurred in the past are not often mentioned within PSIS' CCAPs, with a rate of 1.56/3.00 and an average of a single mention per each plan with each PSIS. CC discussion occurs in wide variation from pride about independence to discussing a territory's role as an outpost of the larger host nation. In addition, pertinent global events rooted in CC, such as World War II or colonization, are referenced only occasionally. This principle of nissology is second-to-last mentioned most likely because of either negative connotations associated with past colonization or with tacit acceptance of the current political situation.

Surprisingly, the least-mentioned nissological principle within PSIS' CCAPs is migration, whether it happens to focus on immigration or emigration. In terms of sea-level rise or possible relocations, this is a politically laden issue that most PSIS are not willing to mention within their approved plans, although the topic may be on the minds of the PSIS. Lastly, it would be unlikely that these plans, which more heavily concentrate on adaptation versus mitigation, would announce to the world a population project to

relocate in the foreseeable future. Nonetheless, there are mentions of both intercountry and intracountry migrations based on the past cultural practices of Pacific Islanders.

Looking at the distribution of all nissological characteristics yields the following graphic representation of Table 5, Figure 4, demonstrating the frequency and distribution among PSIS' nissological scores where certain patterns began to take shape: low-lying PSIS near the higher end of the spectrum and high or mixed islands near the lower end.

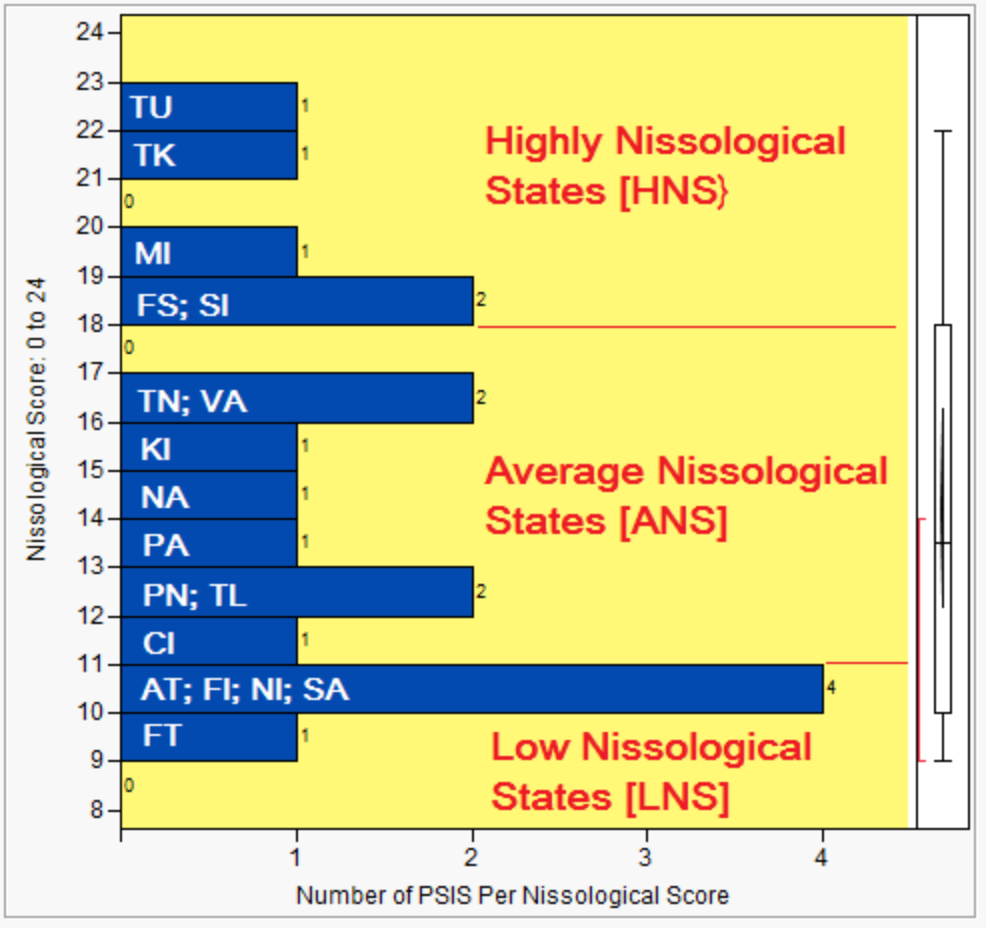

Figure 4. Histogram: Frequency of PSIS nissological scores and categories. Note. CI = Cook Islands; FS = Federated States of Micronesia; FI = Fiji; KI = Kiribati; NA = Nauru; NI = Niue; PA = Palau; PN = Papua New Guinea; SA = Samoa; SI = Solomon Islands; TL = Timor-Leste; TK = Tokelau; TG =Tonga; TV = Tuvalu; VN = Vanuatu; AT = American Territories; FT = French Territories.

Finally, entities such as the United Nations or its subsidiary organizations assist in writing or sponsoring some of the plans. For example, roughly 66% of all PSIS contained an in-country consultation in which the United Nations or its subsidiaries would visit a country for approximately a week-long analysis meeting with dozens of ministries, agencies, and constituents as one of the three documents analyzed per each PSIS, seen previously in Table 2 (Pacific Solomon Islands, 2009, p. 9). There are also some categories in which some specific information is slightly hidden within the columnar nissological categories: the land borders column, for example, includes mentions of the EEZs and the vastness of PSIS when their watery boundaries are included in their measurement.

Bringing these nissological results together, there are considerable data and findings to discuss. First, there is a distribution of the types of CCAPs PSIS have at their disposal, from in-name CCAPs to documents produced on behalf of the United Nations and its division affiliates to state-sponsored literature that may have originated from multiple sources. Although some of the documents have a more regimented pattern than others, analyzing multiple CCAPs per PSIS gave greater opportunities to study the trends of nissology within the documents.

Next, the instances and rates of the nissological principles begin to uncover how certain PSIS sway in terms of having lightly or more heavily nissological tendencies in their documents. The range of scores listed and illustrated in Table 5 and Figure 4, respectively, show the distribution of scores on the multifaceted nissological scale from 9 through 22 on a possible scale of 0 to 24. The top five scoring PSIS on the 0 to 24 index are Tuvalu (TU), Tokelau (TK), Marshall Islands (MI), Federated States of Micronesia

(FS), and Solomon Islands at 22, 21, 19, 18, and 18 respectively. These HNS PSIS are mostly low-lying atoll states (aside from Solomon Islands) with the first two PSIS consisting of only three and nine atolls, respectively. On the other side, the five lowest scoring PSIS on the 0 to 24 index (LNS) are the French Territories (FT) at 9, followed by the American Territories (AT), Fiji (FI), Niue (NI), and Samoa (SA), of which all scored 10. Of these five lowest-scoring PSIS, four fifths are high islands, with the FT being a quasi-outlier. Parts of the French Territories, such as portions of French Polynesia, are low-lying atolls, but other areas are not low-lying islands, such as Wallis and Futuna. This is why the French Territories is categorized as a mixed island typology.

Finally, when looking at the results from the 8 principles of nissology, the outcomes are dominated by environmentally and economically centric categories such as sea resources, land borders, and a sense of limitation. However, these are broad categories and as a whole perhaps do not shed much light on what is in PSIS' CCAPs. Conversely, the lack of migration discussion across PSIS is something that is either omitted possibly due to neither wanting to raise panic nor alarm, or perhaps it is found to be not relevant with CCAPs. The next step is to compare and place some of these nissological results alongside the forthcoming results that will examine success of climate change adaptation to determine whether there is a relationship between nissology and success.

Success Coding Results

The definition and determinants of successful climate change adaptation are divided over 36 binary indicators, based on scholarly research (see section on defining success, Chapter 1) regarding what constitutes successful adaptation. The 51 CCAPs

were coded again via a content analysis focusing on the 36 indicators of success, as illustrated in Appendix C, with the questions listed in Appendix E. An indicator of success answered in the affirmative—meaning that the indicator is present within a PSIS' CCAP—is denoted via an "X," whereas an indicator that is missing from a PSIS' group of CCAPs is marked with an "–" in the corresponding box can be seen in Appendix C's table.

At the bottom of each question's column is a value indicating, on average, the percentage of PSIS in which the indicator of success is present. For example, Question 6, states "Do the plans contain monitoring, assessment, and evaluation opportunities within them?" Question 6 has a 0.83 average, with 15 of the 18 states fulfilling this characteristic of success. At the end of each row, a PSIS total "X" quantity, or the number of the 36 indicators of success fulfilled, is tallied both as a standalone figure and as a percentage. This percentage is not meant to be simply read as a PSIS being "75% successful toward climate change," but rather as a tool by which to compare and contrast specific PSIS with other PSIS. These averages allow patterns to be read, such as which PSIS is the only one not answering in the affirmative to question 22: "Do the plans identify the barriers and risks to adaptation?" Similarly, the analysis can attempt to decipher why only 2 of the 18 PSIS affirmatively answered question 1: "Do the plans use a systemic approach, such as use of metrics, to determine success?"

Analysis of Success Coding Results

The 36 binary indicators were used to quantify the success (based on previously discussed definitions) with which PSIS are approaching climate change adaptation and help illustrate differences between states and any overall regional tendencies wherein

some states are highly successful and others are not. The average among the 18 PSIS is a success score of 74.8%. Again, this is not to say that on average PSIS were approximately 75% successful in their adaptation to climate change; rather, the percentages give certain benchmarks based on what experts in the field state should be done. Some of the 36 indicators of success are actual implementation-based activities, whereas others are planning-based activities (not necessarily doing anything at this particular time, but having the potential to effect change in the future).

The distribution of the success scores of the 18 PSIS is illustrated in Table 6, with Tuvalu and Solomon Islands taking the top two positions, scoring 92% and 86%,

Table 6

PSIS' Success Scores and Rank

State	Success Score*	Success Rank
French Territories	12.67	3-LSS
Kiribati	16.00	3-LSS
Palau	17.33	3-LSS
Papua New Guinea	17.33	3-LSS
Samoa	17.33	3-LSS
Timor-Leste	17.33	3-LSS
Cook Islands	18.00	2-ASS
Federated States of Micronesia	18.00	2-ASS
Fiji	18.00	2-ASS
Niue	18.00	2-ASS
Nauru	18.67	2-ASS
Tonga	18.67	2-ASS
Vanuatu	18.67	2-ASS
American Territories	19.33	1-HSS
Marshall Islands	19.33	1-HSS
Tokelau	19.33	1-HSS
Solomon Islands	20.67	1-HSS
Tuvalu	21.33	1-HSS

Note. HSS = highly successful state; ASS = average successful state; LSS = low successful state. *Success score normalized from x/36 to x/24.

respectively. The next top-scoring states are the American Territories, Marshall Islands, and Tokelau, all scoring approximately 81% on the success scale. Coming in at just less than 78%, Nauru, Tonga, and Vanuatu round out the top 8 of the 18 PSIS, with these states scoring above the mean of 75.4, and the other 10 scoring below. The lower-scoring 9 states are Cook Islands, Federated States of Micronesia, Fiji, and Niue (all coming in at 75%), then Palau, Papua New Guinea, Samoa, and Timor-Leste, coming in at 72%. Last are Kiribati, and the French Territories scoring 67% and 53%, respectively.

Table 6 illustrated the PSIS and their success scores, while also grouping them into high, average, and low success scores, based on their fulfillment of the 36 SIQs. The individual 36 success indicators analyzed to determine success have been illustrated in Figure 6, indicating that four indicator questions are fulfilled in the affirmative by all 18 PSIS, whereas 90% of all PSIS answered an additional nine indicator questions in the affirmative. These 13 questions with such a high rate of response are illustrated within the SIQ Scoring Table, Appendix C. Conversely, the indicator question with the lowest number of PSIS answering affirmatively was question 1.

Figure 5 below illustrated the number of PSIS reaching certain thresholds of fulfillment amongst the 36 SIQs. For example, the French Territories is the only PSIS to answer affirmatively to 52.7% – or barely half – of possible SIQs. The most concentrated portion of PSIS' scores was situated between 72% - 81% of SIQs answered affirimatively.

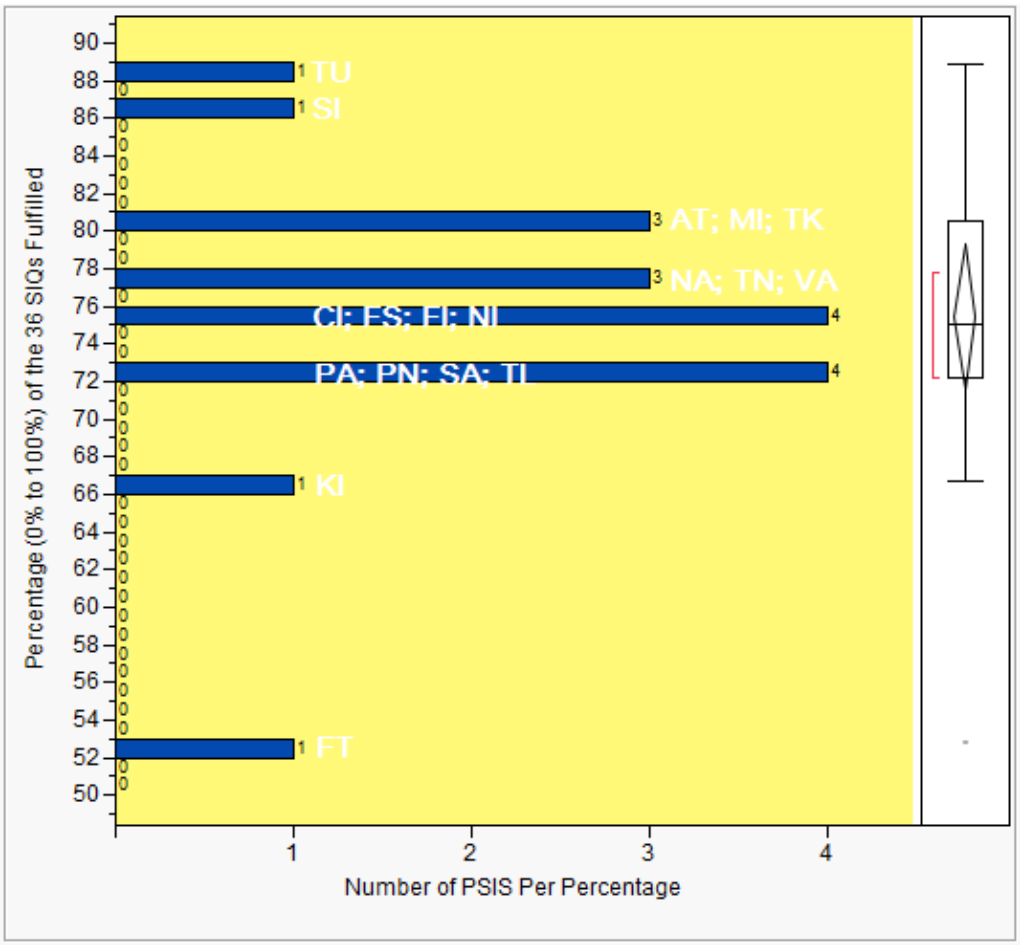

Figure 5. Percentage (%) of 36 indicators of success fulfilled by PSIS.

1. Do the Plans Use a Systemic Approach, Such as Use of Metrics, to Determine Success?

With the lowest response rate of any of the success indicators (2 of 18), this metric illustrates that PSIS' CCAPs fail in determining success or how to measure it, even though they may use the word *success* throughout their plans. This success indicator illustrates an overall lack of going beyond a superficial notion of wanting success without having any method by which to plan for it.

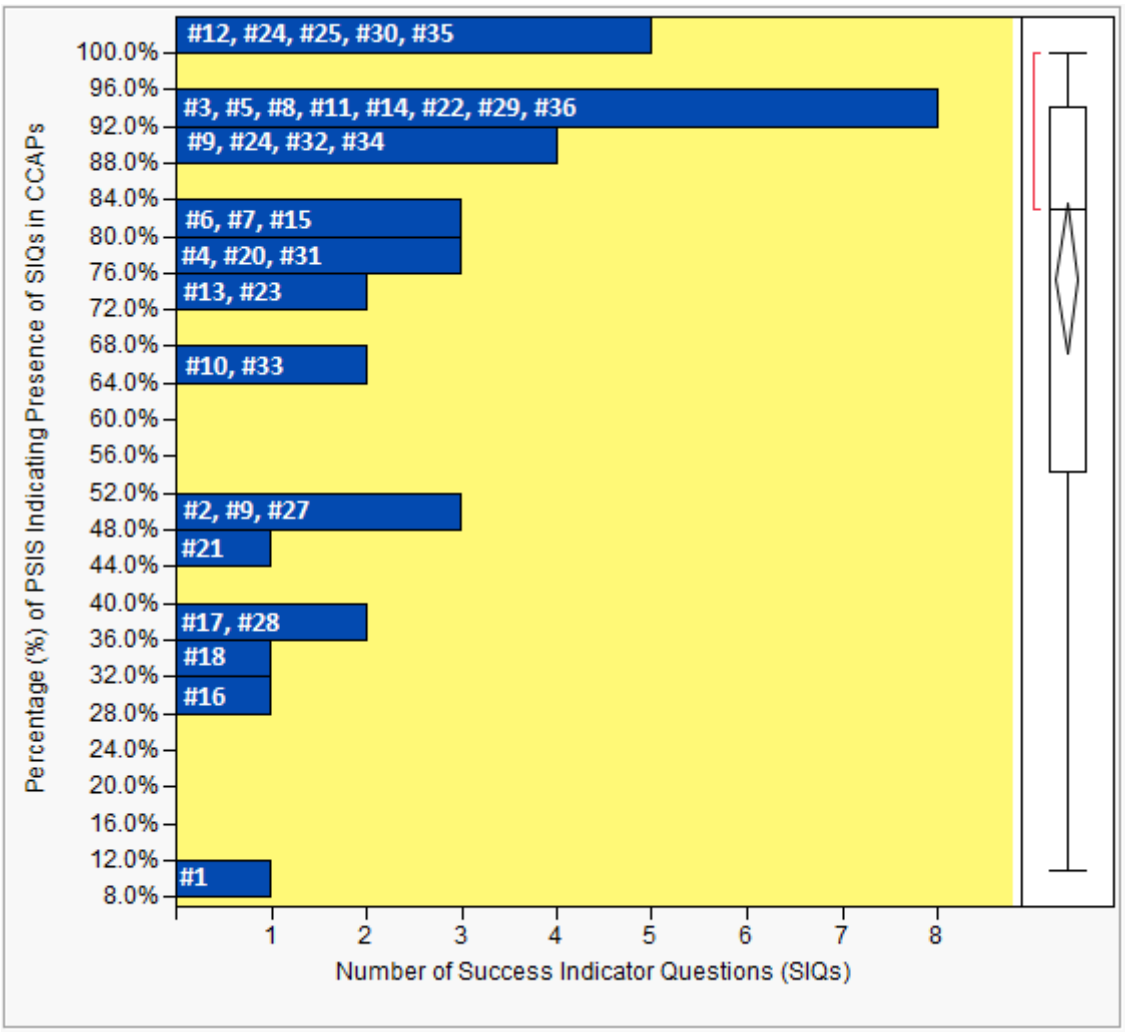

Figure 6. Percentage of PSIS indicating presence of success SIQs within CCAPs. Refer to Appendix E for SIQs.

2. Do the Plans Refer to Learning From Past Lessons?

With a response rate of 9 of 18 PSIS, this metric illustrates that, on average, PSIS do take past lessons into account when planning for current and forecasted effects of climate change. The CCAPs ultimately were scored in the affirmative only if PSIS stated specific references to past lessons learned and how they are integrated into their CCAP and associated plans. This success indicator illustrates that on average, half of all PSIS implement specific past lessons into future CCAPs.

3. Do the Plans Mention an Invitation to Various Stakeholders?

With a response rate of 17 of 18 PSIS, this metric is one of the nine indicators on which all but 1 PSIS contained affirmative wording. This illustrates that, on the whole, PSIS at least give examples of who is invited to the table to participate in the planning process. Although a mere mentioning of the invitation and invitees is enough to warrant credit for this success indicator, other questions build off of this one—asking about specific synergies between the CCAPs and their unambiguous inclusion into other state-related processes.

4. Do the Plans Have Synergies or Links With Other Plans, Processes, and Programs?

With 14 of 18 PSIS having affirmative wording, this metric goes beyond the superficiality of plans simply saying that they would have synergies with other related plans and state-specific goals. For a PSIS to score in this indicator, the CCAP had to specifically state how the CCAP is holistically interwoven with other related plans so that the CCAP does not sit alone in a siloed fashion. Even with this higher-level threshold, the majority of states do provide the linkages necessary to other climate change–related documents; yet, similarly to other success indicator questions, the rate by which the synergies exist was not evaluated.

5. Do the Plans Illustrate or Discuss the Potential Goals of the Plans?

The response is similar to success indicator 3 in that 17 of 18 of the PSIS containing affirmative wording. Although this item can be considered popular from the point of view that it has near-unanimous participation, there are multiple interpretations of the question. For example, PSIS were scored if they gave specific project-based goals for their PSIS, whereas states could also get a point for saying that their overall plans

were involved with tackling climate change at the state or regional level. The former instances were much more common than the latter, whereas the latter may be more indicative of more resilient long-term planning. Nonetheless, it is important that the majority of PSIS have specific ideas of how they anticipate planning for forecasted effects of climate change.

6. Do the Plans Illustrate or Discuss the Potential Goals of the Plans?

With 15 of 18 PSIS having affirmative wording, the majority of states assess their CCAPs after implementation. However, this is another indicator for which it is relatively easy to list strategies within the plan, whereas accomplishing implementation is another story. Conversely, it is admittedly difficult and perhaps overly burdensome to expect the CCAPs to list exact evaluation methods. Related to this success indicator are other indicators related to how to determine success; how both projects and evaluation will be funded; and what to do as state, regional, or even global goals change.

7. Are "No-Regrets" Approaches Identified?

Also with 15 of 18 PSIS containing affirmative wording, the "no-regrets" (approaches that would have a net benefit to a PSIS regardless of whether it specifically addresses or solves a climate-related effect) success indicator has the majority of support but is also not robust in what it is uncovering. CCAPs rarely state that they initiate an action because it helps the PSIS adapt to climate change or it will be beneficial to the state. Rather, they are more likely to say that they will initiate no-regrets approaches. However, as in some of the other examples mentioned, it is quite easy to place no-regrets approaches within a PSIS' plans but it is a more challenging task to identify and implement.

8. Are the Plans Looking to Go Beyond Just Maintaining the Status Quo?

This question, with 17 of 18 PSIS containing affirmative wording, seeks information about whether states are taking proactive and not reactive actions toward forecasted climate change. Many of PSIS' CCAPs can be considered reactive in a sense, but at least 17 of 18 PSIS looked further ahead than today in their plans. A question to ask in the future would entail PSIS' creating a timeline for how they might approach forecasted effects.

9. Do the Plans Recognize Adaptation As an "Iterative, Evolving Process?"

This question, for which 16 of 18 of the PSIS contained affirmative wording, illustrates the general notion that adaptation and mitigation methods will most likely need to shift over time and that there needs to be a multipronged approach to deal with the forecasted effects of climate change. Again, PSIS did not have to indicate how they intended to amend plans or evaluate what is working well in order to be scored positively, but this is another factor to consider and add in the future when evaluating CCAPs.

10. Are Timelines/Temporal Goals Given in the Plans?

Although only 12 of 18 gave timelines or time-related goals within their plans, PSIS are doing a satisfactory job at giving realistic thought as to how and when they anticipate accomplishing goals. However, PSIS were able to score in this category with minimal attention to effort, and many PSIS lacked strong timelines and temporally related goals. An expansion of this success indicator could examine whether the majority of a PSIS' CCAP followed a regimen for thorough evaluation versus solely stating that they would come back once in every 5 years to evaluate the plan.

11. Do the Plans Have Baselines Against Which to Measure Progress?

With 17 of 18 PSIS containing affirmative wording, it is evident that almost all PSIS are using particular data by which to plan their CCAP goals and next steps. However, similar to other success indicator questions, not a large breadth of information characterized the states' baseline data. Much of what are considered baseline data are currently observed conditions in connection with specific adaptation projects when at the same time PSIS are calling for better data. Although it is a positive feature that so many states have baseline data, the specificity of that baseline data within CCAPs is limited.

12. Do the Plans Purport to Help Build/Increase Adaptive Capacity?

One hundred percent of PSIS contained affirmative wording. All of the plans had some aspect by which to aid their home state in becoming more resilient. Again, the CCAPs themselves were often short on specifics but at least state which resilience-related goals are being considered to describe associated projects.

13. Do the Plans Discuss the Financing of Adaptation?

With 13 of 18 PSIS having affirmative wording, slightly more than two of every three PSIS have thought about the financial costs associated with adaptation. Once again, the amount of planning or even cost estimates varied between the PSIS. If a state accomplished the task for even one project, it received a point. Few PSIS actually attached finite numbers and estimates to their plans, and even fewer actually had the financial planning in place to say when they might start.

14. Is the Plan's Context Specific to the State?

All of the PSIS (17 of 18) fulfilled this indicator, aside from the French Territories. This measure of success for this indicator is not difficult to fulfill—if a PSIS contains a CCAP then the requirement is met. For the French Territories, the only related CCAPs are those that reference French overseas territories worldwide, or European Union–related climate change plans. As noted, many but not all of the PSIS shared similar plans that were prepared at the United Nations or Secretariat of the Pacific Regional Environmental Programme level, but are indeed individualized for the specific PSIS in question.

15. Do the Plans Recognize Limits to the Strategies They Can Achieve?

This acknowledgment states that plans explicitly talk about the hardships in planning for climate change. With 15 of 18 PSIS recognizing these limits in their plans, they are a bit more realistic about what is achievable based on certain limitations, although they may not be empowered to effect greater change.

16. Is Resettlement Discussed As an Option of Last Resort?

Whether discussing intracountry or intercountry migration, the 5 of 18 PSIS that contained affirmative wording to this question specifically stated that as other options are exhausted, relocation of their villages, societies, or even states may be necessary. PSIS that spoke to this question may be better prepared than the others because of their forward-thinking approach to environmental implications of climate change along with an implicit acknowledgment of the hardships of relocation. Recognizing the possibility of in-country immigration or emigration as an option of last resort implies that PSIS are not blind to what may happen because of forecasted climate change but will initiate other

planning options ahead of time in the hope that the choice of last resort does not need to occur.

17. Do the States Avoid Maladaptation (Such As Sea Walls) As a Method to Reduce Exposure?

This question addressed whether PSIS were maladapting (e.g., seawall construction) i.e. were adapting in ways that further injured the surrounding environment while temporarily providing a solution to a particular problem. PSIS gained credit for this indicator (7 of 18) unless they specifically sought out the construction of new sea walls. Although this credit has good merit and intent, plans are very difficult to evaluate with regard to maladaptation: States will rarely be cognizant of or admit to these types of inferior adaptation methods. Further, there are other types of maladaptation examples that are more situational than sea walls such as investing in infrastructure that will result in stop-gap relief from the current or forecasted effects of climate change. The evaluation of maladaptation is ideologically an effective indicator for success, but its evaluation through PSIS' CCAPs is difficult to accomplish and often comes with certain judgment calls, about which there is some disagreement.

18. Do the Plans Mention Increasing Mobility, Migration, and Labor Opportunities for Movement?

With only 6 of 18 of PSIS containing language regarding migration within their CCAPs, this success indicator illustrated a potential resilience gap. Whether through intracountry or intercountry migration, the free movement and flow of people can help alleviate the effects of both sudden and incremental environmental disasters. Important concepts with this indicator are that territorial inhabitants can move to their host countries

(if financially able to make the journey), whereas certain newly independent states have conventions or compacts with their formers hosts. Conversely, PSIS that gained their independence longer ago do not have the same migration opportunities for residents to leave their homeland. This question could be furthered by analyzing the migration opportunities per state based on the categorical analyses offered earlier.

19. Are the Plans Integrated With Other Plans of the State and Not Siloed?

This question examined the holistic relationship (or lack thereof) between PSIS' CCAPs and their other related state documents with which climate change adaptation would normally present itself as relevant. To successfully fulfill this credit, PSIS had to indicate at least one other state-level plan or policy with which their CCAPs meshed or describe how the CCAPs incorporate features of another plan or vice versa. The 9 of 18 PSIS fulfilling this indicator all illustrated how their CCAPs were part of the larger policy network of their state and were not standalone documentation without any inroads or links to other plans or policies. The integration of CCAPs is critical as a success indicator, because once a CCAP is intertwined with broader PSIS' policy agendas, adaptation plans will be less likely to be ignored than if they were standalone.

20. Do the Plans Avoid the Need for Repeated Studies and Avoid Delaying Implementation of Important Decisions?

Fourteen of 18 PSIS met the indicator requirement that plans should not defer action based on a seemingly never-ending need for more information. The question is distinct from monitoring and evaluation studies, which are important. Granted, the only method by which PSIS' CCAPs were evaluated for this requirement is by states explicitly saying that they needed to withhold from moving forward until more environmental data

could be ascertained. In the future, this indicator could be expanded by taking timelines and goal setting into account to surround the PSIS with positive methods by which to fulfill the indicator instead of negative indications causing the state not to achieve the credit.

21. Do the Plans State Their Values Regarding Science and Whose Interests Are Represented?

This success indicator, which only 8 of 18 of the PSIS fulfilled, may appear superficial on the surface, but by stating the values and the rationale behind the plans can be indicative of greater success. Although this success indicator does not differentiate between grandiose declarations of values (e.g., what guides the CCAP document, what is important to the PSIS society, or what is culturally vital to retain in the face of current and forecasted effects of climate change) versus precise acknowledgments, the stated values aid in framing the forthcoming policy. Potential additions to the question could be an analysis of the particular values stated: what they are, how they are defined, and if they represent the PSIS as a whole.

22. Do the Plans Identify the Barriers and Risks to Adaptation?

This success indicator was not difficult to fulfill, with 17 of 18 PSIS answering affirmatively. Whether financial, political, or otherwise related, states were not timid in identifying challenges to the difficulties and risks to various forms of adaptation. In fact, difficulties were sometimes used as rationales for not completing certain desirable tasks. States may actually have overstated certain difficulties to rationalize, for example, a lack of fiscal ability to accomplish certain goals or projects.

23. Are Adaptation Goals a Result of Community/Partner Meetings?

This success indicator, as evaluated at the CCAP level, is challenging in that only plans that outright state this achievement can be scored as fulfilling the requirement. Still, 13 of 18 PSIS mentioned precisely which communities and partners were consulted for the drafting and execution of relevant climate change plans. Although some states may have only mentioned one group and others mentioned multiple groups, the fact that they described ways in which the community is included is tantamount to better opportunities for buy-in and success.

24. Do the Plans Differentiate Between Types/Levels of Adaptation?

This indicator is difficult to evaluate. For this study, it is taken to mean that there are different levels of adaptation, such as overall policy, individual community-specific projects, and temporal differences in the rate and scheduling of adaptation goals. With 16 of 18 PSIS accomplishing this indicator, it is one of the easier credits to achieve but is also indicative of a well-balanced report in considering the spectrum of climate change effects and preparation.

25. Do the Plans Satisfy Multiple Objectives of Multiple Actors (e.g., science, policy)?

All PSIS (18 of 18) satisfied multiple objectives of multiple actors when preparing for the forecasted effects of climate change. Not surprisingly, there is a continuum of how many actors are involved in the process and the forecasted projects associated with that outlook; therefore, future indicator studies could examine the type of multiple actors contacted and the methods used.

26. Do the Plans Maintain Environmental/Resource Values Even As the Environment Changes?

Once again, this was a difficult success indicator to evaluate for PSIS through their plans, but a positive score was accomplished through any mention of environmental and resource management on island in a temporal sense. With 18 of 18 PSIS fulfilling this requirement, it is not difficult to imagine environmental- and resource-based objectives having an important role within CCAPs, and the discussion of them in a changing context through any adaptation and mitigation-related activities is needed because neither the neither nor the plans are static.

27. Do the Plans Exhibit Buy-in to Adaptation Planning/Implementation?

If PSIS detail activities associated with buy-in, such as village outreach, community meetings, and inclusive policymaking activities, among others, they are among the 9 of 18 of states fulfilling this indicator. Although craftsmanship of plans can be a mixture of top-down and bottom-up approaches, more successful states describe inclusionary approaches that allow a variety of opinions to foment creation of CCAPs. Interestingly, the 9 PSIS answering this success indicator affirmatively also occupy the top 5 most successful PSIS, as determined by success score; nonetheless, other PSIS may exhibit these tendencies without actually writing about how the meetings were held.

28. Are the Plans Flexible with Strategies or Do They Have Adaptive Management Mechanisms?

PSIS scoring points for this category anticipate strategies needing to be reevaluated or edited based on new, changing, or contradictory information. Only 7 of 18 PSIS had evidence within their CCAPs that plans may need to be changed. This is a

recognition of the fluidity and flexible structure of the plans. However, just because the other 11 PSIS do not outright state the flexibility within their plans does not necessarily mean that their plans would be difficult or more problematic to modify.

29. Do the Plans Invest in People, Not Just Technology, Policy, Tools, and Infrastructure?

Seventeen of 18 PSIS contained affirmative answers regarding the human dimension of the forecasted impacts and effects of climate change. Although this question evaluated the degree in which humans are key components to consider within CCAPs, future analyses could evaluate the credit more on the basis of empowerment to people as the form of investing instead of taking a wider approach looking at the extent to which people are considered within the larger equation.

30. Do the Plans Enable/Foster Collaboration Between Knowledge Sources and Decision Makers?

The success indicator determined whether decision makers and those having greatest impact on the CCAPs were knowledgeable about the facts, consequences, and overall environment as climate change forecasts pertained to their PSIS. This was a difficult success indicator to evaluate at the CCAP level, because it deals with behind-the-scenes information that normally would not be part of a policy document. Therefore, CCAPs were evaluated based on whether the plans mentioned decision makers using non-siloed approaches in policy making. At this broad level, all PSIS (18 of 18) illustrated somewhere within their plans examples where decision makers were interacting with communities and organizations to firsthand hear or learn about the facts before making policy decisions affecting those constituents.

31. Do the Plans Contain Effective Risk Communication: Awareness, Methods, Sharing Knowledge?

Similar to other success indicator questions, unless plans outright discussed their risk communication methods, it was difficult to ascertain whether it was accomplished. Notwithstanding, risk reduction is arguably more of an essential piece to the actual CCAPs than a fostering of collaboration. With 14 of 18 PSIS containing affirmative wording, the majority of states allocated space within their plans for this more top-down approach to sharing information with populations that may otherwise not receive the data. To further evaluate this success indicator, additional investigation could be performed (most likely outside the realm of success indicator questions) determining which PSIS have conducted their own community outreach to determine familiarity with climate change forecasts and associated implications.

32. Do the Plans Have Adaptation Project/Policy Evaluations?

With 16 of 18 PSIS fulfilling this indicator, PSIS at least incorporated evaluation mechanisms into their CCAPs. However, as with other PSIS, including certain features and actually implementing them are two different things. In addition, CCAPs often neglect to say how evaluations will take place, which types of evaluations are performed, and the frequency with which revisiting of the information occurs, if any. In the future, the types of evaluations and the results of those assessments can be included and be regarded as indicative of more successful PSIS.

33. Do the Plans Convey Any Relevance or Personal Meaning to Stakeholders?

As with previous success indicators, this indicator was difficult to capture within CCAPs—how can one be sure that personal meaning and relevance is indicated within a

plan? With 12 of 18 PSIS scoring affirmatively for this indicator, a host of qualifying data from plans can fulfill this indicator: village outreach, community meetings, decision making at the nonexecutive levels, and more. Therefore, although it is not only difficult but also arguably unlikely that all PSIS would detail potential relevant activities used in the making of the plans, those PSIS that did detail potential relevant activities discussed those processes within the CCAPs.

34. Do the Plans Consider Trade-Offs/Synergies Between Adaptation, Development, and the Like?

Because this success indicator question attempts to determine trade-offs or synergies, if a PSIS did demonstrate at least one of those, then it scored affirmatively in this regard, totaling 16 of 18 of PSIS. A majority of the plans discussed items such as maladaptation (e.g., seawall construction), future climate change forecasts, and related planning efforts, as well as how the state foresees developing into the coming years and decades. A future analysis and focus of PSIS' CCAPs could more closely focus on the trade-offs which are not often discussed within the plans.

35. Do the Plans Make Adaptation Appear As a Way of Creating a Better Situation for the State?

All PSIS (18 of 18) made adaptation plans appear as a way of creating a better situation, even though there may be negative aspects mentioned, especially with changing cultural norms, environment, and overall ways of life. In other words, PSIS were not harping on grim circumstances but rather, they were more optimistically preparing for how to deal with forecasted and impending effects of climate change. It is interesting to

note that in the face of uncertainty and difficulty, none of the PSIS crafted its document in an overwhelmingly or overt inflammatory manner.

36. Do the Plans Articulate Adaptation As a More Desirable Future?

Although PSIS do not often state that a future filled with the effects of climate change is a better situation, 17 of 18 of PSIS did—in one manner or another—describe adaptation as beneficial to either inaction or relying on mitigation. An interesting tangent and expansion to this question would be PSIS' viewpoints on the issue of climate debt and responsibility, although aside from any introduction or letter included from a policymaker, these items would not normally be found within CCAPs or policy documents.

