

Climate Change and Sustainable Development in the Pacific: The EU's Contributions 2000-2017,  
with a case study on the Cook Islands

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## Abstract

My thesis is going to mainly discuss climate change, sustainable development and the European Union's climate change policies within the Pacific region, it will use the Cook Islands as a case study. The context for this thesis is that climate change is beginning to happen and the Pacific will suffer more than any other region. Most of the Pacific Nations do not have the resources to mitigate the effects of climate change, so they will require help from other actors. Any project that is going on in the world should have the aim of achieving sustainable development so that future generations will not be put at risk with what current populations are doing. Climate change will also alter migration patterns in the Pacific and if nothing is done now then there is the chance that there will be climate refugees. I will be using the Bellagio Principles to determine how effective the EU's climate change policies are in the Pacific in terms of mitigating the effects of climate change and to see if they help increase the rate of sustainable development within the region. The Cook Islands was chosen as a case study because out of all the Pacific Nations they use the most fossil fuels and I am part Cook Island Maori so this area is of interest to me. New Zealand also plays a role in the Pacific and has committed to helping Pacific Nations increase their standings on fighting climate change, in some climate change projects the EU and NZ have collaborated.

## Introduction

This thesis is going to assess how effective the European Union's climate change policies and programs are in helping to reduce the effects of climate change in the Pacific Region, with a focus on the Cook Islands as a case study. It will use the Bellagio Principles to measure how effective the policies and programs are in terms of working towards and achieving sustainable development in the Pacific Region. The research question for this thesis is: "Are the European Union's Climate Change policies and programs effective in helping to reduce the effects of Climate Change in the Pacific Region and increase sustainable development in the region? with a focus on the Cook Islands as a case study". Sustainable Development fits in with the research focus of this thesis because it can be used to measure the effectiveness of the EU's policies and projects, in order to adapt to the effects of climate change in the region, sustainable development should be promoted and implemented. The Pacific Region is currently a vulnerable region in terms of environmental and climatic factors, some of the nations are already experiencing the effects of climate change, for example there has been an increase in sea level rise for Tuvalu. The other Pacific Regions this thesis will look at in terms of the general Pacific Region are Fiji, Papua New Guinea, Samoa, Tonga, Niue, Tokelau, Marshall Islands, Solomon Islands, Kiribati and Vanuatu.

## Review of the Literature

This review will firstly focus on the literature discussing climate change, sustainable development, the European Union and climate change, New Zealand and climate change and the threat of climate change to Pacific Nations. Scholarly articles are used in this review, however some of the literature comes from EU, NZ and NGO articles that focus on climate change.

## Sustainable Development

The International Institute for Sustainable Development has defined the concept for Sustainable Development as "A development that meets the needs of the present without compromising the ability of future generations to meet their own needs. It contains two key features: the concept of needs, in particular the essential needs of the world's poor, to which overriding priority should be given, and the idea of limitations imposed by the state of technology and social organization on the environment's ability to meet present and future needs". (International Institute for Sustainable Development, 2017) In this concept, there are six subsystems that are always mentioned, these are:

- Individual development (civil and human rights, health, gender etc.)
- Social system (Population, development, income distribution and class structure etc.)
- Government (government and administration, public finances and tax, conflict resolution, immigration, legal system etc.)
- Infrastructure (settlements and cities, health service, waste disposal, communication and educational facilities)
- Economic System (production and consumption, money, commerce and trade, labour and employment etc.)
- Resources and Environment (natural environment, atmosphere and hydrosphere, ecosystems, species, pollution etc.). (Bossel, 1999)

Literature that focuses on sustainable development look at all areas that need it, not just climate change, some examples are extreme poverty, food security and animal ecosystems. Jeffrey D. Sachs gives a good understanding of the need for sustainable development for all areas in his *'The Age of Sustainable Development'*, "An intellectual pursuit, sustainable development tries to make sense of the interactions of three complex systems: the world economy, the global society, and the Earth's physical environment. Sustainable development is also a normative outlook on the world, meaning that it recommends a set of goals to which the world should aspire." (2015) The academic world is rich in content on sustainable

development, this concept has taken greater urgency in the past decade as scientists are gathering more data to support the need for more sustainable development goals.

According to Susan Baker, “Sustainable Development is part of new efforts, albeit tentative, to integrate environmental, economic and (more recently) social considerations into a new development paradigm. There are many versions of this new approach. They are united in their belief that there are ultimate, biophysical limits to growth. This challenges industrial societies not only to reduce the resource intensity of production (sustainable production) but to undertake new patterns of consumption that not only reduce the levels of consumption but change what is consumed and by whom (sustainable consumption). This creates the conditions necessary for ecologically legitimate development, particularly in the Third World.” (2016, 28) This literature suggests that to have a greater chance of achieving sustainable development goals there needs to be a coalition of environmental, economic and social considerations into new programs. They also suggest a reduction in consumption levels of pollutants, such as greenhouse gases and fossil fuels.

In the 21<sup>st</sup> century there has been more of a demand for businesses to have values and goals that create sustainable development, there is literature that look at sustainable development from a financial point of view. Literature for this comes from Chris Laszlo in *The Sustainable Company*, “The core concept behind the frameworks and tools is that the financial value created by a business is always associated with a stakeholder value that can be either positive or negative. Positive stakeholder value is created when a business adds to the capital or well-being of the individuals and constituencies it impacts. Negative stakeholder value is created when a business reduces their capital or undermines their wellbeing. We can illustrate the difference between creating negative stakeholder value and creating positive stakeholder value by using the example of an aggregates company operating in a relatively dirty extractive industry. The negative stakeholder value case: The aggregates company operates stone quarries in ways that negatively affect the local community and ecologies through dust and noise pollution and poorly restored spent quarry lands. It does only what is required by law. There is little or no communication or coordination with the local community and NGOs. The positive stakeholder case: The company operates stone quarries with standards for dust and noise control that are beyond compliance levels. It restores and rehabilitates spent quarry lands through reintroducing plant and animal species according to a plan co-designed with the local community. (2010, 132-133) The financial standpoint and sustainable development are crucial in terms of reducing the effects of climate change in the Pacific because any company that decides to work in the region should consider how they might be impacting the sustainable development in the region and how they could help with reducing the effects of climate change.

### How can Sustainable development be assessed?

To assess sustainable development, it would be best to use the Bellagio Principles, these were formed in 1996 during the Rockefeller Foundation’s Study and Conference Center in Bellagio, Italy. It is made up of ten principles, these are:

- Guiding Vision and Goals (should have a clear vision of sustainable development and goals that define that vision.)
- Holistic Perspective (review of the whole system, considers both positive and negative consequences of human activity and the state of social, ecological and economic subsystems.)
- Essential Elements (consideration of equity and disparity within the current population and future generations, dealing with the various concerns such as resource use, overconsumption and poverty and the need to consider economic development and other non-market activities that contribute to human and social well-being.)
- Adequate Scope (adoption of a time horizon long enough to capture both human and ecosystem time scales, definition of the space of study that is large enough to include local and long-

distance impacts on people and ecosystems, and further building on historic and current conditions to anticipate future conditions: where we want to go, where we could go.)

- Practical Focus (should have an explicit set of categories or an organizing framework that links vision and goals to indicators and assessment criteria, it should have a limited number of key issues for analysis, there should be a limited number of indicators or indicator combinations to provide a clearer signal of progress and the comparison between indicator values and targets.)
  - Openness (the methods and data that are used should be accessible to all)
  - Effective Communication (should be designed to address the needs of the audience and set of users, draw from indicators and other tools that are stimulating and serve to engage decision-makers, aim for simplicity in structure and use clear and plain language.)
  - Broad Participation (obtain broad representation of various ethnic groups, ages and gender to ensure balanced recognition, there is a need for decision makers to participate so they can link policies and actions.)
  - Ongoing Assessment (development of a repeated measurement to determine trends, be adaptive to change, adjustment of goals, frameworks and indicators when new insights are gained, and the promotion for the development of collective learning and feedback to decision-making.)
  - Institutional Capacity (during the decision-making process there needs to be assigned responsibility and ongoing support, provision of institutional capacity for data collection, maintenance and documentation and supporting development of local assessment capacity.)
- (Bossel, 1999)

Literature based around the Bellagio foundations focuses on the key points and how and when it is used as a form of principles for sustainable development assessment and measurement, they are used by both scientists and policymakers. Some academics have argued that these principles need to be updated to match the developments of the current generation and future generations. Literature for this point comes from Laszlo Pinter, Perter Hardi, Ander Martinuzzi and Jon Hall 'Revisiting the wat society defines and measures progress has been identified as one of the key levers in tackling the root causes of unsustainable development. The recent economic and food crises exposed a critical weakness in the ability of currently mainstream indicators of progress to provide early warning and take adequate preventive action. Since the early 1990s a growing number of organizations have been involved in the development of indicator systems around the key socio-economic and environmental concerns of sustainable development within their own context. In order to provide guidance and promote best practice, in 1997 a global group of leading measurement and assessment experts developed the Bellagio Principles. The Bellagio Principles have become a widely quoted reference point for measuring sustainable development, but new developments in policy, science, civil society and technology have made their update necessary. (2012, 20)

### What causes climate change?

Scientists have hypothesised that many anthropogenic influences on the Earth's climate system and the increasingly changing climatic conditions during the past decades is a response to human interference. (Richardson & Liverman, 2011) Per the NZ Ministry for the Environment "The Earth's atmosphere is made up of oxygen, a larger amount of nitrogen and a small amount of greenhouse gases, the Earth is blanketed in these greenhouses as they are able to trap warmth from the sun and make life possible on Earth. Without enough greenhouse gases, too much heat would escape and the surface of Earth would freeze, opposite to this when there is an increase in the amount of greenhouse gases in the atmosphere it causes Earth to heat up. It is more than likely to change temperatures and cause more extreme climate events such as floods, storms, cyclones and droughts." (Ministry for the Environment, 2017)

The evidence that the NZ MFE uses to support the argument that climate change is occurring are:

- Direct temperature measurements on land
- Changes in the dates when lakes and rivers freeze and their ice melts

- A reduction in the extent of snow cover in the Northern Hemisphere
- A reduction in glaciers
- Extended growing seasons of plants
- Changes in the heat stored in the ocean
- Changes in rainfall patterns resulting in more floods, droughts and intense rain
- Shifts in ranges of some plant and animal species
- Earlier timing of spring events such as leaf-unfolding, bird migration and egg-laying for some species. (NZ Ministry for the Environment, 2017)

The Earth's temperature is going higher at an unprecedented rate and the levels of carbon dioxide and methane in the atmosphere are also increasing, the NZ MFE have recommended that there needs to be a decrease in greenhouse gas emissions, and that there will still be issues even after reductions have been made due to uncertainties of future climate changes. (NZ Ministry for the Environment, 2017)

Academic literature that focusses on climate change discuss the primary causes for climate change, the scientific consensus on climate change, global responses to climate change, challenges that climate change poses, human security and what it will mean for future generations of people. From Joseph DiMento 'Many scientists felt that respect was overdue: as early as 1995, the Intergovernmental Panel on Climate Change (IPCC) had concluded that there was strong scientific evidence that human activities were affecting global climate. By 2007, the IPCC's Fourth Assessment Report noted it is "extremely unlikely that the global climate changes of the past fifty years can be explained without invoking human activities" Prominent scientists and major scientific organizations have all ratified the IPCC conclusion. Today, all but a tiny handful of climate scientists are convinced that earth's climate is heating up and that human activities are a significant cause.' (2014, 65) This literature suggests that there is a large consensus that human activity is more than likely a huge contributor to climate change, it also suggests that is still a small number of scientists that do not believe in this theory even though there is more than enough evidence to prove it.

There is a wide amount of literature that discusses the individual indicators of climate change, e.g. changes in animal migration, greenhouse gas levels, however it is difficult to find literature that summarises all the local indicators into one report. This is seen in Victoria Reyes-Garcia, Alvaro Fernandez-Llamazares, Maximilien Gueze, Ariadna Garces, Miguel Mallo, Margarita Vila-Gomes and Marina Vilaseca in *Local Indicators of climate change: the potential contribution of local knowledge to climate research*, "Although the analysis of local indicators of climate change appears to growingly attract the interest of the scientific community, especially in the natural sciences, the field suffers important weaknesses: primary data on the topic are not abundant, the methodological development is incipient, and the geographical extent is unbalanced. Furthermore, there have been very few previous attempts to classify local indicators of climate change, all of them using data from a single case study. The field could, therefore, benefit from (1) building more closely on the experience of social scientists working with local peoples, (2) homogenizing the methodological approach, and (3) covering previously neglected geographic areas of climatic regions." (2015, 118-119)

### What is the European Union doing for itself?

The European Commission has made policy initiatives towards climate change since 1991 and has two major targets for reducing its own greenhouse gas emissions progressively up to 2050, these are the 2020 climate and energy package and the 2030 climate and energy framework. (The European Commission, 2017) The EU has its own emissions trading system that is used to cut greenhouse gas emissions, this tool is used to help it reach its three main targets for its 2020 package, these are 20% cut in greenhouse gas emissions (from previous 1990 levels), 20% of EU energy from renewables and 20% improvement in energy efficiency. (The European Commission, 2017) The EU's 2030 climate and energy framework has three main targets it wishes to achieve that build on from the 2020 project, these are to have at least 40% cuts in greenhouse gas emissions (from 1990 levels), at least 27% share for

renewable energy and at least 27% improvement in energy efficiency, these goals are set as a long-term commitment to the EU's commitment to overall reducing its carbon footprint in the world. (The European Commission, 2017)

If the EU manages to reach these targets by the chosen timeframes they could then become role models to the rest of the world that it is possible for a large population and area to move towards sustainability. Having sustainable and renewable energy with low emissions could become a part of the EU's norms and it could become a pre-requisite for alliances or even membership with the EU. The EU is not a single state, however most of the EU members signed the Paris Agreement and will be making their own attempts to reduce emissions themselves besides reaching the EU's targets.