Combined Results

Combined Nissological and Success Results

To determine whether there is a relationship between nissology and success, the 18 individual PSIS must be lined up and evaluated: Do the PSIS that score high in nissological characterizations also score high in success-related characteristics? An efficient and refined way to answer this question is through statistical regression to determine if there is a robust relationship between the two results. The nissological scores of PSIS are used as the dependent variable on the scale of 0 through 24. On the independent variable axis are the indicators of success for each of the PSIS. Although there were 36 indicators of success, they were normalized over a scale of 24 for comparative purposes: a score of 30/36 is shown (and is mathematically equivalent) as 20/24.

The linear model in Figure 7 illustrated a relationship between nissology and success as evidenced by a trend where an increase in a nissological score generally yields an increase within the success of the PSIS. With a *p* value of .0056, the relationship is statistically significant or robust, and more than half of the 18 PSIS are located within the .05 confidence interval, shaded.

Specifically, the relationship between nissological score and success is robust and statistically significant. With a the linear equation (represented by the solid line in Figure 7) of $y = 14.0761 + .2837 \times \text{NissScore} = \text{Success}$, the base success rate would be [14.0761+(0*.2837)]/24 or 58.65%; and the highest possible value would be [14.0761+(24*.2837)]/24 or 87.02%. The actual bounds for nissological scores are the French Territories and Tuvalu, scoring 69.28% and 84.66%, respectively, with nissology scores of 9 and 22 respectively. In other words, every additional nissological point attained yields approximately a 1.2% increase in success. These data show that plans that do not include any nissological principles and characteristics may be less successful; nissology explains approximately 28.37% of a PSIS' success score.

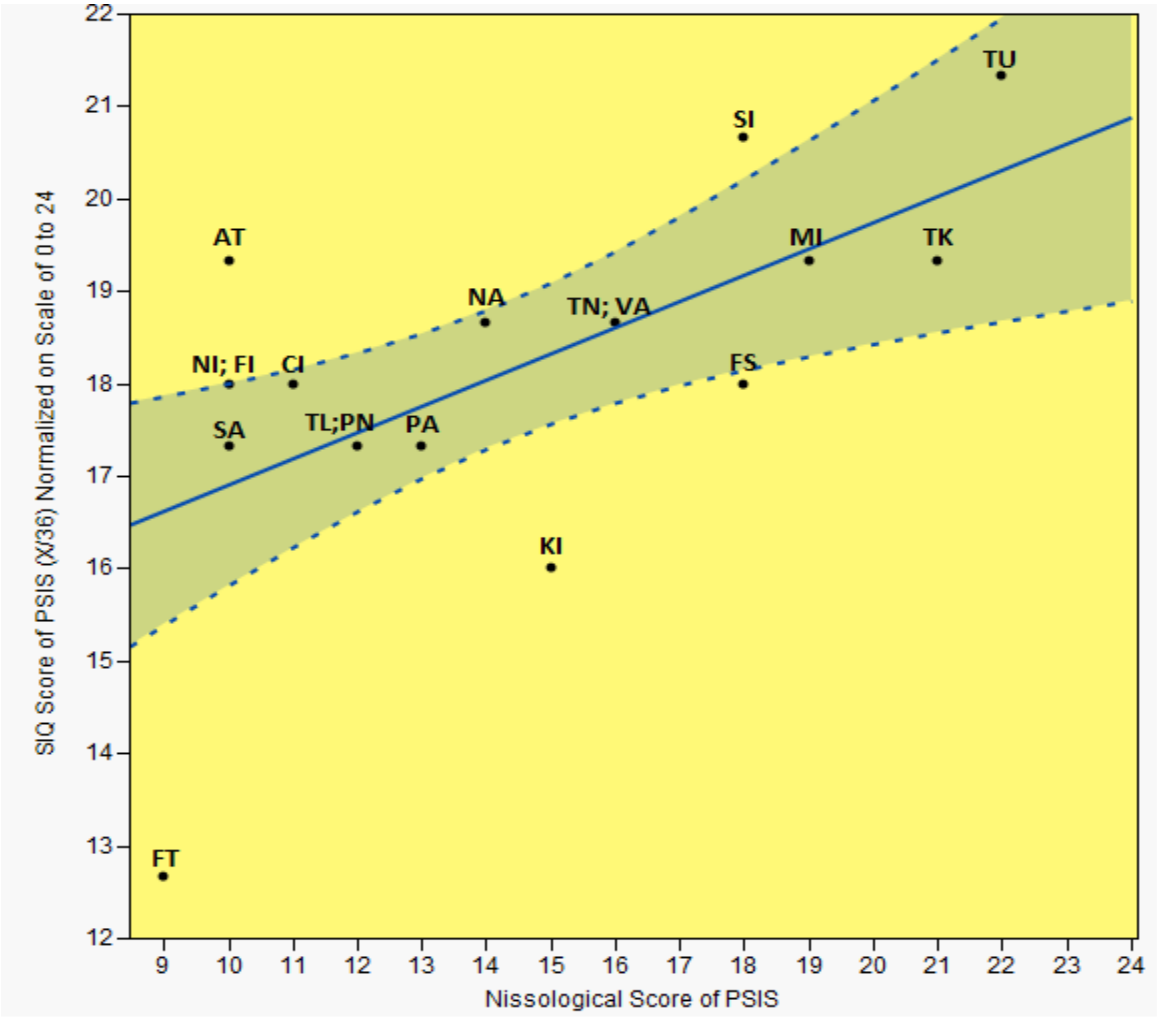

Figure 7. Nissological scores of PSIS by success scores of PSIS. CI = Cook Islands (S); FS = Federated States of Micronesia (I); FI = Fiji (I); KI = Kiribati (I); NA = Nauru(I); NI = Niue (S); PA = Palau (I); PN = Papua New Guinea (I); SA = Samoa (I); SI = Solomon Islands (I); TL = Timor-Leste (I); TK = Tokelau (T); TG =Tonga (I); TV = Tuvalu (I); VN = Vanuatu (I); AT = American Territories (T); FT = French Territories (T); S = semiautonomous; I = independent; T = territory.

Combined Nissological and Island Characteristics: Frequency of Islands

The relationship between an island's nissological score and the frequency or number of islands located within a particular PSIS can illustrate a potential relationship between how islanders view themselves both as islanders and geographically. Relating back to the concept of insularity, less-developed states that are more removed may be less

exposed to trade and communication than others (hyperinsularity) whereas others have greater linkages to the globe (hypoinsularity; Taglioni, 2011, p. 56). Therefore, the assumption can be made that those smaller and more remote states with fewer global attachments and connections might exhibit higher nissological levels. However, as seen in Figure 8, the individual markers representing PSIS are found scattered among the ranges of nissological viewpoints and number of islands. In fact, if the Marshall Islands, which has more than 1,200 islands (not all inhabited), were excluded within this analysis, there would be an even greater lack of a relationship.

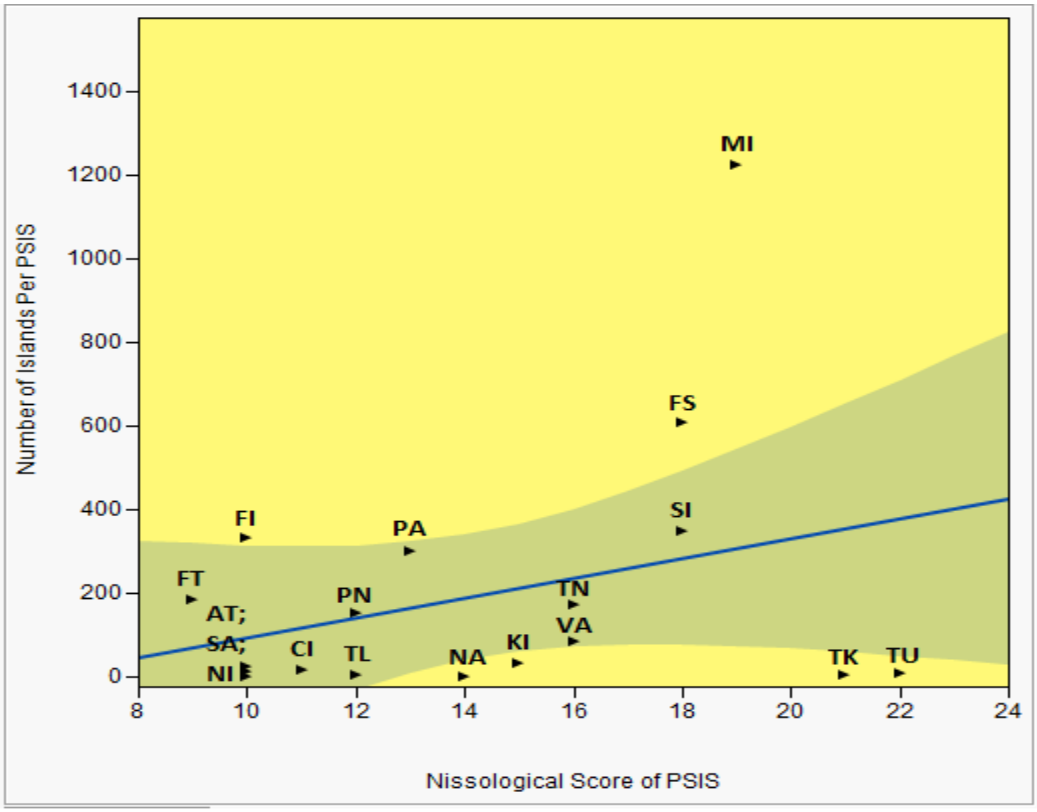

Figure 8. Nissological scores of PSIS by number of islands of PSIS. Note. CI = Cook Islands; FS = Federated States of Micronesia; FI = Fiji; KI = Kiribati; NA = Nauru; NI = Niue; PA = Palau; PN = Papua New Guinea; SA = Samoa ; SI = Solomon Islands; TL = Timor-Leste; TK = Tokelau; TG =Tonga; TV = Tuvalu; VN = Vanuatu; AT = American Territories; FT = French Territories.

Combined Nissological and Island Characteristics: Date of Independence

Samoa became the first of the 18 PSIS to gain independence from a colonizing country. Since then, 11 of the PSIS reached independence before the year 1990, whereas the other 7 PSIS either gained their independence in the past 25 years or are still governed by a host country. Analyzing PSIS' nissological scores against their date of independence—before 1990 or not—yields the relationship seen in Figure 9.

There appears to be a trend between PSIS' nissological score and the year of independence; however, the relationship is neither statistically significant nor robust. Notwithstanding, it is evident that aside from one state, all PSIS lacking independence before 1990 have low nissological scores. One reason to look at this relationship is that the plans, policies, and projects executed on either nonindependent or recently independent PSIS may be handed down from the mainland (i.e., France, New Zealand, United States) or by other past colonial rulers, who were less likely to take the unique and particular island and islander characteristics into account. Conversely, those states that have been independent for more than 25 years could be more globalized and integrated in the global dynamic than territories and recently independent PSIS.

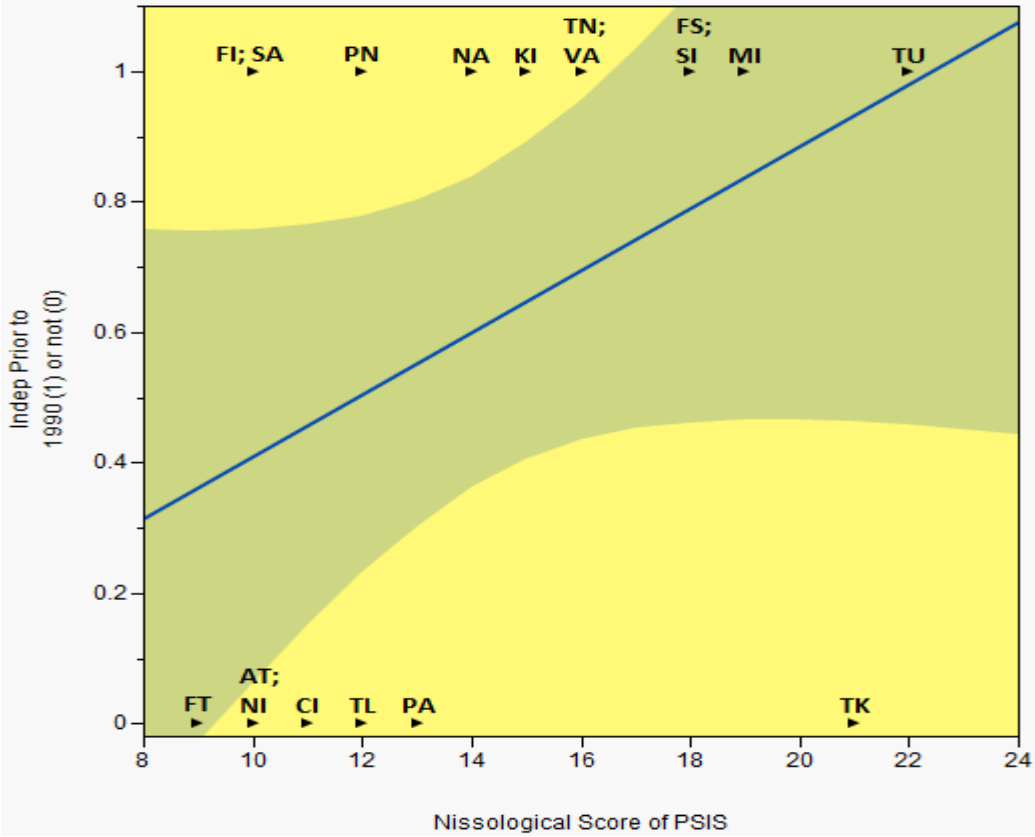

Figure 9. Nissological scores of PSIS by independence of PSIS before 1990. CI = Cook Islands; FS = Federated States of Micronesia; FI = Fiji; KI = Kiribati; NA = Nauru; NI = Niue; PA = Palau; PN = Papua New Guinea; SA = Samoa ; SI = Solomon Islands; TL = Timor-Leste; TK = Tokelau; TG =Tonga; TV = Tuvalu; VN = Vanuatu; AT = American Territories; FT = French Territories.

Combined Nissological and Island Characteristics: Current Sovereignty

Five of the 18 PSIS were still not independent states in 2014. Do states that are not independent act in a particular manner with regard to nissology? Is it easier or more difficult to hold onto more island-centric ways of thinking either while independent or as a territory under another state's leadership? Figure 10 shows that current sovereignty is related to PSIS' nissological score but not statistically significantly. Of the 5 PSIS that are territories or semiautonomous, Tokelau which is illustrated by the enlarged triangular marker, is an outlier. If Tokelau (enlarged marker) were disregarded from the analysis as

a statistical outlier, then the relationship jumps to a p value of .0172, seen with the dashed line. However, with only 5 PSIS as nonsovereign, this small sample size should not be taken as a rule, but it can lend credence to future analyses where sovereign and nonsovereign states are evaluated in a policy context.

Combined Nissological and Island Characteristics: Island Height

Related to the frequency of islands in PSIS is the concept of high islands and low islands, as well as the centers of populations on the islands. Although some PSIS are easily characterized by their heights, other PSIS are difficult to categorize because of

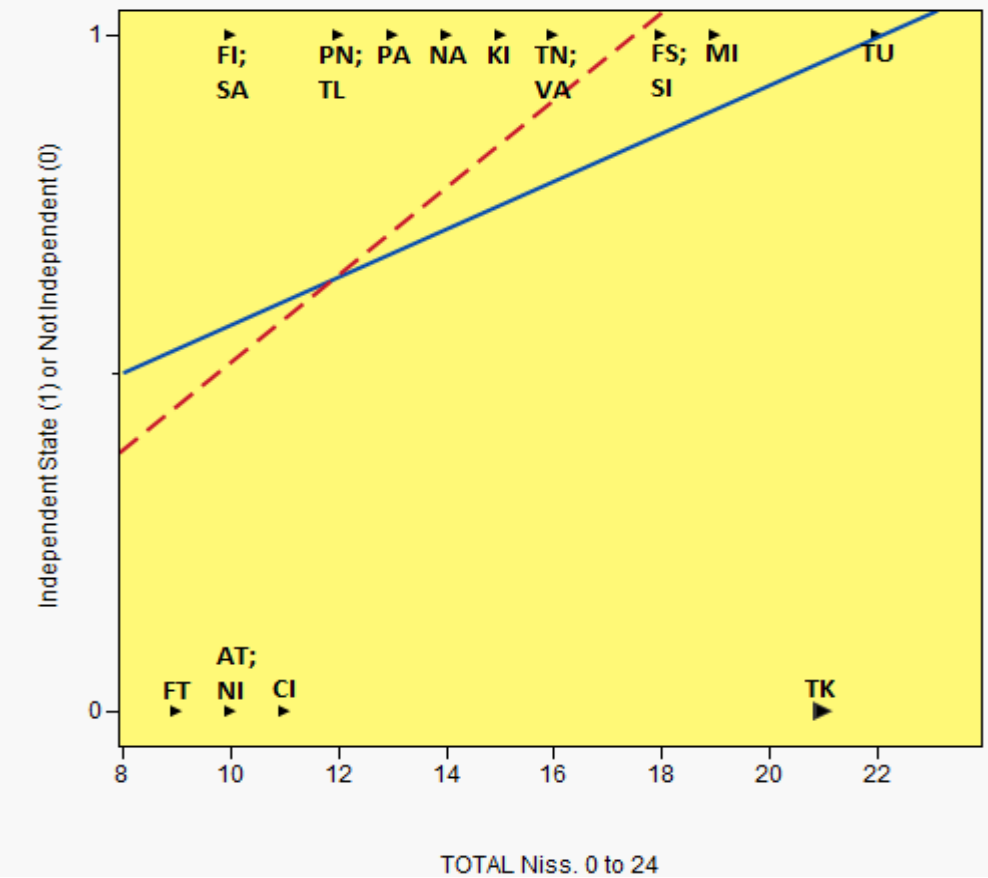

Figure 10. Nissological scores of PSIS by sovereignty status. Note. CI = Cook Islands (S); FS = Federated States of Micronesia (I); FI = Fiji (I); KI = Kiribati (I); NA = Nauru(I); NI = Niue (S); PA = Palau (I); PN = Papua New Guinea (I); SA = Samoa (I); SI = Solomon Islands (I); TL =

Timor-Leste (I); TK = Tokelau (T); TG =Tonga (I); TV = Tuvalu (I); VN = Vanuatu (I); AT = American Territories (T); FT = French Territories (T); S = semiautonomous; I = independent; T = territory.

their vast degree of heterogeneity. Therefore, if islands are low lying with much of their population centered within 5 m or less above sea-level, they were classified as low. If the PSIS has large areas of land more than 5 m above sea-level with a majority of the population living within these upper areas, the PSIS was classified as high. If the PSIS contains both low and high islands with a mix of population centers, the PSIS was classified as mixed.

The rationale for testing island height as affected by nissological scores is that perhaps those states with the lowest elevations, not much above sea-level, are those that retain more nissological tendencies because of their natural proclivity to functioning as islands and an inability to transform their ways of life into more continental viewpoints. Of the 18 PSIS, 9 were classified as high, 5 as mixed, and 4 as low. Results from the analysis reveal a statistically robust or significant relationship between nissological score and island height (Figure 11). Both high and mixed islands have lower nissology scores with a higher quantity of high islands scoring lower on the nissological index than mixed islands. Of the 4 PSIS classified as low islands, 3 occupy the top three places on the nissological index.

Combined Nissological and Island Characteristics: Commercial Direct Air Accessibility

Many PSIS have limited transportation available via commercial air travel; this may have historically impeded cooperation with other neighboring states that share geographic and cultural similarities. The accessibility analysis analyzed the relationship

between a state's nissological score and accessibility options. The rationale for testing nissology and commercial direct air accessibility is that PSIS that are better connected in

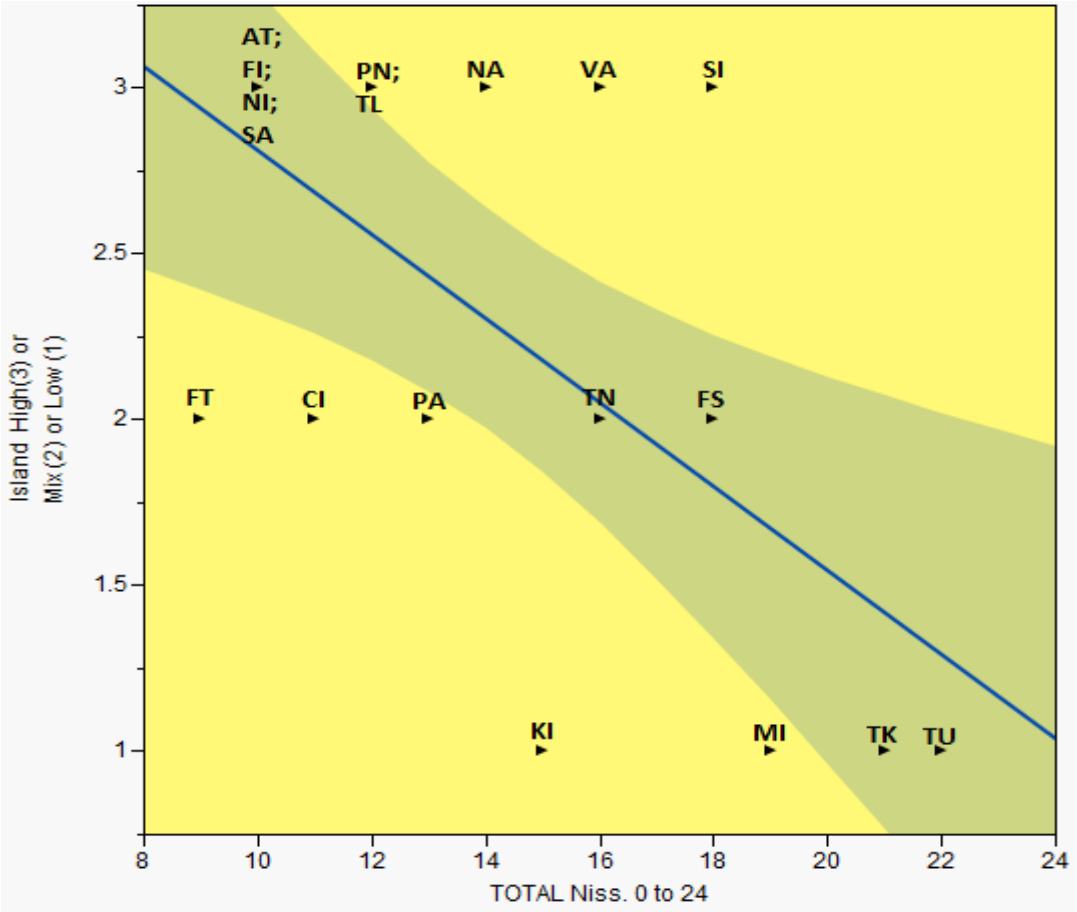

Figure 11. Nissological scores of PSIS by island height. CI = Cook Islands; FS = Federated States of Micronesia; FI = Fiji; KI = Kiribati; NA = Nauru; NI = Niue; PA = Palau; PN = Papua New Guinea; SA = Samoa ; SI = Solomon Islands; TL = Timor-Leste; TK = Tokelau; TG =Tonga; TV = Tuvalu; VN = Vanuatu; AT = American Territories; FT = French Territories.

the region, Figure 12, may exhibit stronger nissological tendencies, because they can better communicate with their island neighbors. Conversely, the better connection within the region might yield less place-specific strategies and, through regionalization, might lead to more generic viewpoints on island. With an average 2.39 destinations available via commercial air travel, there does not appear to be a strong relationship between a

PSIS nissological score and accessibility; in fact, 16 of the 18 PSIS have accessibility to one-sixth of the PSIS in the region or fewer.

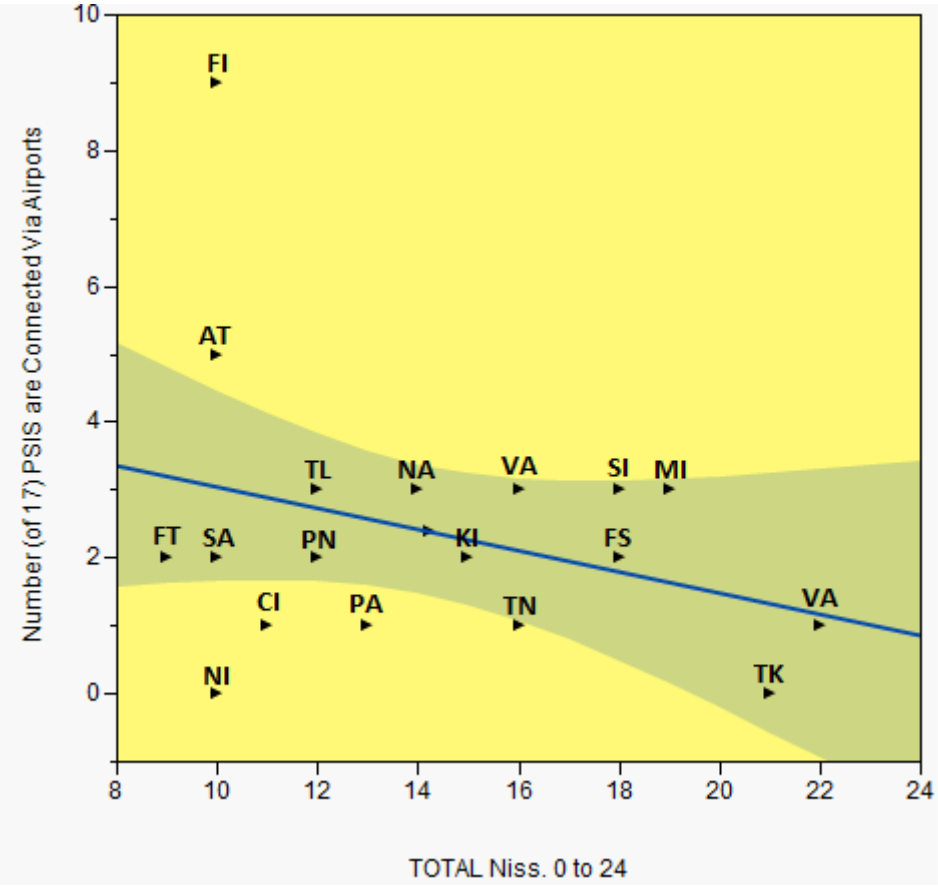

Figure 12. Nissological scores of PSIS by island connectivity via PSIS' airports. CI = Cook Islands; FS = Federated States of Micronesia; FI = Fiji; KI = Kiribati; NA = Nauru; NI = Niue; PA = Palau; PN = Papua New Guinea; SA = Samoa; SI = Solomon Islands; TL = Timor-Leste; TK = Tokelau; TG =Tonga; TV = Tuvalu; VN = Vanuatu; AT = American Territories; FT = French Territories.

Overall Synthesis and Findings

Hypothesis 1 states *PSIS that use a CCAP based more deeply on a nissological understanding of "islandness" will have more successful plans, policies, and projects than PSIS with a neutral or more continually derived CCAP*. Through the aforesaid statistical and qualitative data, analyses, and observations, the null hypothesis can be

rejected, and the data thereby form a foundation of successful climate change adaptation aligning with a nissological viewpoint along with other criteria.

Table 7

PSIS' Combined Nissology Ranks and Success Scores

State	Nissology Score	Nissology Rank	Success Score*	Success Rank	Inside Confidence Interval
American Territories	10	3-LNS	19.33	1-HSS	No
Cook Islands	11	2-ANS	18.00	2-ASS	Yes
Federated States of Micronesia	18	1-HNS	18.00	2-ASS	No
Fiji	10	3-LNS	18.00	2-ASS	Yes
French Territories	9	3-LNS	12.67	3-LSS	No
Kiribati	15	2-ANS	16.00	3-LSS	No
Marshall Islands	19	1-HNS	19.33	1-HSS	Yes
Nauru	14	2-ANS	18.67	2-ASS	Yes
Niue	10	3-LNS	18.00	2-ASS	Yes
Palau	13	2-ANS	17.33	3-LSS	Yes
Papua New Guinea	12	2-ANS	17.33	3-LSS	Yes
Samoa	10	3-LNS	17.33	3-LSS	Yes
Solomon Islands	18	1-HNS	20.67	1-HSS	No
Timor-Leste	12	2-ANS	17.33	3-LSS	Yes
Tokelau	21	1-HNS	19.33	1-HSS	Yes
Tonga	16	2-ANS	18.67	2-ASS	Yes
Tuvalu	22	1-HNS	21.33	1-HSS	Yes
Vanuatu	16	2-ANS	18.67	2-ASS	Yes

Note. HNS = highly nissological states; ANS = average nissological states; LNS = low nissological states.; HSS = highly successful states; ASS = average successful state; LSS = low successful states; * = normalized success score converted from x/36 to x/24 (e.g. 30/36 = 20/24)

Several significant conclusions are evident from the data regarding nissology, success, island characteristics, and the relationships between them explored in this study.

Regarding nissological categories, sea resources are an important outlier and are mentioned substantially more than any other nissological category in CCAPs. The sea is the livelihood and breadbasket of many PSIS, and marine territory is normally vastly larger in area than terrestrial lands. Conversely, migration is the least-mentioned

nissological category within PSIS' CCAPs. This is perhaps because of migration-related policy and rules not seen as either pertinent to CCAPs, or perhaps PSIS wanting to address aspects of migration but finding them beyond their ability because of political factors.

Examining the 36 success indicators, many PSIS are scoring well on some indicators. For other indicators, some states are advancing whereas others are faltering. Scores for some indicators represent the potential need for a realignment of focus and policy.

Beginning with the encouraging, with respect to potential for success, PSIS are excelling and should continue to extend various stakeholder invites, be future oriented in their thinking, and strive toward projects that concentrate on adaptive capacity. Plans are quite specific to the PSIS to which they pertain, are fairly knowledgeable about what is doable and achievable at the state-level, and appear open to an iterative, evolving process as time moves on. In addition, PSIS' goals, synergies between goals and plans, and a seeming openness to input across sectors are positive features within the CCAPs.

Other areas where PSIS excel are avoiding the need for repeated studies before taking policy-related action, having plans that invest in people as well as technology and infrastructure, and fostering a collaboration between knowledge sources and decision-makers. Similarly, risk communication and awareness as well as framing the issue of climate change adaptation as a more desirable future and a better-off state for islanders versus taking no action are additional strongpoints for PSIS. Finally, PSIS also exhibit success in identifying barriers to adaptation, satisfying multiple actors (e.g., policy, science, or cultural), and preserving environmental and resource value within PSIS.

Areas where PSIS are making strides but still need to focus more strongly are in identifying past lessons, mistakes, and successes and learning how to weave them into proposed policy. In addition, baseline data need to be better identified so these future strides and challenges have clear benchmarks to be judged against. Finally, PSIS need to integrate data and plans into other related policy forums.

Avoiding maladaptation, mentioning how to exactly integrate policies, and being forthcoming with no-regrets approaches are additional aspects that PSIS need to improve. Additional areas where PSIS are making some progress but need to refocus are stating their values and the target of their goals, growing community buy-in, and describing how goals relate to particular community and partner meetings. In addition, policy evaluations, the relevance and personal meanings of these policies, and the tradeoffs and synergies involved need to be considered.

Capacities that PSIS are currently failing in and where they need to refocus attention are determining and being explicit as to what would constitute successful adaptation and planning along with developing useable metrics for evaluation. Further, reliable financing is needed or at the very least an estimate or proposed budget so PSIS do not identify robust strategies that are effectively wish lists because they do not have any likely financial support or backing. Other areas that need attention are climate-based migration and resettlement approaches such as strategies, protocols and policy connections with other jurisdictions. Monitoring, evaluation, and reassessment as well as the timeline of such activities need to be included within future CCAPs. In addition, the flexibility of adaptive management and mechanisms to change or shift focus should be included.

Regarding the specific statistical analyses, when $y = 14.0761 + .2837 \times \text{NissScore} = \text{Success}$, the base success rate would be $[14.0761 + (0 \times .2837)]/24$ or 58.65%; and the highest possible value would be $[14.0761 + (24 \times .2837)]/24$ or 87.02%. What does this statistically significant relationship between nissology and success scoring signify? It illustrates that certain PSIS are crafting their CCAPs in such a way that, per expert opinion about what constitutes successful climate change adaptation, they are better forecast to more ably adjust to a changing climate. However, perhaps there are similarities between using a nissological plan and one that is considered successful: Both look to contextualities on island, using local and appropriate means by which to accomplish tasks and defining jurisdictions or borders with respect to certain policies. The argument can also be made that the eight nissological principles can be considered success indicators.

Although some of the 36 success indicator questions deal with current strategies, others approach future topics; just because a document says that a PSIS government needs to do something does not mean that it will be accomplished. Some success indicators hold observably greater weight than others: should having a timeline and budget available for adaptation activities be weighted the same as having a positive outlook with regard to how adaptation is framed within the document?

Although the relationship between the quantities of islands per PSIS may initially appear to illustrate a particular relationship (Figure 8) of greater nissology scores relating to an increase in island quantity, there is not a strong relationship and not all PSIS display this pattern. A similar tendency, but lack of strong statistical relationship, exists between PSIS and the date of independence. Although Figure 9 illustrates a trend between higher

nissological scores and those PSIS that gained independence in the first portion of the last 50 years, the relationship is not significant (p = .1115).

In a related vein, Figure 10 depicts a trend between higher nissological scores and the sovereignty of PSIS. Although there is a relationship visible in the figure, the outlier of Tokelau—the only nonindependent PSIS with a high nissological score—casts doubt on the statistical significance. Once Tokelau is excluded, the p value of the relationship jumps from .2028 to a statistically significant, but not robust value of .0172 for the remaining 17 PSIS. Only 5 PSIS form the nonindependent sample. Because of the very small sample size and the exclusion of Tokelau, caution needs to be taken with any conclusions.

Figure 11 examines the statistical relationship between high, mixed, and low islands typologies assigned to PSIS. Although there may be disagreement about how to categorize an entire PSIS into a single category, there is a statistically significant or robust relationship between nissology and island typology: PSIS classified as low islands have higher nissology scores. Finally, excluding Fiji, the one outlier and only PSIS with direct air linkages to more than five PSIS, actually lessens the already nonexistent relationship between nissology and accessibility.

The PSIS that have the highest rates of nissology are statistically shown to be indicative of states with higher levels of successful adaptation to climate change. In the mid-1990s, McCall made the case for nissology proposing that nissology "be employed as both a rhetorical and a political device . . . the study of islands on their own terms . . . reminding continental dwellers that island reality is" for islanders to decide and no one else (McCall, 1996, p. 82). It is the very islander-based frameworks and decisions that

have resulted with results associated with what climate change experts have deemed successful adaptation to climate change. Are islands special in that they are more apt to plan and create projects and implement policies than counterparts which are not islands? Although one could argue either way, the crux of the research is that the islanders who look to their history, elevation, way of life, successes, failures, colonization, lifestyles, food source, location, linkages, associations, and any other island-based characteristics are more likely to be successful, because they are implementing plans that relate to their people, policies that align with their culture, and projects where community buy-in is inherent with perpetuating islanders' longevity.

Some researchers contend that "the eight points that McCall uses to characterize island communities and nature provide an excellent description of island" society (Christensen & Mertz, 2010, p. 281), but the "question is whether they distinguish islands from other societies located in remote areas" or perhaps any other "place-based and interdisciplinary approaches in human geography and analytical frameworks" (Christensen & Mertz, 2010, p. 285). Although the argument about the necessity for nissology continues, the important element to deliberate over is whether deltaic states (or polar state, or others) for example could create their own tenets of living in a delta environment and whether those would be indicative of success. The answer is yes. Yes, if a certain group of states—regardless of whether they qualify for their own subset of study—has certain fundamental and irrefutable characteristics that are self-evident to them, and those are taken into account within states' plans, policies, and projects, then yes they will also most likely be successful in their climate change planning strategies.

CHAPTER 5
ISLAND STATES AND REGIONAL ASSOCIATIONS: FIELDWORK AT THE UNITED NATIONS AND IN THE PACIFIC

Rationale and Variables

The second research question evaluated the rationale behind decision makers' choices, policy creation, and overall implementation within regional organizations and multistate actors. The first portion of this second research question focused on all 18 PSIS at the United Nations level via semi-structured interviews. Then, using semi-structured interviews and site visits, the second part concentrated on how a PSIS in particular—the United States Territories in the Pacific—translated plans into on-the-ground implementation.

This chapter's methodology of qualitative on-site interviews at the United Nations and on island in the Pacific differs from the more quantitative content analysis in the previous chapter. The transition helps triangulate, verify, and possibly counter some of the findings that were developed in the nissologically based Chapter 4.

The second hypothesis of the dissertation states the following:

2. PSIS that participate in AOSIS and the regional organizations will have more successful plans, policies, and projects for current and forecasted climate change adaptation than PSIS with a neutral or more continentally derived CCAP

Results

The results illustrate the responses from approximately 14 interviews conducted over the course of 6 months from the fall of 2013 through the winter of 2014. The majority of these United Nations-based interviews were conducted during the first half of

the period, mostly at the countries' respective United Nations Missions in New York City. The interviews in the United States Territories in the Pacific consisted of approximately 55 in-person interviews and occurred mostly in the second half of the period, most often in the particular island state (territory or commonwealth) to which the interviews applied.