There is a substantial amount of literature on what the EU are doing in terms of reducing the implications of climate change, the EU is considered as one of the leading actors for adapting to climate change and having sustainable development goals. From Rudiger K.W Wurzel, Duncan Liefferink and James Connelly "There is no shortage of would-be leaders in EU climate change politics. The EU institutions (e.g. European Council, Council of the EU, Commission and the European Parliament), member states and societal actors have all, though to varying degrees and at different time periods, tried to offer leadership in EU and internal climate change politics. Importantly, public support for EU environmental policy in general, and climate change policy in particular, has been consistently high. The economic recession which followed the 2008 financial crises triggered only a moderate drop in public support for EU action on climate change, although considerable variation exists between member states." (2016,3)

The EU have outlines their efforts in terms of promoting sustainable development, "During 2004 and 2005 the EU Sustainable Development Strategy was reviewed in preparation for the adoption of a renewed Strategy in 2006, which reaffirmed the overall aim of achieving a continuous improvement in the quality of life, both for current and for future generations. The renewed EU Sustainable Development (EU SDS) sets out a single, coherent strategy on how the EU will more effectively live up to its long-standing commitment to meet the challenges of sustainable development. The main body of the Strategy is built around seven key challenges, with corresponding operational objectives and targets as well as associated actions and measures. In addition, a number of key objectives and policy guiding principles serve as a basis for the Strategy. Recognising that the unsustainable trends described in the 2001 Strategy still persist, and that new challenges are arising, the renewed EU SDS identifies the following seven key challenges for the EU:

- Climate change and clean energy;
- Sustainable transport;
- Sustainable consumption and production;
- Conservation and management of natural resources;
- Public health;
- Social inclusion, demography and migration;
- Global poverty and sustainable development challenges." (Eurostat: European Commission, 2009)

### The Threat of Climate Change to Pacific Nations

During the 1990s more scientists were studying climatology and that started the growing concern for climate change on this planet, especially for Pacific nations as they already suffer from natural disasters and are under resourced for preventing the effects and controlling them. Some of the potential effects for the Pacific region are sea level rise, changes in wave climate, more intense tropical cyclones and storms, increase in average temperature, changes in average annual and seasonal rainfall, changes in frequency of El Ninos and anti-El Ninos, increase in carbon dioxide concentration, increase in ultraviolet radiation. (Sem & Underhill, 1992). These potential effects will impact on various sectors

for every Pacific nation, these are human health, infrastructure, coastal resources, disaster management, fresh water availability, agriculture, fisheries, forestry, marine ecosystems and tourism. (Australian Government, 2017).

Due to the severity of these factors and what they might impact, there needs to be assurance that what the EU is doing in the Pacific is effective and will not only stop the effects temporarily but permanently. Statistics from 2014 show that there are almost ten million people living in the Pacific nations that are at risk of the effects of climate change, what would happen to these ten million displaced peoples if their countries were deemed as being unable to live in, where do they go? (United Nations Population Fund, 2014). Another issue with the threat of climate change is who is held accountable for the damages made, does public international law provide a substantive basis for holding one State responsible for the impacts of another State? Would Pacific Nations be able to take states with large greenhouse gas emissions to court? What would be the punishments and what would be required of those who lost a court case? (Gerrard and Wannier, 2013).

There is a lot of literature that looks at climate change as a threat to Pacific nations, the literature comes from a range of people in different backgrounds, such as scientists and policy makers. The main areas that literature look at in the Pacific are the sectoral, economic, social and migration implications. Literature that supports the social implication comes from the Asian Development Bank, "The Pacific Region has a rapidly growing population, taxing resources that may be further pressed by the effects of climate change. The Pacific region is currently home to approximately 10.7 million people, with 68% of the total population living in PNG. Over the last 17 years, the region's population had at an average annual growth rate of 2.95%, increasing by 50% over the 1995 level. Rapid population growth creates increasing pressure on a range of resources, including freshwater, food production and land. The additional stress on resource availability arising from rapid population growth, in combination with the vulnerability to climate change, creates a particularly significant set of risks." (2011, 5)

Literature that focuses on the economic implications of climate change in the Pacific state that the economic sectors that will have the most implications will be the tourism and tuna sectors. Literature that supports this comes from Johann D. Bell "The four species of tuna that underpin oceanic fisheries in the tropical Pacific (skipjack, yellowfin, bigeye and albacore tuna) deliver great economic and social benefits to Pacific Island countries and territories (PICTS). Domestic tuna fleets and local fish processing operations contribute 3-20% to gross domestic product in four PICTs and license fees from foreign fleets provide an average of 3-40% of government revenue for seven PICTs. More than 12,000 people are employed in tuna processing facilities and on tuna fishing vessels. Fish is a cornerstone of food security for many PICTs and provides 50-90% of dietary animal protein in rural areas. Several PICTs have planned to (1) increase the benefits they receive from oceanic fisheries by increasing the amount of tuna processed locally, and (2) allocate more tuna for the food security of their rapidly growing populations. The projected effects of climate change on the distribution of tuna in the tropical Pacific Ocean, due to increases in sea surface temperature, changes in velocity of major currents and decreases in nutrient supply to the photic zone from greater stratification, are likely to affect these plans." (2011, 199)

Literature that supports the theory that climate change in the Pacific will in turn effect migration patterns within the region comes from John R. Campbell "There is considerable debate about the links between environmental change (particularly degradation) and migration. This is more so than in the case of climate change and population mobility. While the distinction is not a cut and dried one, there tends to be a division between two schools of thought. First, some working in climate-change impacts foresee large numbers of people being forced to move because of rising sea levels, increases in the magnitude and/or frequency of climate-related extreme events, and other forms of environmental degradation caused by global warming. These observers, who tend to see migration in a negative light, have estimated that very large numbers of people globally will become 'environmental refugees' or be

displaced by the effects of climate change. For example, Norman Myer's suggestion that there may be as many as two hundred million environmental refugees by the time 'global warming takes hold' has gained considerable acceptance." (2014,1)

### Conclusions on Literature Review

The main arguments from this literature review are that sustainable development has become more important in the past two decades, the main point being that sustainable development aims to secure the world's resources and environments for future generations. There is also the argument over negative and positive stakeholders in sustainable development, the negative caring less about the environment and communities it disturbs compared to the positive stakeholder which is more likely to consult community groups and NGOs to ensure that there is as much sustainable development as possible. The Bellagio principles can be used to measure sustainable development goals, however there is the need to update them to current developments as they were created in the 1990s. There is a consensus as to how climate change is caused by scientists, politicians and non-governmental officials, that the increase in greenhouse gas emissions is causing the earth to warm up. There is also another consensus that some of the effects of climate change are sea level rise, changes to rainfall patterns, reduction in snow levels in the northern hemisphere and in glaciers.

There is a vast amount of literature on what the EU are doing in terms of climate change, however the main points that were made from the literature that was gathered are that the EU aims at being a leader in fighting climate change and becoming more reliant on sustainable energy systems. There is also a vast amount of literature on the threat of climate change to Pacific Nations, there is a consensus that this will be the first area that is going to suffer from the most effects of climate change. The Literature states that the bigger issues with climate change in the Pacific are economic, social and sectoral, with the pressing issue of migration leading to climate refugees. Areas for further research would be what would happen if Pacific Nations no longer existed due to climate change, are actors that contribute to much of the greenhouse gas emissions responsible and where do all the 10 million potentially displaced people go and seek refuge. Overall there is a good amount of literature on the areas that will be covered in my thesis, it is good that there are perspectives from people in different fields and there will continue to be more literature as climate change is becoming a higher-ranking issue for many states.

Six key terms that will come up often in this thesis are climate change, sustainable development, renewable energy, fossil fuels, migration and climate refugee. The definitions for these terms can be found in the glossary at the start of the thesis for reference. This thesis is written in the following order, contextual chapters on the current situations and past and current EU climate change projects. It will then have a chapter on theoretical models which will mostly look at how to achieve sustainable development. The next chapter will then look at the method that was used to best answer the research question, using the Bellagio Principles for assessment on EU climate change policies. There will then be a chapter on the empirical results that were gained from the method that was used, these will help to answer the research question. The second to last chapter will be a discussion, this chapter will focus on giving policy recommendations to both the EU and the Pacific Region in terms of fighting climate change and helping to further sustainable development. The final chapter will consist of conclusions of the thesis and recommendations for areas of further research.

This research question and thesis have a fair amount of importance to the world, the fact that climate change is one of the biggest issues of the twenty-first century and for future generations as the climate is always changing. However, due to the earth heating up due to global warming there is no denying that the Pacific Region is going to experience the worst effects of it even though they are smallest contributors. Another key fact that supports the importance is that there are at least ten million people in the Pacific that are at risk to the effects of climate change, there is a concern over what will happen to these nations and their people if they were to go below sea level or if they were severely damaged from the effects of climate change. Some other reasons that support the importance are that this thesis

will the role the EU plays in the Pacific Region, to emphasize the relationship between the EU, NZ and the Pacific and that there is a need for sustainable development and to move from fossil fuels to renewable energy. Besides importance in this thesis, there is also some relevance, reasons for this are that climate change is becoming a higher topic for discussion, some of the Pacific Nations are already experiencing the effects of climate change, the EU has made a commitment to fighting climate change and the Cook Islands was chosen as a case study because it is one of the bigger nations to still heavily rely on fossil fuels.

The research question for this thesis is as follows: “Are the European Union’s Climate Change policies and programs effective in helping to reduce the effects of Climate Change in the Pacific Region and increase sustainable development in the region? with a focus on the Cook Islands as a case study”. The thesis will also include some sub questions that bridge out from the main research question, these are:

- What other international actors commit to helping the Cook Islands to fight the climate change threats?
- How do their policies compare with the EU’s?
- What is the role of the EU?
- What is the role of New Zealand?
- What are the Cook Islands solely doing in fighting climate change?
- How might a collaborative approach from various actors be adopted for helping the Pacific Region in terms of the effects of climate change?

The aims of this thesis are to answer the research question through the methodology and provide further policy recommendations and to also spread awareness of climate change as an issue for the pacific region. The hypothesis for this thesis is that the EU are using effective policies and sustainable development programs in the Pacific to help reduce the effects of climate change, this will be discussed in the conclusion of this thesis to see if it was proven true or false. General outline of the order of the rest of the thesis:

- Contextual chapter (current situation in the overall Pacific region and in the Cook Islands)
- Contextual chapter (EU climate change policies in the overall Pacific region)
- Contextual chapter (EU climate change policies in only the Cook Islands)
- Theoretical models chapter
- Methods chapter
- Empirical results chapter
- Discussion
- Conclusions

The methodology of this thesis is mixed methods, wherein it will use aspects of both Qualitative and Quantitative research methods. This thesis is going to collect both qualitative and quantitative data as climate change and sustainable development can be researched through statistics as a quantitative form of research. The analysis of the EU climate change policies can be assessed through the Bellagio Principles as a qualitative form of research.

### Current Situation in the Pacific Region and in the Cook Islands

Country	Population	Year of Data	Contributions to Global Climate Change (%)	Year of Data
Cook Islands	17,456	2016	0.00012	2017
Fiji	898,760	2016	0.04	2015

Kiribati	114,395	2016	Unknown	Unknown
Marshall Islands	70,000	2017	Unknown	Unknown
Niue	1,611	2011	0.0001	2017
Papua New Guinea	8,000,085	2015	0.2	2006
Solomon Islands	599,419	2016	Unknown	Unknown
Tokelau	1,411	2011	Unknown	Unknown
Tonga	107,122	2016	2.95	2015
Tuvalu	11,000	2017	Unknown	Unknown
Vanuatu	280,000	2016	Unknown	Unknown

Country	Sectors that contribute to Climate Change	Member of the UN Paris Climate Agreement
Cook Islands	Energy, Road Transport	Yes
Fiji	Energy	Yes
Kiribati	Energy	Yes
Marshall Islands	Energy	Yes
Niue	Energy	Yes
Papua New Guinea	Energy, Exports	Yes
Solomon Islands	Energy	Yes
Tokelau	Energy	Yes
Tonga	Energy	Yes
Tuvalu	Energy	Yes
Vanuatu	Energy	Yes

Compared to other countries such as the US and China, the Cook Islands have a relatively low carbon footprint but are still dependent on imported fuels and the cost of electricity is high as nearly all households in the Cook Islands are connected to grid electricity. (GO100% Renewable Energy, 2017) According to the United Nations Framework Convention on Climate Change (UNFCCC), the Cook Islands only contributes to roughly 0.00012% of global carbon emissions, a breakdown of these emissions showed that the sectors that equally contribute the most to these emissions are electricity and road transport. (UNFCCC, 2017) Therefore, the Cook Islands has issues with greenhouse gas emissions from its electricity and road transport, there is a need to help the Cook Islands become more reliable on renewable energy sources such as solar power to reduce the use of fossil fuels. The Cook Islands have developed their own goals in response to climate change and disaster risk management, these consist of: ensuring strong governance arrangements for disaster risk management and climate change adaptation; ensure that high quality risk information is available to inform planning and implementation; enhance effective preparedness response and recovery and to build resilience through effective disaster risk reduction and climate change adaptation. (Pacific Climate Change Portal, 2016)

Fiji contribute to 0.04% of global carbon emissions, it has the same problem as the Cook Islands where it is the energy sector that mainly contributes to this percent. (UNFCCC, 2015) Fiji's biggest climate threats are higher rates of disease due to average temperature rise, increasingly destructive storms as oceans get warmer and weather patterns become more severe, disruptions to agriculture as the intrusion of saltwater damages to existing farmland, Fiji's main island Viti Levu is expected to have economic damages of up to \$52 million per year due to these factors. (UNFCCC, 2017) For Fiji's situation there needs to be a transition from fossil fuel energies to renewable energy and a need to mitigate these factors from climate change. The Government of Fiji have set various priorities for climate change, these are: to mainstream climate change issues in all national and sector policy and planning processes; collect, manage and use accurate and scientifically sound climate change-related data and information; increase awareness and understanding of climate change-related issues across all sectors and at all levels in Fiji; integrate climate change in school curricula, tertiary courses, and vocational, non-formal education and training programmes; reduce the vulnerability and enhance the resilience of Fiji's communities to the impacts of climate change and disasters; reduce Fiji's greenhouse gas emissions and implement initiatives to increase the sequestration and storage of greenhouse gases, ensure sustainable financing for climate change efforts and to effectively participate in and contribute to international and Pacific region climate change negotiations, discussions, commitments and outcomes. (Pacific Climate Change Portal, 2016)

Kiribati is recognized as a least developed country by the UN and contributes the least to climate change in terms of carbon emission, however they are one of the Pacific nations most at risk. (UNFCCC, 2017) It is expected that Kiribati will endure various problems from climate change even though they are not a big contributor to it, some examples of effects are extreme heat waves, increased intensity of cyclones, extinction of coral reefs, damage to health sanitation of fresh water, sea-level rise, coastal erosion and the break-up of former social systems. (The World Bank, 2013) Kiribati has made efforts to increase its adaptation to the effects of climate change through its Kiribati Adaptation Program that went from 2003 to 2016 with three phases, these consisted of Phase I: Preparation (2003-2005), Phase II: Pilot Implementation (2006-2011) and Phase III: Expansion. (Office of the President Republic of Kiribati, 2017) Actions that were made through this program consisted of population settlement planning, improving water supply management, protection of public infrastructure, coastal management protection measures and strengthening laws to reduce coastal erosion. (ibid) Although Kiribati has ran its own adaptation program for climate change, they still continue to make efforts to further the initiatives made from this program and to further reduce their carbon emissions. Kiribati has establish its own national climate change policies for 2014-2023, these are: Strengthening good governance, policies, strategies and legislation; Improving knowledge and information generation, management and sharing; Strengthening and greening the private sector-specific approaches and promoting healthy and resilient ecosystems; Increasing water and food security, with integrated and sector-specific approaches and promoting healthy and resilient ecosystems; Strengthening health-service delivery to address climate change impacts; Promoting sound and reliable infrastructure development and land management; Delivering appropriate education, training and awareness programmes; Increasing effectiveness and efficiency of early warnings and disaster and emergency management; Promoting the use of sustainable renewable sources of energy and energy efficiency; Strengthening capacity to access finance, monitor expenditures and maintain strong partnerships; Maintain the sovereignty and unique identity of Kiribati and Enhancing the participation and resilience of vulnerable groups. (Pacific Climate Portal, 2016)

Marshall Islands is made up of two archipelagic island chains of 29 atolls, the Marshall Islands are located roughly halfway between Hawaii and Australia with a population of roughly 70,000 people. (Central Intelligence Agency, 2017) It has been noted that for the Marshall Islands have already experienced an increase in temperatures, a decrease in annual rainfalls, sea level rise and there has been an increase in ocean acidification. (Australian Government, 2011) For the future climate of the Marshall Islands it is expected that temperatures will continue to increase, there will be an increase in the amount

of very hot days, there will be a change in rainfall patterns, there will be an increase in more extreme rainfall days but there will be less frequent typhoons. (ibid) In terms of the Marshall Islands contributions overall to global climate change, they contribute 1.94 CO<sub>2</sub> emissions per capita as at December 2014, this is miniscule compared to other nations. (multpl, 2017) Roughly 90% of the Marshall Island's national energy needs are fulfilled by expensive imported petroleum products, the main actions that contribute to their carbon emissions are electricity generation, sea transport, land transport, kerosene for lighting on outer islands and cooking. (UNFCCC, 2015) The Marshall Islands have made plans to reduce their contributions to climate change with an agreement of commitment with the UNFCCC where they aim to reduce their emissions of greenhouse gases to 32% below 2010 levels by 2025, and to reduce its greenhouse gases to 45% below 2010 levels by 2030. (ibid) The national climate change priorities that the Marshall Islands have established are to: Strengthen the Enabling Environment for Climate Change Adaptation and Mitigation, including Sustainable Financing; Adaptation and Reducing Risks for a Climate Resilient Future; Increased Energy Security and Low-Carbon future; Disaster Preparedness, Response and Recovery; Building Education and Awareness, Community Mobilization, whilst being mindful of Culture, Gender and Youth. (Pacific Climate Change Portal, 2016)

Niue contributes to roughly 0.0001% of global carbon emissions, its main sector that contributes to most of this percent is its energy sector due to its reliance of fossil fuels. (UNFCCC, 2017) It is anticipated that some of the effects Niue will have from climate change are rising temperatures, an increase in the number of hot days, changing rainfall patterns, more extreme rainfall days, reduced frequency in tropical cyclones, more intense cyclones, sea level will continue to rise and ocean acidification will continue to rise. (Australian Government, 2011) Niue has made a national response to climate change with its Niue National Strategic Plan which runs from 2014 to 2019, it has a vision of Niue ke Monuina (A Prosperous Niue) and is based on seven national development pillars, these are Financial Stability, Governance, Economic Development, Social, Environment, Taoga Niue and Private Sector Development. (UNFCCC, 2017) Niue also has its Niue Strategic Energy Road Map (NiSERM) which outlines Niue's aspirations to meet 80% of its own electricity needs from renewable energy sources by 2025, this plan is considered highly ambitious and they will definitely need support from outside sources. (ibid) The National Climate Change Priorities for Niue consist of raising more awareness; increasing the levels of data collection, storage, sharing and application; increasing adaptation to climate change, increasing mitigation of climate change, increasing the involvement of governance and mainstreaming information do everyone; increasing regional and International Co-operation and to increase the levels of disaster risk management. (Pacific Climate Change Portal, March 2016)

Papua New Guinea contribute to roughly 0.2% of global carbon emissions as of 2006, it contributes more than the previous Pacific nations due to having the largest population in all of the Pacific Nations and a larger land mass. (Mongabay, 2009) According to the Australian Government's Climate Change program, it is expected that average temperatures will continue to rise, rainfall patterns will change, sea level continues to rise, ocean acidification will continue to rise, there will be more extreme rainfall days, less frequent but more intense tropical cyclones and there will be a rise in hot days and a decline in cooler weather. (Australian Government, 2011) Papua New Guinea produces fossil fuels due to its access to natural gas reserves and uses an unsustainable energy supply that contributes to its carbon emissions, it needs to move to more renewable sources of energy. (Promoting Energy Efficiency in the Pacific, 2017) According to the UNFCCC, Papua New Guinea has communicated that it is aiming to decrease its Greenhouse Gas emissions by at least 50% before 2030 and it has communicated that it will become carbon-neutral before 2050. (UNFCCC, 2011) National climate change priorities to be achieved by 2030 for Papua New Guinea are to: have an adequate level of resources available to address risk transfer and adaptation initiative; have more than 89 meteorological stations with at least one station in every station in every district; increase investments in clean energy and contribute to reducing greenhouse gases and to engage effectively in global climate change negotiations. (Pacific Climate Change Portal, 2016)

Solomon Islands is made up of a chain of six large and small islands in the South Pacific, it covers an area roughly of 28,450 sq km and its main islands are Guadalcanal, Makira, San Cristoval, Vella Lavella, Choiseul, Rennell, New Georgia and the Santa Cruz group. (Encyclopedia.com, 2016) In terms of climate change, it has been noted over the past twenty years in the Solomon Islands temperatures have increased, sea level has risen, ocean acidification has risen and there has been no change to rainfall patterns. (Australian Government, 2011) For future patterns of climate change in the Solomon Islands, it is expected that temperatures will continue to rise, there will be an increase in the amount of hot days, there will be changes in rainfall patterns with more extreme rainfall days and less frequent but more intense cyclones. (ibid) In 2015 the Solomon Islands submitted their climate action plan in accordance with the 2015 Paris Agreement, with outlines of reducing carbon emissions over the next twenty years. (UNFCCC, 2015) The Solomon Islands have established ten national climate change priorities, these are: Enabling Environment and Institutional Arrangements; Mainstreaming of Climate Change; Vulnerability and Adaptation and Disaster Risk Reduction; Mitigation; Research and Systematic Observation; Technology Transfer; Education, Awareness and Capacity Building; Finance and Resource and Mobilization; Partnership and Co-operation and Monitoring and Evaluation. (Pacific Climate Portal, 2016)

Tokelau is a made up of three low-lying atolls in the Pacific Region with a population of roughly 1,400 people, it is part of the Realm of New Zealand and contributes to less than one-hundredth of the world's carbon emissions yet it is most at risk to the effects of climate change. (Government of Tokelau, 2015) Through the effects of climate change, it is expected that Tokelau will suffer from more intense tropical cyclones, droughts and most importantly sea level rise, Tokelau is also one of the most economically vulnerable atolls with heavy reliance on imported petroleum and bunker fuels with a lack of infrastructure which makes it difficult for the attraction of foreign investment. (Government of Tokelau, 2016) Due to these factors, and the expectation that Tokelau will be one of the first nations to suffer the worst from climate change before other nations, there is an expectation for other nations to help in terms of building resilience and mitigating the effects of climate change. New Zealand will also be expected to play a major role in this nation due to the relationship between Tokelau and New Zealand, Tokelau has made efforts to move from fossil fuels to renewable energy and to reduce their carbon emission overall. Tokelau's national climate change policies consist of: enhancing resilience to immediate and long-term threats to the people of Tokelau and the economy and ecosystems; to reduce the impact that extreme weather and climate change has on the three villages; to enact laws and guidelines for using natural resources wisely; to explore and adopt a comprehensive, integrated approach to climate change risk management that provides timely information, products and services, such as understanding patterns and trends of cyclone frequency and intensity; to ensure that Tokelau is fully included as part of the New Zealand climate change adaptation and mitigation work programme; to improve access to short-term weather forecasts and seasonal climate predictions; to access information specific to Tokelau on how the climate and sea-level may change in the future for each community and implications for such changes; to integrate extreme weather and climate change-related considerations into the national planning and strategy documents, community infrastructure development, village planning and activities; to complete seawall, housing and water storage projects and ensure maintenance of structures over time; to increase awareness of weather extremes and climate change-related issues and how it affects all members of the community; to identify and implement appropriate village level activities to reduce the impacts that climate change will have on Tokelau; to develop and implement laws prohibiting sand-mining and coral mining for construction and to undertake assessment to identify areas where sand deposits are sustainable for utilisation. (Pacific Climate Change Portal, 2016)