Interview and Results: United Nations

Research interviews at the United Nations level were designed to occur once at each of the PSIS for a period of 30–45 minutes, using the same 15-question semi-structured interview format. Because of meetings, travel schedules, and other time conflicts, not all 18 PSIS had representatives available to speak during the research timeline; nonetheless, the research protocol achieved an approximately 75% response rate for interviews.

The 15 questions asked during the United Nations-based interviews are listed in below in Figure 13 with the asterisks replaced with the name of the appropriate PSIS during the interview. Pursuant to IRB protocols, the PSIS interviewed for the study are not identified by name, but are given a chance identification from $PSIS_1$ through $PSIS_{100}$ to alleviate any concern about piecing together PSIS' identities. For example, $PSIS_{22}$ and $PSIS_{69}$ and others could reference the same PSIS. In addition, all identifying and potentially distinguishable features of a PSIS' interview comments have been replaced with an appropriate nonidentifiable feature so that documentation of a particular PSIS' attributions or comments are not linked to a particular source.

Approximately 6 quotations are shown for each of the 15 questions asked at the United Nations level. Quotations were chosen because they represented the broad

sentiments expressed during the 14 PSIS' interviews. At the end of the 15 question, the quotations are summarized in chart form to more succinctly bridge respondents' quotations along with their relationship back to nissology and other associated literature.

1. How would you describe climate change in (**)?
2. Is climate change seen as an essential topic in (**), and why?
3. Do you think that PSIS could solve the forecasted and current effects of climate change on their own?
4. Should PSIS be responsible for solving the forecasted and current effects of climate change on their own?
5. Do you think that working together as a region in the Pacific helps (**) toward obtaining its climate change goals?
6. Has working together with AOSIS assisted (**) with being more appropriately prepared in facing forecasted and current effects of climate change?
7. (**) is one of many states in the Pacific. Does just being one state in AOSIS create certain positive and negative effects?
8. Aside from AOSIS, has it been common or is it more common nowadays, for PSIS to work together on similar issues that affect PSIS?
9. As you probably know, there are states that are members or observers of AOSIS that are not located in the Pacific. Do you think this affects AOSIS' goals and actions?
10. Does AOSIS ever look to (**) for input regarding climate change plans, policies, or projects?
11. How would you describe the relationship between PSIS and AOSIS?
12. Overall, do you think that regional cooperation is a good way to address issues on (**)?
13. Do you have any suggestions regarding how (**) and AOSIS cooperate regarding climate change plans, policies, and projects?
14. Is there anything else in reference to the broader discussion regarding climate change in (**) that you would like to mention or discuss?
15. On a scale of 1–10, how would you describe the degree to which (**) is prepared for climate change, and would you say this number is affected at all through its partnership with AOSIS?

Figure 13. Interview questions for AOSIS representative for PSIS (or similar) at the United Nations level. Asterisks (**) replaced the name of the appropriate PSIS during the interview.

Question 1: How Would You Describe Climate Change in (**)?

This question seeks to understand the go-to initial reaction of what United Nations-level decision makers on a PSIS-level recall when the issue of climate change arises.

> [T]he inundation of the island with the sea, saltwater, the waves are getting bigger and push more inland beneath the wind factor is getting stronger so our normal high tide when I was very young never even come on, on the island now it is every 14 days, it's inundate part of the island and the coastal area . . . .There is nowhere to go, exactly, and so we see this every day. ($PSIS_{19}$)

> You know you just see the water coming to the houses but it's, it's like something that you, an inconvenience that you just tolerate . . . and besides there is, where are we going to go because . . . you don't just go and . . . we don't have apartments . . . .You're supposed to take care of your land. ($PSIS_{49}$)

> I think there are some organizations which are helping which are hearing . . . there are some countries which are hearing but they have their own issues anyway . . . .We are in very, very small islands. ($PSIS_{88}$)

> [T]he first thing that comes to mind is the coastal erosions, the effect on families, on homes, on women, children, the growing brackishness of the water . . . .More frequent storm surges and that's about the, what you see happening, but then there are others like you know the effect on food supplies because of the encroachment of seawater. ($PSIS_{66}$)

> The thing that happens . . . is the spring tides . . . the swells will sometimes roll right over an atoll, the water will literally go from one side of the atoll to the other, out the other side . . . .With a lot of destruction . . . .But you're talking about these tiny little places and if you haven't looked at Google Maps, look at Google Maps and just see how minute these things are. ($PSIS_{84}$)

> When in fact the whole climate change was really about small island nations, and yet they continue so it's, it's this I think Western attitude about smallness, too small? . . . So I think that, that perspective is not brought to bear in the people sometimes, and that's something that I think needs to be considered. ($PSIS_{73}$)

The 14 PSIS interviewed answered with a survival-based response that dually mentioned the human environment, the vulnerability of the ocean as islanders'

breadbasket, and human-related security concerns such as relocation and housing. Some respondents used words such as "urgent" to describe the need by which climate change issues need to be addressed while simultaneously speaking to the lack of effective policies. PSIS spoke to a fleeting sense of normalcy or how extreme events were becoming the new normal in lands often characterized by small land areas, family tenure land systems, and limited resources for facing the issues. Although a few countries noted that they were better off than others in certain features—such as being situated on higher-elevation islands—they admitted to not being immune to other effects of climate change such as food and human security risks. Respondents' answers noted the severity of island events that caused them begin to address climate change, whether on a state, regional, or global level.

Question 2: Is Climate Change Seen as an essential Topic in (**), and Why?

This question sought to understand the overall importance of climate change within PSIS and the rationale behind it.

> Yes . . . very emotional for those of us that are maybe because when we were at the, the way the island is receding, it really involves your future, what are you going to do when you, when your islands are somewhere, you're going to be forced to migrate . . . .So it comes to a point where you say wow, where do you go next? Do you stay home or you sink? And what country will want to take you after you're forced out of your own country? ($PSIS_{41}$)

> We talk about it a lot but not in the sense of like scientific discussions as I said, I mean we see many things that are happening now that we didn't experience before . . . .Some people tend to think that an island has to be inundated before you say that. ($PSIS_{57}$)

> So I wouldn't say that there's consistent buy-in at all levels, but at the highest levels, in those regional fora there is apparent buy-in. ($PSIS_{55}$)

> It's affecting our development....It's affecting how, how we do our gardening or how we go fishing, ocean acidification, is affecting because all us live around the island and there's a sea level rise and . . . a lot of people have been resettled because of the king high tides and it's not happened before . . . and they encroach on other people's lands. ($PSIS_{40}$)

> It's about sea level rise, in other parts of the world it's glaciers, it's flooding, it's drought, they associate that with where they are but for us it's, because we are just tiny islands ($PSIS_{18}$)

> You're talking about very, very narrow strips, so the relationship . . . to the natural environment . . . they understand that they are in the hands of the natural environment. The elders would talk about it in a quite different way; the recent generation is starting to articulate it through climate change. ($PSIS_{74}$)

The consensus is that of course climate change is an essential topic. Often interviewees harkened back to the justifications from the previous question about describing climate change in their host PSIS. However, the responses from the PSIS were slightly more varied, taking into account a wider perspective of climate change and not solely focusing on their states. PSIS linked their local issues within the greater context of global climate change—from forums to adverse effects of climate change in nonisland states—while simultaneously supporting their PSIS' reaction to real and perceived vulnerabilities of climate change. From these representative samplings, some ideas that begin to filter out are the idea of connecting (and possibly erroneously or overconnecting) changes in the environment to climate change as well as how climate change is discussed at the intergenerational level. Finally, a sense of exasperation was deduced from some of the responses as to the next steps for approaching some of the impacts of climate change. Respondents noted that their islands are not the only ones to feel the effects of climate change but they were some of the few for which climate change triggers an existential question of survivability.

Question 3: Do You Think That PSIS Could Solve the Forecasted and Current Effects of Climate Change on Their Own?

This question elicits a response regarding PSIS' attitudes toward national, regional, and international types of cooperation and assistance. In fact, many respondents were slightly surprised at the question because of the illogicality of PSIS being able to tackle a global issue on their own.

> [T]he reality is that . . . no country, including the Pacific islands countries would be able to do it on their own and not even . . . the developed countries for that matter . . . .It's a global problem, it's affecting some more than others, but it doesn't mean that you should wash your hands simply because of you know it's going to affect you but maybe 10 or 20 years down the line. ($PSIS_{37}$)

> Of course they can't, I mean that's, that's really not feasible. I mean just the idea of continuous adaptation, imagine putting seawalls up for the rest of the life of a state. ($PSIS_{79}$)

> Oh no, they, they're tiny countries with tiny governments and tiny and in many cases tiny endogenous resources, absolutely don't have the propensity or the money to do it. ($PSIS_{67}$)

> How can you really meaningfully talk about sustainable development if we are actually firefighting and we are talking about survival, not only of a small community but a whole people, a whole nation, a whole culture? So it's about survival for us. (Interview $PSIS_{43}$)

> Well they can go a fair distance in terms of being able to show that they are committed to . . . walking the talk . . . and through AOSIS and in various other fora. At working together to show that they have a commitment of determination, but of course there is just no way that they can do it on their own. ($PSIS_{20}$)

> No, no, no, there's no way they can do that . . . .So we're asking the big nations, I think that's why this climate change thing in Warsaw was so frustrating because we were saying do your part because it's just not . . . yet they argued and argued that well yeah there's a certain amount of correctness in that but it's not all of our responsibilities. ($PSIS_{97}$)

Part of the reasoning behind this incongruous question was not have respondents balk, but rather to have them describe why they might disagree with the notion of PSIS

solving the forecasted and current effects of climate change on their own, as was seen within the quotations. The unanimity among all PSIS during the 14 interviews was that PSIS should adapt to the effects of climate change, but it is fruitless to think that the global issue could be solved within a localized fashion. One interviewee suggested the terminology of "firefighting" climate change issues and the inherent unsustainability of constantly bandaging symptoms and not the source of the problem. Interestingly, some respondents hinted at either an absolute or severe lack of culpability in the creation of climate change related phenomena extending to non-emitting nations not having the responsibility; yet, they all agreed that they had do their part in addressing the issue. PSIS stated that climate change is something that is neither caused by nor solved by a single party.

Question 4: Should PSIS Be Responsible for Solving the Forecasted and Current Effects of Climate Change on Their Own?

This question parsed out the assumptions for PSIS beyond whether they had the ability to contend with the implications of climate change to any so-called responsibility.

> I think even in the late 1980s the international community realized this would be an international effort . . . where you're saying . . . who is responsible for solving these, well I don't think that they're really solved, they're just risks that are addressed . . . .If there's just the expectation that others in the world will sort of do something about this then the results especially on things like adaptation are not going to work out very well ($PSIS_{72}$)

> [A]nd so when I see nations like Norway or under the previous Australian Administration or European Union, when I see those nations stepping up and saying we're going to actually pour a lot of resources into helping you figure this out, then to me that's sort of an attempt to balance the moral ($PSIS_{47}$)

> That's water under the bridge, it's not going to bring back the pristine environment we are talking about. Our focus would be on today and tomorrow . . . .It's the common but differentiated responsibilities . . . .We are saying that you might have been responsible but collectively we need to fix it, we need to be all part of the solution rather than keep on opposing blame on others. ($PSIS_{44}$)

> I mean you can't expect to be living in the same world as me and you're cutting all the rainforest and I'm getting all the flood, that I mean from an island point of view you're very small in this world and we hope that those who are more able, the most powerful countries, they should be responsible for being there. (PSIS30)

> That's another misconception I think...that maybe of the Pacific Islanders are sitting their cup in hand asking for funding, but let me remind you that in terms of emissions, they're basically minus . . . .Why should 100,000 people suffer for the actions of millions . . . .100,000 people are just the same human beings that live everywhere else, everybody has a right to live where they've lived for generations. ($PSIS_{87}$)

> I think PSIS and small island states have a major role but they cannot do it on their own, the major role and the first is, we're the early warning system for global climate change related disasters. We're the early warning system so the global community needs to take, to pay attention and begin to go over strategies to address that. ($PSIS_{63}$)

Some respondents may have answered all or parts of this question within the previous inquiry, but for others it was helpful to further explain how they intend to move forward from past milestones into the near and more distant future. Yet again, the PSIS reached consensus that blaming or yielding responsibility to large emitter states would not create solutions to the current and forecasted effects of climate change. Moral obligations were stated within some of the responses as an impetus for non-PSIS and nonisland states to participate more adequately; but all PSIS saw the value in balancing the activities in the Pacific with larger international efforts and agreements. All interviewees acknowledged the lack of success in addressing climate change issues and they concluded that the road ahead will be strewn with obstacles and faulty policy and implementation linkages.

Question 5: Do You Think That Working Together as a Region in the Pacific Helps (**) Toward Obtaining Its Climate Change Goals?

This is the first question in the list of 15 to evaluate individual PSIS' attitudes toward working together as a region. Notably absent was the listing of any particular regional association, partnership, or program in particular, which allowed the PSIS to bring up any noteworthy examples at their own discretion.

> Well, on some of these issues I think strength is in numbers and trying to work through the region especially on climate change because it's a complex issue . . . usually when our delegations to these UNFCCC negotiations there are about a hundred things happening at the same time and you have a small delegation so how do you get to everything so that's why we work through the region . . . through AOSIS. ($PSIS_{29}$)

> We have a lot to learn and we have a lot of resources to bring . . . with the problems and solutions as well . . . it's not just that we would be sucking up this knowledge and appropriating it but we would be learning and sharing and helping to build capacity. ($PSIS_{53}$)

> I think the effect, the emphasis is on leadership, the Pacific is saying we are not waiting for people to do that, we had, we had tried to lead by example, we are trying to put our own house in order first. So we are trying to say what can we do hopefully that will inspire others to do similar thing. ($PSIS_{91}$)

> The Pacific is the first and only region of the world which has actually linked together its climate change adaptation and its disaster risk reduction policies and instead of having two different policies . . . they're having . . . one coherent DRR [Disaster Risk Reduction Plan] and climate change policy. ($PSIS_{85}$)

> [I]f I were to go stand in the middle of the football field and shout out a message, they'll probably just look and say there's some crazy...in the field? But if it's 20 of us doing that, shouting out the same message, we'll get a bit more attention and if there's 50 of us we'll probably get the police to come down and land the squad to arrest us which really means people are listening. ($PSIS_{11}$)

> Well I've been dealing with AOSIS since . . . and I've never seen any of those Observer States recognized in anyway whatsoever. They're not allowed in meetings, now they may have had that status a while back, but it's of no value to them. ($PSIS_{95}$)

Answers from the PSIS indicated that they all agreed that working together as a region was often an effective way to help the individual PSIS obtain their climate change goals. Different states mentioned subregional and regional groups, such as AOSIS, Majuro Declaration, Micronesian Challenge, PIF, and Secretariat of the Pacific Regional Environmental Programme as key constituents within the process. Nonetheless, a semblance of working together—and respondents were very mindful of challenges associated with such partnerships—was reported in the interviews as necessary to successfully address climate issues. Although all PSIS interviewed agreed that regional associations were helpful or even necessary, there are distinctions: different routes of engagement, frustrations, but still an overall strategy of making noise and garnering attention. Notwithstanding the distinctions, these regional groups are effective. There are some drawbacks and Question 6 examined the group AOSIS, which arguably has the most international clout among the regional groups. Those PSIS that wanted to work together are the ones found to be both more nissological and more successful in adapting to current and forecasted effects of climate change.

Question 6: Has Working Together With AOSIS Assisted (**) With Being More Appropriately Prepared in Facing Forecasted and Current Effects of Climate Change?

Directly asking about the United Nations stronghold of AOSIS in the United Nations for PSIS, the question aimed to uncover PSIS' sentiments toward the organization and the degree to which it was viewed as helpful, successful, or perhaps not effective.

> AOSIS is kind of . . . a political organization so if you're looking for . . . assistance . . . in kind of the technical issues . . . it's not really equipped to do that, there are regional organizations in the Pacific that do that . . . but

> AOSIS I think is more of a political entity and it's one that has . . . primary regions of small islands, and the numbers do make a difference in the United Nations even though all of the countries or most of them are very small . . . but of course the larger the group the more diverse it is, the more different opinions you have and the longer it takes to kind of work through things ($PSIS_1$)
>
> I think it also raises it to a, or provides like center stage for . . . the most vulnerable group, due to the impacts of climate change so there's a lot of sympathy and understanding because of that collective nature of the SIDS. ($PSIS_4$)
>
> AOSIS has done a . . . tremendous job in doing that and yes, assist us in organizing the seminars and help, help little countries . . . with little budget to attend these meetings so they also have a budget and they encourage us to attend. ($PSIS_{34}$)
>
> Very much so because some of them are well-trained negotiators, some of them they have scientists in the SPREP [Secretariat of the Pacific Regional Environmental Programme]. ($PSIS_{81}$)
>
> I can tell you joining AOSIS . . . has assisted (**) in the global negotiations of climate change . . . we cannot ignore that, because what is set at the global level will dictate the amount of assistance, and the amount of funding, and the amount of duties and obligations . . . .Now, the degree to which it has helped at that remains to be measured. ($PSIS_{96}$)
>
> The larger the groups you go to the more diverse the requirements, the more diverse the backgrounds the more diverse the needs . . . the Caribbean for instance . . . are fairly well developed in terms of tourism and tourist dollars and close to the U.S. markets, which is not there for the Pacific countries so in terms of economies they're sort of stronger economies than we are . . . .We talk about the importance of fisheries, to them fisheries, yes they've got oceans . . . but fisheries is not really, it's more the tourist dollar . . . so there's those different perspectives. ($PSIS_{66}$)

Respondents generally regarded AOSIS (as well as other regional organizations) as helpful; as an aggregation of strength in numbers; and as an effective means to negotiation, partnership, and lending a loud powerful voice at the United Nations. At the same time, PSIS mentioned differences among the members of AOSIS that sometimes affected negotiations. Overall, they expressed a give-and-take attitude common in settings with diverse groups. Question 6, which focused on AOSIS (although other

regional organizations were sometimes discussed as well), illustrated that PSIS were overall content with AOSIS, thought it was beneficial, and recognized the geographical and ideological divides within the organization and the need for negotiation within a large group that has affected great change at the global level. However, one of the unstated benefits of AOSIS' political status is that it offered PSIS the chance to come together as a quorum, even if these other regional organizations were the ones executing the decisions around CCAPs.

Question 7: (**) is One of Many States in the Pacific. Does Just Being One State in AOSIS Create Certain Positive and Negative Effects?

Question 7 expanded on PSIS' responses to AOSIS in Question 6. Granted, some PSIS discussed this issue in the previous question while others did not. In any event, this query seeks more detailed answers and responses to more closely analyze how a particular PSIS and arguably the most significant organization for small island states can plan for climate change related issues.

> Well for the most part it's very helpful. I think if it was not we would have been withdrawn from it . . . of course in every group you have . . . to compromise but never losing your national interest so I think the pros outweigh the cons....I mean it also goes for, the same for them too . . . .Must see some strength in having the group that's why they've, they've remained with AOSIS. ($PSIS_2$)

> Things get a little bit tricky when we're part of these international conversations, but there are also complications . . . .So there's this real fuzzy middle ground where the territories . . . we've kind of fallen to this fuzzy middle ground where we're recognized as part of the Pacific Islands, but we don't have state, nation-state status ($PSIS_3$)

> Sometimes we get frustrated, because we can ask ourselves are they really helping or, are they, I think they are helping, we take the positive . . . we appreciate what they're doing, advocating ($PSIS_6$)

> I mean at . . . if you sit in UNFCCC you're arguing about the globe at large but at the end of the day when each of us goes back to our countries, that's when the real action, the real rubber hits the road, that unless you're doing things at home, then you're wasting time talking at an international organization, or even a regional organization. ($PSIS_{77}$)
>
> I think just one of the things to be aware of, is that the Alliance of Small Island States is not particularly unitary and there are quite a lot of sort of different perspectives between the Pacific members and the Caribbean members ($PSIS_{24}$)
>
> The thing I alluded to before was just getting . . . noticed is one of the biggest challenges. I mean it's not so much what you do with it, it's being ignored is perhaps the hardest thing for them to have to deal with. They often don't get on anybody's radar. ($PSIS_{69}$)

PSIS' responses on this question were less cohesive than the previous question: The majority found AOSIS to be an overall positive aspect to small island state politics and negotiations but others found complications in the association regarding issues such as eligibility, effectiveness, and factions in membership. Further parsed, the PSIS' opinions on Question 7 addressing AOSIS and other regional associations' shifted to one of necessity and helpfulness, but it is not the panacea for addressing climate change in either the Pacific or for the globe. Other, non-sovereign respondents went so far as to lament the exclusivity of the group. Although PSIS understand the rationale behind the exclusivity of the group, they often cannot cooperate with their peers and neighbors in certain forums nor can they extend the benefits that would ordinarily accompany such a relationship. AOSIS is a group that all PSIS wanted a chance to join. For the most part, they were able to participate. However, those states that are observer states or without any status have been unable to gain access to AOSIS and the associated benefits of membership because of their sovereignty status.

Question 8: Aside From AOSIS, Has It Been Common or Is It More Common Nowadays, for PSIS to Work Together on Similar Issues That Affect PSIS?

This question evaluated PSIS' regional tendencies without solely focusing on AOSIS or climate change planning. Although climate change is the central area of research for this study, Question 8 evaluated whether PSIS have perhaps come together over this global issue or whether other prior motivations had prompted PSIS to work together as a region. This question may yield answers as to how PSIS work together or fail to do so.

> Majuro Declaration like I said earlier, we're not just complaining, we're showing that we are doing something about mitigating greenhouse gas emissions even though we don't contribute that much . . . ($PSIS_{49}$)

> Well I think there's a culture of cooperation that we've seen . . . .The thing that's new is . . . kind of two parallel tracks as to how people were dealing with climate change . . . on the one hand you had the disaster risk management resiliency community that was looking at . . . climate variability but back then it would just be disasters. And then you had this emerging field of people . . . working on what most of us think of as climate change, those long-term trending changes. What's happened within the last couple of years is those two communities have come together, which is very exciting. ($PSIS_{55}$)

> Pacific Island Forum did create that feeling of solidarity among the small island states and that started with most of them becoming independence [sic] . . . we have worked together as a group on a number of global issues . . . .On nuclear disarmament, that was topical in one era . . . .The topical issue . . . is climate change and we are also working together as a group on, on that . . . .There are some amongst the Pacific countries where climate change is existential . . . ($PSIS_{76}$)

> I mean there's political unions that were born out of the desire to act what together I mean over the years some of the economies have grown stronger ($PSIS_{8}$)

> South Pacific Commission, its agenda was economic and technical, so in that, at that time the issue was testing, you know nuclear testing. And there was testing, French testing in French Polynesia, there was testing by the British and the Americans . . . so there was a lot of concern . . . .There was

> that growing concern by the small, those countries that had become independent, about testing, but they couldn't talk about that within SPC because the French, the British . . . and the Americans say no . . . this is technical economic organization you can't talk about political issues. So what happened? They then created the Forum, the Pacific Islands Forum which is now the Pacific Island Countries plus Australia and New Zealand and they spoke about whatever they wanted. ($PSIS_{43}$)
>
> I think it's the region that's proven that regional cooperation is alive and well in fact you've got a number of very mature regional organizations . . . the SPC, SPREP [Secretariat of the Pacific Regional Environmental Programme], you've got the Pacific Islands Forum. . . . I mean some very, very significant organizations. ($PSIS_{58}$)

From interviewees' responses, the perception is that PSIS have often worked with one another in the past, but this situation was sometimes stymied by past colonial rule that may have grouped some geographic areas under one colonizer when immediately adjacent areas were included in another. Past agreements before climate change emerged as a major issue focused on fishing rights, political clout and cooperation, and education, as reflected, for example, in creation of the regional University of the South Pacific. Among the several associations listed, the PIF appears to be valuable to many of the PSIS because of its political power in squashing nuclear testing in the region and bringing greater collective power to the PSIS. Moreover, the PIF and others mentioned illustrate the sizeable history that PSIS have working together before and during climate change issues. Not illustrated in the quotations, but mentioned by several countries, was the need for political power and drive at home as well. This is important because global agreements—like the Kyoto Protocol—sometimes falter, and strategic actions still need to be taken at the local or regional level. The PSIS had a long history of working together both before colonization and after independence; however, the jurisdictional and administrative frontiers did and continue to cause some hardships on interisland collaboration.

Question 9: As You Probably Know, There Are States That Are Members or Observers of AOSIS That Are Not Located in the Pacific. Do You Think This Affects AOSIS' Goals and Actions?

Question 9 returns to the issue of AOSIS to determine whether the diversity of the organization's membership is helpful or hinders its efficacy and role as a basis for island negotiations at the global level.

> It was frustrating in fact when I first came . . . why are these bigger countries in these smaller . . . because . . . it's really different from what we're asking for, so you know sometimes I said geographically they're not, they're not supposed to be this thing . . . I was so naïve when I came in . . . ($PSIS_{19}$)

> I think there's a real willingness to try to learn and share and understand but I don't think there's much influence over policy and practices unless you're like Norway or even the EU [European Union] . . . pouring millions of euros . . . then that's going to influence the dialogue and the outcomes. ($PSIS_{47}$)

> I can speak from my experiences as a negotiator for AOSIS, what I observed it has not served as a stumbling block kind of factor . . . .It hasn't, to the extent of dividing solidarity of AOSIS but it could if . . . it is not diplomatically or politically handled. ($PSIS_{7}$)

> I mean working at the United Nations you need cross-regional groupings which is an emerging concept . . . .But it has to be outcome driven and results-oriented, you can't sit there and argue obvious issues . . . .Climate change global-warming is an issue for island states, we're past that argument. ($PSIS_{79}$)

> I mean you can't go in and expect every single thing that you want to be included in there, but at least if you are not part of that group, nothing that is important for you will be . . . if you go in with a basket of, and come out with a half full basket, that's good enough. ($PSIS_{63}$)

> I'm not sure that it creates friction, I think sometimes it creates questions. For instance . . . like Singapore, it's a member of AOSIS and sometimes we wonder . . . maybe because they're not developing nations, they're . . . very high GDPs [gross domestic products] and . . . are small island nations. So we don't want to be exclusive we want to be inclusive, but at the same time . . . sort of negates the whole idea of developing nations meeting together to express their needs because sometimes our needs and

> their needs are not the same so they may, they may decide to protect some of their interests which are contradictory to our interests. ($PSIS_{35}$)

Some PSIS brought this issue to light in other questions, but additional searching from this question fielded a consensus that although there is often disagreement pertaining to a state's economic, social, or geographic nature, if AOSIS were not beneficial to the state, it would leave the group. This question undoubtedly released more personal opinions about respondents' own experiences with AOSIS, but it fortified the other responses about inclusivity and cooperativeness and the idea that AOSIS is not the primary organization. In addition, the responses raised the sensitivity and political nature of global issues brought before the group and the United Nations at large from climate change to items beyond. Respondents alluded to the balancing act necessary so that neither a single member state nor subclass of member states would be neglected by AOSIS either in representation or comradery.

Question 10: Does AOSIS Ever Look to (**) for Input Regarding Climate Change Plans, Policies, or Projects?

Question 10 sought to learn whether the AOSIS pays particular attention to certain PSIS or certain types of projects, policies, or plans being implemented in PSIS that could possibly be emulated by others.

> Well, for the PIF the members drive the direction for the work of, so I guess I can say that they do look to, to [**] to share lessons learned or group practice . . . ($PSIS_{57}$)

> SPC and SPREP [Secretariat of the Pacific Regional Environmental Programme] they're structured really differently and I think SPREP tends to be a little bit more opportunistic in working with the territories and if they can . . . identify some project money then they'll come in and then they'll do some work . . . whereas I see SPC as more interested in really

> working across boundaries and borders regardless of statehood . . . ($PSIS_{53}$)
>
> We're always willing and ready to share . . . of best practice or share of knowledge and I think also maintain that too often we tend to look beyond the Pacific, we tend to look to Canberra or Wellington or . . . Washington for solutions. And yet there's a lot of . . . good things happening on the ground which makes a lot of sense given the sizes, the challenges, and the capacity constraints ($PSIS_{37}$)
>
> Oh, there has been actually a case here and there over the years . . . .We, right now the [Foreign Government] has identified [**] as a potential country for, for receiving their assistance so that's the [Foreign Government] and they have identified [**] for what reason?....As far as we are concerned . . . [**'s] profile has been increased tremendously ($PSIS_{30}$)
>
> The regional organizations do, so AOSIS is a very political body and because it's very much New York based it's very little involved in the realities of actually implementing, designing or implementing particularly adaptation policies ($PSIS_{9}$)
>
> I think at the present time AOSIS is, the preoccupation is in the negotiations of the framework under the . . . UNFCCC ($PSIS_{71}$)

Respondents' reactions show that AOSIS engages mostly in political negotiations at the United Nations and New York arena and does not venture into individual adaptation-based projects within the PSIS. Notwithstanding, there are similar groups, such as PIF, Secretariat of the Pacific Regional Environmental Programme, and the Pacific Islands Applied Geoscience Commission, that look to particular PSIS to create and enhance programs within the region. AOSIS truly appears to be the negotiating and political-based arm for PSIS, but it does not have much immersion into the everyday adaptation-based programs within the states, where other agencies are thriving and taking the lead. In addition, as seen within the quotations, certain PSIS excel within this realm of bilateral and multilateral relationships by linking with partners such as far-off countries as allies for their projects and other endeavors where sovereignty status is not so

important. Several articles outlined AOSIS' role in the UNFCCC negotiations as well as its specific role in negotiating on behalf of small island states (Ashe et al., 1999; Betzold, 2011). Finally, AOSIS may have not specifically advocated or promoted best practices within CCAPs, but their forum did serve as a meeting for which like minds were able to collaborate and discuss islands and climate change–related issues.

Question 11: How Would You Describe the Relationship Between PSIS and AOSIS?

Only approximately one-quarter of respondents had an answer for Question 11; most interviewees stated they had already answered this question in previous questions that drew this answer out as part of the response. From the responses given, there was the same reiteration of the good that AOSIS does while simultaneously recognizing that it is just one piece in the overall puzzle for climate change negotiation issues. Because there were so few responses and those that did simply reiterated past comments, the question did not provide new data, and therefore no quotations are included here.

Question 12: Overall, Do You Think That Regional Cooperation Is a Good Way to Address Issues on (**)?

Question 12 goes behind the idea of climate change cooperation and expands to ask how PSIS may or may not cooperate with one another, and whether regional cooperation is an effective, ideal situation based on past linkages and experiences within PSIS.

> Some elements of our national climate change policy . . . we have identified that we can do ourselves and there are some that we think through regional cooperation it would be more effective and negotiations is one of them ($PSIS_{29}$)

> There's still this shared culture of partnership and participation cooperation and that's critically important as we try to develop a more refined understanding of how climate change is playing out now . . . and then the knowledge sharing . . . how important that is because adaptation's happening in real time. ($PSIS_{26}$)

> A lot of our needs are catered for at the regional level because sometimes being small also, I mean everything is relative . . . .I have a lot of faith in regional organizations, and I think our leaders have seen the marriage of working together at the regional level ($PSIS_{44}$)

> Yeah when you say regional because we have similar things like I said, some are other countries, maybe landlocked or high . . . they have their own issues, and they call it climate change as well but for us it's the sea-level rise ($PSIS_{88}$)

> I think your phrase there should be no man is an island, John Donne, but answers it for you. ($PSIS_{87}$)

> What I would just stress here is the importance of the Pacific Island Forum, because . . . it's the political forum that, that really sets the regional policy in some respects. . . . So there's a very strong thing here and the Pacific leaders reinforce that, they want to live in their own countries . . . it's a statement there about the importance of essentially adaptation to enable people to live at home rather than having to shift. ($PSIS_{67}$)

Respondents stated that regional organizations have their place. They considered whether regional organizations were a step up from localized approaches where being so small hinders certain economies of scales of cooperation. They considered whether regional cooperation represents the views of the United Nations and whether the global level might be too large an arena within which to address some concerns. PSIS' responses further strengthened the positive perspective of regional relationships and how they fit into the larger realm of in-country policy. As mentioned previously, there are certain organizations that PSIS migrate toward for certain needs. Further, there appear to be a handful of prominent regional organizations, such as AOSIS, PIF, SPC, and Secretariat of the Pacific Regional Environmental Programme. PSIS appeared to have

their preferred organizations for specific activities, but all independent PSIS did participate within all of the regional organizations mentioned, which possibly led to a growing number of niches of specialization within organizations.

Question 13: Do you Have Any Suggestions Regarding How (**) and AOSIS Cooperate Regarding Climate Change Plans, Policies, and Projects?

Although Question 13 refers specifically to AOSIS, other regional organizations were documented if the PSIS respondent brought them up as organizations with which the PSIS worked deeply.

> I think there is just too many meetings and with the, with the . . . system that we have, we don't have many people in the environment office that's responsible for climate change and they are the ones that usually go to many of these international meetings ($PSIS_{54}$)

> If there were a mechanism and it could be a person, a regional climate coordinator . . . that had the authority to actually interface with the international and domestic and territorial . . . program level people, just having somebody that had their finger on the pulse of what was going and was able to identify real opportunities. . . . I think that would accelerate this whole endeavor that we're all engaged in and probably result in more rapid on the ground action, adaptation action. ($PSIS_{70}$)

> Maybe we have to sit down and take a stock-take, you know what have we said at the last 18 COPs [Conference of the Parties]. . . . Almost every week we get papers from the Secretariat . . . saying the same things which were said . . . what else can you say with climate change that has not been covered?....But to me it's let's sit down . . . this is what we have done very well, this is what we have done not so well, so what to do about it and I hope they are doing that because if we keep on like I said ($PSIS_{18}$)

> One of the problematic areas I see is in the financing issue and I'm sure you're familiar with the so-called billions and billions that are supposed to come out since Copenhagen. . . . Having said that, chasing billions and billions of dollars in an international negotiating process for me is expensive. It's wasting resources there when we should be dealing with whatever we need to be dealing with ($PSIS_{77}$)

> We often lose sight of the fact that it's the people, it's the people that we're talking . . . on their behalf and . . . sometimes when you sit down in

> the meetings . . . there is an almost clinical way that these issues are discussed, an almost impersonal, clinical ways . . . this sort of legalistic . . . let's drop that. ($PSIS_{82}$)

> The climate change convention is too process oriented. We need to get beyond this process . . . all we talk about is the process, very little . . . outcome. There are too many debates and people just go on, and on, and on and I mean like [Foreign Country] would talk for 20 minutes, half an hour to just talk . . . .I think this conventions they should set a . . . deadline says Friday afternoon if we're not finished, no outcome—not outcome let's go home. Let it be seen as a complete waste of money and maybe we can learn and go on but . . . it's become part of the culture now to try to prolong and then go into this midnight on Saturday night 3 o'clock in the morning it's counterproductive, people are tired and it's not right. ($PSIS_{14}$)

Responses varied greatly and turned almost into a suggestion box for respondents where they saw areas of potential improvement. Some common items of concern regarding interaction between PSIS and regional associations were the clinical or sanitized manner in which discussions occur, the inability to come to agreements until the final second of a conference, and the inability to take stock before spending more capital. As respondents succinctly answered, there is a lot of potential for improvement in the current state or regional associations when assessing and planning for climate change. Although there will never be unanimity about what constitutes a favorable agreement, the sentiment is that the proliferation of meetings without tangible, timely goals borders on the realm of worthlessness. None of the PSIS directly mentioned an impasse or inability to move forward, but they did suggest practical recommendations that could increase success and efficacy within the regional organizations. Because PSIS that worked with AOSIS were typically sovereign, and because the interviews yielded the information that AOSIS does not get to the microscale level of state-based adaptation, PSIS' responses to this question answered more about how AOSIS functions rather than how AOSIS helped influence PSIS' adaptation plans.

Question 14: Is There Anything Else in Reference to the Broader Discussion Regarding Climate Change in (**) That You Would Like to Mention or Discuss?

The purpose of Question 14 was to analyze whether there were any important areas that respondents either felt were overlooked or which they did not have the opportunity to discuss during the prior portion of the interview.

> We'd like to go prepare with something that can really bring us another step forward to look at how we can get people on board, countries on board to look at how desperate we are to live in our own homes, yes, we really don't want to be forced out of countries and our home and live in different places, there's really no place like home. I've been to different countries and while there is, you enjoy the environment and the pleasures and all . . . that, it's so different when you go home because you know that's where you belong and where you're accepted ($PSIS_{41}$)

> In particular, the military is such a huge presence and has a lot of influence over policies and practices in industries thriving or failing so I think that's just, that's one area where collectively as a community we need to do a better job of figuring out how to, how to bring these very important partners into the center of this conversation ($PSIS_{59}$)

> We've learned from harsh realities that both natural causes and also manmade causes, sometimes they don't negotiate with you and they don't tell you in advance. . . . What I think is really important is that rather than focusing on the vulnerabilities. I think it's important to build up the resilience of communities ($PSIS_{91}$)

> What we are trying to do is we want to stay there, we want the world to know that we are not moving. Anyway, the UN system you don't have any status for climate change refugees . . . it's not in the legal, it's not recognize ($PSIS_{81}$).