Tonga contributes to roughly 2.95% of global carbon emissions as of 2015, its main sector that contributes to most of this percent is its energy sector. (Kingdom of Tonga, 2015) It is anticipated that some of the effects Tonga will have from climate change are rising annual air temperatures and sea surface temperatures, rainfall patterns will decrease in the dry season and increase in the wet season, extreme rainfall days are projected to occur more often, frequency of tropical cyclones will decrease,

the intensity of the tropical cyclones will increase, sea levels are project to rise and ocean acidification will continue to rise. (International Climate Change Adaptation Initiative, 2017) Tonga have however made goals in line with the UFCC, these are that by 2020 they want to have 50% of electricity generation from renewable sources, by 2030 have 70% of electricity from renewable sources by 2030, to reduce sector emissions in Transport, Agriculture, Waste management and Reforestation. (Kingdom of Tonga, 2015) Tonga's National Climate Change Priorities consist of: full mainstreaming the goal of a resilient Tonga into government legislation, policies and planning at all levels; to implement a coordinated approach to the collection, monitoring, management and use of all relevant data and information; to develop a coordinated, multi-sectoral approach to research for building a resilient Tonga; to develop the capability for resilience building responses throughout government, the private sector and civil society; to implement actions that are designed towards the building of a resilient Tonga by 2035 at national, island and community level and to implement financial actions that are designed towards the building of a resilient Tonga by 2035 at national, island and community level. (Pacific Climate Change Portal, 2016)

Tuvalu is one of the smallest and most remote pacific nation on earth, it is made up of nine atolls, these are Nanumea, Nui, Vaitupu, Nukufetau, Funafuti, Nukulaelae, Nanumaya, Niutao and Niulakita. (Central Intelligence Agency, 2017) Of these nine coral atolls, six have lagoons that are open to the ocean, two have landlocked lagoons and one has no lagoon. (ibid) It is estimated that as of July 2017 it has a population consisting of just over 11,000 people and more than half of the population reside on the Funafuti atoll which has an open lagoon. (ibid) It has been researched that the current climate situation for Tuvalu consists of an increase in average temperature, no changes to rainfall patterns, rise in sea level and there has been an increase in ocean acidification. (The Australian Government, 2011) For future patterns for Tuvalu's climate patterns, it is expected that temperatures will continue to increase, there will be an increase in the amount of hot days, there will be changes to rainfall patterns, there will be more extreme rainfall days, there will be less frequent but more intense tropical cyclones, sea level will continue to rise and there will also be an increase in ocean acidification. (ibid) Tuvalu contributes little to overall carbon emissions, most of its emissions come from electricity generation, however it has set targets to the UNFCCC for its goals in reducing its carbon emissions. These are to commit to the reduction of emissions of green-house gases from the electricity generation(power) sector, by 100% by 2025, its indicative quantified economy-wide target for a reduction in total emissions of GHGs from the entire energy sector to 60% below 2010 levels by 2025 and that these emissions will be further reduced from other key sectors such as agriculture and waste. (Government of Tuvalu, 2015) Tuvalu have established their own national climate change incentives for (2012-2021), these are: Strengthening Adaptation Actions to Address Current and Future Vulnerabilities; Improving Understanding and Application of Climate Change Data, Information and Site Specific Impacts Assessment to Inform Adaptation and Disaster Risk Reduction Programmes; Enhancing Tuvalu's Governance Arrangements and Capacity to Access and Manage Climate Change and Disaster Risk Management Finances; Developing and Maintaining Tuvalu's Infrastructures to Withstand Climate Change Impacts, Climate Variability, Disaster Risks and Climate Change Projection; Ensuring Energy Security and a Low Carbon Future for Tuvalu; Planning for Effective Disaster Preparedness, Response and Recovery; Guaranteeing the security of the People of Tuvalu from the Impacts of Climate Change and the Maintenance of National Sovereignty. (Pacific Climate Change Portal, 2016)

Vanuatu is located in the Pacific and is made up of more than eighty islands, however roughly sixty-five of these islands are inhabited, as of July 2017 it has a population of just over 280,000 people and much of the population live in the three largest islands, Espiritu Santo, Malakula and Efate. (Central Intelligence Agency, 2017) According to the Australian Government, the current climate patterns for Vanuatu consist of an increase in average temperatures, a decrease in wet season rainfall, sea level rise and an increase in ocean acidification. (The Australian Government, 2011) Future climate patterns for Vanuatu consist of an increase in temperatures, an increase in hot days, a change to rainfall patterns, more extreme rainfall days, less frequent but more intense tropical cyclones, a continued rise in sea

level and an increase in ocean acidification. (ibid) Vanuatu has made a commitment to reducing their carbon footprint through their Vanuatu Climate Change and Disaster Risk Reduction Policy 2016-2030, for example some of the goals are to: “encouraging the increased use of renewable energy sources in power generation and lighting activities with the participation of all energy service providers, supporting the implementation of green growth policy statements in the National Environment Policy.” (Government of the Republic of Vanuatu, 2015) Vanuatu have established their own national climate change priorities where they aim to work in the following sectors to reduce their contributions to climate change, these consist of: Agriculture, Human Health, Freshwater Resources, Coastal Developments, Coastal Marine Environments, and Forestry. (Pacific Climate Change Portal, 2016)

## Fundamental Approaches to climate change: EU, Pacific Region and the Cook Islands

### The European Union:

In April 2013, the European Commission adopted its own strategy to the adaptation of climate change, it has set out a framework and mechanisms that will help prepare the EU for current and future climate impacts to a new level. “To avoid the most serious risks of climate change, particularly large-scale irreversible, the international community has agreed that global warming must be kept below 2 degrees compared to the pre-industrial temperature. International action to reduce greenhouse gas emissions will therefore be needed for decades to come. But however successful these mitigation efforts prove to be, the impact of climate change will increase in the coming decades due to the delayed impacts of past and current greenhouse gas emissions. Europe and other parts of the world therefore have no choice but to take adaptation measures to deal with unavoidable climate impacts and their economic, environmental and social costs. By prioritising coherent, flexible and participatory approaches, it will be much cheaper to take early, planned adaptation action than to pay the price of not adapting to climate change.” (European Commission, 2013) This strategy consists of three objectives:

1. Promoting action by member states: The commission encourages all member states to adopt comprehensive adaptation strategies and will provide guidance and funding to help them build up their adaptation capacities and take action. The commission will also support adaptation in cities by launching a voluntary commitment based on the Covenant of Mayors initiative.
2. Promoting better informed decision making: By addressing gaps in knowledge about adaptation and further developing the European Climate Adaptation Platform as the ‘one-stop shop’ for adaptation information in Europe.
3. Promoting adaptation in key vulnerable sectors: Through agriculture, fisheries and cohesion policy, ensuring that Europe’s infrastructure is made more resilient, and encouraging the use of insurance against natural and man-made disasters. (ibid)

This strategy is based on eight actions, these are:

1. Encourage all Member States to adopt comprehensive adaptation strategies;
2. Provide LIFE funding to support capacity building and step up adaptation action in Europe (2014-2020);
3. Introduce adaptation in the Covenant of Mayors framework (2013/2014);
4. Bridge the knowledge gap;
5. Further develop Climate-ADAPT as the ‘one stop shop’ for adaptation information in Europe;
6. Facilitate the climate-proofing of the common Agricultural Policy (CAP), the Cohesion Policy and the Common Fisheries Policy (CFP);
7. Ensuring more resilient infrastructure;

8. Promote insurance and other financial products for resilient investment and business decisions. (ibid)

## The Pacific Region

In September 2016, as one unit, the Pacific Region published the “Framework for Resilient Development in the Pacific: An integrated approach to address Climate Change and Disaster Risk Management (FRDP) 2017-2030”. This framework began development in 2012 at the Pacific Island Leaders Forum, it was developed on the basis of reviews of the two previous regional frameworks, so that it incorporate<sup>3</sup>s lessons learned from their implementation, and the document was also developed through an extensive and inclusive engagement process with stakeholders, from national and communities to regional and international levels. The EU supports this framework and the current members of the Pacific Island Forum Secretariat are Australia, Cook Islands, Federated States of Micronesia, Fiji, Kiribati, Nauru, New Zealand, Niue, Papua New Guinea, Republic of Marshall Islands, Republic of Palau, Samoa, Solomon Islands, Tonga, Tuvalu and Vanuatu. (Pacific Island Forum Secretariat, 2016) The goals for this framework are:

1. Strengthened integrated adaptation and risk reduction to enhance resilience to climate change and disasters: Pursuing this goal entails successfully managing risks caused by climate change and disasters in an integrated manner where possible, within social and economic development planning processes and practices, in order to reduce the accumulation of such risks, and prevent the creation of new risks or loss and damage. This goal will contribute to strengthening resilient development and achieving efficiencies in resources management.
2. Low-carbon Development: Pursuing this goal revolves mainly around reducing the carbon intensity of development processes, increasing the efficiency of end-use energy consumption, increasing the conservation of terrestrial and marine ecosystems, and enhancing the resilience of energy infrastructure. This goal will contribute to having more resilient energy infrastructure in place, and to increase energy security, while decreasing net emissions of greenhouse gases.
3. Strengthened disaster preparedness, response and recovery: Pursuing this goal includes improving the capacity of PICTs to prepare for emergencies and disasters, thereby ensuing timely and effective response and recovery in relation to both rapid and slow onset disasters, which may be exacerbated or caused by climate change. Disaster preparedness, response and recovery initiatives will reduce undue human losses and suffering, and minimize adverse consequences for national, provincial, local and community economic, social and environment systems. (ibid).

This framework uses global frameworks from the UNFCCC Paris Agreement on Climate Change 2015 and the Sendai Framework for Disaster Risk Reduction 2015-2030. Areas of co-operation this regional framework will be using from global frameworks are: Early warning systems, Emergency preparedness, Slow onset events, Events that may involve irreversible and permanent loss and damage, Comprehensive risk assessment and management, Risk insurance facilities- climate risk pooling and other insurance solutions, Non-economic losses, Resilience of communities, livelihoods and ecosystems. (ibid) The Guiding Principles for this framework are:

- Integrate climate change and disaster risk management (where possible) and mainstream into development planning including policy making, planning, financing, programming and implementation, to build resilience;
- Strengthen and develop partnerships across countries and territories, including sharing of lessons learned and best practices, but without compromising sovereignty and related considerations;

- Protect human rights, such as the right to life, safety, dignity, non-discrimination, and access to basic necessities, to ensure that every person has equitable access to humanitarian and development assistance, according to his or her specific needs;
- Prioritise the needs and respect the rights of the most vulnerable, including but not limited to women, persons with disabilities, children, youth and older persons, and facilitate their effective participation in planning and implementation of all activities.
- Integrate gender considerations, advocate and support equitable participation of men and women in the planning and implementation of all activities;
- Ensure the resilient development is sustainable and aims to alleviate poverty and hardship;
- Incorporate ecosystem-based services and functions in resilience building;
- Advocate open and ready access to reliable sources of traditional and contemporary information;
- Build on and help reinforce cultural and traditional and contemporary information;
- Build on and help reinforce cultural and traditional resilience and knowledge of communities, who should be engaged as key actors in designing plans, activities and solutions that are of relevance to them;
- Acknowledge and factor in traditional holistic worldview, where spirituality plays an integral role in constructing meaningful life and pro-active existence. (ibid)

## The Cook Islands

In 2013, the Government of the Cook Islands released ‘Kaveinga Tapapa’ which is their Climate & Disaster Compatible Development Policy for 2013-2016. This is their most recent climate change policy that they had produced, it was made in accordance with the UNDP and its main goals are:

1. Climate and disaster resilient development (adaptation and disaster mitigation linked to development);
2. Low carbon development (CC mitigation linked to development);
3. Strengthening the enabling environment for ensuing development that is climate and disaster resilient and reduces the carbon footprint of the Cook Islands. (Cook Islands Government, 2016)

The main goal of this Cook Island Policy is to ‘Provide an integrated and coherent policy and planning framework that directs country led and coordinated adaptation and mitigation actions and resources towards climate and disaster compatible development outcomes.’ (ibid) Overall, the main strategic outcomes for the whole policy are to:

- Increase access to sustainable water, food, energy and social security;
- Increase community preparedness and adaptation to risks and impacts;
- Effective and sustained use of land, sea, and natural resources;
- Increase safeguarded biodiversity and eco-systems;
- Reduce greenhouse gas emissions
- Reduce reliance on fossil fuels
- Improve energy security
- Enhance Co-ordination and strengthened implementation through integrated institutional and implementing arrangements across communities. (ibid)

For each goal, the Cook Island Government has established strategic objectives, these are:

1. Climate and Disaster Resilient Development:

- Implement climate change and disaster risk assessment and management measure that strengthen infrastructure and safeguard essential services, natural ecosystems, economic development and livelihood systems in key sectors;
  - Access and build bodies of knowledge that research and promote traditional knowledge and coping mechanisms alongside scientific investigations and evidence to drive decision making and actions;
  - Bolster the conservation and management of biodiversity and eco-systems through integrated holistic approaches.
2. Low Carbon Development:
- Enable sustainable development through in proven low carbon infrastructure and technology development while becoming carbon neutral through effective measures in land and sea use, electricity, energy efficiency, transport and waste management.
3. Enabling Environment
- Ensure continuous climate and disaster financing from government as well as new and additional funding from partners that s effectively co-ordinated and managed using local systems in addressing financial risks associated with immediate and slow onset events.
  - Build the capacity of people and systems to implement national, sector and community C & DCD strategies and initiatives through effective processes and procedures including gender mainstreaming and targeted human resource development opportunities including research, assessments, training and education.
  - Strengthen governance and management arrangements for C & DCD including policy, fiscal, compliance, legislative and regulatory frameworks, data management, performance monitoring and reporting frameworks that enable the ongoing assessment and management of disaster and climate risks and impacts. (ibid)

### EU Climate Change Policies/Projects in the Pacific

- Climate and Oceans Support Program in the Pacific (2012-2017)
- Pacific Islands Climate Prediction Project (2003-2017)
- Pacific Adaptation to Climate Change (PACC) (2009-2014)
- Secretariat of the Pacific Community- Global Climate Change Alliance: Pacific Small Island States (2011-2016)
- PIF Special Training on Climate Change (2013)

### EU Climate Change Policies/Projects in the Cook Islands

- Strengthening the resilience of our islands and our communities to climate change (SRICC) (2012-2017)
- Asset Management for Sustainable and improved infrastructure Services Delivery (2014-2015)
- Cook Islands: Cyclone Emergency Assistance Project formerly Emergency Rehabilitation Project (formerly Emergency Rehabilitation Programme) (2005-2010)
- Solar Photovoltaic Power Generation Capacity in Cook Island (2014-2017)

### Theoretical Models

The main theory that will be used in this thesis when looking at climate change in the Pacific Region comes from Susan Baker, a Social Science Professor from Cardiff University, one of her main fields of Research is Environmental Governance in the EU. (Cardiff University, 2017) Baker theorises that

Sustainable Development refers to the many processes and pathways to reconcile the ecological, economic and social dimensions of life. This can include, for example, the promotion of sustainable agriculture and forestry, sustainable production and consumption, good government, research and technology transfer, education and training, recognition of cultural values and different forms of knowledge, sustainability is the long-term goal, the goal of attaining a more sustainable world. (Baker 2016, 9) Baker refers a lot of her research to the Brundtland Report which was created by the UN as a means of working towards protecting the current planet for current and future generations. It consists of twelve key areas, these are:

1. Common Concerns: A Threatened Future, Symptoms and Causes, New Approaches to Environment and Development;
2. Towards Sustainable Development: The Concept of Sustainable Development, Equity and the Common Interest, Strategic Imperatives;
3. The Role of the International Economy: The International Economy, the Environment, and Development, decline in the 1980s, Enabling Sustainable Development. A Sustainable World Economy;
4. Population and Human Resources: The Links with Environment and Development, the population perspective, a policy framework;
5. Food Security: Sustaining the Potential, Achievements, Signs of Crisis, The Challenge, Strategies for Sustainable Food Security, Food for the Future;
6. Species and Ecosystems: Resources for Development, Character and Extent, Extinction Patterns and Trends, some causes of Extinction, Economic Values at Stake, New Approach-Anticipate and Prevent, International Action for National Species, Scope for National Action, the Need for Action;
7. Energy: Choices for Environment and Development, Fossil Fuels, Nuclear Energy, Wood Fuels, Renewable Energy, Energy Efficiency, Energy Conservation Measures;
8. Industry: Producing More with Less, Industrial Growth and its Impact, Sustainable Industrial Development in a Global Context, Strategies for Sustainable Industrial Development;
9. The Urban Challenge: The Growth of Cities, The Urban Challenge in Developing Countries, International Cooperation.
10. Managing the Commons: Oceans, Space, Antarctica.
11. Peace, Security, Development, and the Environment: Environmental Stress as a Source of Conflict as a cause of Unsustainable Development, Towards Security and Sustainable Development.
12. Towards Common Action: Proposals for Institutional and Legal Change: The Challenge for Institutional and Legal Change, Proposals for Institutional and Legal Change, a call for action. (United Nations World Commission on Environment and Development, 1987)

When assessing sustainable development as a theory, Baker looks at the Brundtland development paradigm, in her words, it consists of:

1. Reviving growth:
  - Changing the quality of growth: making it less material- and energy intensive and more equitable in its impact;
  - Meeting essential needs for jobs, food, energy, water and sanitation;
  - Merging environmental and economic considerations in decision making.
2. Population and human Resources:
  - Reducing population growth to sustainable levels;
  - Stabilising population size relative to available resources;
  - Dealing with demographic problems in the context of poverty elimination and education.
3. Food Security:

- Addressing the environmental problems of intensive agriculture;
  - Reducing agricultural subsidies and protection in the North;
  - Supporting subsistence farmers;
  - Linking agricultural production to conservation;
  - Shifting the terms of trade in favour of small farmers;
  - Addressing inequality in access to and distribution of food;
  - Introducing land reform.
4. Loss of Species and genetic resources
- Maintaining biodiversity for moral, ethical, cultural, aesthetic, scientific and medical reasons;
  - Halting the destruction of tropical forests;
  - Building a network of protected areas;
  - Establishing an international species convention;
  - Funding biodiversity preservation;
  - Conserving and enhancing the natural resource base.
5. Energy
- Establishing safe and sustainable energy pathways;
  - Providing for substantially increased primary energy use by the Third World;
  - Ensuring that economic growth is less energy intensive;
  - Developing alternative energy systems;
  - Increasing energy efficiency, including through technological developments and pricing policies.
6. Industry
- Producing more with less;
  - Promoting the ecological modernisation of industry;
  - Accepting environmental responsibility, especially by trans-national corporations;
  - Achieving tighter control over the export of hazardous material and wastes;
  - Ensuring a continuing flow of wealth from industry to meet essential human needs;
  - Reorienting technology and the management of risk.
7. Human Settlement and land use
- Confronting the challenge of urban growth;
  - Addressing the problems caused by population shifts from the countryside;
  - Developing settlement strategies to guide urbanisation;
  - Ensuring that urban development is matched by adequate services provision. (Baker, 2016, 33-34)

Baker has used the Brundtland approach to critique her theory of sustainable development and has summarised it as following:

- Links Environmental degradation to economic, social and political factors;
- Presents sustainable development as a model of social exchange;
- Constructs a three-pillar approach: reconciliation of the social, economic and ecological dimensions of change;
- Takes a positive attitude towards development: environmental protection and economic development can be mutually compatible goals and may even support each other;
- Argues that the state of technology and social organization limit development, but progress in these areas can open up new development possibilities;
- Adopts a global focus, including in relation to planetary limits;
- Recognises that there are ultimate biophysical limits to growth;

- Makes explicit the needs of the poor, especially in the developing world;
- Argues that the planetary ecosystem cannot sustain in the extension of the high consumption rates currently enjoyed in industrialised countries upwards to the global level;
- Holds that the consumption patterns of the North are driven by wants not needs;
- Challenges the North to reduce its consumption levels to within the boundaries set by ecological limits and by considerations of equity and justice;
- Calls for new models of environmental governance, ranging across all levels, from the local to the global;
- Acknowledges the responsibility that present generations have towards future generations;
- Has achieved authoritative status within international environmental and development discourse and international environmental governance structures and legal frameworks. (ibid, 34-35)

The Normative principles of Sustainable Development that Baker has proposed through the Brundtland development paradigm, consist of:

- Principle of Need: Meeting the essential needs of both present and future generations, the satisfaction of human needs and aspirations is the major objective of sustainable development. It goes beyond basic needs in life to the aspiration for an improved quality of life for all, it encourages the consumption standards that are within bounds of the ecologically possible and to which all can reasonably aspire.
- Principle of Inter-Generational Equity: Equality between generations through present policies that will benefit current and future generations.
- Principle of Intra-Generational Equity: Equity between people in the same generation, for example the current relationship between developed countries and developing countries.
- Principle of Common but Differentiated Responsibilities: This is the idea of environmental responsibility for governments, they are held responsible for protecting and improving the environment for present and future generations.
- Principle of Justice: This principle is required to ensure that the process of attaining sustainability is legal and does not harm anyone or the environment.
- Principle of Participation: The promotion of increased participation in societies allows the construction of a ‘shared public basis’ where legitimacy and acceptance of potential restrictions and corrections can be made possible.
- Principle of Gender Equality: This principle is required because equitable participation of women in environmental decision making is also required, not least so as to give women space to discuss and identify their needs. In addition, the insights, experience and knowledge that women bring can help identify new policy situations to better promote sustainable development. (Baker 2016, 44-55)

Looking at Sustainable Development Theory’s historical roots, it is considered a new development model that emerged during the late 20<sup>th</sup> Century, however the concept is far older than the theory and development model. (Waas, Huges, Verbruggen, Wright, 2011) Throughout human history there has always been a concern for a balance between needs of raw materials for food, clothing, shelter, energy balanced against environmental limits of ecosystems, this was documented in 1713 by Hanns Carl von Carlowitz in his German term “nachhaltende nutzung” (sustainable use), when he wrote about sustainable forestry. (ibid) Following the end of World War II there was economic development for western countries, this did not spread to developing countries during the 1970s and poverty increase, so the idea of development was pushed due to these factors. During the 1980s the idea of protecting the environment and promoting actions that would not harm the environment arose, we then get the theory of Sustainable Development. In a time period less than fifty-year, sustainable development has grown from an alternative view on development towards development

to an acknowledged and formal politically endorsed development model, it has reached some milestones:

- United Nations Conference on the Human Environment (UNCHE; 1972)
- World Conservation Strategy (WCS: 1980)
- Our Common Future (1987)
- United Nations Conference on Environment and Development (UNCED; 1992)
- United Nations Millennium Summit (2000)
- Earth Charter (2000)
- United Nations World Summit on Sustainable Development (WSSD; 2002)
- Rio+ United Nations Conference on Sustainable development (UNCSD, 2012) (ibid)

There is a high probability that Sustainable Development will continue to be used in the future due to its concepts for future generations and the future of the planet and sustainability. For many nations it is one of their priorities among other interests, some nations are willing to help developing nations with their efforts of sustainable development as it is not only at an individual level but a global one.

Baker argues that through aiming for sustainable development through policies, mitigation and adaptation to climate change can be achieved. “Mitigation refers to technological change and substitution that reduce resource inputs and emissions per unit of output. Mitigation means implementing policies to reduce GHG emissions and enhancing sinks, that is activities or mechanisms which remove a GHG from the atmosphere, such as a forest.” (Baker 2016, 174) “Adaptation involves initiatives and measures to reduce the vulnerability of natural and human systems against actual or expected climate change impacts, while not necessarily dealing with the underlying cause of those impacts. Examples include raising river or coastal dikes, constructing houses on stilts, and planting and restoring mangroves to provide a coastal buffer against storm surges.” (ibid) A temporary theoretical solution that Baker suggests that could provide some assistance towards mitigation and adaptation of climate change is Geoengineering. “Geoengineering is the intentional manipulation of the environment at the global scale, a variety of geoengineering schemes have been proposed, or at least envisioned. An Example of geoengineering is Carbon capture and sequestration, this process involves capturing CO<sub>2</sub> from emissions before they enter the atmosphere. This captured carbon could then be stored in deep underground rock formation.” (Baker 2016, 175) The theoretical concept of geoengineering is still in theory rather than practise, however the biggest controversy or potential issue with this theory is that it is unknown what plausible events could occur if mankind were to attempt to, in theory, control the weather in order to adapt and mitigate the effects of climate change.

## Methods

The Research question for this thesis is essentially, “How effective are the European Union’s climate change policies in the Pacific, especially in the Cook Islands” The hypothesis is that from studying the EU’s actions in development policy, the EU will be providing effective climate change policies in the Pacific Region and they will help work towards the theory of sustainable development. The way in which the effectiveness will be measured will be through measuring the policies and projects against the Bellagio Principles that were mentioned in the literature review. The dependent variable of this research is how effective the EU’s climate change policies are in the Pacific after they are measured against the Bellagio Principles to determine if they are helpful towards reducing the effects of climate change and if they contribute to increasing sustainable development. The independent variable are the EU’s Climate Change Policies and Projects in the Pacific Region as these can be looked at and measured. Some Sub Questions that may arise in this thesis are:

- What other international actors commit to helping the Cook Islands to fight the climate change threats?
- How do their policies compare with the EU’s?

- What is the role of the EU?
- What are the Cook Islands solely doing in fighting climate change?
- How might a collaborative approach from various actors be adopted for helping the Pacific Region in terms of the effects of climate change?

The Research Design of this thesis is a Nomothetic approach, wherein there will be a generalisation of climate change and its effects to the whole Pacific Region and how the EU are helping, then it will focus on the Cook Islands as a case study. This research has a Causal research concept, this thesis is designed to determine whether one or more variables causes or affects one or more outcome variables: so how do the EU's climate change policies and programs influence the effects of climate change in the Pacific Region and do they increase the rate of sustainable development in the region.