> The debate around loss and damage. This is the long-term slow consent effect of climate change. This is the calculation of the international negotiations. AOSIS is advancing an argument that we should have a mechanism that looks into loss and damage. . . . Slow onset, ok we are talking about in a 100 years . . . completely submerged . . .. It's this argument that we are grappling with in the Pacific ($PSIS_{96}$)

> What's important is to also see climate change challenges as an opportunity also to have our production, involve our way of transportation . . . to think in a positive way and to have when we call them a positive

> agenda of saying that it's also an opportunity to think differently and not just unload only taking climate like a burden sharing ($PSIS_{93}$)

PSIS' representatives answered with a wide breadth of suggestions and ideas for moving forward with climate change preparation in the Pacific. Ideas ranged from how climate change is conceptualized and discussed to focusing on the forecasted biological effects of the next century. Charting a vast expanse of examples and ideas, the representative quotations for this question offer a sampling of the many areas that climate change policy touches. With 18 PSIS, the suggestions and idiosyncrasies varied, but they could aid planners in being better suited to understanding the rationales and priorities for a diverse clientele. Respondents' answers shed light on the least certain answers that PSIS face in the future, such as ownership of uninhabitable land, who is monetarily responsible for climate change, and how to move forward without an enforceable global agreement in hand.

Question 15: On a Scale of 1–10, How Would You Describe the Degree to Which (**) Is Prepared for Climate Change, and Would You Say This Number Is Affected at All Through Its Partnership With AOSIS?

The impetus of Question 15 was not to necessarily obtain a quantitative number from respondents—although it was a by-product of the process—but rather to have respondents self-place among their peers, focusing on where they stand, where they need to go, and what the foresee into the future for their PSIS.

> You know the day before the last flight, if it is a last flight, and then the other people are not yet initially building to future risks and conditions so I think that's an important one, but I think that's less with AOSIS as a kind of negotiating . . . and much more within the capital, within the government, within donor relations and then also kind of a regional-level ($PSIS_{41}$)

> I think there are some things you can control and there are things that you cannot . . . .I mean many of these things that are happening are things that we are just now seeing, it's how do you plan for something that you cannot predict. . . . We don't want to take imported food to them, but you cannot grow anything anymore, food security, water security is . . . ($PSIS_{61}$)

> You can have the best technology, best risk alerts . . . gadgets, you can have all the, but when something happens it happens. And you can have sirens on the coconut tree, hey there's a wave coming, then tell yourself what to do. Probably the highest point . . . is the highest coconut ($PSIS_{48}$)

> I think the only mechanism that we have is try to be aware of what's happening and I think . . . having a knowledge and education system, a knowledge base and an education system, you know getting the PR out, simple things like having radios, you know people being contacted. . . . I think the more objective part of the question is, answer is can we be continuously prepared, can we respond if something happens ($PSIS_{60}$)

> It's very much part of the thinking . . . is this climate proofed? . . . And we also I think are seeing it through disaster risk reduction means, disaster risk reduction is a huge issue . . . .I think the danger is because there's . . . separate negotiation on climate change, people want to do two things. They want to lump everything on climate change in that negotiation. And then they want to say . . . you can only deal with it there. And they try and distinguish climate change money from other kinds . . . And this doesn't work . . . .If you silo it, you're really in trouble . . . ($PSIS_{85}$)

> Future proofing essential infrastructure. Now this is the sort of thing that needs to be done in an increasing number of places where climate change extreme weather events or whatever are going to jeopardize the very existence of communities. You build it so that this is strong enough, this is where the people come for refuge. This is where the computers are, this is where the x-ray machine ($PSIS_{13ANS}$)

PSIS' responses averaged approximately 5.2 of 10 for preparedness, with a varying degree of rationale for their particular scores. Although a few PSIS opted not to give a number, others used the opportunity to expand on some of their perceived strengths and weaknesses to bring the story full circle with regard to how climate change is understood within their home country. Consensus from the PSIS was that it is virtually impossible to be a 10 or near it on the scale of climate change adaptation preparation,

because there will never be enough money, preparation, or knowledge about 100% of potential climate change related events. However, there are smart preparatory steps and actions that PSIS can take to effectively use disaster risk reduction methods based on their particular society, population density, island type, cultural aspects, physiography, and other island aspects. Being a part of AOSIS did not necessarily raise a PSIS' score on the scale from 1 to 10, but it did allow PSIS to collaborate with other states that are equally intent on preparing for the current and forecasted effects of climate change. In fact, it may have tempered PSIS' scores because of increased knowledge regarding climate change adaptation.

Analysis of United Nations Missions Interviews

The overall notion of the second hypothesis is that PSIS that participate in AOSIS and the regional organizations will have more successful and developed policies toward climate change adaptation than PSIS with a neutral or more continentally derived CCAP. Likewise, PSIS that are more integrated (less insular) within the Pacific have more successful and developed policies toward climate change adaptation, which is supported by the interview evidence in favor of the research question. Overall, the independent states interviewed can and do participate heartily in AOSIS, whereas those that are semiautonomous or territories cannot and simultaneously lament the inability to do so or difficulties with having to go through roundabout methods for climate-related negotiations. This premise was investigated further in the second portion of the fieldwork that specifically examined the American Territories.

Table 8 synthesizes the diversity of quotations from the United Nations' respondents. The overall PSIS column sieved the highlighted quotations as well as those

not listed per each question. Next, the overall response to nissology is highlighted as a comparison to the eight principles and the relationship of the respondents' answers to nissological points of view.

Table 8

PSIS' Responses to Interviews and Relation to Nissological Principles

Question	Overall PSIS Response	Relation to Nissology
1. How would you describe climate change in (**)?	• Survival based • Duality of ocean as breadbasket islander characteristics • Fleeting sense of normalcy for low islanders versus less of an immediate concern for high islanders	• All 8 nissological principles are addressed in respondents' answers from borders to sea resources to lack of land and migration.
2. Is climate change seen as an essential topic in (**), and why?	• Worrying about what to do next • It is essential, but also realizing that different parts of the world are also effected in a different sense than islands • A lack of vision on how to move forward with preparation	• It is not just an island issue but how climate change, adaptation, and groundwork to address it will ultimate be a deviation from how past islander ways of life.
3. Do you think that PSIS could solve the forecasted and current effects of climate change on their own?	• It is a global problem; how could islands let alone any group of countries solve it in isolation? • There needs to be greater accountability as to the causes and culprits of climate change • Islanders can certainly assist, but they need global cooperation and assistance	• Islanders are going to do what is necessary for survival, an inherent form of islander's resilience and nissology; however, there are a lot of outside players and factors that are part of the overall process to resolving or adapting to climate change.
4. Should PSIS be responsible for solving the forecasted and current effects of climate change on their own?	• Similar to previous question but with added emphasis on how PSIS are not looking for a handout, but at the same time they are not the ones to blame • PSIS want to balance their participation and adaptation measures along with global initiatives by all countries	• Islanders want to retain their culture and ways of life, yet simultaneously realize that all parties involved need to share in the responsibility of climate change. This question again references islanders' nissological principles.
5. Do you think that working together as a region in the Pacific helps (**) toward obtaining its climate change goals?	• There is a greater disparity with how sovereignty affects how certain PSIS work together as a region in the Pacific • Getting the message out there is sometimes difficult but by banding together as a group assists in having a large voice	• Because of logistics and cultures, working together as islands is extremely helpful in regional approaches toward the Pacific. However, some of the authority and colonization issues sometimes complicate matters.

Table 8, continued

Question	Overall PSIS Response	Relation to Nissology
6. Has working together with AOSIS assisted (**) with being more appropriately prepared in facing forecasted and current effects of climate change?	• AOSIS really helps to elevate the issues to the world stage • AOSIS does not necessarily work on individual plans for PSIS but rather as a larger advocate for them so that PSIS can move forward with plans. • There are some worries with issue dilution because of the diverse membership, but overall, a highly satisfactory ideal is held	• AOSIS works directly with PSIS and is led (mostly) by islanders for (mostly) islanders. Although there are some issues that respondents mentioned about different island regions of the world having different agendas, the responses are still heavily tied to the principles of nissology.
7. (**) is one of many states in the Pacific. Does just being one state in AOSIS create certain positive and negative effects?	• AOSIS is seen as very helpful, and a large group dynamic is necessary, although of course there will be (and are) factions • For the non-sovereign states they are placed in a gray area with regard to AOSIS • Vast array of perspectives within group	• Because AOSIS is worldwide, there are bound to be differences, yet they all relate back to issues that island states are having: from the sea to perception of scarcity of resources to being bounded between on and off island policies.
8. Aside from AOSIS, has it been common or is it more common nowadays for PSIS to work together on similar issues that affect PSIS?	• Regional cooperation is alive and well, as it has been in the past before climate change • Ban on nuclear testing was one of the galvanizing issues for the PSIS, coming together for a regional and arguably global issue • Culture of Pacific cooperation	• All of the 8 principles of nissology were touched on by respondents' answers; and it was the unique islander viewpoints that assisted in creating group cooperation, based on a shared culture and previously addressing joint issues together.
9. As you probably know, there are states that are members or observers of AOSIS that are not located in the Pacific. Do you think this affects AOSIS' goals and actions?	• Sometimes, but AOSIS is a really good asset and most are quite satisfied with the organization although there are challenges and disagreements. • It is part of the negotiation process and the countries involved in AOSIS have to understand the give and take nature of the process	• Although it deals with islanders and their homelands, the nissological connection of this question did not relate to the literature. However, it did heavily reference groups, negotiation, and regional collaboration literature in a multiregional group dynamic.
10. Does AOSIS ever look to (**) for input regarding climate change plans, policies, or projects?	• AOSIS usually does not get involved with projects • Much more of a negotiation organization and a voice for action and change	• AOSIS' main role is as a voice and as a negotiation tool for PSIS, they typically do not look to individual PSIS and therefore it does not strongly relate back to nissology.
11. How would you describe the relationship between PSIS and AOSIS?	• Most respondents answered that they had already addressed this question in the preceding parts of the interview.	• Most respondents saying that they had already addressed this question with little new information given.

Table 8, continued

Question	Overall PSIS Response	Relation to Nissology
12. Overall, do you think that regional cooperation is a good way to address issues on (**)?	• Regional cooperation is very helpful for the region • Aids with several small states that otherwise would have difficulty leveraging options • Allows PSIS to continue existence on island	• This question relates back to nissology by talking about the island societies and focusing on their perceptions outside of the island while simultaneously allowing for continued existence under the threat of climate change.
13. Do you have any suggestions regarding how (**) and AOSIS cooperate regarding climate change plans, policies, and projects?	• Perhaps get away from overly process-oriented meetings that take away from the human aspect of climate change • A coordinator whose sole purpose was to deal with regional climate change issues as a higher level would help • Take stock of where programs stand so replication of activities and money is not wasted	• The suggestions relate back to the essence of nissology of islanders, and that the human equation should not be lost within climate change preparation. It also speaks to the group cooperation and dynamic literature allowing for representation of PSIS by another entity.
14. Is there anything else in reference to the broader discussion regarding climate change in (**) that you would like to mention or discuss?	• View climate change as a positive way to evolve and continue islander lifestyles and traditions while not focusing on the vulnerabilities in lieu of resiliencies • Getting non-islanders on board for support and ability to maintain livelihoods on islands	• Islanders' suggestions illustrate how others outside of their communities can assist, and this relates back to the literature because it is the very semblances of their livelihoods that they wish to protect, but cannot do it without assistance.
15. On a scale of 1–10, how would you describe the degree to which (**) is prepared for climate change and would you say this number is affected at all through its partnership with AOSIS?	• Average of 5.2, but overall sentiment of can you really every be totally prepared • Time will tell, we can do our best, but we will see when the hour comes whether we have done enough or not • Concerns with is continuous preparation realistic along with syncing this preparation into a more holistic format	• Existence for PSIS depends on the ability to survive. The 5.2 average score shows that there is work to be done but also that it is senseless to think that a PSIS can ever be totally prepared for the impacts of climate change. Touching on themes of migration, and sovereignty issues, the respondents' comments related to the principles of nissology.

The takeaway from the interviews was that there is a sense of immediacy to prepare for climate change, but a lack of direction of what exactly to do first. Things are changing, with islanders noticing a deviation from past norms yet islanders are not quite certain how to proceed. The necessity to prepare for climate change comes from PSIS

wanting to conserve their identities, livelihoods, and continued existence, all of which are at risk. They see this as a global issue even if the region is working well to coordinate some of the activities and protocols. Any success in the region has to be met globally; otherwise, the activity of continuously adapting to the symptoms of climate change without addressing any of the causes will be unsustainable. From the global point of view, PSIS want the world to know that they are not waiting for handouts or other leaders to tell them what to do; rather, they are navigating through the uncharted waters but need cooperation at global ports of call.

AOSIS is a powerful tool to PSIS. The voice at the United Nations on behalf of small island states and those in similar geographies is loud and important. However, only sovereign states can be members of AOSIS; therefore, there is a minority left out of these conversations that needs to make noise via a different methodology. The diversity of AOSIS may lead to a dilution of topics, but respondents are mostly satisfied with climate change–related actions and there is not another organization that comes close to performing similarly. However, AOSIS is just one piece of the climate change solution puzzle, with other organizations having roles in the on-the-ground aspects of adaptation and coordination locally, subregionally, and regionally. PSIS have often worked together in the past—from nuclear disarmament to fishing rights—and they are solidifying even more but need further global action taken and not just more talking and negotiating, even though they realize the organizations have a diverse continuum of who they represent, which affects deal making.

Finally, PSIS have a shared culture of responsibility and their economies of scale in their small size. They recognize that although sea level rise may be their most pressing

climate change issue, others may focus on disease or drought, which should encourage policy sharing and similarities in global strategy. PSIS say there are too many meetings where people only talk and no action is taken, there is a lack of representation for nonsovereign states (and those nonsovereign nations feel overlooked from their home countries), there is a need for financing and not just plans, there is a need to recognize the human aspect of climate change and not to speak abstractly, and finally that taking stock is needed so that unnecessary or repeated studies or activities are not carelessly wasting resources.

Islanders want to stay in their homelands, but they do not know what is coming down the line. They must have a plan both for the inevitable slow onset of damage and catastrophic events. Climate change preparation should be seen as an opportunity of sorts. Islanders worry about how to prepare for the unknown, for resiliency, for the ability to adapt, and about how to survive in an uncertain era.

Interviews Results: United States Territories in the Pacific

The research interviews in the United States territories in the Pacific were designed to question multiple decision makers individually within the following Pacific locations: American Samoa, Guam, and the Northern Mariana Islands. The goal of approximately 10–12 interviews per each of these locations was successfully reached, using a 15 question semi-structured interview format that was similar to but not identical to the questions at the United Nations level. Because of IRB protocols, the individual territories interviewed as part of the American Territories within the Pacific could not be identified by name within the actual interview responses. They were given randomized identification from $PSIS_{500}$ through $PSIS_{999}$ to alleviate any concern about piecing

together PSIS' identities. For example, $PSIS_{555}$ and $PSIS_{679}$ and additional identifiers could reference the same PSIS.

Approximately 12 quotations are shown for each of the 15 questions asked at the United Nations level, with 4 of the 12 coming each from American Samoa, Guam, and the Northern Mariana Islands, but not necessarily in that order. The quotations were chosen because they represented some of the major and broad sentiments expressed during the 14 PSIS' answers.

Interviewees are anonymous; however, they came from a variety of positions and organizations within the island infrastructure, from territorial-level to federal-level to community-level organizations and from environmentally based organizations to those more focused on island business and economic centers, among others. Initial interviewees were contacted because of their involvement in their islands' CCAP or the initial planning happening on the island; subsequently, these first interviewees identified other prospective interviewees, which led to the goal of 10–12 interviews per location. Although it is possible that some interviewees were either duty-bound or felt allegiance to a specific position, respondents often included comments referencing the anonymity of the interviews, enabling them to talk freely. Moreover, some respondents who worked for higher-level authorities sometimes cited their management's official take on an issue and the rationale behind it, specifically saying that it was the official position and sometimes countered with why they may have felt differently.

The 15 questions asked during the approximately 40 PSIS-based interviews are listed in Figure 14 where the asterisks were replaced with the name of the appropriate PSIS during the interview. For each of the 15 questions, a sample of 12 quotations was

identified to help elaborate the overall response within American Samoa, Guam, and the Northern Mariana Islands; however, the responses were not grouped by geographical location or identified to ensure anonymity of the interviewees.

1. How would you describe the ways in which climate change is addressed in (**)?
2. What would you say is the general attitude in (**) toward climate change?
3. How would you describe (**'s) climate change plans, climate change policies, and climate change projects?
4. Does (**) work with other PSIS in addressing climate change?
5. Do you happen to be familiar—and if so, how—with AOSIS, the Alliance of Small Island States or CROP, the Council of Regional Organizations of the Pacific?
6. Does (**'s) status as a United States' territory near many other PSIS that are not part of the United States have any effect on climate change preparation in (**)?
7. On a scale of 1–10, how would you describe the degree to which (**) is adequately preparing for climate change, and why?
8. Although (**'s) status is not a "state" of the United States, do you think that being part of the greater network of the United States is an asset to (**) in preparing for climate change?
9. If there were an item or two that you think (**) is excelling at in terms of climate change preparation, what would that be?
10. Do you think any of the physiographical (geographical) or historical aspects of (**) affects the type of climate change plans, policies, and projects being instituted?
11. Do you think any other PSIS are in a similar situation to that of (**), and why?
12. How would you describe the similarity between the intended goals of climate change plans, policies, and projects, and what is actually being done in (**)?
13. If there were one or two items that you could change regarding how climate change is handled in (**), what would it be?
14. Is there anything else in reference to the broader discussion regarding climate change in (**) that you would like to mention or discuss?
15. Is there any person in particular or any project site that you would suggest I contact/visit to obtain more information regarding climate change plans, projects, and policies here in (**)?

Figure 14. Interview questions for government officials, decision-makers, project managers in American Samoa, Guam, and Northern Mariana Islands. **Asterisks replaced with the name of the appropriate PSIS during the interview.

Question 1: How Would You Describe the Ways in Which Climate Change Is Addressed in (**)?

PSIS Question 1 sought the go-to initial reaction of what United Nations-level decision makers on a PSIS-level recall when the issue of climate change arises.

Jurisdiction 1.

I don't think necessarily addressing climate change directly is the most effective way in dealing with it, because you have this huge barrier of educating people so you, I think . . . if you address something more like flooding or . . . .Disaster or something, or a food shortage . . . .You are framing it in a different way but it's not related to climate change in their head ($PSIS_{671}$)

The average person is, is sort of in my perception . . . is sort of vaguely aware and interested and now other people have heard world sea-level's rising and they get the constant stuff from the media and what they see on sort of popular . . . like history channel or whatnot . . . to the extent I don't think most people really critically examine it and . . . it's not really a major concern of most people. The average person is a lot more concerned about whether the . . . economy's going to hold up . . . ($PSIS_{893}$)

I think [**] is actually quite far behind some of our neighbors in the region that I think to some degree are feeling much more concerned about the impacts because we've got neighbors . . . they get the king-tides . . . and the changes in sea level is causing damage to their taro fields and so it's a very much more direct impact than we tend to think about ($PSIS_{804}$)

For the most part, I would say that climate change is being addressed in a very sporadic manner, different entities and I think it's mostly coming from nonprofits, they seem to be taking the helm. . . . There are various departments that have looked into this, I think it's of concern . . . to agriculture, . . . planning with their coastal management and their coral reefs programs ($PSIS_{739}$)

Jurisdiction 2.

For me . . . climate change, I think beyond what's happening with the reefs and sea level rise . . . unfortunately, majority from my perspective, majority of the residents here really don't understand . . . when they hear climate change, it's, they automatically tie it into the reefs, and how it affects the reefs ($PSIS_{737}$)

We've been able to leverage a lot of funds for research, specifically relating to coral reefs and fisheries and climate change so that's kind of a really big deal down here and we have bunch of people who are constantly coming from off island to help us figure out how we're going to adapt to climate change when the coral reefs bleach or acidification . . . ($PSIS_{803}$)

I kind of want to go to each village and create sea level rise maps and give it to them, here, look, look this is simulation. Now, I'm not saying that you're going to drown in 2 years or so, but for your children you might

> consider having them invest in building . . . up higher or if you have no choice to maybe stilts is the way to go ($PSIS_{602}$)
>
> I don't think there's much going on in the territory. And, I'm probably aware of climate change because I'm in the meetings, sometimes in these meetings where climate change is discussed but however the community is not really engaged in any activities or whatever that other countries or territories are doing because I'm not sure if the whole territory is aware that climate change is a problem here ($PSIS_{858}$)

Jurisdiction 3.

> So I guess climate change is fairly new . . . so far the only way it's really been addressed, this is a completely new initiative is when in 2012 . . . .Composed of representatives with decision-making power or at least program manager capacities . . . and then ideally with some nongovernmental organizations . . . business associations ($PSIS_{788}$)
>
> One of their main priorities and so one of the things that we wanted to do was . . . let's get a group together and talk about this issue and how we are going to address it for islands, so we got like all the agencies that would be affected by this and some civic groups in the community and we meet often and talk about the issues ($PSIS_{978}$)
>
> Pinpoint where maybe some of our more resilient ecosystems and reefs are and that's, that was one of the big . . . from the marine side of . . . addressing climate change is first figuring out what do we have and how is it currently functioning and this way we can probably plan ahead in the future. ($PSIS_{627}$)
>
> Climate change is probably something we haven't really discussed until maybe the last year and a half and that's really in smaller discussions . . . .We have to look at our threats and hazards . . . .So things like power, the hospital, just critical systems, there's really only one of each here . . . we don't, redundancy is not quite a thing we have here. ($PSIS_{678}$)

In the first of the three jurisdictions, climate change is new, noteworthy, in its infancy, and focused on reef and marine issues. In addition, barriers to education, a vague interest and awareness by locals as well as a feeling of being behind neighboring independent jurisdictions presided throughout the interviews. In the second jurisdiction, the overall initial reactions by respondents varied, but it often had an environmental and coral-reef-based perspective. Other ways in which climate change was addressed in this

jurisdiction included a focus on community resilience through community education, although it was stated that the educational aspect is still within the infancy stages. In the third jurisdiction, the overall initial reactions by respondents also varied but they did discuss the newness of climate change discussions and programs on island. Coral reefs and biologically related activities were also highlighted within this jurisdiction, but there was a prevalence of infrastructure protection or relocation mentioned by several respondents. Relatedly, interviewees begrudgingly acknowledged the lack of urgency of climate change planning, although they gave the indication that it was finally gaining traction and starting to get some momentum, albeit slowly.

Although the previously mentioned three groupings did not identify which pertains to American Samoa, Guam, and the Northern Mariana Islands, all together, reviewing Question 1 elicits some interesting findings. In the cases of all three jurisdictions, there was the indication that climate change education, advocacy, and discussion are in the nascent stages. Interviewees compared it that way in response to how other PSIS address climate change. In addition, there was the idea that communities are beginning to notice changes in precipitation or erosion and sometimes attribute these changes to climate change, but then the term *climate change* unfortunately becomes a catchall for any environmental anomaly. Finally, the prevalence of coral reef and marine life assessments juxtaposed with the lack of human-centered effects of climate change really stands out within this first question of the American Territories analysis, especially in comparison with the United Nations conversations in the earlier portion of the chapter.

Question 2: What Would You Say Is the General Attitude in (**) Toward Climate Change?

PSIS Question 2 is similar to Question 1 but pursues a more in-depth look into how climate change is handled (e.g., with energetic adaptation activities perhaps or with a more sluggish response). In addition, the question concurrently has respondents compare either American Samoa, Guam, or the Northern Mariana Islands to other PSIS to obtain a better comparison of where the American Territories in the Pacific self-situate among their neighbors.

Jurisdiction 1.

> I think there's a general, it's not lack of awareness that climate change is occurring globally, the issue is that it's not very clear what that change will mean for [**] in particular . . . And so as a result, nobody I think . . . nobody's really ringed the bells and . . . tried sounding the alarms at least at the public level. If we were out in The Marshalls it would be . . . a topic of daily discussion ($PSIS_{944}$)

> I think people are quite honestly really apathetic, I don't think it's on the radar. To the extent that people are linked to some of these other areas where we see it ($PSIS_{700}$)

> There's a lot of other things that are more immediate . . . and climate change is hard to get your hands around . . . because such a long-term thing doesn't fit well with politics which people are trying to get reelected a lot, and so . . . the money tends to go more toward short-term things ($PSIS_{954}$)

> There are people who are following the money and there's money for climate change remediation, adaptation and so their people are saying of course yea . . . we need this money, so as long as there's money, people will . . . agree yea we got a problem, and so I think there's that, and which is again they're not critically examining it ($PSIS_{920}$)

Jurisdiction 2.

> The general attitude in the government seems to be more along the lines of oh this is something we should worry about because everyone else is worried about it and people seem to be getting publicity and money and attention and everything for, but there still doesn't, one of the challenges we've had . . . is that it's . . . not a big priority ($PSIS_{892}$)

To tell you the truth, the climate change, we just started doing the climate change as the, as a group of all government agencies, yea. So not a lot of people are aware of climate change, so that's why we're trying to educate ($PSIS_{853}$)

I think we definitely need to do a better job of doing public outreach. I wouldn't say there's a negative attitude, I would say there is just a lack of understanding of even knowledge that, or just maybe the use of the word climate change because I think residents here are already seeing this, they're not just using the words climate change to describe it ($PSIS_{719}$)

I'll say most people believe it, though I don't know that they really understand it. Sorry, that's why I was hesitating . . . It's not like some parts of the US where no, there's no such thing as climate change, you don't get that reaction here. . . . I think most people acknowledge, recognize they . . . don't have any ideas on what exactly it means for them and their lives going forward ($PSIS_{575}$)

Jurisdiction 3.

Because this is a very religious area, and people just kind of say oh well, you know we just rely on the Lord to help us if anything and, but for me, I feel like the Lord helps those that help themselves, so, I am concerned . . . ($PSIS_{705}$)

There's a concern about it. I think that a lot of people maybe don't know as much as they could know. . . . I would argue that if you look in levels of government . . . I think that a lot of the natural resource managers are extremely concerned. . . . But if you look at executive levels of government, you know it's kind of more indifference . . . and I think that part of that is just . . . a need to reach out to them more and make them understand that climate change is an issue but it will affect . . . economic development because that's sort of what people are very primarily concerned with here, understandably so ($PSIS_{919}$)

I believe that [people] within the government departments . . . are aware . . . especially the environment people . . . They are aware that climate change is beginning to be a problem. It's a problem now on island. But the general public needs also to be aware of it, so what I don't see and what I don't hear in the radio . . . in the media, in the schools, in the church groups, because that's one of the target audience here is the church groups . . . is really into church, like very, Christianity here is . . . Paramount and . . . when I was in Fiji, I was just recently . . . I hear radio advertisements on climate change ($PSIS_{815}$)

I feel like it's pretty different from the mainland US . . . it's not like something you have to sell people on . . . it's pretty much a given at this

> point. And I think people aren't as sure what to do about it, but they're convinced that it's going to be a problem ($PSIS_{764}$)

In the first of the three jurisdictions, the island grouping spoke to the uncertainty regarding how to approach climate change issues where they may be a priority of sorts, but other issues supersede climate change on the list of priorities. In addition, questions about incoming migration from the region, not understanding how to adapt to a changing climate, and looking to climate change as a source of money for the island were topics brought up by interviewees. Within the second group, the on-island interviews described the general attitude toward climate change as being something new. Simultaneously decision makers were unclear as to how to incorporate it into educating residents. There is an overall unfamiliarity regarding climate change in the jurisdiction. although policy makers would like to increase public outreach, that has proven difficult. Slowly, portions of the government are taking the lead along with nongovernmental groups, but the momentum is just starting up. Within the third of the three jurisdictions, the general reaction to describing the general attitude toward climate change on island was that it is just beginning, not affected by the denial seen in the past on the mainland United States, and somewhat affected by the highly religious population on island: some respondents mentioned that – more so in the past than today – planning for tragedies was either an invitation for calamities to happen or were going against an intended destiny designed by a higher power. Although there is a concern on island that people do not know as much as they could or should about climate change, they may believe the future is in the hands of a higher being or that until they see the effects firsthand, it is not something to start worrying about.

These three groups of quotations address the general attitude toward climate change in the American Territories. There are some substantial takeaways from the interviewees' responses. One of the most common responses was that there were other more pressing items, such as the economy, that surpass climate change as an important topic for the public and elected decision makers. Next, there is not reluctance to adapting so much as there is confusion about how to adapt and what the foreseen impacts of climate change are on the local level. Relatedly, a lack of understanding of what climate change is, as differentiated from other environmental factors, is causing residents and decision makers to falter with meaningful action and preparation. Finally, items such as regional migration and lack of harsh localized effects of climate change all affect the attitude toward climate change in the PSIS of the American Territories in the Pacific.

*Question 3: How would you describe (**'s) climate change plans, climate change policies, and climate change projects?*

PSIS Question 3 parses out the islands jurisdictions' actual plans, policies, and protocols. Furthermore, it gets closer to respondents' answers by having them qualify previous answers regarding climate change in the American Territories in the Pacific.

Jurisdiction 1.

> We have some good people leading some good projects. I think also what's critical is that we have some major funders . . . these organizations that provide . . . our local organizations and . . . climate change programs . . . there's potential funding, so that's also the driving projects . . . . So, we respond to where the money is and so I think you know that's good. ($PSIS_{975}$)

> I want to be accurate with this word, in its infancy, that, literally . . . a couple weeks ago, it may have been last month, was really the first time we, to my knowledge . . . have gone to individual meetings with the Executive Branch . . . when as a group and presented the . . . Assessment to . . . the governor, a lot of the regulatory agencies, and heads. ($PSIS_{913}$)

I think right now we are as a, as a group of government agencies, we each tackle basically our sections for example . . . I provide input as far as areas of concern . . . .We have to start doing something about it, ways to mitigate it. ($PSIS_{780}$)

Nonexistent, yea, so they have had no plans, projects, etcetera and so the whole reason why the . . . group was formed was because . . . there was no planning happening, they recognized they should start looking in that direction, and thus they embarked on this journey. ($PSIS_{883}$)

Jurisdiction 2.

A lot of the policies are really kind of adopted from somewhere else, rather than more local. It's, I mean . . . a lot of the people here, really just grab something that somewhere else where they've actually really done the research . . . that's the thing. There isn't real research data locally . . . .They really need to customize it to fit [**'s] needs rather than just trying to adopt which is useful elsewhere. ($PSIS_{914}$)

Our biggest challenge is working with some of those. . . . And so there's a lot of major decisions that. . . . When we're looking at these sort of plans you know, it's tough to kind of, that's why we kind of have it in a framework, we're trying to get funding for all these projects that we've put within the framework. But it's kind of you know, it's slow. ($PSIS_{524}$)

I just started with this position . . . That's why I can talk freely about what we feel like on the streets . . . but I was like what have you been doing all this time, I sit right next to you and I still don't know what this is all about? That's messed up. I'm sure there's (sic) policies out there. ($PSIS_{675}$)

There's some kind of awareness going on, just by word of mouth, but really haven't got the experts to really sit down and share the future of climate change, what the impacts is going to happen. Personally, I feel we need to start from the government, need to go out to the public and get information from them ($PSIS_{603}$)

Jurisdiction 3.

I think [**] is way less progressive than most other small island states in terms of climate change plans and mitigation strategies. The one area where I think that they've been proactive on is particularly . . . with like I said coastal zone and sort of these near shore marine kinds of environments. Terrestrially, in terms of groundwater, drinking water issues, I think [**] is, lags behind many other places . . . .Once you go inland, most of those plans are basically just on paper . . . very few of those plans have been operationalized. ($PSIS_{672}$)

> A mixed-bag . . . so I think it's changing but I think right now, we're pretty thin on climate change plans and policies. ($PSIS_{826}$)

> There's been kind of secondary conversations about . . . climate change but kind of packaging it as a climate change adaptation plan is not how I think it's been approached as a whole . . . .I would say that just kind of the high-level governments . . . of the United States, that was impacting people's ability to discuss and plan . . . with Bush it . . . was taboo and now with Obama it's definitely more, more acceptable. ($PSIS_{741}$)

> I think people are trying to include climate change in stuff that's already going on just because it makes more sense than trying to do this crazy overlay. . . . So like we do a lot of work with reef resilience, but effective fisheries management is necessary for any number of reasons besides to increase the health of a reef system so that it can be more resilient to a climate change issue, right? ($PSIS_{673}$)

Within the first of the three jurisdictions regarding the specificities of the jurisdiction's plans, policies, and protocols, there were a range of responses, with the most common being that plans, policies, and projects are either nonexistent or in their infancy, whereas others stated that resource agencies were at the helm of anything climate related on island. Nonetheless, there were a few other responses that interviewees had to the prompt. In the second jurisdiction, regarding the specificities of the jurisdiction's plans, policies, and protocols, there was a diverse range of opinions by interviewees. The most frequent response was that they were not aware of any particular plans, policies, or projects on the island related to climate change, although the prospect of them existing did not sound outrageous. Another common response was that they are woven throughout multiagency projects and incorporated holistically amongst different organizations that may be environmental based or more political. Finally, some finite examples were given by respondents. In the third of the three jurisdictions the overall sentiment was that climate change planning was just taking off in the region and was a new work in progress. Respondents stated that they felt the island jurisdiction was

substantially behind many of its regional neighbors, and the only areas in which the island excelled were related to the coastal or marine planning mechanisms put in place by federal agencies.

Within these three groups of quotations addressing the general attitude toward climate change, the key message is the infancy, beginning stages, or overall lack of foundational planning for climate change planning, policies, and projects in the American Territories in the Pacific. Where there were plans in place, it was most often involving coral reef resilience or other coastal-related programs that were dictated as necessary at the federal level of the United States. Although plan integration exists across some sectors of planning to create holistic climate change networks, this does not happen often, which creates a lack of public education and the need for more community outreach where respondents say the information is often scant. Interviewees, for the most part, considered the jurisdictions to be moving in the right direction, but the current states of climate change plans, policies, and projects was lackluster. This information, when juxtaposed with additional interview questions regarding particular difficulties, may parse out some of the reasons behind PSIS' records on preparing for climate change at the territorial level.

Question 4: Does (**) Work With Other PSIS in Addressing Climate Change?

PSIS Question 4 analyzes whether being territories or commonwealths of the United States in the Pacific affects interregional cooperation at the international and global negotiation-based levels.

> *Jurisdiction 1.*
>
> And then we work with a lot of regional organizations . . . we work with SPREP [Secretariat of the Pacific Regional Environmental Programme],

we work with PICCC, so they're kind of a new organization starting out. We don't really work with other nations or states very closely in partnerships really on climate change . . . .There's issues with funding that most of the regional organizations, their funding comes from . . . French Aid, and AusAid . . . so they're not actually allowed to do a lot of things here . . . they . . . figure the money's coming from the US. ($PSIS_{680}$)

Federal people . . . you know, they work together with this government . . . and NGOs [nongovernmental organizations] so it's like a whole you know territorial effort involving all . . . difference agencies. ($PSIS_{601}$)

South Pacific Community (SPC) . . . I know some of our guys been going out there, but they haven't brought any information back for us . . . .They talk to us, they bring it up in meetings. They are funded by a lot of big countries. ($PSIS_{623}$)

We are also a member of SPREP [Secretariat of the Pacific Regional Environmental Programme] . . . one of our mentor programs . . . they have a lot of education programs that are in schools and even out in communities, and also churches and youth. ($PSIS_{783}$)

Jurisdiction 2.

It's kind of tricky as a U.S. Territory, you can only do so much in terms of hey let's partner with like, I don't know, the Maldives or . . . . Palau and RMI [Republic of the Marshall Islands] . . . .I think to really get to other parts of the Pacific or the Indian Ocean, or maybe some of the nations of the Caribbean, it takes a little more effort so we don't work with them as much as I'd like to see. ($PSIS_{639}$)

One of the issues that happened, came up in Marshalls, is like you're asking us to do a campaign to tell people to stop, to slow down on fishing . . . but our islands are sinking. How do we make this judgment call what's more important . . . I don't know how that relates to your question. But, I think there's things happening and then . . . there's climate change and then we all try to deal with it in our way as best we can. ($PSIS_{799}$)

I do, I want to say the answer is yes, the reason I say this is because I have friends at other government agencies . . . where I know they frequently travel within, especially the Pacific to discuss issues. ($PSIS_{994}$)

We share information, I'm not sure how closely our lead person works with some of the groups from Hawaii, but I know with we've invited . . . federal funding, some professors and some people that have more knowledge about the climate change . . . .They have a simulated topographical report . . . but I was kind of more interested in how they, that can be applied here and simulated here in our islands. ($PSIS_{609}$)

Jurisdiction 3.

> I'd say we are trying to learn as much as we can from other small island states. Again it, the issue of climate change really took off under this current administration, and so we're almost playing catchup believe it or not to even our neighboring islands. ($PSIS_{522}$)

> We're sort of learning more about what impacts can happen to island communities by, by being part of the discussion . . . with the rest of our neighbors in the Pacific. I think we're sort of late to the party but thank goodness we are at least invited to the party. ($PSIS_{691}$)

> We used to and it's been a major change, I'd say . . . 15 years ago [**] was really active in regional . . . South Pacific Regional Environmental Program for example. I used to attend their meetings . . . And so we were participating and but suddenly we disappeared and we dropped out in the last 2 years which is kind of disappointing, rather than getting more active . . . I guess politically people turned more to the US because there's more funding there to do more things . . . [**] is slipping away . . . that bothers me. ($PSIS_{821}$)

> We're formerly a part of the Secretariat of Pacific Community and it's really taken a lead on this . . . We're not as involved in SPREP [Secretariat of the Pacific Regional Environmental Programme], we sort of focus our efforts more on SPC. ($PSIS_{992}$)

In the first of the three U.S. jurisdictions, with regard to the island's propensity to work alongside other PSIS, respondents overwhelmingly mentioned a bilateral relationship between the U.S. jurisdiction and a culturally similar PSIS. However, aside from that relationship, interviewees spoke about the regional Pacific groups of Secretariat of the Pacific Regional Environmental Programme and SPC that allowed U.S. jurisdictions to participate—even though they are not sovereign nations. That was favorably recognized by respondents. Finally, Honolulu was mentioned as a hub for U.S. island jurisdiction activities, acting as a nexus from agencies that do work in the American Territories.