## Empirical Results

Project Name	Guiding Vision and Goals	Holistic Perspective
Strengthening the resilience of our islands and our communities to climate change (SRICC)	met	met
Asset Management for Sustainable and improved infrastructure Services Delivery (2014-2015)	met	met
Cook Islands: Cyclone Emergency Assistance Project (formerly Emergency Rehabilitation Project)	met	met
Solar Photovoltaic power generation capacity in Cook Islands	met	met
Climate and Oceans Support Program in the Pacific	met	met
Pacific Islands Climate Prediction Project 2003	met	met
Pacific Adaptation to Climate Change (PACC)	met	met
Secretariat of the Pacific Community- Global Climate Change Alliance: Pacific Small Island States	met	met

PIF Special Training on Climate Change	met	met
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Project Name	Essential Elements	Adequate Scope
Strengthening the resilience of our islands and our communities to climate change (SRICC)	met	met
Asset Management for Sustainable and improved infrastructure Services Delivery (2014-2015)	met	not met
Cook Islands: Cyclone Emergency Assistance Project (formerly Emergency Rehabilitation Project)	not met	met
Solar Photovoltaic power generation capacity in Cook Islands	met	met
Climate and Oceans Support Program in the Pacific	met	met
Pacific Islands Climate Prediction Project 2003	met	met
Pacific Adaptation to Climate Change (PACC)	met	met
Secretariat of the Pacific Community- Global Climate Change Alliance: Pacific Small Island States	met	met
PIF Special Training on Climate Change	met	met

Project Name	Practical Focus	Openness
Strengthening the resilience of our islands and our communities to climate change (SRICC)	met	met
Asset Management for Sustainable and improved infrastructure Services Delivery (2014-2015)	met	not met
Cook Islands: Cyclone Emergency Assistance Project (formerly Emergency Rehabilitation Project)	met	not met
Solar Photovoltaic power generation capacity in Cook Islands	met	not met
Climate and Oceans Support Program in the Pacific	met	met
Pacific Islands Climate Prediction Project 2003	met	met
Pacific Adaptation to Climate Change (PACC)	met	met
Secretariat of the Pacific Community- Global Climate Change Alliance: Pacific Small Island States	met	met
PIF Special Training on Climate Change	met	not met

<b>Project Name</b>	<b>Effective Communication</b>	<b>Broad Participation</b>
Strengthening the resilience of our islands and our communities to climate change (SRICC)	not met	not met
Asset Management for Sustainable and improved infrastructure Services Delivery (2014-2015)	met	not met
Cook Islands: Cyclone Emergency Assistance Project (formerly Emergency Rehabilitation Project)	met	not met
Solar Photovoltaic power generation capacity in Cook Islands	met	not met
Climate and Oceans Support Program in the Pacific	met	met
Pacific Islands Climate Prediction Project 2003	met	met
Pacific Adaptation to Climate Change (PACC)	met	not met
Secretariat of the Pacific Community- Global Climate Change Alliance: Pacific Small Island States	met	met
PIF Special Training on Climate Change	not met	not met

<b>Project Name</b>	<b>Ongoing Assessment</b>	<b>Institutional Capacity</b>
Strengthening the resilience of our islands and our communities to climate change (SRICC)	not met	not met
Asset Management for Sustainable and improved infrastructure Services Delivery (2014-2015)	not met	not met
Cook Islands: Cyclone Emergency Assistance Project (formerly Emergency Rehabilitation Project)	met	not met
Solar Photovoltaic power generation capacity in Cook Islands	met	not met
Climate and Oceans Support Program in the Pacific	met	not met
Pacific Islands Climate Prediction Project 2003	not met	met
Pacific Adaptation to Climate Change (PACC)	not met	met
Secretariat of the Pacific Community- Global Climate Change Alliance: Pacific Small Island States	met	met
PIF Special Training on Climate Change	not met	not met

## Analysis



For the Guiding Vision and Goals assessment from the Bellagio Principles all of the programmes that were analysed met the criteria of:

- Be Guided by a clear vision of sustainable development that define the vision.

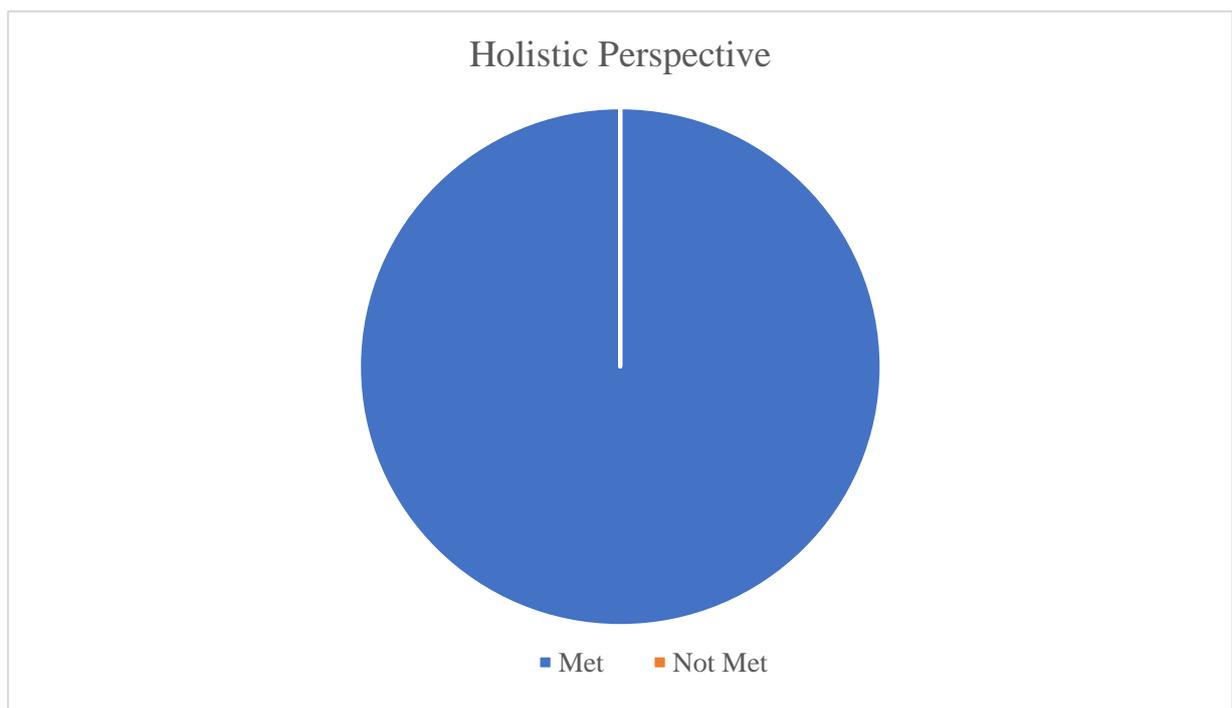
Examples that support this analysis, from the “Strengthening the Resilience of our Islands and our Communities to Climate Change (2012-2017)”:

- Strengthening and implementing climate change adaptation and disaster risk reduction at national level: This project will develop capacity for efficient and effective support at national level for disaster risk reduction and adaptation initiatives in the Pa Enuu;
- Strengthening capacities for climate change adaptation and disaster risk reduction in the Pa Enuu: Key Players in Pa Enuu development have the capacity to reflect disaster risk management and adaptation considerations when planning, making decisions and during operations revisions to national forestry policy and plans, enhanced coordination and forestry-related early warning systems, and increased capacities of government officials in climate adaptation;
- Implementing climate change adaptation and disaster risk reduction measures in the Pa Enuu: the project will result in enhanced resilience to climate change, including weather- and climate-related disasters, for all 11 inhabited Pa Enuu;
- Climate change adaptation knowledge management: This project will generate lessons learned and best practices improve the effectiveness of initiatives to enhance the resilience of Pa Enuu and other vulnerable communities. (UNDP, 2012)

From the “Secretariat of the Pacific Community- Global Climate Change Alliance: Pacific Small Island States”:

- Support the governments of the Cook Islands, Kiribati, Marshall Islands, Micronesia, Nauru, Niue, Palau, Tonga, Tuvalu and regional bodies’ efforts in tackling the adverse effects of climate change, in line with Pacific Islands Framework for Action on Climate Change (PIFACC).
- Contribute to a more coherent, coordinated, efficient and mainstreamed way of delivering climate change adaptation support at national and regional level. (Global Climate Change Alliance+, 2012)

These projects show that from the planning of the projects there was a strong guided vision and goals which helped them develop greater adaptation and mitigation to climate change in the Pacific Region along with an increase in Sustainable Development in the region also.



For the Holistic Perspective assessment from the Bellagio Principles, all of the programs that were analysed met the criteria of:

- Include Review of the whole system as well as its parts;
- Consider the well-being of social, ecological, and economic sub-systems, their state as well as the direction and rate of change of that state, of their component parts, and the interaction between parts;
- Consider both positive and negative consequences of human activity, in a way that reflects the costs and benefits for human and ecological systems, in monetary and non-monetary terms.

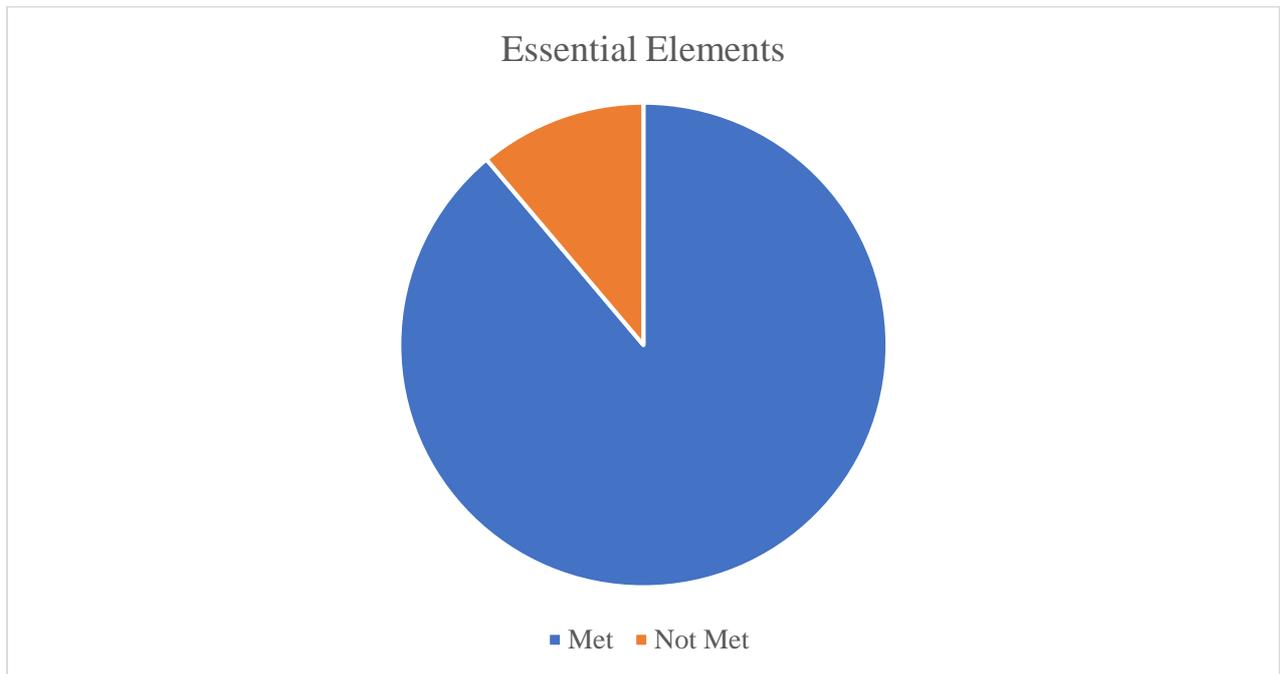
Examples that support this analysis come from the “Pacific Adaptation to Climate Change (PACC)”:

- Capturing and storage of rain and groundwater resources (individual household and community storage capacities)- Tuvalu, Tonga, Nauru, PNG, RMI and Tokelau;
- Reducing leakage of reticulated systems and water storage facilities- Tonga, RMI, Tokelau;
- Water Saving (e.g. introducing compost toilets, demand management through awareness raising)- Tuvalu, Tonga;
- Water purifiers (using solar heat)- Nauru;
- Induction of climate resilient crop species and varieties (resilient to drought, water clogging, salt water intrusion, pests), including techniques for their consistent supply (germ-plasm collections, nurseries)- Solomon Islands, Palau, Fiji, PNG;
- Enhanced farming and land use techniques facilitating soil and water conservation (e.g. mulching, organic farming, mixed cropping, drainage), -Solomon Islands, Palau;
- Enhanced aquaculture techniques- Palau;
- Increase in protective coastal structures- Samoa, Vanuatu;
- Increased protection in coastal vegetation- Samoa, Vanuatu;
- Reinforcing existing coastal infrastructure (climate proofing of roads and harbours)- Federated States of Micronesia, Vanuatu, Cook Islands.
- Relocating coastal infrastructure to less-exposed areas (Vanuatu- landing strip, road sections);
- Coastal resource use changes (e.g. Reducing sand-mining by local communities, conserving reefs and coastal wetlands and forests as natural protection barrier)- Samoa. (United Nations Development Programme, 2017)

From the “Solar Photovoltaic Power Generation Capacity in Cook Islands” Project:

- “This project is implemented by the ADB and will assist the Cook Islands to fulfil its goal of delivering renewable energy to all its islands by 2020 and also reducing the Cook Islands’ dependence on fossil fuels, by building solar-powered plants on six of its islands, funded by the Asian Development Bank (ADB), the European Union (EU), the Global Environment Fund (GEF), the Government of Japan through the Pacific Islands Forum Secretariat (Pacific Environment Community Fund or PEC) and the Government of the Cook Islands.” (Cook Islands Ministry of Finance & Economic Management, 2018)
- “Each solar plant built on the island in the country’s south under this \$24.28 million project will have a total installed power generation capacity of approximately three megawatts. It is anticipated that this project will lower annual use of diesel consumption of generating electricity by 1.09 million litres, in turn lowering carbon dioxide emissions. Nearly all households in the Cook Islands are connected to grid electricity. Of these households 5.5% have additional solar photovoltaic systems installed, and 1% use small diesel generators. The Cook Islands depends heavily on imported fuels and electricity costs there are among the highest in the Pacific. (ibid)

From these two examples, they show that these projects were looking into how they can not only change the situation at present, but also how they can positively impact the environmental future for future Pacific generations to come. The Solar Photovoltaic Power Generation Capacity in Cook Islands Project reviewed the system in which the Cook Islands provide electricity to homes and how this can be improved through the introduction of solar power. The Pacific Adaptation to Climate Change looks at how the well-being of social, ecological and economic sub-systems can be improved, e.g. Reinforcing existing coastal infrastructure (climate proofing of roads and harbours), and considers the consequences of human activity in the region.