In the second jurisdiction, two subregional organizations were mentioned that participate alongside other U.S. jurisdictions as well as sovereign states within this sphere

of the Pacific. In addition, Hawaii, especially Honolulu-based organizations, were identified as nexuses of cooperation in the Pacific for American Territories.

In the final jurisdiction, two substantial regional organizations participated alongside other American jurisdictions as well as sovereign states within this sphere of the Pacific. Hawaii is once again mentioned, but it was not regarded as being as strong of a link as was the case for previous interviewees. Finally, this jurisdiction voiced more concern about the inability to work with sovereign PSIS.

The most referenced regional group by far was the Micronesian Challenge, a consortium of Micronesian States (Federated States of Micronesia, Marshall Islands, Palau, Guam, and the Northern Mariana Islands) that works together, regardless of sovereignty, addressing climate change and related issues, such as conservation. The South Pacific equivalent is the Two Samoas Initiative, which is very similar but focuses on geographically adjacent Western and Eastern Samoan islands, today known as Samoa and American Samoa. Hawaii and Honolulu were often mentioned as an education and policy nexus for the region, as were the international SPC and Secretariat of the Pacific Regional Environmental Programme agencies. Along with the Micronesian Challenge, the Micronesian Chief Executive Summit focused on a broader range of issues: cultural, economic, and energy, as well as environmental. Cohesively, the region has an assortment of regional organizations, so much so that some jurisdictions partake in some more strongly than others. Therefore, although there are difficulties in American Territories not having sovereign status, from their regional unity, there did not appear to be much of a disconnect at the surface. To better understand this relationship, subsequent questions addressed this issue in depth.

Question 5: Do You Happen to Be Familiar—and If So, How—With AOSIS, the Alliance of Small Island States or CROP, the Council of Regional Organizations of the Pacific?

PSIS Question 5 attempted to determine whether any of the American Territories were using their status as observer members within AOSIS or whether they took part in the CROP agencies under the auspices of the SPC. These memberships and activities—and whether or not the American Territories participate—aided in evaluating networks of cooperation.

Jurisdiction 1

> AOSIS I think is a wonderful organization, I . . . think it's a real testament to what the Pacific can pull off when they put their heads together and I mean . . . they have 21% of the voting members of the UN, it's a pretty large bloc . . . .AOSIS is not something we interact with very often just because it's touchy politically. I think we follow the United States on foreign policy and AOSIS is not necessarily always in line with U.S. foreign policy . . .. ($PSIS_{616}$)

> We were, for a while we were really active and historically [**], let me tell you some history, when, when was it about, maybe 1990 or '91 . . . SPC . . . had two levels of members, there were the mother countries, France, and Australia, and New Zealand, and US that would contribute more money but also had more votes sort of and decisions . . . there was a move . . . I can't remember who he was, the President of Nauru came up at the meeting and he said everyone's got to be equal, we treat every country equal, there's no difference between big countries and the small countries and . . . the U.S. State Department guy just about fell out of his chair, it was pretty exciting . . . and the rest of the group voted on it, and they changed SPC, so that was an historic event . . . The U.S. government had some hesitation of having [**] be a full voting member . . . and the Governor here just kind of rebelled and said we're dropping out . . . if we can't be like the other members. ($PSIS_{990}$)

> I happen to have some of their publications . . .. ($PSIS_{656}$)

> I mean for one person it's about $10,000 investment and all we do is sit down and shut up. It's just not a good investment, and with times as challenging as they are now. ($PSIS_{543}$)

Jurisdiction 2.

I've never heard of either of those. ($PSIS_{952}$)

The reason why I'm familiar with CROP and I learned about CROP 3 weeks ago while I was in Fiji, so, it was a heads of transportation meeting, I didn't know what CROP was . . . so if you asked me three weeks ago . . . I would've told you no. ($PSIS_{542}$)

I've heard of AOSIS but that's about it . . . I've heard and I think I might have checked out their website or something. ($PSIS_{625}$)

I don't think I recognize either of those. ($PSIS_{513}$)

Jurisdiction 3.

It's so good that we are a U.S. Territory but our location in, it then it makes a disadvantage because there's a lot of programs out there through the UN and WMO [World Meteorological Organization], other areas but it's all to foreign countries and usually . . . we always have to try to get permission just to be in it . . . a huge process just to be included . . . they do so much . . . but we're usually not really included. ($PSIS_{884}$).

We definitely keep up to date when they'll make statements to the UN during the General UN Meetings and everything, and I mean keep up with it and it's definitely of interest I think . . . so it's something that we . . . keep up with but it's not something that we participate in. ($PSIS_{930}$)

Yea, a lot of time we don't benefit, we don't want to get involved. Which is like going over there, when they divide up the pie, we just sit there with our thumbs like what are we doing here you know it's kind of embarrassing. . . .. I complain about it to our congress office. ($PSIS_{757}$).

Sometimes we're invited, sometimes we're not, so . . . The funds can't be used for us because we're part of the US. ($PSIS_{802}$).

In the first of the three U.S. jurisdictions to be analyzed regarding their familiarity with AOSIS and CROP, almost half of respondents were knowledgeable about or at least familiar with the agencies. Although most were familiar only in passing, some of the respondents on island had past working experiences with these agencies. However, they admitted that nowadays, there is not much coordination for a variety of reasons. In the second jurisdiction, when asked if they were familiar with and worked alongside AOSIS or SPC, the response was a resounding no. Out of the roughly dozen interviews

conducted within this territory, one respondent had heard of AOSIS and one had just found out what CROP (sitting within SPC) was 3 months prior. Almost all of the interviewees' responses to this prompt were "no" without many other words to clarify their lack of familiarity. Finally, within the third of the three U.S. jurisdictions, when asked whether they work alongside AOSIS or SPC, the overwhelming response was a lack of familiarity with AOSIS and SPC. In fact, after the question, most recipients wanted an explanation of what this group was and perhaps the islands' role or lack thereof in the associated affairs. Interestingly, many respondents were unhappy, but not shocked, that their island-based government was either careless in not joining this regional forum or perhaps unable to because of federal policies.

These three groups of quotations address familiarity with or self-association with CROP or AOSIS on the part of the American Territories in the Pacific's familiarity with or self-association with CROP or AOSIS; the result was that the understanding and experiences with these organizations was variable. In two of the three jurisdictions, almost all recipients lacked knowledge of the organizations; those that were familiar with these Pacific-based organizations had only heard of them in passing. In the other jurisdiction there was some experience working with AOSIS and CROP, but more recently, those associations had been cut because of political and financial reasons. Earlier in this study it was established that AOSIS works in a mostly advocacy and negotiation-based realm on behalf of small island states. It is not clear that American Samoa, Guam, and the Northern Mariana Islands are missing out by not being part of it. Most likely, they are not, although they are missing out on some potential networking and other regional interactions. In terms of CROP, which sits under SPC, two of the three

island jurisdictions are actually members (one full, one associate) although that was not obvious from what was stated during interviews. Are the islands missing out by not connecting with their Pacific brothers and sisters through CROP and thereby SPC? This is likely the case because CROP deals with issues such as energy, the environment, fisheries, and more. If the American Territories in the Pacific are indeed looking for a way to connect in a welcomed atmosphere, then CROP/SPC, may be the answer.

*Question 6: Does (**'s) Status as a United States' Territory Near Many Other PSIS That Are Not Part of the United States Have Any Effect on Climate Change Preparation In (**)?*

PSIS Question 6 builds off of the previous question on AOSIS and CROP: if those associations are not favored for cooperation by American Samoa, Guam, and the Northern Mariana Islands, then are there others that fit better with the fact that they are territories and not sovereign? Or, as some respondents described in previous questions, is there a lack of cooperative connection between the U. S. territories and other PSIS in the Pacific region due simply to differing political statuses?

> *Jurisdiction 1.*
>
> It's not only with climate change, but it's in everything else, we just get whatever the leftovers are . . . We're just this small little island . . . okay we'll give you this, we have some leftover stuff for you guys, sorry to say that, but that's just how it is . . . .Well one of the things that I do notice is the good thing is with the US, being a U.S. Territory we do get the good . . . training and it's pretty good. (PSIS$_{904}$)
>
> I think that it makes us, it's slightly detrimental and then it makes us a little more independent as far as our climate change preparations go. We're able to work with other territories . . . and we're able to work through SPREP [Secretariat of the Pacific Regional Environmental Programme] in certain ways but . . . since the funding is so different as far as SPREP is concerned when we go to different SPREP . . . meetings or you know groups . . . it's kind of a little challenging because it is we're kind of on

the outside looking in . . . So it kind of makes us you know a little bit of the outsiders. ($PSIS_{923}$)

Well they look at us like we got a lot of money . . . We, every time they look at us they feel like we got all this U.S. dollars, but we, you and I both know with sequestration and budget cuts, it's not like that anymore . . . and you got to produce . . . you can't just keep saying gimme, gimme, gimme anymore . . . . It benefits us but it also creates hardship for us, because there are lot of areas where we're not similar to the States and their jurisdictions . . . and things that are impacting them. We're more similar to the islands, so that's where it poses a challenge. ($PSIS_{641}$).

I was in this meeting in Fiji, the attitude, the general attitude there is like, (**) shouldn't be speaking with Samoa because Samoa's level is with the United States, so coming from (**), and I was very, I was very frustrated with it. I was like how come (**) is not involved in the discussions, the panels, some of the panels that they had, being that I was representing the territory, and was like, because you are down here, we are up here with the United States . . . .And I said, oh, but nobody from the United States is here, I am here, then we should be acknowledged as members of the US and they're like, oh no, because you guys would have to go through the US, the U.S. people will speak to them. . . . And then the way the other islands are treating (**) is like that, like okay we're not going to talk to you because the US, we have to have a representative from the United States to talk on your behalf. ($PSIS_{620}$)

Jurisdiction 2.

I don't know how much it, the fact that we're a U.S. Territory versus them not being . . . The fact that there are some other Pacific Island states that are already having some pretty serious impacts from climate change has sort of, I think it's both helped and hurt a little bit our attempts to try to get that to be more popular here because on the one hand it's like they are starting to think about it. ($PSIS_{703}$)

I think that it does and I'm trying to remember the example where we wanted to go to this meeting and we couldn't go . . . .Were trying to get the Governor . . . to sign it . . . they both were like reluctant to sign it because they said, I think we have to go through the U.S. Department of State before we sign anything like this, so they never got to sign it. . . . And my take on it was, you can sign it because this is your state, you're signing as state, when you do this you become a leader in your state like a climate leader. And he didn't feel very comfortable with that so he asked the legal counsel and the legal counsel said that I was right, that he could sign it, but the still wanted to check with the Department of State . . . . So we can't really go unless we're with the U.S. delegation, which is even more high-level. ($PSIS_{837}$)

It doesn't seem like our being part of the US and our, our sort of . . . identity as an island is, it's hampered our, our acceptance of climate change here. I think if anything we kind of embrace it more because we want to, we're so concerned with our island here, and our island being part of the culture and the people. ($PSIS_{767}$)

It's just a lot more Western and so just the conversation you have with how are you going to address this and in Palau they're like oh, the elders just said we're going to plant more taro, boom, done, everyone listen's to it. Here it's like well, you can't . . . the elder here can say it but he's not the governor and there's . . . all these businesses and it's just so, there's a big disconnect almost so it, just in general makes it hard to work. ($PSIS_{834}$)

Jurisdiction 3.

Well I think because we're a U.S. Territory they're going, if it's big huge disaster does come in . . . it will get taken care of by the United States . . . I mean there's pros and cons with being a territory and it depends on who you talk to but that is one pro of being a territory of the United States but if like a terrible, horrible horrific emergency or disaster happened you do have the US which has a lot of financial support to kind of helping you out. ($PSIS_{962}$)

Let's just say huge sources of government revue and this security that you have being a totally part of the US . . . and I think (**) is benefitting from it, so that's my opinion on that big time . . . I think (**'s) getting forced to go to the table in some of these meetings and getting forced to sit at a table like . . . Coral Reef Task Force all of a sudden (**) wants a seat, they want to be a member and I know it's because of these interactions with PSIS. ($PSIS_{591}$)

We would like to believe that it's an understanding that our place in the Pacific, our connections with some of the impacts and being a small island nation, not nation but a small island state, and our relationship with the United States, maybe we are the canary in the mine and hopefully . . . bring to the table some of the issue. ($PSIS_{959}$)

There's more resources coming from the U.S. government like sponsoring . . . more workshops, there's more opportunities . . . to do research on climate change and although these things can apply to other countries, lots of times it's more available to U.S. Territories from the U.S. funding . . . other kinds of funding through . . . the European Union that won't come . . . but it will go to our neighboring countries. ($PSIS_{563}$)

In the first of the three U.S. jurisdictions, the majority of respondents answered yes, the territory's status in the region affects regional cooperation in terms of how

climate change occurs. Almost all interviewees said that although there are some good points about being part of the United States (as well as mentioning their patriotism and happiness to be part of the United States), there are so many prohibitions and logistical bureaucratic processes associated with being an American Territory, that they have a very difficult time achieving any cooperative agreements with other PSIS.

In the second of the three jurisdictions, the respondents more often answered that being a territory of the United States does hamper cooperation with other PSIS, but there were a fair number of respondents who believed it did not greatly impede coordination. In addition, some interviewees acknowledged that they were lucky to be living on (**) versus some of the independent PSIS that are more prone to feeling the effects of climate change today. Finally, in the third U.S. jurisdiction, the respondents overwhelmingly answered that it really does not affect the situation, and even when it does, it is overall a good thing.

These three groups of quotations addressed whether and how the American Territories in the Pacific were affected as non-sovereign territories of the United States by their geographical proximity to other PSIS. The two answers most often given by interviewees were, first, that being part of the United States is beneficial, it brings in money and resources and power, as well as a sense of assurance in case natural disasters strike or preparatory measures need to happen. This viewpoint is more introspective, because it looks at what the islands accomplish as part of their association with the United States and the by-product of resilience. Conversely, the second and just as common popular answer was full of firsthand knowledge and frustration, with interviewees voicing the obstacles that have stopped them from participating in climate

change preparation because they are territories among a sea of independent PSIS. Although they are often invited to regional meetings on climate change, they actually have to sit out of the decision-making arenas because only U.S. Department of State personnel are at the decision-making level of their island peers. However, the U.S. Department of State rarely sends a representative; if it does, that person is often from Washington or New York, without much knowledge regarding Pacific territories. Thus, there are two distinct dialogues surrounding American Samoa, Guam, and the Northern Mariana Islands: one in which their status as territories is detrimental to self-fulfilling and forward-thinking planning and another where they are provided for by a large power, providing a guarantee of assistance that interviewees stated other PSIS would be jealous to have in the event of a disaster or natural phenomena. Both options are powerful and should be used as guidance toward creating stronger, more resilient climate change planning tools in the future for the American Territories in the Pacific.

Question 7: On a Scale of 1–10, How Would You Describe the Degree to Which (**) Is Adequately Preparing for Climate Change, and Why?

Similar to the last question in the United Nations-based interviews earlier in the chapter, PSIS Question 7 has the by-product of a quantitative value but is more important in the qualitative features given by the interviewee regarding self-placement among peer PSIS.

> *Jurisdiction 1.*
>
> I think that there's so many dimensions of climate change, a number of potential effects that we should start planning and mitigating for that we're not. Like I said sea-level rise is one thing, but ocean acidification's another one . . . the precipitation rates and groundwater. ($PSIS_{769}$)

Just between . . . November and today, so many things have happened locally, internationally, and nationally. I can guarantee you right now there's . . . people actively working on something climate change related as we speak . . . we're definitely climbing up there. ($PSIS_{552}$)

It depends on what the US does, too. If the US has programs and funding and people doing this climate change adaptation and sustainability, and applying certain codes for building and zoning and all that, it would carry on to here, that it would really influence it and then this is ahead of a lot of the other countries that aren't associated with the US. ($PSIS_{539}$)

I think that the people are working on it . . . we have some really skilled, talented people that are passionate about it and so they're, they've put a lot of work into trying to get our community going . . . I still think that's confined to a small portion of our population and it's not something...when I've been elsewhere in the Pacific, it seems to be overwhelming, it's a concept everybody talks about, everybody's dealing with and on (**) it's very localized. ($PSIS_{785}$)

Jurisdiction 2.

I would say that we were really, like, on you know a good trajectory. I think that it kind of got stalled a little bit as other things kind of came up and you know the focus has been economic on development . . . more so than anything else. ($PSIS_{890}$)

We're always told to get our 72-hour kits. I mean when the tsunami hit I go grab your 72-hour kits, we're on the road, running, we were in the wave you know, and we have welfare, we keep food, we still have water, those kinds of things we can afford. We can't necessarily afford to build a steel home or anything like that. ($PSIS_{945}$)

We're not preparing. I don't think, yea. They're just going with the flow here. Yea, I don't think we're prepared for the climate change . . . We can play a huge impact into the Pacific . . . .Look at us, and maybe that will go back. . . . But I don't think our people quite understand climate change. And, awareness is just not enough. ($PSIS_{778}$)

In particular, I feel like we're doing pretty well, like we have plans in place, we have research that's happening . . . .The territory as a whole, hmm, I don't really know, which is concerning in and of itself probably and would tend to . . . a lower ranking . . . so yea, I'm not really sure what the island or island government is doing or thinking about climate change. ($PSIS_{867}$)

Jurisdiction 3.

> So, it depends on what we're doing this relative to. If we're doing it relative to all coastal states in the US . . . .Within the Pacific Islands, the U.S. aligned territories . . . .Just relative to others . . . There's really no way to tell if what . . . started at this foundation we built, if it's, if . . . I disappeared off the face of the planet, I think climate change work . . . would just wall. ($PSIS_{774}$)

> Somewhere in the middle of the road . . . I think like our office . . . is probably making strides . . . on our own, but then the other partners that we have to work with who should also be very concerned about climate change like . . . public works or . . . utilities . . . they're kind of slacking . . . but oh too late we already did our five year master plan for the next 5 years, so, we'll, we'll try and throw some climate change consideration into the plans. ($PSIS_{925}$)

> I just really think that more needs to be done and we need to be more aggressive and the word needs to get out on how important this is because this is beyond our control and there's certain things that we can do now in preparation for it so yea, that's just. ($PSIS_{996}$)

> I think with planning we're, we're at maybe 6, implementing we're at 0, but you know the plan is . . . a course of action, recommended course of action, so, at least it's there, and the awareness is building and again planning versus action. ($PSIS_{559}$)

The first of three jurisdictions surprisingly resulted in the same average as the second, with an average of 4.1 of 10 in explaining the degree to which they consider themselves prepared for climate change. This is the lowest value of all American Territories interviewed. Respondents were mixed on whether climate change planning and adaptation procedures were progressing, being implemented in the early stages and legitimate, versus those that say it is all talk and nothing is being done besides longstanding discussions. Conversely, some interviewees talked about the multidimensionality of climate change and the inherent difficulty for planning. The second jurisdiction interviewed averaged a 4.8 of 10 in explaining the degree to which they consider themselves prepared for climate change. Some interviewees spoke about

change heading in the right direction in terms of increased preparedness, whereas several others recollected the past administration that implemented many climate change preparation measures only to have them curtailed by a new administration that recently has taken over. In addition, respondents ascertained that much of climate change on island was focused on certain areas—like coral reefs—without taking an island-centric, holistic approach. Finally, the third jurisdiction surprisingly produced the same average as the second, with an average of 4.8 of 10 in quantifying the degree to which they considered themselves prepared for climate change. On the island, a much larger number of projects and incentives was just beginning to form to be initiated, with a long journey to go before they could be considered adequately prepared for climate change. Interestingly, interviewees often gave their own island institution a higher score than the island at large and made note of that in their response.

These three groups of quotations address how the American Territories in the Pacific are preparing for climate change as well as rating their own efforts. Two of the jurisdictions received a 4.8 of 10 average, whereas the other received a 4.1 of 10. What this says is that generally, interviewees believed that progress was being made, but that it was in the infant stages, which sometimes means that plans are solidified but no implementation has begun. The appointment of the governors of Hawaii and Guam, Governor Abercrombie and Governor Calvo, respectively, to the U.S. Climate Task Force was identified with very recently catalyzing the movement for climate planning and resilience in the Pacific Islands. Nonetheless, the majority of respondents gave low scores and shared that, overall, the American Territories were unprepared to face the real prospect of climate change. They gave examples such as not taking local cultural

contextualities into account and focusing on reefs versus other programs. Those interviewees walking the line between prepared versus not prepared said that it has only been in the very recent past that things have really started coming together so it is being worked on, but it is hard to analyze exactly where the islands' efforts lie at this point. Reading the quotations from the three territories, no one location is doing much better than others in the thinking of those interviewed. The important activities included developing detailed plans with funding and implementation procedures, educating islanders, linking with the mainland United States for acceptable norms and programs for both parties, and looking to the region to see how other islanders in the Pacific are preparing.

*Question 8: Although (**'s) Status Is Not a "State" of the United States, Do You Think That Being Part of the Greater Network of the United States Is an Asset to (**) in Preparing for Climate Change?*

PSIS Question 8 question tried to evaluate some of the positive and negative features of the territories in the Pacific with relation to how they are either able prepare for climate change as parts of the United States or as part of the greater Pacific region. Respondents may have previously touched on this question, but the directness of Question 8 elicited more in-depth answers.

> *Jurisdiction 1.*
>
> I think as far as, we have more access I think to direct U.S. funds, but we don't have access to international funds, so . . . other parts . . . can get other funding maybe through United Nations or through all these other like international opportunities for funding that we don't have access to, but at the same time we have access to more opportunities through NOAA and stuff like that. ($PSIS_{855}$)

It's a good thing and maybe a bad thing because good thing is that we're part of the US and we can get all this funding, bad thing is sometimes we want to be engaged more in these other networks and we can't because U.S. Department of State. ($PSIS_{618}$)

It's definitely like a double-edged sword to where it helps . . . we get a lot of the funding opportunity to implement these programs and projects . . . from the federal government, and it's good. The hard part though is, is like we don't fit in with a lot of the plans or boxes that are being developed for like the states, and even Hawaii which may be the closest analog to what we, we've got here, it's such a huge state, like even just those islands are huge compared to what we've got here. ($PSIS_{593}$)

Boy a lot of these questions are really, it's bigger than just climate change, right . . . .Is it good to be attached to the US or not? Sometimes yes sometimes no. I think in general it is probably helpful just because once they kind of figure it out . . . the US does have money and it can funnel funds and in that sense [**] is in a better position to, to have that direct link . . . but on the flipside they do not have the opportunity to draw in Australian funds or New Zealand funds or Japan funds, which the other free . . . states can, and that hurts. ($PSIS_{840}$)

Jurisdiction 2.

It is an asset having the United States be part of us because you'll get a lot of help you get a lot of expertise to help guide us, a lot of wisdom and knowledge from the US to share with us what needs to be done. ($PSIS_{955}$)

I think that we are at the best position we're at now, and mostly because you still have the US to, whatever happens in the US it promulgates, so if they're going to have a mandate on climate change, you're going to follow it, or you're not going to be funded for it. ($PSIS_{856}$)

I think it's an asset in the availability to different resources, especially federal agencies bringing in people who have expertise in a lot of different areas. ($PSIS_{759}$)

I would say my biggest problem with the US is . . . anytime you talk about climate change, having national policies, nobody want to touch it. So from our standpoint, yea it's a shame to be associated with one of the most powerful nations in the world, and just not have a national policies on climate change. I think with the current administration Obama has been somewhat more focused on that than the previous . . . we have about 12 federal agencies that sit in on the table. They agree on everything but having the word, term climate change on paper. ($PSIS_{864}$)

Jurisdiction 3.

> Well the asset to preparing for anything because especially to the extent of the preparation of all federal money . . . .So I mean that's . . . we perceive ourselves to be kind of second-class citizens in a lot of ways because we don't get, you don't have representative in Congress, but you get a delegate but they don't vote. ($PSIS_{966}$)
>
> I guess I would say in preparing, in dealing with climate change, absolutely . . . I would envision the answer is yes, but what I've seen so far is no. That, because of that . . . they've not taken as serious as other places that I see, so that's weird, but that's what I've seen. ($PSIS_{805}$)
>
> It's an asset for one very real reason. Collectively, I'm talking about the small island states. We generate the least amount for example of carbon emissions, yet we're the most impacted by what everyone else in the world does. And I don't think combined we get enough funding whether internationally or from the United States to somehow reduce the impacts that it's causing on our island states. We have, and I think for that, that one singular reason, we really try to embrace each other and we try to support each other where we're lacking. ($PSIS_{604}$)
>
> I say it's a tradeoff . . . it's a strength in that we . . . have access to certain programs that we wouldn't have access to if we weren't part of that, by the same token, the US is going to represent (**) at climate conferences and things like that, especially international conferences, so . . . (**) isn't going to have...its own say . . . so (**) is going to be a part of the US, the U.S. policy and U.S. response, an international conferences but I would say . . . we get a lot more benefit from being part of the US than we lose by . . . being part of the US. ($PSIS_{583}$)

The first of three jurisdictions stated that yes, being aligned and supported by the United States was undoubtedly an asset to climate change preparation. Conversely, there was a vocal minority among the interviewees that maintained that there is a balance between the positive and negative effects—which are often associated with the relationship between a territory and host country. The second jurisdiction to answer the question said that yes, it was an asset. Interestingly, several respondents actually said that if there were any shortcomings, it was more likely to be a lack of initiative and progress on island versus a lack of United States–based policy. The last of the three jurisdictions to

answer the question gave the most divided response of the three, saying that it was simultaneously helpful and hurtful to advancing climate change adaptation planning. In almost all the cases in which respondents said that it was helpful, that helpfulness focused on funding, research, and availability of experts from the mainland.

These three groups of quotations addressed how the American Territories in the Pacific reacted to the question of whether being part of the United States was an asset—or not—in preparing for climate change. It was interesting that one of the island jurisdictions had an almost 100% rate in rating the relationship an asset, whereas another was similar with a few more negatives mixed in. A third jurisdiction consisted of mostly "both" responses, where funding, research, and expertise brought over by the U.S. mainland and programs was thought to be very helpful to the islands; however, the lack of accessibility of international funds and self-representation were areas of contention. Overall, the three island jurisdictions believed that funding was tantamount for preparing for climate change but that there needs to be a bit more accessibility and integration with the region. At the same time, it was noted that this is not the only area in which the relationship between the American Territories in the Pacific and their neighbors create a unique gray area in cooperation. From these interviewees' statements and quotations, the next step in climate change preparation would be alleviating the difficulties, inconsistencies, and roadblocks that hamper the otherwise beneficial relationship that the island territories have with the United States. For example, the U.S. Department of State should reach out to the islands to better understand their viewpoints and the obstacles they face when they cooperate with neighbors so that they are either cleared to speak on

behalf of their island or have an accessibly available point person, such as a designated liaison in Washington familiar with islanders' culture and points of view.

Question 9: If There Were an Item or Two That You Think (**) Is Excelling at in Terms of Climate Change Preparation, What Would That Be?

PSIS Question 9 encourages participants to name any plans, projects, policies, or otherwise climate change–related items where they recognize their island as outshining others. Some respondents believed that that the word "excelling" was a bit strong and laughed, but it helped to steer the conversation about what (if anything) is happening on island in a positive direction.

Jurisdiction 1.

> The fact that we are just preparing for it. That we have been meeting I think it's been 2 years already . . . I would say we are excelling that we haven't let climate change slip through the cracks, so we're still engaged. ($PSIS_{615}$)

> I think the, that having the working group together with all the agencies . . . I think that's really helping us a lot to prepare and also the . . . Assessment, because having that helps us to prepare our outreach plan, which then in turn once we go out there to the community and we tell them about our issues, they're going to come back to us and ask us so what can we do to adapt, and . . . hopefully we'll have a plan, and some ideas. ($PSIS_{830}$)

> I'm just going to go back to that, the . . . assessment, I think having that done that already is a big step. I don't know have other states and territories completed similar studies? ($PSIS_{889}$)

> Excelling is a strong word. I think I will just say again that I think they've had a good start in forming a working group and trying to get an idea of what climate change is . . . and start to identify really . . . the needs and gaps are . . . I think they are doing solid work in that regard, and if they are able to sustain that then maybe at some point we can get to the word excellent. ($PSIS_{921}$)

Jurisdiction 2.

I think that just by virtue of the fact that we already are a pretty resilient community because of our history with storms and earthquakes. We already kind of . . . as a community, and this may be changing, because of the way the storms . . . but people know the drill, like when the storm washes . . . your road, and you don't have power for 2 months, this is all something that people have dealt with and so we, I think at our core are resilient as, as an island an although I think it's changing a little bit, I think that that's going to be what gets us through sort of all the things that climate change brings out. ($PSIS_{621}$)

I think our exchange with . . . and understanding what's happening in the region and trying to adapt it to what we should be able to do. I think we also get a lot of, of other people like . . . partnerships with people outside of the government that bring the issues to us. ($PSIS_{807}$)

I think we are doing a lot better than a lot of Pacific island nations. Maybe we do not have the policies, but we have a lot things in place that they simply don't. And if you look at for example disaster recovery, we have an emergency operations center, we have agencies all involved in that, we have building codes, we have we basically have rule of law and policies to back them up and we have the infrastructure in place. ($PSIS_{973}$)

Individual attitudes, people are more open, and they're seeing more clearly that climate change is real. The effects are real, the impacts are real, so I think it's just the community, a majority of the community now understands what climate change is. ($PSIS_{645}$)

Jurisdiction 3.

I would say . . . the first is kind of education and outreach. I think we are doing a really good job at making sure that especially the younger generations have a good idea of what climate change is all about and you know when I go off to high schools and I talk to the kids out there, I think that they all . . . have a pretty good understanding of climate change. ($PSIS_{911}$)

Localizing it, I think doing it, those adaptation plans and really bringing it home. And we're walking the talk I think . . . But I think we need to continue to educate and educate people, become more aware better be prepare. I mean, some of those things are out of control, the natural phenomena of hurricanes . . . .But I think there is, there are policies that we need to put in place to reduce an impact. ($PSIS_{715}$)

Tsunami warnings . . . when you're sitting in the office you can heard it loud and clear. ($PSIS_{765}$)

> I'm really excited about the sea-level rise modeling that's happening, I think that's great and the outreach associated with that, that people are on that and really wanting to do outreaching, that's excellent. ($PSIS_{651}$)

The first of the three jurisdictions to answer the question regarding where the island state is excelling in terms of climate change stated that the recently released vulnerability report and assessment was where they are excelling—although it was only a start. Respondents also stated that climate change preparation and planning on island is relatively new, so there is a long way to go, but they are content with the fact that the process has been started over the past few months and years. The second jurisdiction had the most mixed responses of the three, as they explained how and where their jurisdiction was excelling in terms of climate change preparation. For example, interviewees stated that the island's history of dealing with storms and recovery, i.e. its resiliency, was what allowed it to best prepare for the forecasted impacts and challenges of climate change. In addition, respondents said that the scientific technology and capabilities on island assisted with creating a culture of readiness, whereas others said that there was currently not much in which the island was excelling at in preparing for climate change. The last of the three jurisdictions identified education and outreach as the principal area in which climate change preparation is going well. In addition, interviewees identified marine and reef education and resilience as a subarea, as well as expertise on island on how to approach tsunami warnings.

These three groups of quotations addressed in what ways respondents from the American Territories in the Pacific saw their countries as excelling in preparing for climate change. Although each of the three jurisdictions sees itself differently, the overall themes of resilience via localized education, historical knowledge, and inherent

community resiliency were the categories most often listed. Within these acknowledgments came past precedents to disasters known to islanders who, for centuries past, relied on tried and true building methods and coping mechanisms without having the fortune of advanced meteorological warnings. Reef readiness (resiliency planning) and education were the other items that islanders in the jurisdictions claim as being strongpoints. The key concepts to carry forward from this analysis are that the American Territories in the Pacific are not outwardly scared of climate change, although they simultaneously realized that they do need to prepare for forecasted future effects and that they are lucky to have more sizeable aquifers than many of their neighboring Pacific Islands, fewer droughts, higher islands, and the assistance of the United States as a safety net. Therefore, perhaps some of the items within this safety net, as well as the items in which they are excelling, should be carried forward in the conversation when establishing how islands can better and more successfully prepare for climate change. In other words, it would be remiss to act as if the residents of the American Territories were simply sticking their heads in the sand and ignoring the tides and changing climates around them. It would be more appropriate to say that there is a built-in resiliency already on island and that although the respondents admittedly said that they may not be as prepared as their sovereign neighbors, both groups can learn best practices from one another.

Question 10: Do You Think Any of the Physiographical (Geographical) or Historical Aspects of (**) Affects the Type of climate Change Plans, Policies, and Projects Being Instituted?

PSIS Question 10 created a bit of confusion for respondents because of the wording. However, its purpose was to evaluate any unique place-based characteristics of

the American Territories that interviewees believed affected (positively or negatively) the climate change plans, policies, or projects in the islands based on present or past events, geographies, histories, or other matters.

In most of the interviews for the three jurisdictions, the respondents reacted very differently from each other. There were a few key themes that emerged from the interviews for Question 10, but overall, there appeared to a strong consensus regarding physiographical or historical aspects of American Samoa, Guam, and the Northern Mariana Islands affecting how these territories plan for and anticipate climate change. The most common answer referred to the region as "high islands" and not being as pressured as atoll nations by forthcoming sea-level rise. The second most common answer related to the islands' colonial pasts and, especially as a result of World War II, relics such as tanks and ordnance as well as the legacy of loss of life in all three regions. In fact, one interviewee stated

> This is the only community in the United States of America that . . . suffered an invasion and occupation by an enemy during . . . World War II, and that's starting to fade now . . . that generation is dying off . . . but it's kind of like if you can survive that you can survive any and so people . . . are survivors. ($PSIS_{587}$)

Other common answers from respondents involved storm frequency and typhoons, stable water supply, military bases, immigration to regional hubs, unique cultural behaviors, and political association with the United States as unique aspects that affected climate change preparation in the islands.

Unlike the previous questions, 4 quotations for each island jurisdiction were not given because some respondents either did not know how to answer or did not give an answer to the question and also because the answers were dissimilar from one another,

with few common themes. Nonetheless, the answers given to this question helped reinforce the notion that taking locally based contexts into the equation when preparing for climate change was important. If a community has success with preparing for tsunamis or typhoons on an average of 1 to 2 per decade, then the communication technology used to disseminate the message should be incorporated into other logistical areas from further disaster preparedness to village-to-island communication and partnerships. Finally, the categorical answers for this question need to be used to examine the undesirable effects that some of the examples may bring with them, such as the military presence on the islands, overreliance on water supply, and any cultural clashes between the islands and mainland policy and decision makers.

Question 11: Do You Think Any Other PSIS Are in a Similar situation to That of (**), and Why?

PSIS Question 11 had a few simple but multipurpose rationales. First, it was intended to trigger interviewees' thoughts of connections between their home island and perhaps other American Territories in the Pacific. It was also thought that respondents might quickly go to the regional level for more regional viewpoints; moreover, they could even talk about territories in the globe as an entity. Regardless of their answer, the way in which the interviewees responded better aided the analysis of PSIS and the connections or lack thereof between them.

> *Jurisdiction 1.*
>
> One way or the other we'll all be affected by the climate change, how the weather patterns are changing, how it affects fish stocks, and you know the productivity in terms of marine services and ecosystem. ($PSIS_{746}$)
>
> Regardless of how unique our cultures are and our different knowledges are in the Pacific Islands . . . our cultures are founded on the same

principles, they have very similar beliefs and perspectives of their environment and things like that . . . with the exception of Tuvalu who's sinking . . . they actually see it . . . they're more proactive with, with doing something or trying to move away because they actually see the water covering their lands. ($PSIS_{571}$)

Similar situation because you're part of the Pacific region and we're all impacted . . .. But most if not all of the smaller nations are vulnerable because of their location. So some of these island nations . . . deal with population problem, and people are migrating, they're moving away because of this and they lost their cultural . . .. Connection to their home country. ($PSIS_{968}$)

I think we're all in a similar situation in that we have these huge forces that are acting that are beyond our control and yet very greatly going to affect all of our islands, and ocean resources in a major way and already are really and we've seen mass bleaching events here already. ($PSIS_{545}$)

Jurisdiction 2.

A lot of them are probably ahead of us because they have access to . . . some of these international programs in certain aspects . . . but in certain aspects they're behind us. Our infrastructure is more robust, there's more money . . . so we're a lot more advanced. ($PSIS_{649}$)

Certainly (**'s) political connection with the US would apply to (**) and (**). Where I think a fairly significant the resources and the attention that's give to it that might be harder in other countries. However they do have SOPAC [the Pacific Islands Applied Geoscience Commission] and SPC and others that are advising and for assistance they can get assistance from non-US places that can then serve the same purpose. ($PSIS_{900}$)

I'd say at least on this side of the world what between (**) and (**) . . . it's exactly the same, it's exactly the same. ($PSIS_{985}$)

You know we probably have more resources than any of them. ($PSIS_{810}$)

Jurisdiction 3.