For the Essential Elements assessment from the Bellagio Principles, eight of the projects met the assessment and one did not. The criteria for this assessment consists of:

- Consider Equity and Disparity within the current population and between present and future generations, dealing with such concerns as resource use, over-consumption and poverty, human rights, and access to services, as appropriate;
- Consider the ecological conditions on which life depends;
- Consider economic development and other, non-market activities that contribute to human/social well-being.

An example of a project that met this assessment was the “Strengthening the Resilience of our islands and our Communities to Climate Change”:

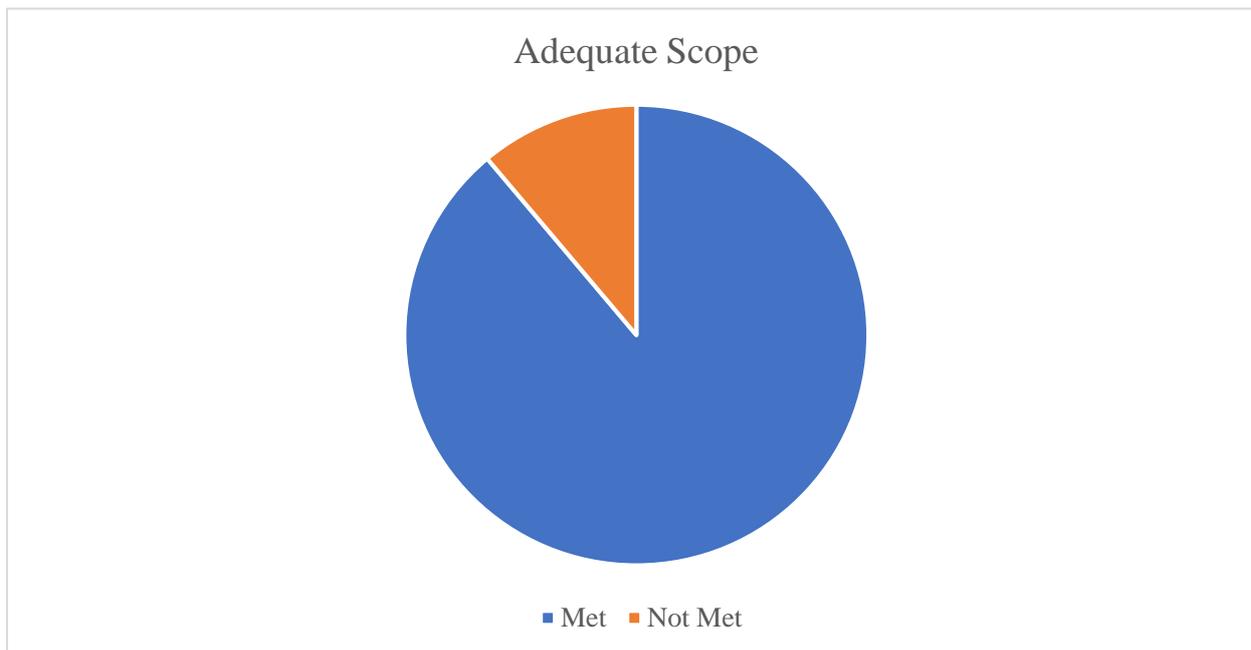
- “The Cook Islands is subject to highly destructive cyclones, intense rainfall events, and devastating droughts. The isolated populations in the Pa Enua (sister islands to the capital island of Rarotonga) are especially vulnerable to the anticipated changes in climate, including increased frequency and intensity of rainfall and tropical storms; rising and extreme sea levels and changing wind patterns; and hotter, drier weather. The aim of the SRIC programme is to strengthen the ability of all Cook Island communities, and the public service, to make informed decisions and manage anticipated climate change driven pressures (including extreme events) in a pro-active, integrated and strategic manner.” (United Nations Development Programme, 2012)
- The islands became a British protectorate in 1888. By 1900, administrative control was transferred to New Zealand. In 1965 residents chose self-government, in free association with New Zealand. As a result, the Cook Islands is fully responsible for internal affairs, while New Zealand retains responsibility for external affairs and defence, in consultation with the Cook Islands. About 70% of the population of 20,000 lives on the largest island of Rarotonga, which has a land area of 67km<sup>2</sup>. Rarotonga is the capital and main commercial and government centre, and hence the country’s dominant driver of economic growth. Around 20% of the population

lives in the eight islands of the Southern Group. Five are elevated fertile volcanic islands, while the rest are atolls, except Mitiaro, which is raised coral. These Pa Enea are within 300 km of Rarotonga. The remote Northern Group of Pa Enea, more than 1,250 km from the capital, is made up of seven low-lying, sparsely populated, coral atolls and sand cays, with little arable land. Some of these islands benefit from large, productive lagoons that support pearl farming. They are also the main base for the country's fishing industry. (ibid)

An example of the project that did not meet this assessment was the "Cook Islands: Cyclone Emergency Assistance Project":

- "The climate is maritime tropical, dominated by easterly trade winds and a marked seasonality in the rainfall regime. The dry season is from May to October and the wet season from November to April. The wet season is also the tropical cyclone season, associated with an easterly shift of the South Pacific Convergence Zone over the country. The climate can vary significantly, especially in relation to the El Niño Southern Oscillation. (Asian Development Bank, 2005)
- Between 4 February and 8 March 2005, the Cook Islands experienced five damaging cyclones. Their wind speeds exceeded 200 kilometres per hour (kph) with cyclone Meena peaking at 280 kph; cyclone Nancy at 241 kph; cyclone Olaf at 259 kph, and cyclone Percy at 212 kph. Four of the five cyclones were given the maximum severity rating of category 5. The first three cyclones formed close to Samoa and the last two near Tuvalu with surface temperatures recorded at a high of 32 degrees Celsius. (ibid)

The "Strengthening the Resilience of our islands and our Communities to Climate Change" met this assessment criteria because it looked at the present population and stated how it could be impacted, along with the implications for future generations. It also considered the conditions of Rarotonga and how and where people live on the island that may be impacted if Sustainable Development is not increased. The "Cook Islands: Cyclone Emergency Assistance Project" did not meet the assessment criteria because it only looked at cyclone events that had occurred in the past without looking towards the future for Sustainable Development. As this is an emergency assistance project that may be why it did not look at future generations or present impacts as it was established in response to an emergency, it would then only address the current situation at the time, thus being the cyclones in 2005.



For the Adequate Scope assessment from the Bellagio Principles, eight of the projects that were analysed met the criteria, and one did not. The criteria for this principle is:

- Adopt a time horizon long enough to capture both human and ecosystem time scales thus responding to needs of future generations as well as those current to short term decision-making;
- Define the space of study large enough to include not only local but also long-distance impacts on people and ecosystems;
- Build on historic and current conditions to anticipate future conditions- where we want to go, where we could go.

An example of a project that met the assessment for the Adequate Scope section was the “Pacific Islands Climate Prediction Project”:

- “The PICPP was designed firstly to expand and enhance the abilities of Pacific island meteorological services to produce seasonal climate predictions. Secondly PICPP sought to encourage and to demonstrate how to incorporate objectively based climate information, including predictions, into decision-making processes within client/stakeholder agencies of the participating PICs.” (Australian Government, 2012)
- “The Australian Bureau of Meteorology (the Bureau) was the Australian Managing Contractor (AMC) responsible for implementing the PICPP. The first phase of the project operated from August 2003 to December 2006. Phase 2 continues and extended the seasonal prediction activities initiated in Phase 1, running from January 2007 until September 2012. PICPP originally consisted of nine participating countries: Fiji, Vanuatu, Samoa, Tuvalu, Tonga, Cook Islands, Solomon Islands, Kiribati and Niue, with Papua New Guinea joining the project in phase 2.” (ibid)
- “The Project has had real and positive outcomes for PICs in terms of improving their understanding of the potential effects of climate variability and change. Furthermore, the ability to generate probability based seasonal predictions and apply the information prudently across a range of critical socioeconomic sectors will lead to a significant reduction in the

negative impacts of climate change and variability along with enhanced capability to take advantage of other opportunities that may arise.” (ibid)

An example of a project that did not meet the assessment for the Adequate Scope section was the “Asset Management for Sustainable and Improved Infrastructure Services Delivery”:

- “The quality of service delivery and sustainability of physical assets in the Cook Islands has been adversely affected by (i) deferred maintenance and the costly unplanned rehabilitation and replacement of infrastructure; (ii) lack of clarity of the asset management governance framework, its plans, roles and responsibilities; and (iii) lack of an information system to manage the framework.” (Asian Development Bank, 2015)
- “It is also aligned to the COBP, 2014-2016, targets of (i) improving public infrastructure to establish the fundamentals for environmentally sustainable private sector-led growth; (ii) building capacity and reforming agencies responsible for delivering infrastructure services; and (iii) improving public financial management and public service performance.” (ibid)

The projects that met the assessment criteria for Adequate Scope involved looking at former historic issues for climate change and sustainable development as shown in the first example. The “Asset Management for Sustainable and Improved Infrastructure Services Delivery” did not meet this criteria it only looked at the short-term future rather than both the past, the current situation and the long-term future.



For the Practical Focus assessment from the Bellagio Principles, all the projects that were analysed met the criteria, the criteria for this principle is:

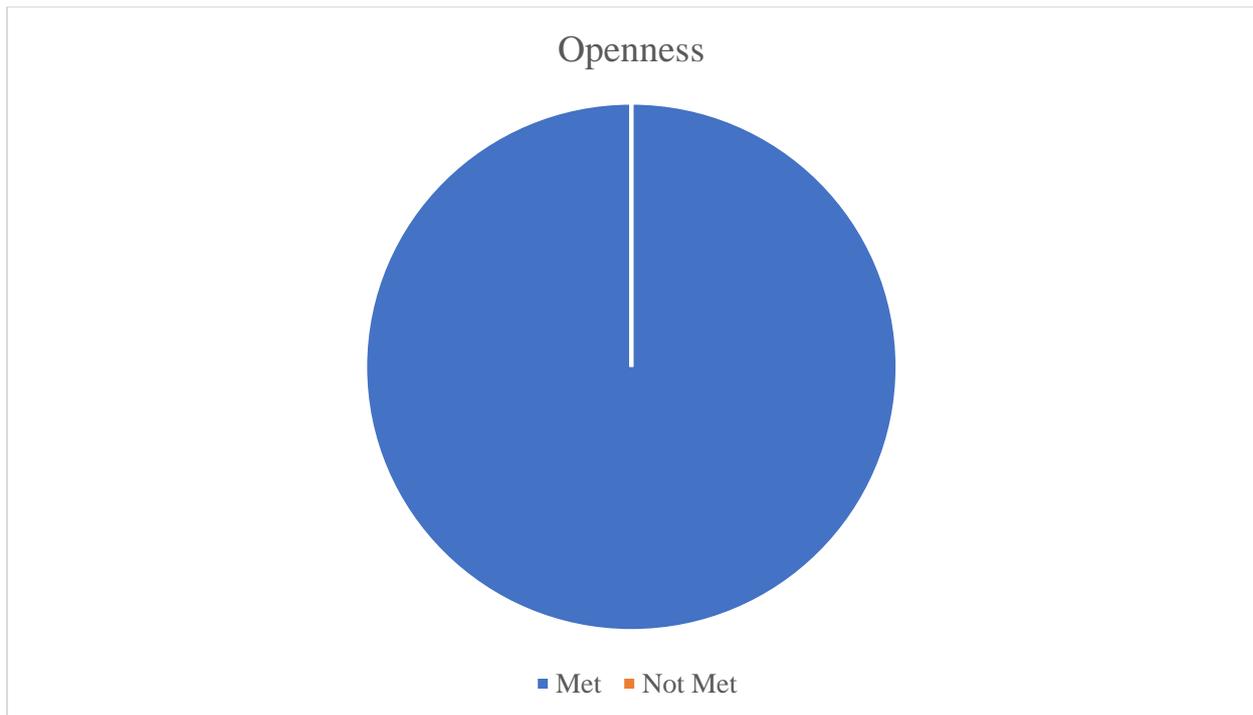
- An explicit set of categories or an organizing framework that links vision and goals to indicators and assessment criteria;
- A limited number of key issues for analysis;
- A limited number of indicators or indicator combinations to provide a clearer signal of progress;
- Standardizing measurement wherever possible to permit comparison;
- Comparing indicator values to targets, reference values, ranges, thresholds, or direction of trends, as appropriate.