I would say yes, some of them, most . . . it depends on how each island nation perceives or sees the difference, how climate is affecting their area. The Marshall Islands, I think there was a significant amount of land loss due to climate change, so it just depends on the area and how fast this climate change thing is just basically being detrimental to the islands. ($PSIS_{551}$)

I think that everyone is on the same boat. It could be that they're more serious than we are, the other islands being that they're, they're atolls . . . and we're kind of like a continuous piece of land versus theirs where even

> though they're kind of low-lying, so they're losing ground space so I don't know, I think that they have it worse than we do, and . . . you can tell that their government and their initiatives are a lot more aggressive than ours, so I'm thinking that they, they're on track . . . we probably need to team up . . . and see how we can follow their initiatives. ($PSIS_{594}$)

> I attended a workshop in Fiji last January . . . and there were most of the small island states you referenced were in attendance there, and kind of the consistent message that I was hearing is basically that they all are in the same situation . . . but we need scaled-down information and there's actually at this point kind of an information overload . . . we don't know what to do with the information, we don't know what to make of it. ($PSIS_{654}$)

> I think all of them are . . . .So I'm assuming whatever changes are to policy they have to make, they're going to be asking themselves the same questions and it's tough . . . .So I think there's, you're going to have those back and forth between the, those two sets of populations that do we err on the side of caution for the climate or, or for the environment or for the economy. ($PSIS_{940}$)

The first of three jurisdictions agreed that many of the other PSIS were in similar stages of preparation, but that there were differences between them in population, urgent issues, and governance. The second of the three jurisdictions had the least diversity of opinion among the American Territories regarding the question of whether all islands in the region are facing similar dilemmas. The last jurisdiction concurred that islands in the region were of course facing similar dilemmas, although the exact situational aspects differed among and even within individual PSIS.

These three groups of quotations address how the American Territories in the Pacific are in a similar situation to other PSIS in the region. On a general level, more agreed that the American Territories were similar to their PSIS brothers and sisters than not, but almost all of them had caveats and differences between them, ranging from culture to economic assistance available to comparable problems regarding ocean acidification and development issues. Further, cultures, types of disasters, and the level of

existential threat felt by islanders in the PSIS varied but at the same time formed common concerns among the islands. Amid the American territories, the interview responses did bring up some key differences wherein certain respondents were more content that they had more control over their marine tenure whereas others do not, versus the tourism and economic vibrancy in some Pacific Islands when it hardly exists in others. There are differences among the American territories—as is the case for all PSIS have—but the question did not elicit any more information than was already filtered out via other interview questions.

Question 12: How Would You Describe the Similarity Between the Intended Goals of Climate Change Plans, Policies, and Projects and What Is Actually Being Done in (**)?

PSIS Question 12 evaluates whether the plans, policies, and projects put forth through various channels are actually being implemented. In other words, as some respondents have mentioned, is everything present on paper but lacking in implementation? The interviewees' responses to this query were helpful in evaluating whether the lack of urgency or necessity at this point has created a slowdown in implementing said items in comparison with other PSIS.

Jurisdiction 1.

> I would argue that it's kind of half there, and I think that our, for instance, our territorial plan, there's a lot of stuff that we can do just on our own with no funding, but it needs more support and then there's a lot of stuff that does require . . . huge infrastructure changes, and that is kind of difficult to get without not only more executive level support from here, but also more support just from the U.S. mainland ($PSIS_{530}$)

> It's a lot of talk. ($PSIS_{753}$)

> We just have, this is . . . new administration. So we are transition into that. There has been some yea some challenges because the work was done and

true anywhere if you have a new administration, they want to review policies and everything. ($PSIS_{574}$)

It's such an important question . . . so often there are plans that nothing gets done, right?...Hopefully, yea, I feel, I mean, I often feel like, there's a lot of talk in writing of plans, but not, never necessarily as much that happens on the ground. ($PSIS_{720}$)

Jurisdiction 2.

I think very few of those of the plans that I've seen have actually been . . . operationalized, so . . . I think I've seen very few plans, not just . . . plans aren't being operationalized, I've seen very few . . . plans to speak of. ($PSIS_{721}$)

It's kind of revving up and it's kind of, you know, they're kind of stumbling around asking the question so should we be concerned, what, what do we need to know, what do we need to do, is there anything we need to do? Again, I don't think it's going to ever get really high on the list of priorities around here, people are more . . . concerned about immediate economic concerns. ($PSIS_{510}$)

I think currently yes it is a lot of talk and also two, there's not a lot . . . enough translation of the existing science to the right people. I feel like that's a big impediment to moving forward, so yea it's a lot of talk and that always happens and you can always default to that, but I also flip the burden or the onus on the people who . . . know a little bit more and are getting paid and getting grants to do research . . . they have to give back to . . . that's one of my things with scientists that I get frustrated when they don't do that more. ($PSIS_{679}$)

I think we're getting stuff done because one of our largest objectives was outreach and capacity building and so . . . agencies are more aware of the fact that climate change is going on just by the nature of what the governor's role is. We're partnering with non-profits to help get this done and we're exposing people to what the phenomenon is and I think that's . . . that was our objective. ($PSIS_{732}$)

Jurisdiction 3.

It's too early to tell, right now it's more of a, more of a public awareness . . . that's where the focus is now letting people know what it is, where we want to be in x amount of years. ($PSIS_{829}$)

So, the goals and the projects and the plans they're... starting to be developed. The actual situation, what's actually happening is that there's just no commitment and acceptance and buy-in from the upper level government and so it's like all of us here in the office know we're doing

> all the work, we're putting all the plans together . . . the presentation and shake hands and they're like this is great work and all that stuff, but the next thing you see in the news it's like more development . . . in what most of us would view as an unsustainable manner. ($PSIS_{710}$)

> I can't say if there's any to my knowledge, I don't know of any existing projects that are being implemented . . . directly because of climate change. ($PSIS_{819}$)

> There are not plans, policies, and anything being implemented, but I will say . . . one of the ideas or one of the driving forces behind . . . starting to address this is because one of the planners at the . . . management office was looking at the state hazard mitigation plan and noticed there was nothing at all addressing climate change . . . and that was kind of her impetus for hey wait a minute, shouldn't we be taking this into account as we're planning for hazards in the future? ($PSIS_{845}$)

In the first of the three American jurisdictions, respondents stated that the overall sentiment was characterized by lack of information, an overall feeling of the islands' implementation being a work in progress, and unknowingness. In the second jurisdiction, reactions focused on the island's tendency and ability to take what is on paper and move it forward to the next stage; this island jurisdiction acknowledged that plans and coordination are just starting to be implemented. In the third of the three U.S. jurisdictions, the overall feeling indicated that any climate change planning was in the extreme early stages with education and knowledge-sharing just happening across the island.

These three groups of quotations provided some answers to how the American Territories in the Pacific would self-describe in terms of implementation and on-the-ground execution of plans, policies, and projects contrasted with what is actually being accomplished. Overall, the two outspoken viewpoints from the interviewees were that climate change adaptation implementation on island is either unknown to them or in the very initial stages of being put into place. At the same time, respondents pointed out that

work during the past few years of education within communities and solidifying the concept that climate change is accepted science has finally laid the basis for a foundation of climate change activities to be enacted. Interviewees expressed frustration with the current lack of accomplishments, but the majority also expressed cautious optimism that the reality of plans, policies, and projects will be low but will happen over time now that the groundwork is finally there. The message from Question 12 responses is that it is difficult to have buy-in and implementation when there is a lack of understanding at the local level. Respondents sometimes mentioned this was a result of past mainland U.S. policies that, until the last few years, did not even address climate change. With governors involved and the United States pushing climate change to the forefront, it is more likely that preparatory activities will increase now that there is more all-around support and knowledge of the subject area. Finally, whether the activity is called climate change or not—perhaps it is called hazard planning for tsunamis, as an example—the synergies between the plans will very likely work in favor of an overall more resilient community without succumbing to past political drama and arguments.

Question 13: If There Were One or Two Items That You Could Change Regarding How Climate Change Is Handled in (**), What Would It Be?

PSIS Question 13 is both a suggestion-based and aspiration-based question, where respondents can look at what is happening on island and recommend—both realistically and more implausibly —what they believe would really allow climate change planning on their island to thrive.

Jurisdiction 1.

There definitely needs to be a better way to get buy-in or engagement at the higher levels in all of the agencies . . . .But I don't have a silver bullet on how best to do that. ($PSIS_{570}$)

It would be the, to speed up the . . . implementation of discussions and findings . . . and have those funneled into plans and procedures because I think there's a lot of data in there that's valuable. ($PSIS_{657}$)

Short of being governor myself, I don't know, I've maybe... it'd be cool if like the Feds came in and were like no you guys have to do this because they do, they've been pretty good about that with . . . power plants we have for utilities . . . EPA's [the U.S. Environmental Protection Agency] given . . . stipulated orders. ($PSIS_{997}$)

The one thing that comes to mind for me is . . . we get, we get folks from off island like myself come in and work for a couple years and leave and they get a project, you might have a really good person who's really pushing our program forward, and then they might leave because their contract's up . . . and then what happens sometimes and I don't know if that's going to be the case with this climate change thing, I hope not, but the program can lose momentum or just be on pause . . . and that could be years. ($PSIS_{825}$)

Jurisdiction 2.

I would go back to more executive level support, which we're working on. ($PSIS_{895}$)

Educations. Like I said, I think we'll take it seriously if we started with the younger generations . . . .I think there's a lack of education, and I think there's a lack of . . . enforcement can come later. ($PSIS_{888}$)

It really helps if we have national policies that were more applicable to island setting. A lot of times national policies are meant for bigger countries, bigger states, maybe they want to protect their assets . . . but we small island nations are . . . really feeling the impact, so that will be . . . a start. ($PSIS_{574}$)

It'd be nice to see more leadership from the government itself, the territorial government in terms of coordinating and having plans and things that they're putting out or wanting to coordinate with people, because I haven't seen too much of that, I've seen in mostly generated from lots of different agencies. ($PSIS_{986}$)

Jurisdiction 3.

> There are going to be some profound environmental and social implications, as well as economical, economic implications for those émigrés to here, that I, that people have just started to talk about . . . so I think . . . about climate change for the region . . . to start thinking about those potential costs. ($PSIS_{908}$)

> I think there just needs to be more conversation about it and more government involvement, more community involvement, I just don't think the conversations are happening. ($PSIS_{772}$)

> I get it, everything comes back down to economics and (**) in the big scheme of things we're disadvantaged as far as the economics is concerned, so you have all of these greenhouse gas problems . . . and U.S. EPA [U.S. Environmental Protection Agency] creates more stringent air emission standards for vehicles, well you know what, this hybrid in the States cost $30,000 by the time it lands on (**) it's $68,000, but we have to abide by the same federal laws and regulations, there's just no way around it. ($PSIS_{538}$)

> I would work toward a lot more involvement and engagement with the higher level political leaders . . . about how it's going to be potentially impact precipitation, natural resources, infrastructure, erosion . . . the whole gamut of things because I don't feel there's good enough education of the political decision makers here on the island, and it's hard to even get a food in the door to have that conversation. ($PSIS_{509}$)

In the first of the three U.S. jurisdictions, the viewpoint of the interviewees focused on greater buy-in; better understanding; and the ability to actually implement plans, projects, and policies. Within the second jurisdiction, the most common answers focused on education and outreach. Respondents sense that if residents do not understand the general facts behind climate change, then they wonder how there can be effective buy-in and policy effectiveness. Finally, the third of the three U.S. jurisdictions had the most diverse answers, ranging from more education, to greater technical capacity, to more priorities at the federal and executive level, and increasing the presence of climate change within conversations on island.

These three groups of quotations provide some answers as to how the American Territories in the Pacific would change regarding how climate change plans, policies, and projects are handled within the three island jurisdictions. Five principal items were identified by the American Territories in the Pacific as needing some kind of change to function more effectively: federal and state (territory) partnerships, executive-level support, education and outreach, swifter action and implementation, and better buy-in. At the federal and state partnership levels, most respondents believed that a top-down approach would compel the island states to follow better climate change practices, because the administration in Washington, D.C., at this point in time is pro-climate change planning. However, others believed that federal policies such as compelling islanders to buy hybrid vehicles at more than double the cost on the mainland United States was not appropriate. Executive-level support on the islands is the second most-requested suggestion due to the outright perception that economic development has apparently garnered favor, and better environmental planning received less priority. Education and outreach, swifter action and implementation, and better buy-in at the island level all relate to the first two suggestions in addition to branching out into other areas. Together, these opinions represent certain obstacles which, when juxtaposed with the previous interview questions(e.g., where islands are excelling in climate change preparation), assist in identifying potential barriers to climate change success that other PSIS can be made aware of, so that they can replicate the positive features and avoid disadvantageous behaviors.

Questions 14 and 15

PSIS Question 14 asks is there anything else in reference to the broader discussion regarding climate change in (**) that you would like to mention or discuss; and Question 15 asks is there any person in particular or any project site that you would suggest I contact/visit to obtain more information regarding climate change plans, projects, and policies here in (**)? Question 14 offered a variety of information that was quite broad, with respondents' choosing to focus on a variety of topics that were important to them or their particular island area. Question 15 and the associated responses provided material from interviewees about possible people to speak with and site visits and were not intended for analysis. Respondents' advice was helpful in finding more prospective interviewees and often led to a variety of sources, as well as locations on island where they thought evidence of climate change might be noticeable.

Analysis of United States Territories in the Pacific Interviews

The second hypothesis stated that PSIS that participate in AOSIS and regional organizations will have more developed policies and better preparation toward climate change adaptation and preparation than those PSIS that are less integrated within the Pacific. The second hypothesis cannot be rejected, given interview evidence gathered from within American Samoa, Guam, and Northern Mariana Islands, territories of the United States. Islanders' absence of knowledge with reference to AOSIS and their limited (but growing) involvement in regional organizations like the Micronesian Challenge and the Two Samoas Initiative juxtapose with islanders' overall self-assessment of not being satisfied with their current state of climate change preparedness. The American Territories in the Pacific do not, and most likely cannot, actively participate within

AOSIS; however, they can and limitedly participate in some regional forums. Again they are stymied with rules regarding foreign relations and the U.S. State Department.

Table 9 synthesizes the diversity of quotations from the respondents within the United States' three island territories. The overall response from American Territories was taken from both the highlighted quotations and those not listed per each question. Next, the overall response to nissology was highlighted as a comparison with the eight principles and the relationship of the respondents' answers to nissological points of view.

Table 9

American Territories' Responses to Interview Questions and Relation to Nissological Principles

Question	Overall Response from American Territories	Relation to Nissology
1. How would you describe the ways in which climate change is addressed in (**)?	• Very early stages depending on island • The norm is to create policy and have a large time gap before implementation • Sometimes unrelated environmental events are now associated with climate change	• Participants see themselves as lagging behind their neighbors. The focus on coral reefs and fisheries does relate to sea resources and the breadbasket of the ocean; yet, it also speaks to U.S. federal policy focusing on the biotic but nonhuman component of climate change.
2. What would you say is the general attitude in (**) toward climate change?	• Not the priority on islands • More pressing economic issues to tackle • Just emerging, and when it moves forward, confusion about how to begin implementation	• Respondents illustrated a high degree of uncertainty or scarcity of wherewithal with comparison to other, independent PSIS. Compared with the mainland United States, they may actually be ahead with planning.
3. How would you describe (**'s) climate change plans, climate change policies, and climate change projects?	• Often coral or reef resilience related • Lack of holistic climate change networks, but starting to change • Not many projects, but there are initiatives for the future to be included in future decision making	• Islanders in the American Territories are working as a community now in the very beginning stages of climate change adaptation planning. Some respondents demonstrated that to retain their lifestyles they do not have to currently adapt as much as independent PSIS.
4. Does (**) work with other PSIS in addressing climate change?	• The Micronesian Challenge • Micronesian Chief Executive Summit • Two Samoas Initiative • SPC • Secretariat of the Pacific Regional Environmental Programme	• As a web of islands brought together by the oceans, American Territories often work with their PSIS neighbors; but, because of their political status it is often regional, rather than international, and seldom is interregional.

Table 9, continued

Question	Overall Response from American Territories	Relation to Nissology
5. Do you happen to be familiar—and if so, how—with AOSIS, the Alliance of Small Island States or CROP, the Council of Regional Organizations of the Pacific?	• Majority of respondents lacked familiarity with AOSIS • Respondents that had any acquaintance was usually in passing without fully understanding AOSIS' mission	• As bounded entities of the United States, there is a formidable barrier between American Territories working alongside their neighbors. Confusing to respondents was the fact that American Samoa and Guam have verified observer status at AOSIS; yet, interviews at the United Nations level stated that this status is hollow.
6. Does (**'s) status as a United States' territory near many other PSIS that are not part of the United States have any effect on climate change preparation in (**)?	• Respondents stated that being part of the United States is beneficial for financial reasons • Respondents were frustrated by inability to participate regionally because of U.S. Department of State protocols	• Islander characteristics of working as communities is lost a by depending on the United States (although an asset financially and for resources). At regional meetings in the Pacific, respondents state that they are not treated as equals by fellow islanders, because they cannot make their own decisions.
7. On a scale of 1–10, how would you describe the degree to which (**) is adequately preparing for climate change, and why?	• 4.1/10 Average in Jurisdiction 1 • 4.8/10 Average in Jurisdiction 2 • 4.8/10 Average in Jurisdiction 3 • Not much different than United Nations-level PSIS, but approximately ½ of a point lower	• Respondents were proud of the islanders' representation (governors of Guam and Hawaii) and recent elevation to the U.S. Climate Task Force by President Obama. This action has acted as a catalyst throughout the American Territories for climate change planning, but respondents also say that local context is not taken into account.
8. Although (**'s) status is not a "state" of the United States, do you think that being part of the greater network of the United States is an asset to (**) in preparing for climate change?	• Very nuanced throughout the American Territories depending on location • U.S. funds, research, staff is very helpful • Inability to work with neighboring PSIS is a large detriment • Long-term roadblocks between American Territories and U.S. Department of State coordination needs attention	• The American Territories are artificially stopped from creating long-term coordination and policies with their neighbors. Notwithstanding, the assistance they receive form the mainland United States is very welcome and creates opportunities that PSIS may not have, but unique neighbors to the individual American Territories feature within this sentiment.
9. If there were an item or two that you think (**) is excelling at in terms of climate change preparation, what would that be?	• Ramping up and putting in a concerted effort over the past few years • Bringing climate change issues to the communities and outreach • May not have formal policies in place but naturally resilient	• Islanders in the American Territories spoke to their historical past dealing with typhoons, tsunamis, war, and earthquakes—all illustrating their resilience where climate change is just seen as another obstacle that they will eventually over come as islanders.

Table 9, continued

Question	Overall Response from American Territories	Relation to Nissology
	•	•
10. Do you think any of the physiographical (geographical) or historical aspects of (**) affects the type of climate change plans, policies, and projects being instituted?	• Few answers given • Respondents slightly confused by question or felt that the answer had already been covered • Sometimes prompted answers regarding other unique aspects of islands although not physiographically related	• Possibly a strange or continental question to islanders, most did not really have an answer about their island's geography and physiography and how it may relate to climate change preparation.
11. Do you think any other PSIS are in a similar situation to that of (**), and why?	• Most responded that they are all in the same boat of preparing for climate change, while some are better off than others • PSIS speak to low island PSIS being the most vulnerable because they have little recourse with respect to sea level rise	• PSIS stated that their cultures and situations and pretty similar which lends them to thinking about and anticipating climate change with only some local contextual factors creating differences such as food sources, customs, and sovereignty or territorial statuses.
12. How would you describe the similarity between the intended goals of climate change plans, policies, and projects, and what is actually being done in (**)?	• Climate change preparation is in its infancy on the islands • The acceptance and understanding around climate change has mostly taken place and is being built up on with plans and future actions • Not much implementation to date	• Islanders feel a bit of the sense of limitation with regard to their peers in other PSIS as well as how they coordinate with the United States, but overall, they feel as if there is momentum building, and they are on the right track headed in the right direction albeit with a long way to go.
13. If there were one or two items that you could change regarding how climate change is handled in (**), what would it be?	• Federal and American Territories partnerships • Executive-level support on island • Education and outreach • Swifter action and implementation • Better buy-in	• American Territories islanders brought up many of the aforementioned issues that they would change ranging from island-specific policies, to greater implementation and buy-in from communities, and even a nudge from the federal government necessity planning.

The interviewees' responses at the American territorial level helped uncover some of the mysteries of climate change adaptation success and failures within regional cooperation or its nonexistence. First, PSIS and their residents need an understanding of climate change and the plans to address these impacts. Although some communities have achieved this, it is lacking in many communities. Fixing this problem would aid in

localizing both the perceptions and understanding of impacts and strategies to better adapt. Most policies in place are focused on coral reefs and marine systems, which should be focused on, but should not be the sole focus. These policies are likely a vestige from the days when both a definition and ability to talk freely about climate change had unfortunately led to lackluster policies where robust ones were needed. Regional linkages in the territories are found in three components: the American Samoa and Samoa Cohesive Initiative; the Micronesian affinity between Guam, the Northern Mariana Islands and the surrounding states of the Marshall Islands, Federated States of Micronesia, and Palau; and, Honolulu as the bureaucratic head and knowledgebase for much of the Pacific and the corresponding American territories.

The question of how to better coordinate within the region was hindered both by governments in the islands picking and choosing which associations they want to participate in contrasted with the independent PSIS that belongs to most, if not all, because they each provide a different outlet: United Nations negotiations, fishing policies, sub-regional cooperation, Pacific Islanders networks, and the like. At the same time, the hindrance comes from the inability to be on the same level as sovereign appointees because of foreign policy restrictions; this needs to be remedied within the United States before more lost opportunities pass. Further, better linkages for the American territories are needed. For example, their CCAPs are nearly impossible to find on any government website, whereas the 50 states are all sufficiently coordinated in their administration to have certain reports easily disseminated through their websites. Similar to the American Territories, it is sometimes also difficult to find sovereign states' CCAPs on their particular websites. Nonetheless, the United States is definitely viewed as an

asset to residents in American Samoa, Guam, and the Northern Mariana Islands, but the environmental protocols, enforcement, and suitable development protocols are seen as in desperate need of renovation.

Interestingly, on island resilience is actually quite high within the American territories in the Pacific because of past natural disasters, war, military bases, and certain past hazard preparations that did not fall under the umbrella of climate change adaptation or preparation, but rather had been called disaster and risk reduction policy or something similar. The various geographical and historical aspects of the island—such as high island types, or having been occupied or attacked during war—do affect the local contexts of the islands. Somewhat surprisingly, islanders did not point out any key characteristics of their island as making them more resilient than neighbors. There is an overt cultural and geographical similarity to other PSIS; yet, the American territories lack the urgency in preparing for climate change that other PSIS have—especially the atoll states facing threats of existence. Finally, a greater understanding of climate change forecasts and effects, better education, and community outreach will lead to better implementation of climate change adaptation strategies. This can be accomplished by looking at the federal and territory interface, the strength of on island executive level support, implementable and action-based objectives, and creation of an overall sense of environmental buy-in.

CHAPTER 6
FINDINGS, RECOMMENDATIONS, AND FUTURE WORK

Review of Findings and Policy Recommendations

Nissology

At the beginning of the study, PSIS using a more nissological approach—with relatively high content levels of island-centric principles— were hypothesized to be indicative of states with more successful climate change plans and policies. It was thought that PSIS that were more self-conscious and had a greater awareness of their strengths, limitations, and natural assets as islands would be more successful at addressing climate change. "Island specialists have criticized the 'continental prejudice' that tends" to regard nissology and island studies "as some kind of aberration, even by islanders," causing a divide in island-centric literature (Depraetere, 2008, p. 4). It was only two decades ago that McCall put forth a formal list of eight principles of nissology (Figure 1) to "cope with understanding the reality of island economies, their regional integration and their future," features that this study found key to CCAPs and related Disaster Risk Reduction Plan planning (McCall, 1996, p. 82).

Although others ask "[i]s a coherent theory of islandness possible?" as a possible "sub-altern discourse for Islanders as well as for understanding islands" (Hay, 2006, p. 19), those same scholars argue that nissology is misconstruing "a special focus of place studies, an almost paradigmatic one in which qualities are heightened, their essence distilled, and their meanings sharpened" but is "yet another continentally derived epistemological paradigm" (Hay, 2006, p. 34).

Through the examination of nissological principles in this study, this study demonstrated that those CCAPs that are more highly nissological are those also

forecasted to be more successful with their planning for climate change through adaptation and plans, policies, and projects. Therefore, when Christensen and Mertz struggled with the topic and appeared a bit forsaken to say that "nissology appears to be another variation of the classical place-based and interdisciplinary approaches in human geography and analytical frameworks, such as the 'sustainable livelihoods framework,'" they did not see that the CCAPs, as well as the contextual characteristics of islands in how they prepare for climate change, are not just place-specific but are unique to islands and islanders (Christensen & Mertz, 2010, p. 285).

From the success indicator questions to how the number of islands can lead toward a trend in more island-centric planning, or the inverse trend toward existential climate change planning, it is perhaps better and more productive to not argue about whether nissology should be distinct theory or a variation of one but rather to acknowledge the vital and significant findings on which it allows scholars to operationalize. Regardless of whether nissology is placed within the category of theorem, framework, or branch of study, the first research hypothesis for this study was substantiated by the data findings. PSIS that have more nissological or locally based CCAPs tend to be states with more successful policies and projects than those with non–island-based plans.

The principal task of evaluating nissology in PSIS was to identify whether PSIS that use a CCAP based more deeply on a nissological understanding of "islandness" would have more successful plans, policies, and projects than PSIS with a neutral or more continentally derived CCAP. With a firm and affirmative yes, CCAPs that are more nissological in this study are more successful, with statistical regression having illustrated

that about 30% of a PSIS' success can be determined by how nissological they are. Next, how can that research inform islanders, policymakers, and decision makers in the future? The primary answer is that those parties involved in climate change adaptation within islands should understand and use islanders' unique perspectives when creating policy and linkages as it has the potential – and within this study a solid validation – to increase success.

Care should be taken to incorporate local characteristics of islands into future plans to ensure success. In addition to the principles of success, certain characteristics of nissology explained – at a robust level – how islands were more prone to act: namely island height. This idea that the islands at the forefront of climate change and those low-lying islands are at the policy frontlines of all islands, yields other nuances to the study in terms of the immediacy of finding solutions to current and forecasted effects of climate change. Forthcoming within this chapter is a policy document for PSIS and other island groupings ; its recommendations will also resonate with non-island communities preparing for current and forecasted climate change.

Success in Regional Associations and Partnerships

It was anticipated that PSIS that were members of regional associations and partnerships would be those more likely to be steering toward successful climate change plans and policies. Because of the regional organizations' goals being for the assumed benefit of their memberships—because memberships are usually not compulsory—the added resources, outreach, funding, knowledge, and other collective traits of the organizations would help PSIS. Ostrom stated that in common pool resource management,

> [I]ndividuals must learn about the structure of the physical system on which they jointly rely, about their own appropriation and use patterns, about the norms of behavior in a community, about the incentives they will encourage or discourage as they change rules, and about how all of these factors will cumulatively affect their net benefits and costs over time. (Ostrom, 1990, pp. 55–56)

This idea that PSIS (the individuals) have to evaluate and understand the regional common pool resources systems within which they are abiding is tantamount to the existence of groups like SPC, Secretariat of the Pacific Regional Environmental Programme, AOSIS, Micronesian Challenge, and the Two Samoas Initiative. Sjöstedt and Young argued that issue linkage and effective governance can be stretched to encompass wider arrays of agreements, but that in some cases, more simplified measures are in order (Sjöstedt, 1993, p. 200; Young, 1997, p. 115). Although it is possible that the proliferation of organizations in the Pacific could be overly complicating and fracturing the theoretical idea for a sole and more succinct group, they each appear to have their niche. This is not to say, as brought up in the United Nations and American territories in the Pacific interviews, that it is monetarily efficient or timely, but rather specific items such as fishing norms have a group, consortium, and strict rules, as do other issues.

The situation becomes more complex when dealing with unilateral United Nations issues or how United States territories in the Pacific communicate with their sovereign neighbors: In both cases, there is no alternative to dealing with the unilateral organization in charge. Ostrom argued that this relates to the "problem of commitment," whereby "individuals have organized themselves to solve CPR [common pool resource] problems, rules have been established by the appropriators that have severely constrained the authorized actions available to them" (Ostrom, 1990, p. 43). In other words, PSIS and the American territories in the Pacific are *already* in a common pool resource agreement by

the very fact that they are a PSIS—or just a state—that is a member of these unilateral organizations. Short of international condemnation or war, it is unlikely that either a PSIS or a territory would withdraw itself from the rules that are imposed on their actions or behaviors, because it would change the very essence of the individual, in addition to causing all forms of other difficulties.

Perhaps these regional systems are key to addressing common concerns and, as put forward by Bernauer, they can be taken as success stories. Yet, there is no consensus because of the limited number of studies, the limited breadth of those studies, and "analytical constructs with no objectively definable boundaries," such as the word *successful,* or *improved,* or *sustainable* (Bernauer, 2002, pp. 10–11). Similar to what was revealed in this study, he stated that there are varying schools of thought and a "wide range of candidate propositions" regarding their implementation and execution (Bernauer, 2002, p. 10). These sentiments are expressed within both sets of interviews whereby respondents admitted that climate policies are often heading in the right direction, but there are obstacles always in the way; often, interviewees expressed that although the best of intentions were present, they inherently blocked what may be considered commonsense routes of moving forward. As one interviewee at the United Nations stated

> They have coordinators for each of the thematic issues . . . in that process so that's how we are able to, to cover the issues. But without working through AOSIS I don't think any of the small island countries can do it alone because negotiations usually take more than two weeks in places that are really expensive. So, by the time people finish everybody's in a bad mood because it starts from morning until night and goes on for a long time as well. ($PSIS_{29}$)

There were advantages and limitations with regard to the PSIS and their regional organizations, but the interviewees' responses demonstrated that PSIS that participated in AOSIS and regional organizations tended to have more successful and more developed policies toward climate change adaptation. The greater integration of PSIS in the region tended to be indicative of PSIS with more successful and developed CCAP policies. AOSIS represents 1 out of every 5 member states of the United Nations, and is credited by interviewees as being the defender and voice for small island states. By territories and semi-autonomous island states' inability to join this unique organization, the hypothesis that PSIS that participate in AOSIS and the regional organizations are the ones that have more successful plans, policies, and projects is further supported by the study's findings.

Through interviews at the United Nations and in the American Territories, it was revealed that interviewees from independent PSIS expressed more satisfaction with their current stage of climate change planning compared with those that were not independent. These findings were found at the qualitative level, as PSIS spoke to the difficulties that faced non-sovereign states, even though they did have advantages by being able to rely on their mainland counterparts. Along those lines, PSIS that took a more active and stronger role participating in AOSIS and other regional organizations were also those states that exhibited greater participation in regional partnerships such as SPC and SPREP; PSIS that did not participate were less integrated and less involved, which led to the frustration of respondents involved with the study.

Reflections and Limitations of Research

The research was designed to be robust, but, it is not possible to have a study without limits of breadth, definitions, and applicability. There was objectivity and

subjectivity in the selection and coding of the CCAPs and neither all PSIS representatives at the United Nations nor appropriate personnel within American Samoa, Guam, and the Northern Mariana Islands were available or able to give interviews due to scheduling conflicts.

Although born on the largest island in the continental United States (Long Island), the principal researcher for this study is not from a PSIS, which may have caused some positional misinterpretations of island theory or application of specific terms. Related, the research concentrated upon nissology, regional associations and partnerships, success, and other associated topics; yet, related thematic literature theories such as postcolonial theory or international relations theory was not profoundly explored as part of this study due to the focus on the aforementioned areas.

Speaking directly to the topic of success, this study's definition of success was methodically explained in both the literature review and hypotheses section, both of which stated that the term is challenging and problematic to qualify and to apply to PSIS and CCAPs. There was also subjectivity in the labeling of success and what is successful. Other researchers, for example, perhaps would have categorized success as a form of robustness or used some other descriptor to determine the level to which CCAPs were reaching their intended goals. Nonetheless, the study does create a measurement of accomplishment (in this case, success) based upon the definitions herein so that it may be used as a tool, amongst others, to ascertain which plans, projects, and policies are heading in a direction that according to hazard and climate experts is the prudent approach.

Associated with the chosen measure of achievement, success, is the rationale post-analysis that some of the Success Indicator Questions should have been more

heavily weighted than others, especially when they used actionable items versus planning-based activities into consideration. For example, future studies evaluating success and climate change should give greater worth and attention to PSIS that have actually allocated the funding, have had CCAP-related projects that are in place being monitored and evaluated, and can pinpoint the achievements and disappointments, rather than SIQs that only followed items that were in the plans. In other words, activities that are currently doing, building, and evaluating should be worth greater SIQ scores than those areas that are simply planning to partake in activity.

Emerging Themes

Although this study's findings have been thoroughly discussed, there were certain developing themes and revelations related to the hypotheses that emerged; five of them are briefly discussed.

The first theme is that while PSIS are working hand in hand with global leaders for a solution to combat climate change via greenhouse gas emission regulations or funding for adaptation projects, they are not idly waiting for assistance and financial support to arrive. PSIS are concurrently doing what is possible from their perspectives to adapt to a changing situation in their home countries. While frustration is apparent at the lack of global progress, they are moving forward on the local and regional fronts because they cannot afford to wait any longer for action.

The second theme that came across is that unlike the situation in the United States mainland, there was not a significant presence of climate change naysayers or deniers encountered during the interviews at the United Nations and in the United States Territories in the Pacific. Although several of these jurisdictions were just in the

beginning stages of planning for the current and forecasted impacts of climate change, there were no vocal opponents to the scientific reporting and data. In fact, interviewees jested about mainland United States climate change politics as an example of irrationality and detriment to the global community moving forward in planning for current and forecasted effects of climate change.

A third theme that arose during the study is that American Samoa, Guam, and the Northern Mariana Islands are caught in legal limbo between planning for climate change and being able to effect a change beyond their local borders. Many of the interviewed respondents voiced frustration at their situation of neither being recognized by their sovereign neighbors as active participants in regional planning nor being adequately represented by the State Department of the United States, housed far away in Washington DC.

A fourth theme was that some PSIS' CCAPs exist under other plans' purviews, such as disaster or risk reduction plans, and are condensed into an overall environmental master plan. Therefore, PSIS stated that sometimes plans or actions that could be considered as climate change adaptation plans, are simply called something else. This theme suggests that some PSIS may be preparing at a more in-depth level than they are achieving credit for; it also suggests that a PSIS may have inherent resilience and adaptive capacities that are not being recognized by those outside of their PSIS.

A fifth theme that emerged during interview discussions was a detestation of the term *environmental refugee* to describe islanders that may have to eventually relocate due to the effects of climate change. Islanders overwhelmingly stated that they do not wish to be considered as refugees for two reasons: first, because it admits a sense of defeat with a

future replete with them losing their homelands, and second, because refugee status contains certain negative implications and connotations.

These themes represented a sampling of the emerging themes and revelations that became evident after dozens of interviews at the United Nations Missions and in the United States Territories in the Pacific. With these themes, along with the various findings evidenced throughout the study, the following policy document recommendation section outlines some of the lessons learned and suggestions of what could conceivably work in other PSIS and islands groupings throughout the world in terms of climate change adaptation policy.

Policy Document Recommendations

During the interviews at the United Nations and on the ground in American Samoa, Guam, and the Northern Mariana Islands, interviewees asked whether the forthcoming dissertation would be publically available. Further, respondents requested a succinct and reference-ready list that they could look to when examining climate change adaptation opportunities.

A policy-type document is included at the end of this chapter to sufficiently summarize the significance, findings, research, and scholarship. In particular, the significance of the study is that past research and scholarship on PSIS historically focused on weaknesses in the face of current and forecasted climate change, lack of resources, and small adaptive capacities in preparing for these effects. This study, conversely, illustrates the sensitivities of PSIS from an island-centric viewpoint, alongside their resiliencies in the nissological sense, which allowed for this combined investigation for a new and unique perspective.

The research provided for a new multidisciplinary approach using human, societal, and environmental dimensions to address complex climate change issues with local, regional, and global implications. The goals and recommendations, laid out here are intended to aid other states, island groupings, and regions facing similar issues in addressing the current and forecasted effects of climate change.

Based on the findings in the study, there are several recommendations for PSIS, island groupings, states, and other areas of the globe currently dealing with or anticipating the forecasted effects of climate change. The forthcoming recommendations come from the three areas of analysis: nissology, regional organization, and vulnerability. The findings are located within four tables labeled as follows: continue, refocus, avoid, and identify. *Continue* indicates currently happening plans, policies, or projects that should be replicated and continued. *Refocus* plans, policies, or projects are indicative of those that should be greeted with pause and caution and reevaluated before they progress or cease. *Avoid* indicates currently happening plans, policies, or projects that should be stopped because of either their ineffectiveness or negative effects. *Identify* plans, policies, or projects pinpoint new areas that PSIS should begin to implement or at least consider.

If a PSIS (or other jurisdiction planning for the current and forecasted effects of climate change) uses these charts, it will have the distinct benefit of learning from a very unique set of experiences. Incorporating the interviews of 14 PSIS at the United Nations level, the wealth of dozens of islander interviews within the American territories in both the South and North Pacific regions, and the work of island scholar experts in the individual plans of 18 PSIS, the recommendations will be useful for any jurisdiction

looking to more proactively, effectively, and successfully prepare for the current and future effects of climate change.

The policy toolkit in Table 10 was directly developed from the findings of the study and provides a swift method to dually evaluate PSIS' current situations and then prepare to continue, refocus, avoid, or identify aspects to better prepare for the current and forecasted effects of climate change. Neither all of the findings nor all of the policy methods listed below will work for PSIS adapting to effects of climate change; however, the policy suggestions listed are a representation of this study's various findings.

Table 10

Policy Document for Successful CCAPs in PSIS based on Nissological Principles and Success-based Finding

Continue
• Continue to extend invites to communities, villagers, and local and regional governments as stakeholders in the process of preparing for climate change.
• *Continue* investing in people as well as the environment and marine resources.
• *Continue* educating decision makers about climate change from the executive level to the more local level.
• *Continue* to look at island contextualities in CCAPs to mimic nissological or island-based characteristics, which are indicative of more successful plans.
• *Continue* to participate in multiple regional organizations, because each has its own strength and focus area.
• *Continue* doing work at home on island without the sole focus being on either foreign- or mainland-based handouts.
• *Continue* to work with AOSIS at the global level, with sub-regional forums at the Melanesia, Micronesia, Polynesian levels, and continue to use knowledge and education hubs like Suva, Fiji, and Honolulu, Hawaii.
• *Continue* to link CCAPs into and with disaster risk reduction planning and methods.
• *Continue* the robust work so far on coral reefs and the marine-focus on which climate change planning historically focused.
• *Continue* education and outreach to islanders and locals.
• *Continue* to encourage and expand built-in island resiliency developed over past centuries and decades via cultural practices and traditional knowledge.

Refocus
• *Refocus* on adaptation and adaptive capacity projects first. • *Refocus* on risk communication to disseminate information throughout islands. • *Refocus* on framing climate change as a positive planning experience to create a more desirable future instead of focusing on the adverse effects. • *Refocus* to increase buy-in from the local to the executive levels on island to solidify CCAPs and associated support. • *Refocus* on obtaining authority and permission to participate in meetings outside of home island grouping. • *Refocus* to take stock of what has been accomplished and what still needs to be done. • *Refocus* on appropriateness and what yields the largest net benefit in preparing for climate change. • *Refocus* on obtaining the low-hanging fruit versus costly expenditures with little effect. • *Refocus* to create and assess intra-island and inter-island migration plans and policies for current and forecasted effects of climate change. • *Refocus* to emphasize proactive, not reactive, planning.
Avoid
• *Avoid* repeated and meaningless studies; rather, use time, money, and resources for implementation. • *Avoid* repeating data acquisition when obtainable from outside resources. • *Avoid* creating rigid, inflexible CCAPs that lack maneuverability with changing times and climates. • *Avoid* being lulled into a false sense of security in planning for impacts of climate change for high island or mixed island groupings. • *Avoid* confusing climate change planning with only existential-type threats. • *Avoid* blaming others for the effects of climate change at such a rate that it impedes negotiations and discussions to move forward with adaptation. • *Avoid* solely focusing on one organization for dealing with climate change. • *Avoid* multiple meetings and duplicate studies for the same topic; from the onset, either decide to vacate the meeting at the prescribed end or agree to not leave until decisions are reached. • *Avoid* allowing military or large-scale planning that does not address current and future climate change impacts on island. • *Avoid* scrapping CCAPs every time a new administration comes into power.
Identify
• *Identify* barriers to adaptation (and mitigation) on island. • *Identify* existing baseline data for adaptation (or mitigation) projects. • *Identify* what successful adaptation would look like on island. • *Identify* which specific evaluation techniques will be used for CCAPs and the associated timelines and frequency for the monitoring, reassessments and evaluation of CCAPs.

- *Identify* the financing strategies and goals for each CCAP-related project.
- *Identify* any regional organizations or groups with which the island is not currently participating but would like to join.
- *Identify* future partners for policy sharing.
- *Identify* current resources in place to avoid costly meeting expenditures.
- *Identify* territorial or sovereignty issues that preclude interisland or interstate cooperation.
- *Identify* a liaison at the territorial or state level to contact powers-at-large so that island has some self-determination-based abilities.
- *Identify* a climate change taskforce that can transcend administrative and political changes on island.

Future Work

People sometimes ask how to categorize small island states in the Pacific: Are they safe havens or are they indeed lost at sea? In early 2015, the best way to describe them—which is a wide brushstroke speaking about 18 PSIS on the broad topic of climate change—would be as communities neither set adrift nor safely harbored. Overall, they are not yet metaphorically sinking from a lack of direction in the face of climate change. However, at the same time, there are uncharted seas ahead with spotty lines of communication. In terms of human, environmental, economic, and legal preparation, they are approaching divergences in the current for which they can prepare, yet can never fully navigate into truly uncharted territory.

Throughout the study, the benefit of nissology as an independent framework and its efficacy in the study islands is emphasized. Viewpoints outside of this study were referenced and argued for both inclusion and exclusion of nissology as a fundamental basis for analysis. This research conclusively illustrates that using nissology as an island-centric framework by which to analysis PSIS CCAPs and related preparation for climate change is both appropriate and pertinent. Whether there is an absolute need for nissology among the broader aspect of place-based studies was not the purpose of the study;

however, the study did unquestionably demonstrate the importance of nissology's use and inclusion in island-centric research.

The research and findings within the study first and foremost speak to a question that before had no substantive answer: How are the areas in the world apparently most vulnerable to climate change preparing and to what efficacy? How do the specific 8 principles of nissology aid in shaping which particular tenets yield greater nissological plans? What is the future for PSIS and islanders in the upcoming years, decades, and centuries? The answers to these questions are quite varied, as illustrated through the nissological, regional, and vulnerability-based assessments that comprise this project. Nonetheless, this is the beginning of much more work in the area of climate change in the Pacific and, more specifically, small island states.

As a United States citizen, the researcher – because of accessibility to United States sovereign land in the North and South Pacific areas – had a unique vantage point into the Pacific Region that was not available to many earlier researchers and studies. Through this innovative research into an area that had historically been ignored, he hopes to continue to work alongside American Samoa, Guam, and the Northern Mariana Islands at both the local, regional, and United States level to further assist in any resilience-building planning, policies, and projects appropriate to the Pacific and island areas throughout the world. Topics to work on in the future include concentrating on or weighing more heavily particular success indicators within the list of 36, integrating decision makers' use of vulnerabilities, and analyzing whether island and non-island states alike have been able to validate some of the findings and policy recommendations put forward by the study.

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APPENDIX A
CITATIONS FOR THE 51 CLIMATE CHANGE ACTION PLANS REVIEWED

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APPENDIX B
INSTITUTIONAL REVIEW BOARD APPROVAL FORMS

TEMPLE UNIVERSITY®

Office for Human Subjects Protections
Institutional Review Board
Medical Intervention Committees A1 & A2
Social and Behavioral Committee B
Unanticipated Problems Committee

Student Faculty Conference Center
3340 N Broad Street - Suite 304
Philadelphia, Pennsylvania 19140
Phone: (215) 707-3390
Fax: (215) 707-9100
e-mail: irb@temple.edu

Certification of Approval for a Project Involving Human Subjects

Protocol Number:	**21467**
PI:	**MASON, ROBERT**
Review Type:	EXPEDITED
Approved On:	02-Jul-2013
Approved From:	02-Jul-2013
Approved To:	01-Jul-2014
Committee:	B BEHAVIORAL AND SOCIAL SCIENCES
School/College:	LIBERAL ARTS (1800)
Department:	CLA:GEOGRAPHY AND URBAN STUDIES (18180)
Sponsor:	No External Sponsor
Project Title:	The Fate of Climate Change Policy in South Pacific Small Island States: Safe Havens or Lost at Sea?

The IRB approved the protocol **21467**.

If the study was approved under expedited or full board review, the approval period can be found above. Otherwise, the study was deemed exempt and does not have an IRB approval period.

Before an approval period ends, you must submit a "Continuing Review Progress Report" to request continuing approval. Please submit the form **at least 60 days before the approval end date** to ensure that the renewal is reviewed and approved and the study can continue.

Finally, in conducting this research, you are obligated to submit modification requests for all changes to any study; reportable new information using the Reportable New Informaiton form; and renewal and closure forms. For the complete list of investigator responsibilities, please see the Policies and Procedures, the Investigator Manual, and other requirements found on the Temple University IRB website: http://www.temple.edu/research/regaffairs/irb/index.html

Please contact the IRB at (215) 707-3390 if you have any questions.

DEPARTMENT OF HEALTH
AMERICAN SAMOA GOVERNMENT
PAGO PAGO, AMERICAN SAMOA 96799
Institutional Review Board
FWA00001749, IRB00001249
684-699-1394 x 234
dohasgirb@gmail.com

July 23, 2013

Mr. Michael B. Schwebel
Department of Geography and Urban Studies
Temple University
Philadelphia PA 19122

Talofa Mr. Schwebel:

This is to inform you that your research proposal, "The Fate of Climate Change Policy in South Pacific Small Island States: Safe Havens or Lost at Sea?," has been given expedited review and approval.

Note that although your survey study involves several Pacific Islands, this approval only applies to work conducted in the Territory of American Samoa during the next twelve months. If more time is needed, please contact me requesting an extension.

Climate change adaption is an important topic for our Territory. Your work should help serve as an impetus to our policymakers to develop specific plans in dealing with this issue. Therefore, we wish you every success.

Soifua,

Don Vargo

Don Vargo, PhD
Chairman

UNIVERSITY OF GUAM
Unibetsedåt GUAHAN

Committee on Human Research Subjects (CHRS)
c/o Office of the Senior Vice President

Date: September 11, 2013

To: Michael Schwebel (PhD candidate, Temple Univ)

From: Dr Unaisi Nabobo-Baba, Chair
UOG Committee on Human Research Subjects (CHRS)

UNBaba
Approved
9/11/13

RE: Approval of (CHRS# **13-88**): **The Fate of Climate Change Policy in South Pacific Small Is**

Dear Michael:

Your completed application for CHRS review with the accompanying documents has been received and reviewed. Your proposed study: **The Fate of Climate Change Policy in South Pacific Small Is** meets the requirements for **expedited review** under the federal guidelines CFR 45, Part 46.

All participants will have their rights explained in the Cover Letter. Consent to take part in the survey will be obtained by the completion of an Informed Consent Form and this is appropriate for this study. Minors will fill Assent Forms when asked to participate in the study.

It is clearly stated that participation in the study is voluntary and may be ended at any time without penalty. Participants have been informed of their rights. Sufficient precautions have been taken to protect the participants' anonymity and the confidentiality of their responses. No physical or emotional harm is expected to accrue to the research participants. Data collected from all participants will be adequately protected.

As a result, **approval for this project has been granted as of September 11 2013.** Therefore, you may begin to collect data. Should the project extend beyond a 1-year period (12 months from approval), please be sure to submit an appropriate request for an extension of the study.

Should any changes in procedures or in the instrument be made, CHRS must be informed and a review of the changes must be completed before they are implemented.

UOG Station, Mangilao, Guam 96923
Telephone: (671) 735-2994 Fax: (671) 734-2290
A Land Grant Institution Accredited by the Western Association of Schools and Colleges

APPENDIX C
SUCCESS INDICATORS DATA

PSIS	AT	CI	FS	FI	FT	KI	MI	NA	NI	PA	PN	SA	SI	TL	TK	TN	TU	VA	Average
Q1	–	–	–	–	–	–	–	–	–	–	X	–	–	–	X	–	–	–	11%
Q2	X	X	–	X	–	–	X	X	X	–	–	X	–	–	X	–	X	–	50%
Q3	X	X	X	–	X	X	X	X	X	X	X	X	X	X	X	X	X	X	94%
Q4	X	X	–	X	–	X	X	–	X	X	X	X	–	X	X	X	X	X	78%
Q5	X	X	X	X	–	X	X	X	X	X	X	X	X	X	X	X	X	X	94%
Q6	X	X	X	X	X	X	X	X	X	X	X	X	–	–	X	X	X	–	83%
Q7	X	X	X	X	X	X	X	X	X	–	X	X	X	–	–	X	X	X	83%
Q8	X	X	X	X	–	X	X	X	X	X	X	X	X	X	X	X	X	X	94%
Q9	X	X	X	X	X	X	X	–	X	X	X	X	X	X	–	X	X	X	89%
Q10	X	–	X	–	X	–	X	X	X	X	–	–	X	X	X	–	X	X	67%
Q11	X	X	X	X	X	X	X	X	X	X	X	–	X	X	X	X	X	X	94%
Q12	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	100%
Q13	–	X	X	X	–	X	X	X	X	X	X	–	X	–	–	X	X	X	72%
Q14	X	X	X	X	–	X	X	X	X	X	X	X	X	X	X	X	X	X	94%
Q15	X	X	X	–	–	X	X	X	X	X	–	X	X	X	X	X	X	X	83%
Q16	–	–	X	–	–	–	X	–	–	–	–	–	X	X	–	–	X	–	28%
Q17	X	–	X	X	–	–	–	X	X	–	–	–	–	–	X	X	–	–	39%

PSIS	AT	CI	FS	FI	FT	KI	MI	NA	NI	PA	PN	SA	SI	TL	TK	TN	TU	VA	Average
Q18	–	–	X	–	–	–	–	–	X	X	–	–	X	–	X	–	X	–	33%
Q19	–	X	X	–	–	X	–	–	X	X	X	–	X	–	–	–	X	X	50%
Q20	X	X	–	X	–	–	X	X	X	X	X	X	X	X	X	–	X	X	78%
Q21	–	–	–	–	X	X	X	–	–	X	–	–	X	–	X	–	X	X	44%
Q22	X	X	X	X	X	X	X	X	X	–	X	X	X	X	X	X	X	X	94%
Q23	X	–	X	X	–	–	X	X	–	–	X	X	X	X	X	X	X	X	72%
Q24	X	–	X	X	X	X	X	X	–	X	X	X	X	X	X	X	X	X	89%
Q25	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	100%
Q26	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	100%
Q27	X	X	–	–	–	–	X	–	–	–	–	X	X	X	X	X	X	–	50%
Q28	–	–	–	X	–	–	X	X	–	–	–	–	X	–	X	X	–	X	39%
Q29	X	X	X	X	X	–	X	X	X	X	X	X	X	X	X	X	X	X	94%
Q30	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	100%
Q31	X	X	–	X	X	X	–	X	X	X	X	X	X	X	–	X	–	X	78%
Q32	X	X	–	X	X	X	X	X	X	X	X	X	X	X	–	X	X	X	89%
Q33	X	X	X	X	–	–	–	X	–	–	–	X	X	X	X	X	X	X	67%
Q34	X	X	X	X	X	X	–	X	–	X	X	X	X	X	X	X	X	X	89%

PSIS	AT	CI	FS	FI	FT	KI	MI	NA	NI	PA	PN	SA	SI	TL	TK	TN	TU	VA	Average
Q35	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	100%
Q36	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	–	94%
Total	7	9	9	9	17	12	7	8	9	10	10	10	5	10	7	8	4	8	8.83
Total X	29	27	27	27	19	24	29	28	27	26	26	26	31	26	29	28	32	28	27.17
% of X/Total	80.56	75.00	75.00	75.00	52.78	66.67	80.56	77.78	75.00	72.22	72.22	72.22	86.11	72.22	80.56	77.78	88.89	77.78	75.46%

Note. CI = Cook Islands; FS = Federated States of Micronesia; FI = Fiji; KI = Kiribati; NA = Nauru; NI = Niue; PA = Palau; PN = Papua New Guinea; SA = Samoa; SI = Solomon Islands; TL = Timor-Leste; TK = Tokelau; TG =Tonga; TV = Tuvalu; VN = Vanuatu; AT = American Territories; FT = French Territories.

APPENDIX D
INTER-PSIS ISLAND CONNECTIVITY VIA AIRPORTS[3]

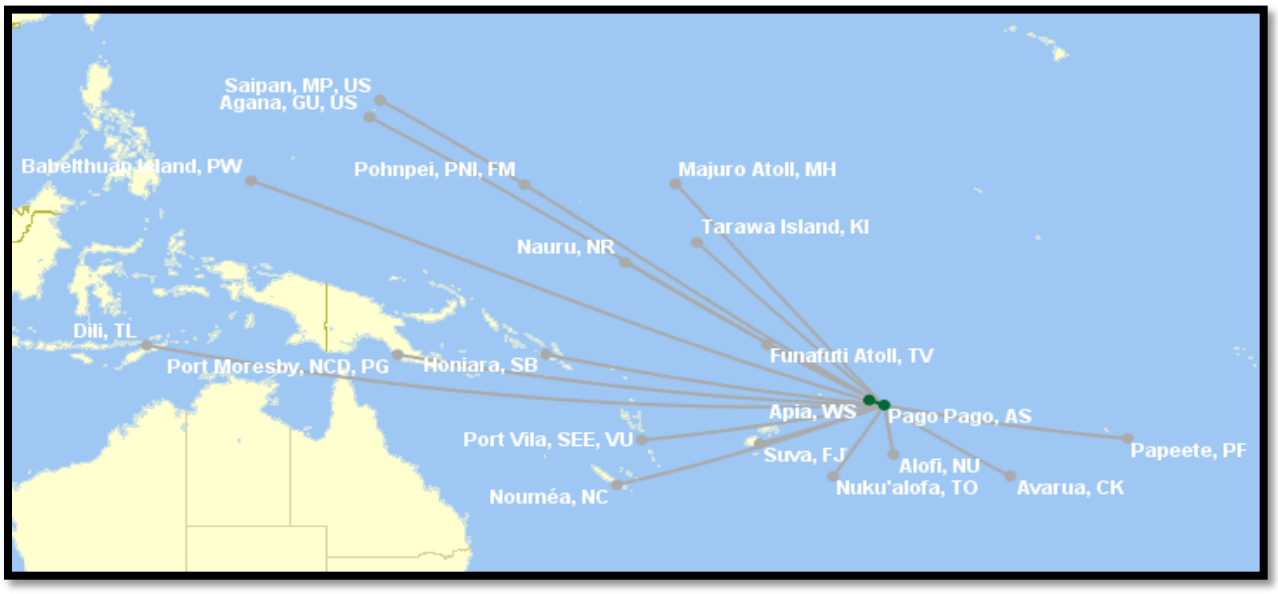

Figure X-1. Inter-PSIS island connectivity via airports: American Samoa (American Territories). Actual routes in green, nonexistent in gray.

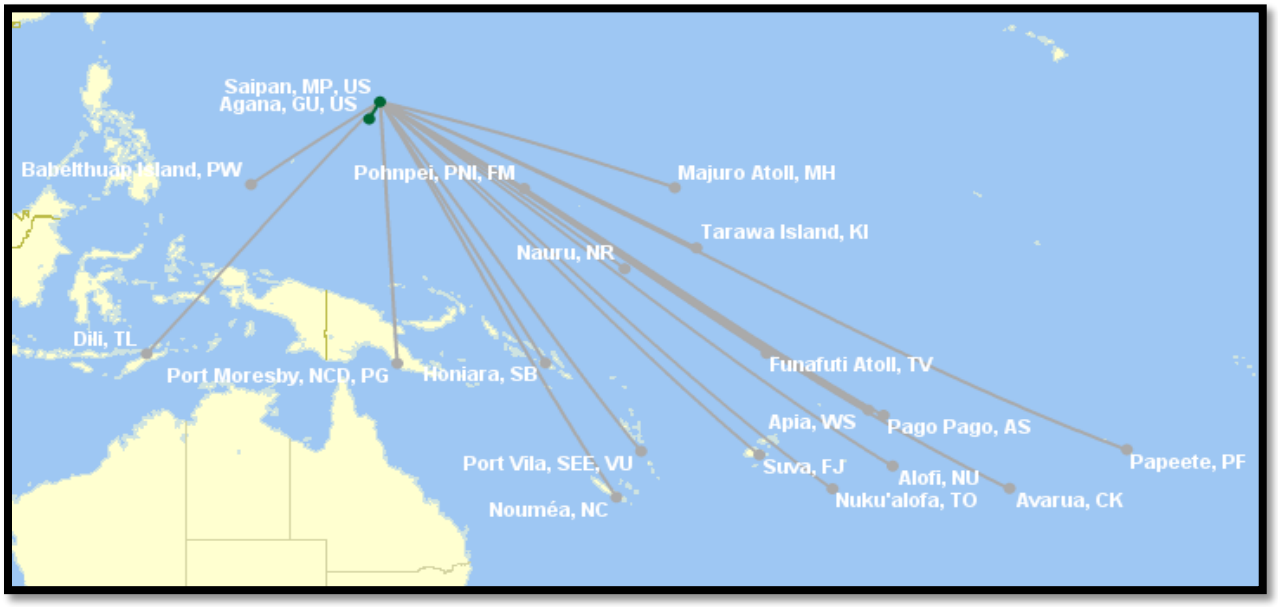

Figure X-2. Inter-PSIS island connectivity via airports: CNMI (American Territories). Actual routes in green, nonexistent in gray.

[3]Publicly available air travel routes were obtained on August 4, 2014 from the Pacific Islands Applied Geoscience Commission/Association of South Pacific Airlines (ASPA), PSIS' airport websites, arrival/departure websites at PSIS' airports, travel itinerary websites, and pertinent tourism websites.

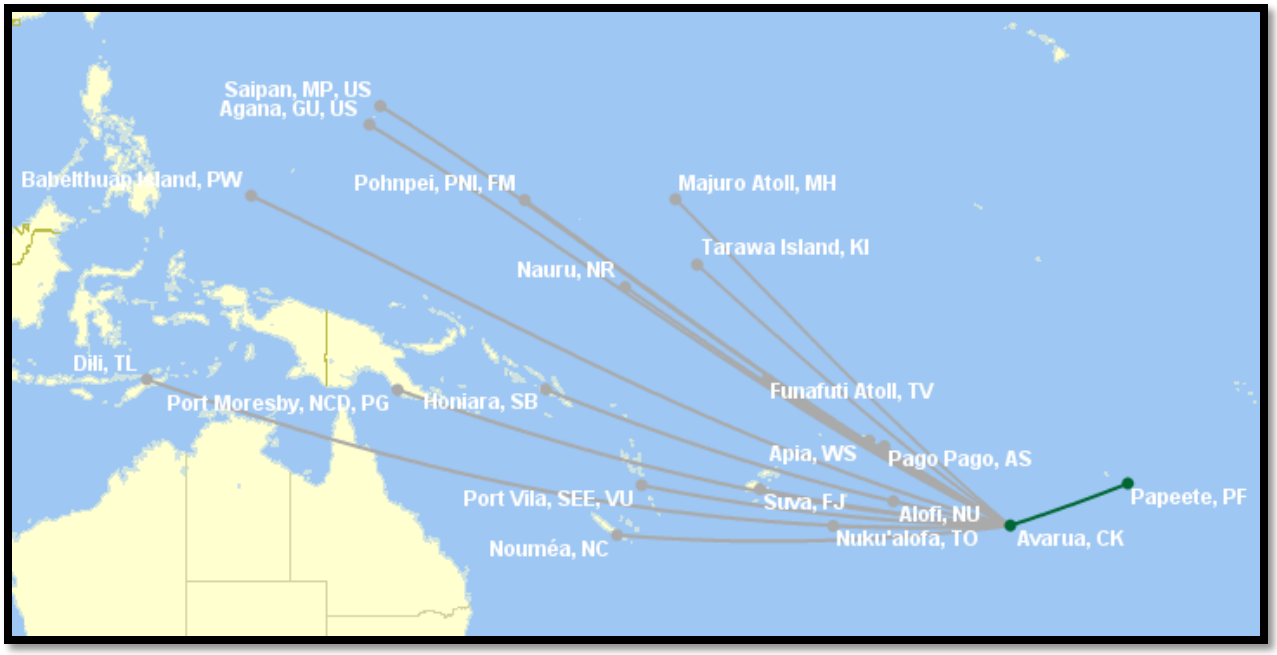

Figure X-3. Inter-PSIS island connectivity via airports: Cook Islands. Actual routes in green, nonexistent in gray.

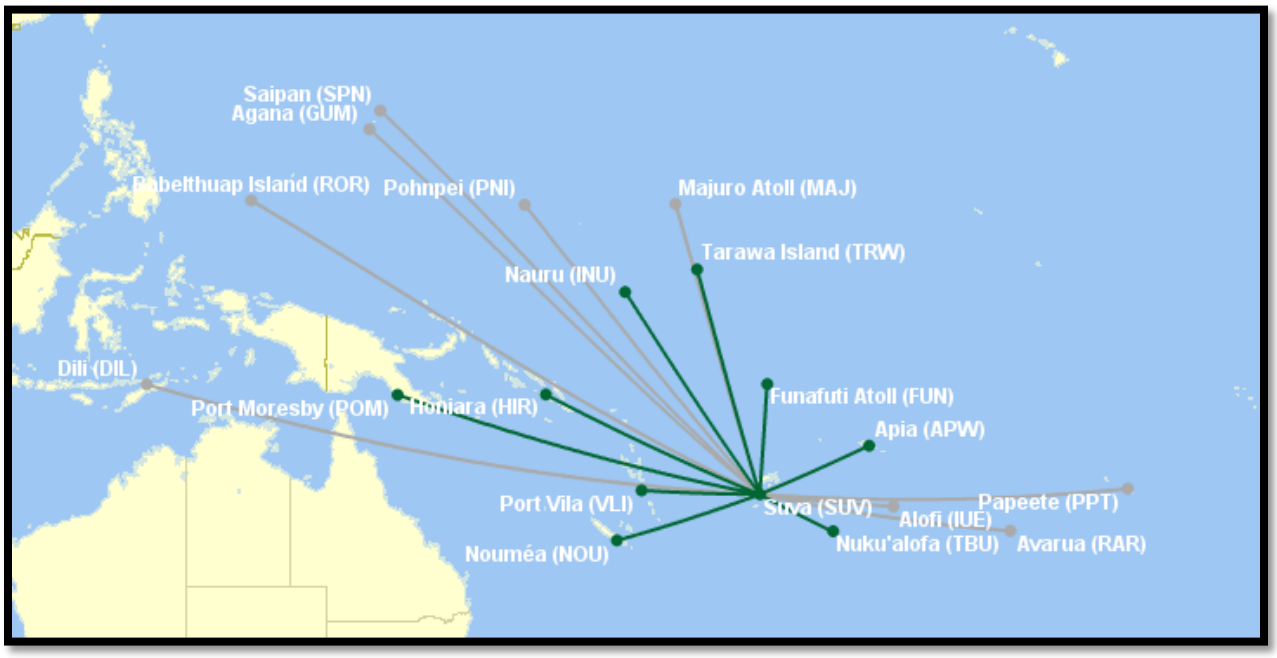

Figure X-4. Inter-PSIS island connectivity via airports: Fiji. Actual routes in green, nonexistent in gray.

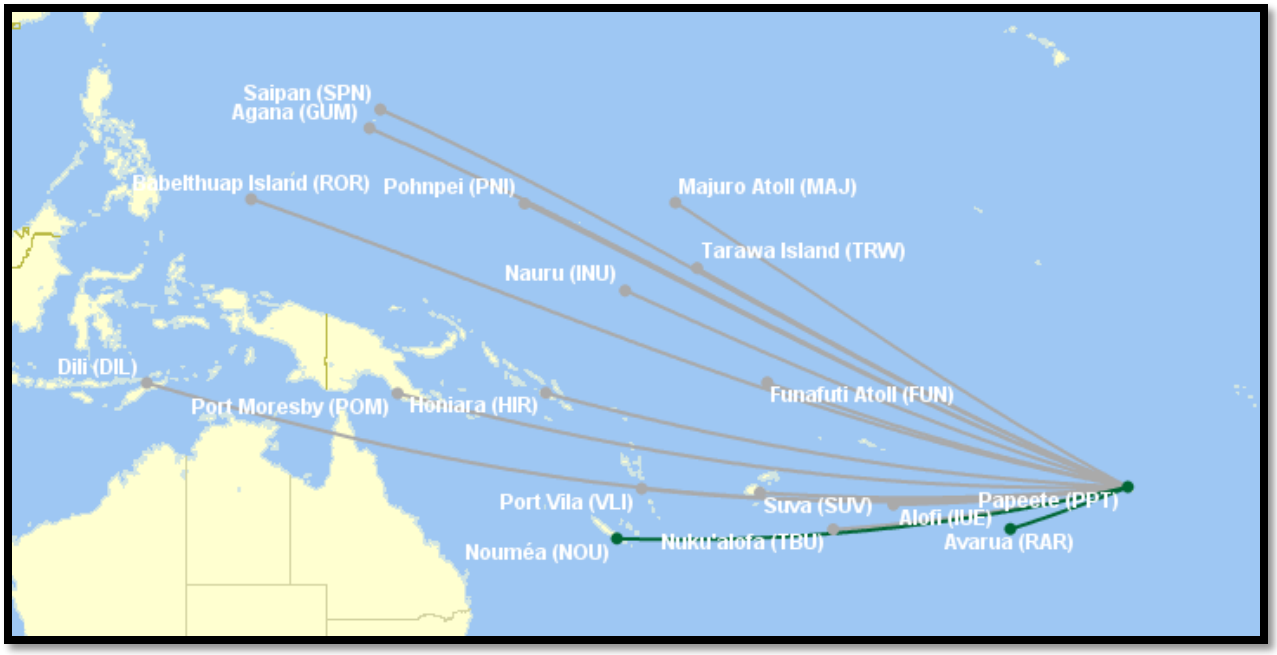

Figure X-5. Inter-PSIS island connectivity via airports: French Polynesia (French Territories). Actual routes in green, nonexistent in gray.

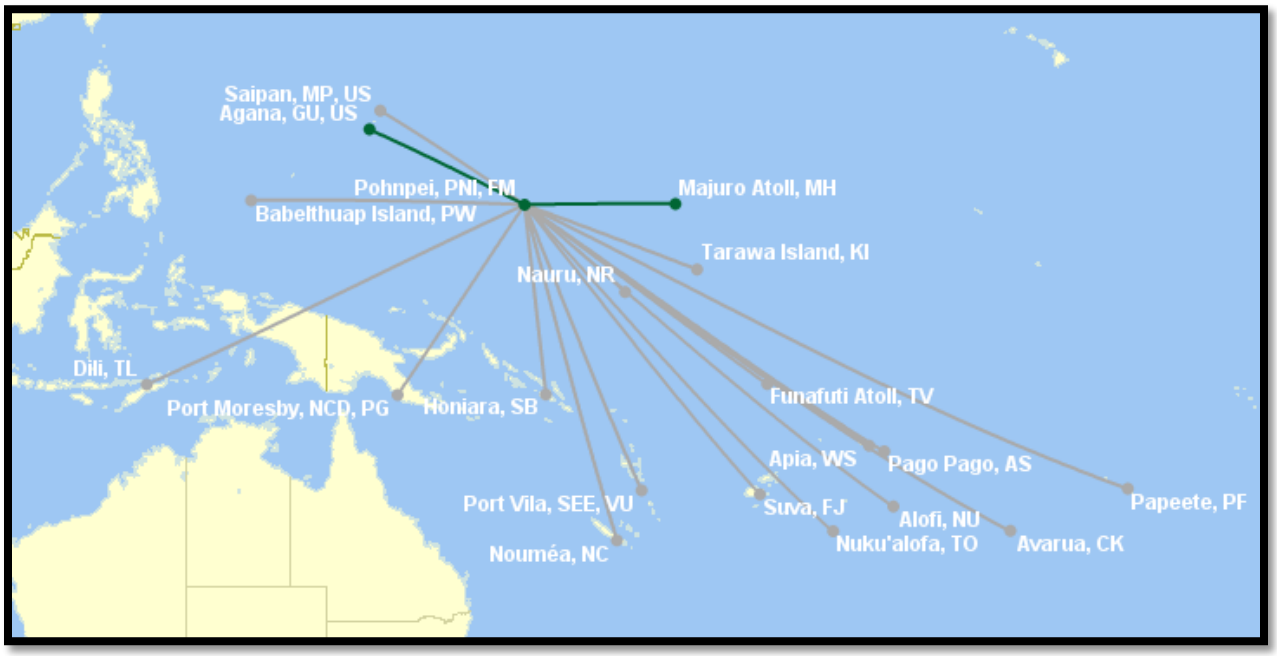

Figure X-6. Inter-PSIS island connectivity via airports: Federated States of Micronesia. Actual routes in green, nonexistent in gray.

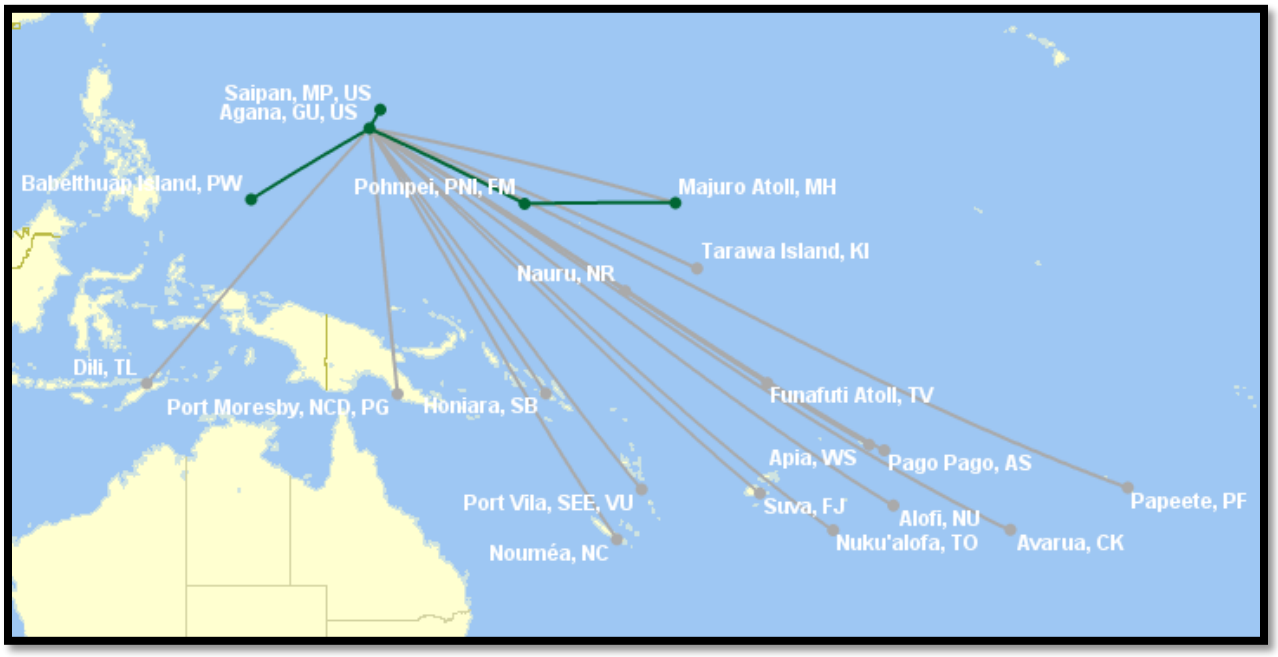

Figure X-7. Inter-PSIS island connectivity via airports: Guam (American Territories). Actual routes in green, nonexistent in gray.

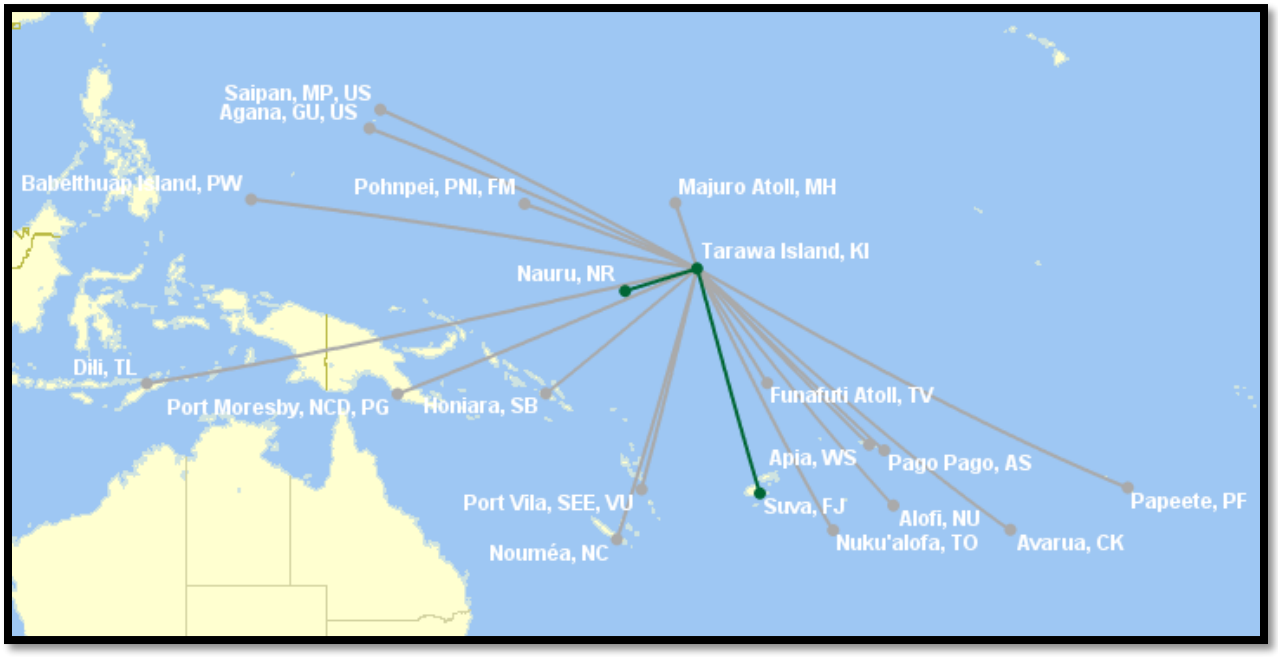

Figure X-8. Inter-PSIS island connectivity via airports: Kiribati. Actual routes in green, nonexistent in gray.

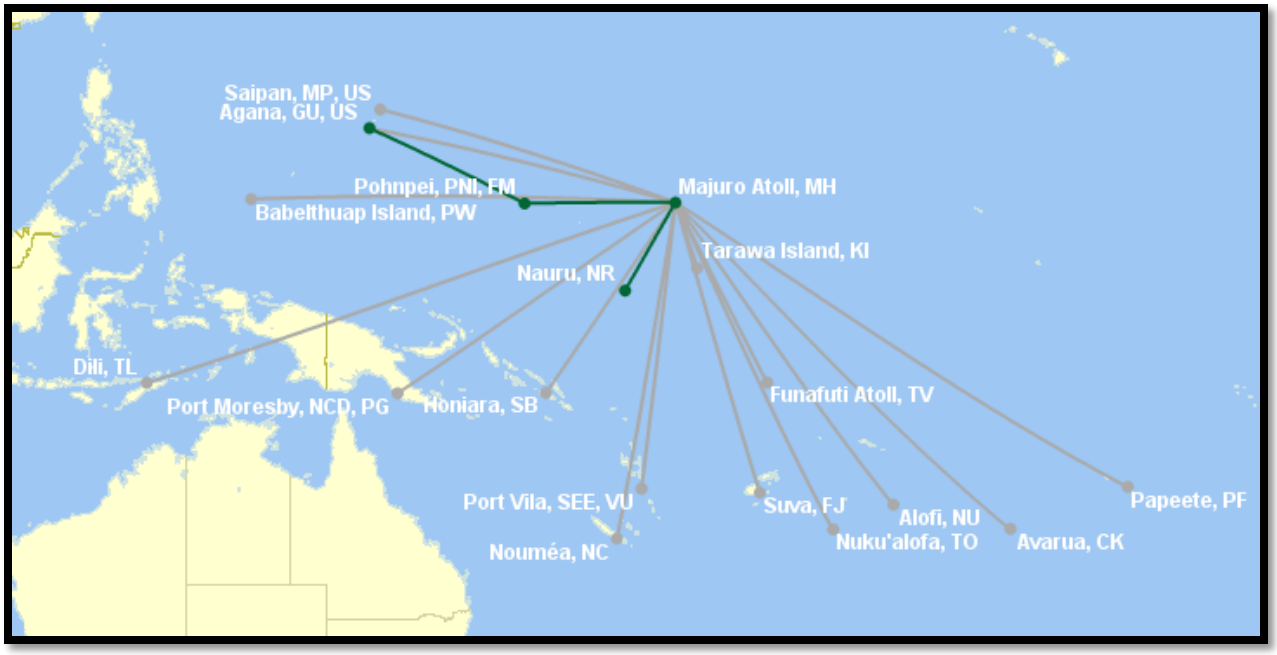

Figure X-9. Inter-PSIS island connectivity via airports: Marshall Islands. Actual routes in green, nonexistent in gray.

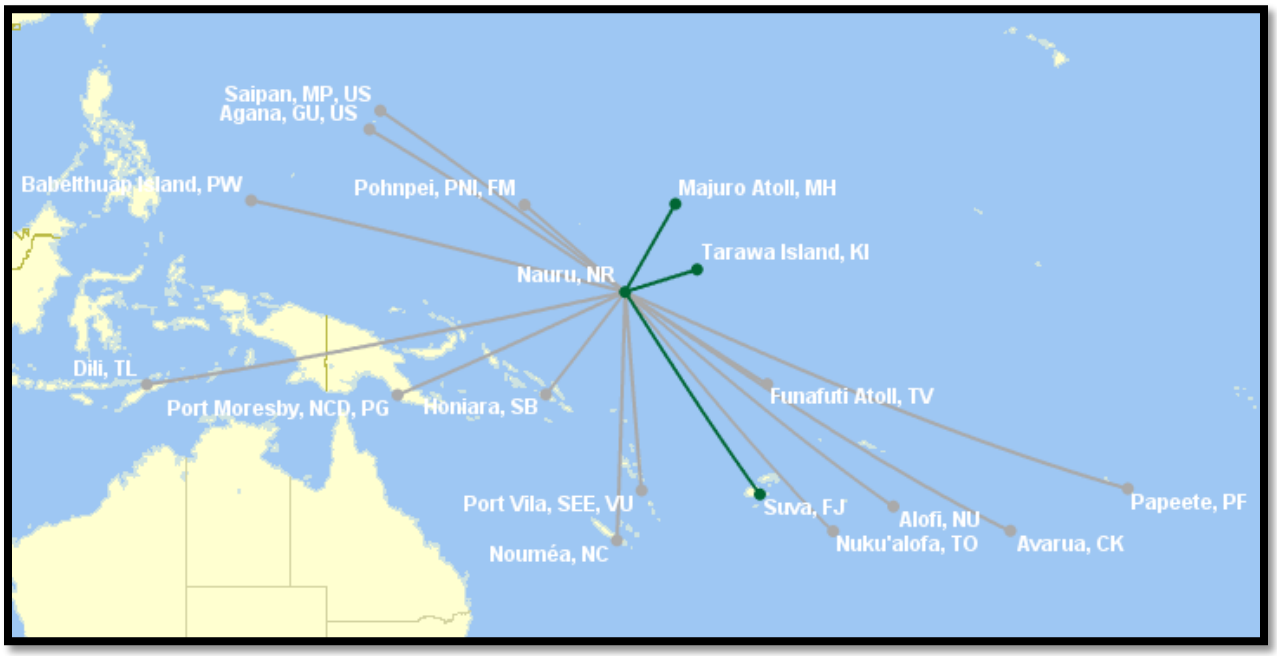

Figure X-10. Inter-PSIS island connectivity via airports: Nauru. Actual routes in green, nonexistent in gray.

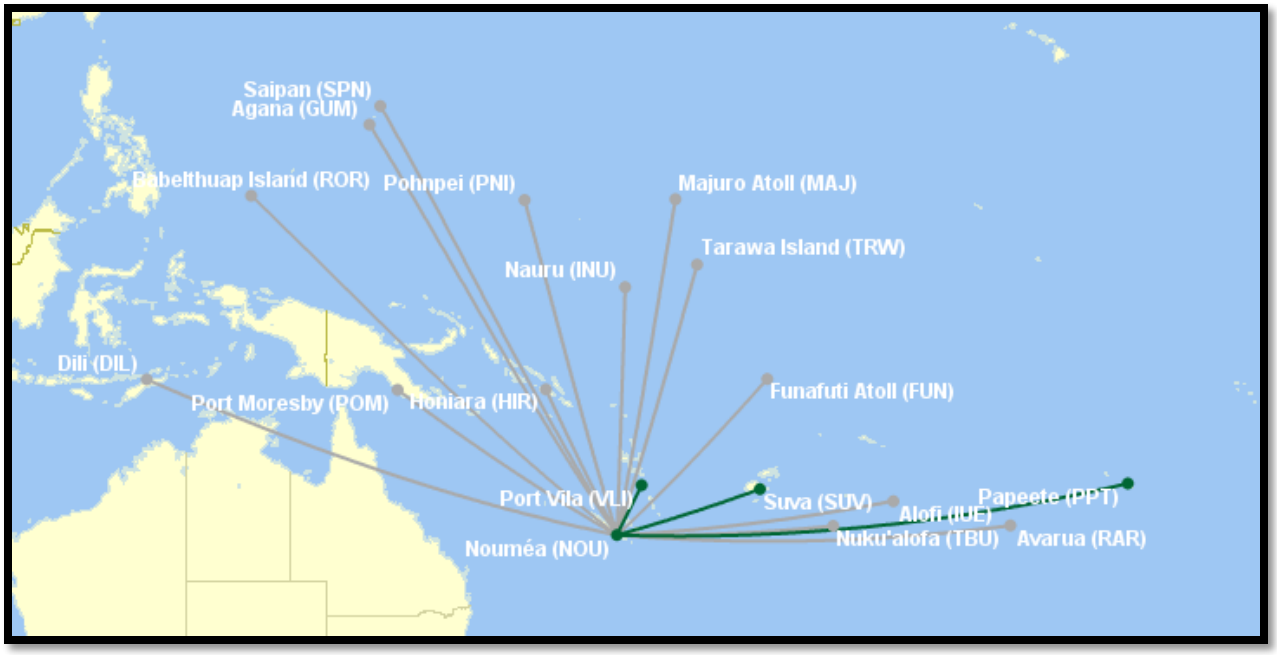

Figure X-11. Inter-PSIS island connectivity via airports: New Caledonia (French Territories). Actual routes in green, nonexistent in gray.

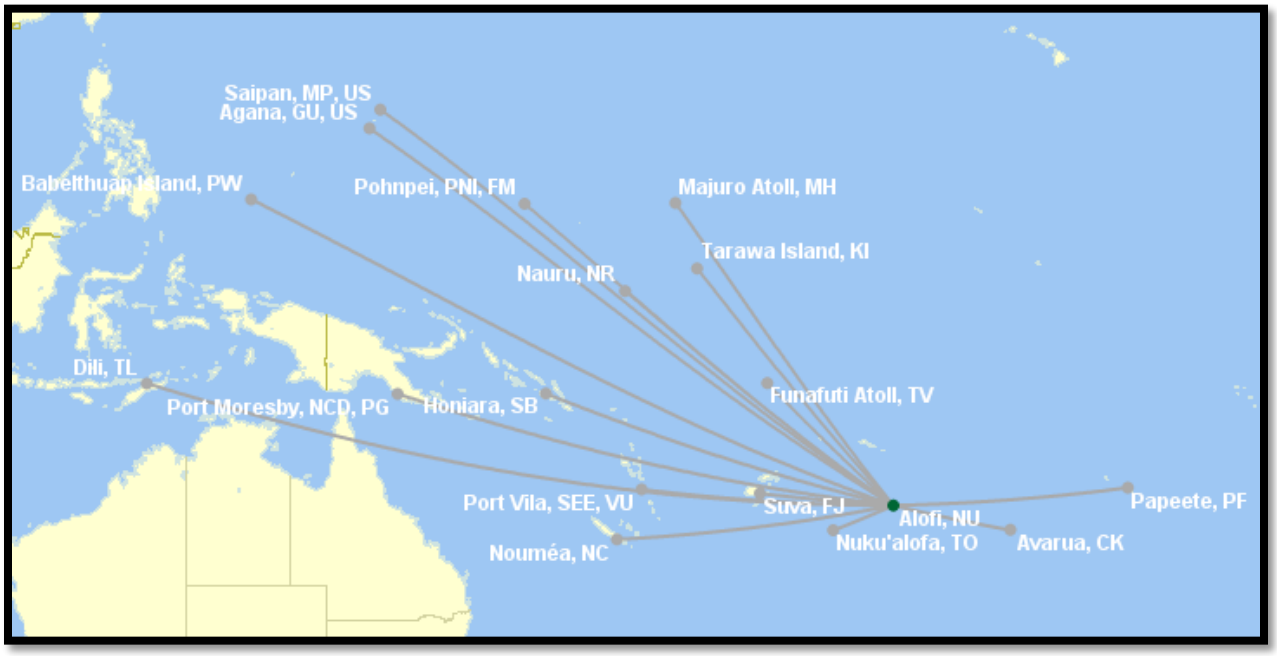

Figure X-12. Inter-PSIS island connectivity via airports: Niue. Actual routes in green, nonexistent in gray.

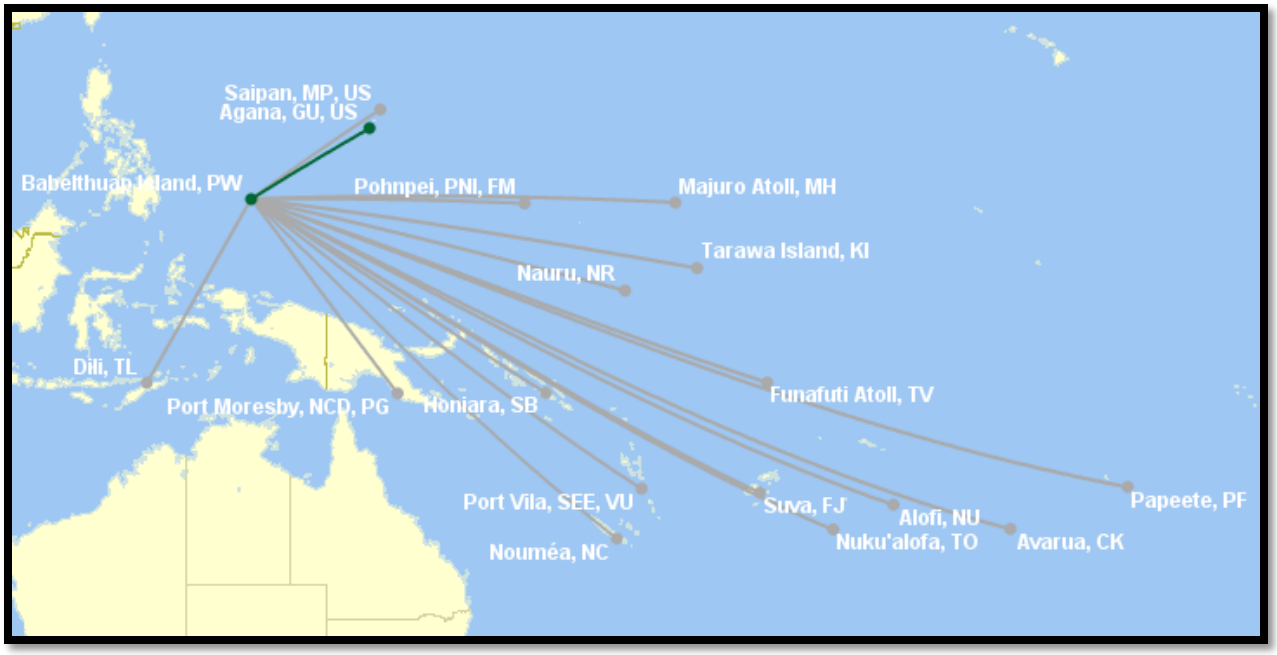

Figure X-13. Inter-PSIS island connectivity via airports: Palau. Actual routes in green, nonexistent in gray.

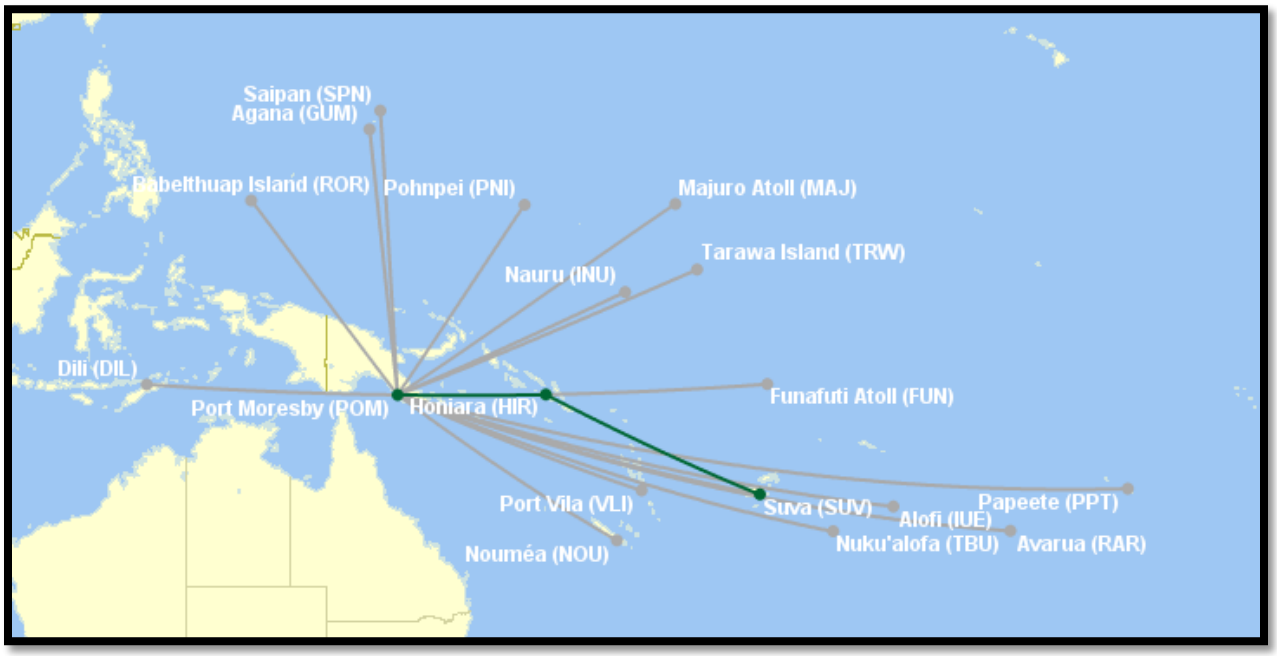

Figure X-14. Inter-PSIS island connectivity via airports: Papua New Guinea. Actual routes in green, nonexistent in gray.

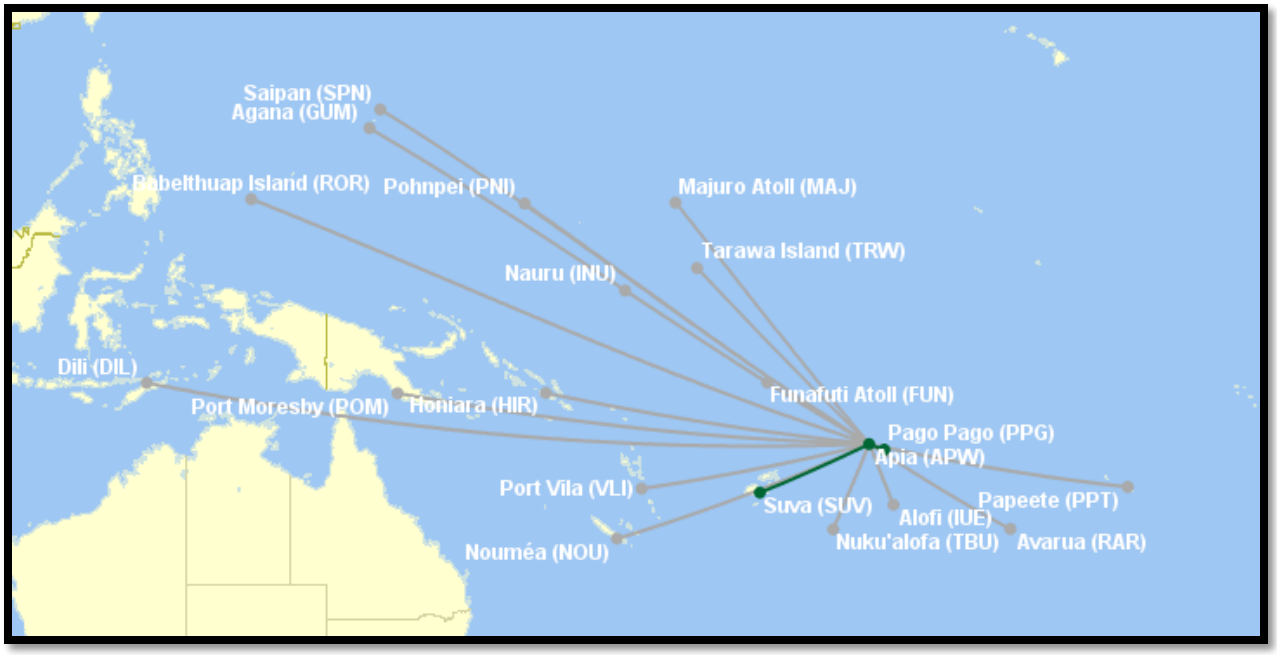

Figure X-15. Inter-PSIS island connectivity via airports: Samoa. Actual routes in green, nonexistent in gray.

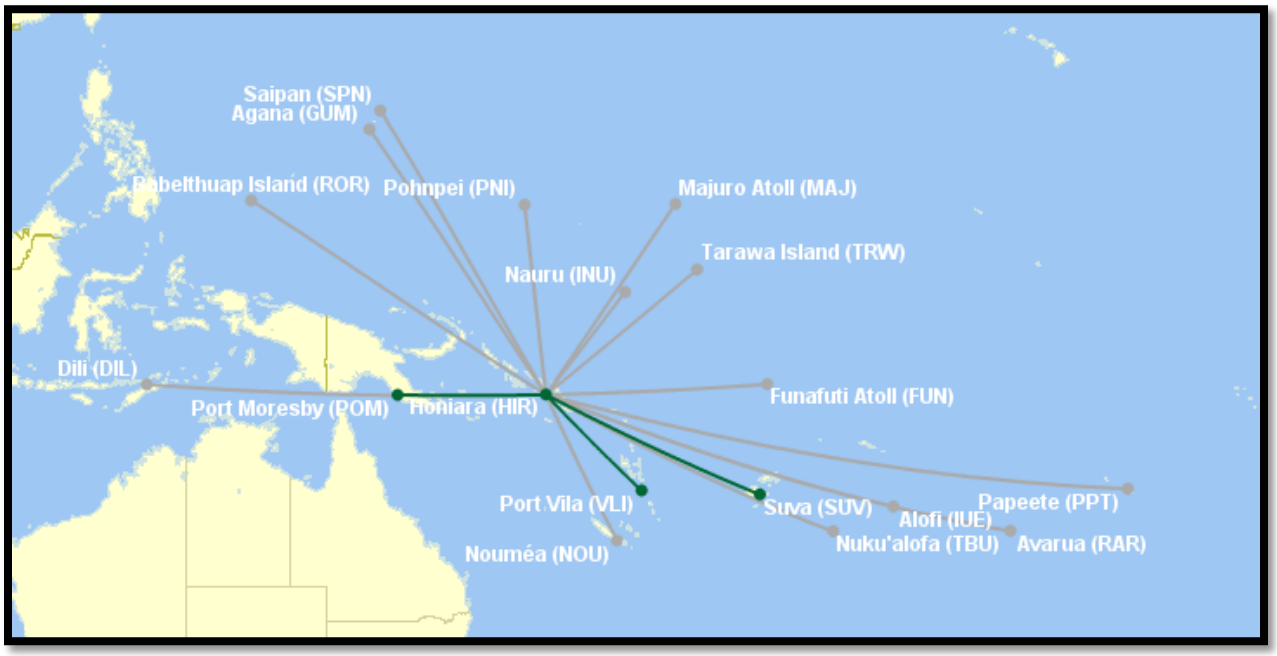

Figure X-16. Inter-PSIS island connectivity via airports: Solomon Islands. Actual routes in green, nonexistent in gray.

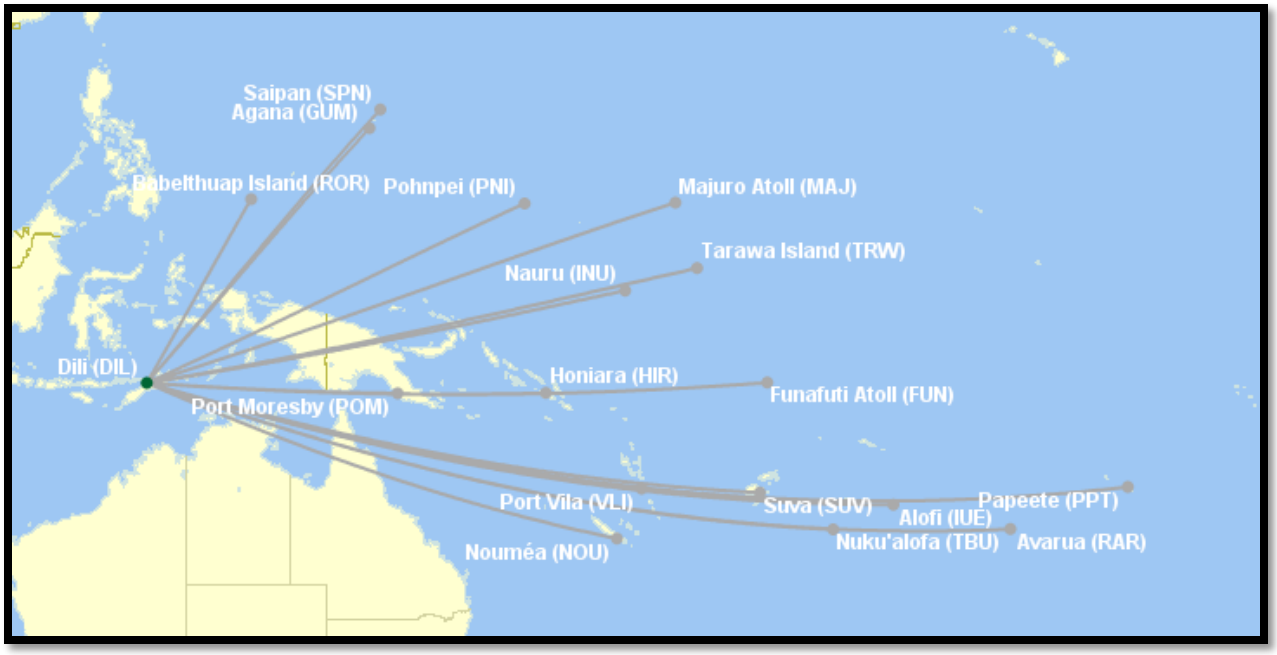

Figure X-17. Inter-PSIS island connectivity via airports: Timor-Leste. Actual routes in green, nonexistent in gray.

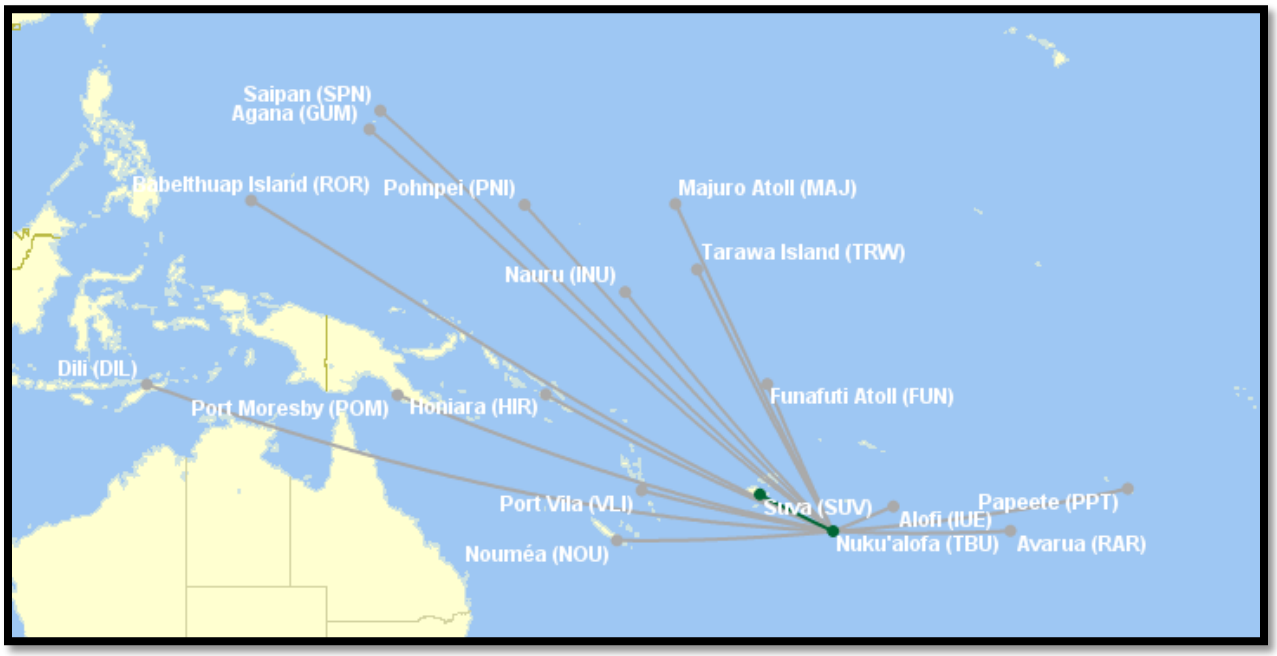

Figure X-18. Inter-PSIS island connectivity via airports: Tonga. Actual routes in green, nonexistent in gray.

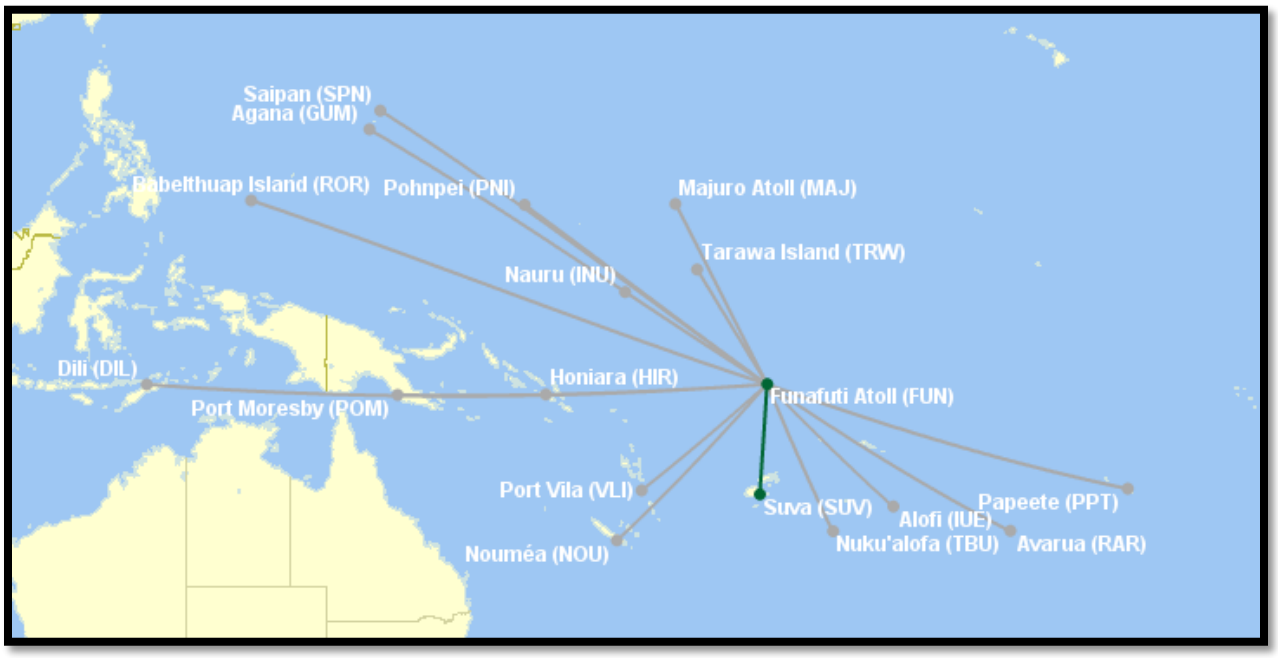

Figure X-19. Inter-PSIS island connectivity via airports: Tuvalu. Actual routes in green, nonexistent in gray.

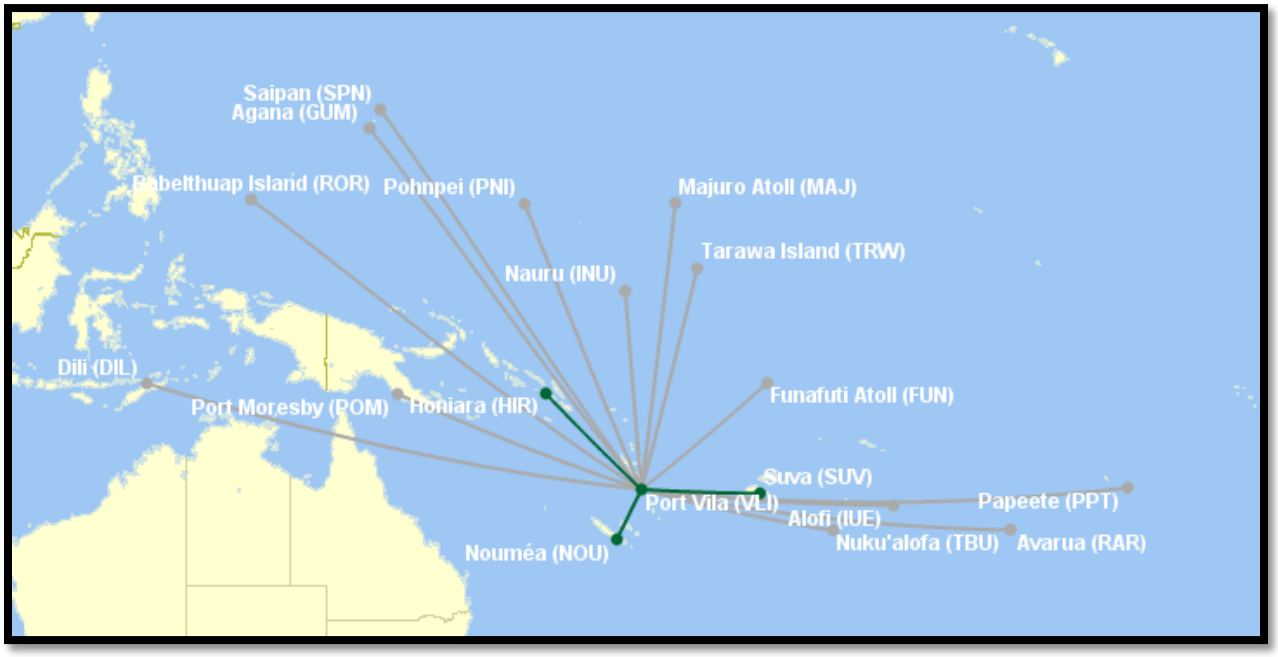

Figure X-20. Inter-PSIS island connectivity via airports: Vanuatu. Actual routes in green, nonexistent in gray.

APPENDIX E
SUCCESS INDICATOR QUESTIONS

1. Do the plans use a systemic approach, such as use of metrics, to determine success?
2. Do the plans refer to learning from past lessons?
3. Do the plans mention an invitation to various stakeholders?
4. Do the plans have synergies or links with other plans, processes, and programs?
5. Do the plans illustrate or discuss the potential goals of the plans?
6. Do the plans illustrate or discuss the potential goals of the plans?
7. Are "no-regrets" approaches identified?
8. Are the plans looking to go beyond just maintaining the status quo?
9. Do the plans recognize adaptation as an "iterative, evolving process?"
10. Are timelines/temporal goals given in the plans?
11. Do the plans have baselines against which to measure progress?
12. Do the plans purport to help build/increase adaptive capacity?
13. Do the plans discuss the financing of adaptation?
14. Is the plan's context specific to the state?
15. Do the plans recognize limits to the strategies they can achieve?
16. Is resettlement discussed as an option of last resort?
17. Do the states avoid maladaptation (such as sea walls) as a method to reduce exposure?
18. Do the plans mention increasing mobility, migration, and labor opportunities for movement?
19. Are the plans integrated with other plans of the state and not siloed?

20. Do the plans avoid the need for repeated studies and avoid delaying implementation of important decisions?
21. Do the plans state their values regarding science and whose interests are represented?
22. Do the plans identify the barriers and risks to adaptation?
23. Are adaptation goals a result of community/partner meetings?
24. Do the plans differentiate between types/levels of adaptation?
25. Do the plans satisfy multiple objectives of multiple actors (e.g., science, policy)?
26. Do the plans maintain environmental/resource values even as the environment changes?
27. Do the plans exhibit buy-in to adaptation planning/implementation?
28. Are the plans flexible with strategies or do they have adaptive management mechanisms?
29. Do the plans invest in people, not just technology, policy, tools, and infrastructure?
30. Do the plans enable/foster collaboration between knowledge sources and decision makers?
31. Do the plans contain effective risk communication: awareness, methods, sharing knowledge?
32. Do the plans have adaptation project/policy evaluations?
33. Do the plans convey any relevance or personal meaning to stakeholders?
34. Do the plans consider trade-offs/synergies between adaptation, development, and the like?
35. Do the plans make adaptation appear as a way of creating a better situation for the state?

36. Do the plans articulate adaptation as a more desirable future?

APPENDIX F
ABBREVIATIONS

AOSIS	Alliance of Small Island States
CCAPs	climate change adaptation plans
CROP	Council of Regional Organizations of the Pacific
EEZs	exclusive economic zones
GMOs	genetically modified organisms
NAPA	National Adaptation Programs of Action
PIF	Pacific Islands Forum
PSISs	Pacific small island states
SPC	Secretariat of the Pacific Community
SPREP	Secretariat of the Pacific Regional Environmental Programme
UNFCCC	United Nations Framework Convention on Climate Change