All of the projects met the Practical Focus assessment, an example of a project that met this criteria was the “PIF Special Training on Climate Change”:

- “Course Objectives:
  - To introduce the concept of ‘low-carbon green growth’ and to develop and promote the ideas;
  - To introduce Korea’s environment policies about climate change;
  - To find their own management method and set up the action plan regarding climate change through practical group work;
  - To identify the environmental problems which the participants are facing share the idea to solve the issues.” (Korea International Cooperation Agency, 2008)
- “The Program consisted of three parts: Lectures;
  1. Climate Change and Ecosystem;
  2. Environmental Policy in Korea;
  3. Global Climate Challenges;
  4. Scientific Perspectives;
  5. Climate Change and Natural Disaster;
  6. Air Quality Policy and System in Korea;
  7. Climate Change, air pollution and human health;
  8. A new paradigm of developmental economics and experiences;

9. Global Climate Changes and Infectious Diseases;
10. Chemicals & Health Effects;
11. Trends and Status of Bioenergy Developments;
12. Climate Change and Renewable Energy Market;
13. National Greenhouse Gas Management System;
14. Adapting to Climate Change: international initiatives;
15. The Way ahead of the GCF

- Country Report Presentation on:
  1. Information on the Organization
  2. Current Status and Policy of Climate Change in the Home Country
  
- Study Visits & Cultural Excursion:
  1. Green Growth Hall, Cheonggye Stream, Carbon Emission Zero Building, National Institute of Biological Resources, Korea Institute of Energy Research, Sihwa Lake Tidal Power Plant & Wind Power Plant, Ipobo Riverside;
  2. Gyeongbok Palace, National Folk Museum of Korea, N-Seoul Tower, etc.” (ibid)
  
- This program was used as an example for meeting this criteria because it listed the categories it wanted to work on in terms of climate change and sustainable development, it consisted of three parts and it was measured on how well each country could present after listing to the various lectures presented to them beforehand.

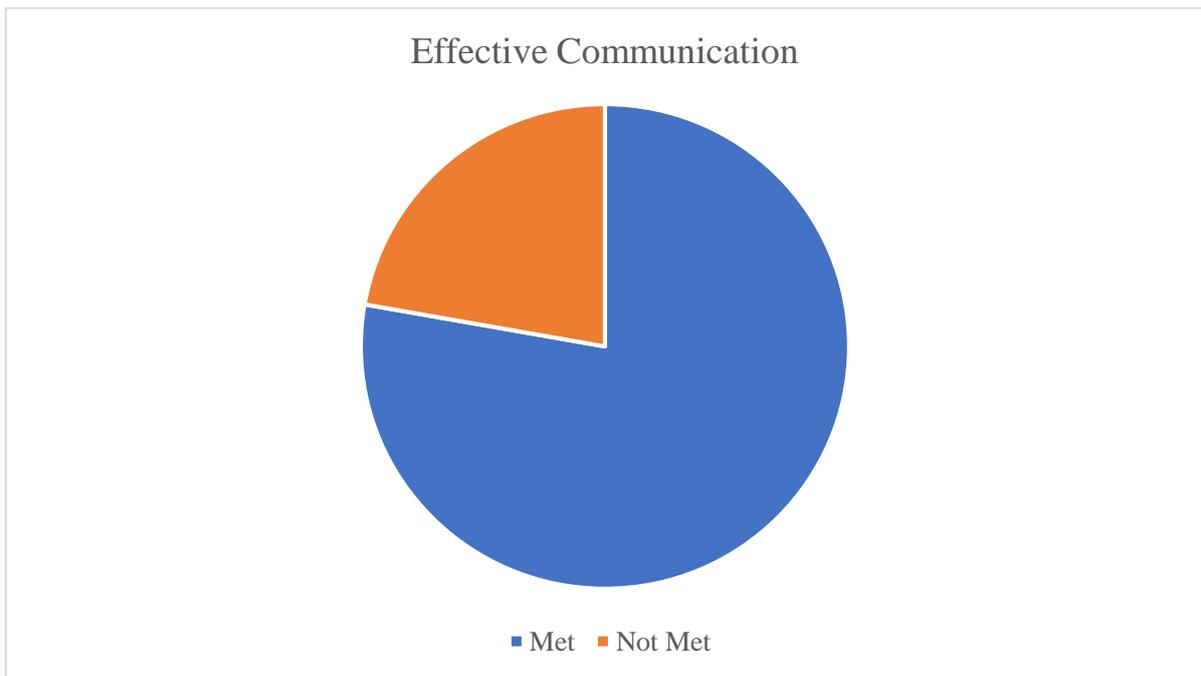


For the Openness Assessment from the Bellagio Principles, all of the projects met the criteria, the criteria for this assessment is:

- Make the methods and data that are used accessible to all;
- Make explicit all judgements, assumptions, and uncertainties in data and interpretations.

An example of a project that met the Openness Assessment was the “Secretariat of the Pacific Community- Global Climate Change Alliance: Pacific Small Island States”:

- “Fostering project ownership by countries: Most climate change projects in the region are based on a pre-selected sector or area of focus. This project provides countries with the opportunity to prioritize their needs and select the particular area of focus for their field adaptation project and the related mainstreaming activities. In some countries, new procedures have had to be developed which combine community, technical and political involvement.
- Delivering training efficiently: Regional training workshops following by in country-delivery through national training workshops is a model that works well providing tailored training to a large number of participants; impact evaluation after the training is another useful tool.
- Collaboration with other development partners in the joint delivery of activities is beneficial and an efficient use of funding. Regional collaboration also requires trust building over time, patience and perseverance. Over the course of the GCCA: PSIS project there have been significant advances in regional collaboration between SPC, SPREP, PIFS, USP, GIZ and UNDP in particular. This is based on recognition of a particular organization’s skills and experience and the identification and implementation of specific joint activities where appropriate.
- Enhancing skills in using local media to portray accurate and effective climate change messaging: The provision of training to media personnel in the preparation and sharing of climate change stories will provide sustainable benefits beyond the life of the project. Sharing experience and good practices across the region is another lesson learned, notably through the use of video, which proved to be a very powerful communication tool. (The Global Climate Change Alliance: Pacific Small Island States, 2012)



For the Effective Communication assessment of the Bellagio Principles, seven of the projects met the criteria and two did not, the criteria for this assessment consists of:

- Be designed to address the needs of the audience and set of users;
- Draw from indicators and other tools that are stimulating and serve to engage decision-makers;
- Aim, from the outset, for simplicity in structure and use of clear and plain language.

One of the projects that did not quite meet this criteria was the “Strengthening the resilience of our islands and our communities to climate change (SRICC)”:

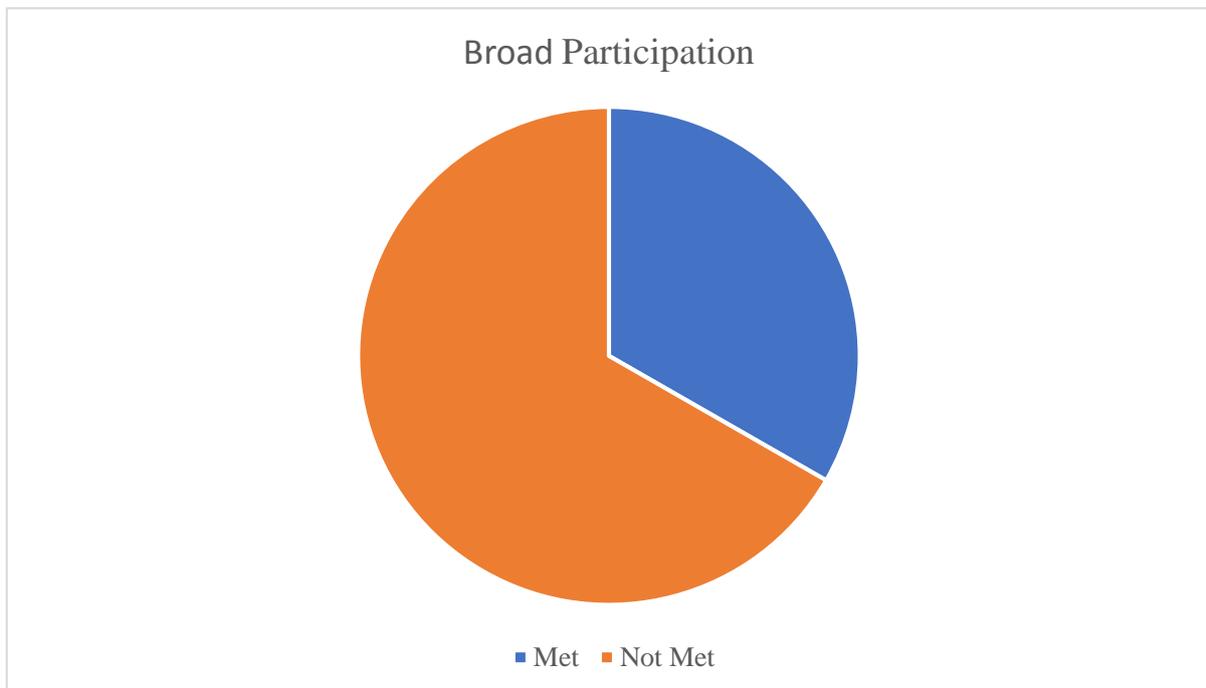
- “A more recent study by NIWA (Baldi et al., 2009) developed separate temperature and rainfall projections for the Northern and Southern groups, using baseline data for Penrhyn and Rarotonga, respectively. Results for an ensemble of GCMs and for a range of greenhouse gas emission scenarios are summarized here. Warming is likely to be larger for the Northern Group, relative to the Southern Group (between about 1.6C and 3.1C for Penrhyn and 1.4C to 2.7C for Rarotonga for 2071-2100, relative to 1971-2000.
- With increased global warming, the rate of sea level is likely to accelerate. Observed data show that, globally, the rate of sea-level rise has increased from 1.6mm/yr in the period 1961-2003 to 3.1 mm/yr in the period 1993-2003. Since 1960, thermal expansion of the ocean and the melting of glaciers and ice caps are the largest contributions to sea-level rise. There has also been an increasing contribution from surface melt from the Greenland Ice Sheet and Antarctica over this period. This means that sea-level rise is currently tracking at or near the upper limit of the IPCC projections.” (United Nations Development Programme, 2017)

One of the projects that met this criteria was the “Cook Islands: Cyclone Emergency Assistance Project”:

- “Overall assessment, the PCR’s overall project rating is successful, with which this validation concurs. The project responded effectively to the government’s urgent request in dealing with the climatic disaster of February 2005 and contributed materially to the quick restoration of public services without upsetting maintenance of fiscal discipline. Eventually, it facilitated the effective use of grants from different sources and formulated broader reforms in the planning of infrastructure development, arrangements for the management of disaster response, and the

modernization of infrastructure for interisland sea transport, all of which will help improve the possibility of renewed economic growth and poverty reduction in coming years. (Asian Development Bank, 2010)

The main reason why the “Strengthening the resilience of our islands and our communities to climate change (SRICC” did not meet this criteria was because it did not use clear and plain language that would be easy to understand, however it met the other requirements for the criteria. All projects must be able to meet all the requirements for the criteria in order to be considered as meeting it. The “Cook Islands: Cyclone Emergency Assistance Project” met the criteria because it addressed the needs of the audience from various perspectives, it provided easy to read graphs which linked to the data they were talking about in various paragraphs and it was easy to understand due to using clear and concise language.



For the Broad Participation Assessment of the Bellagio Principles, three of the programmes met the criteria and six did not, the criteria for this assessment is:

- Obtain broad representation of key grass-roots, professional, technical and social groups, including youth, women and indigenous people- to ensure recognition of diverse and changing values;

- Ensure the participation of decision-makers to secure a firm link to adopted policies and resulting action.

An example of a project that did not meet the Broad Participation criteria was the “Pacific Adaptation to Climate Change (PACC)”:

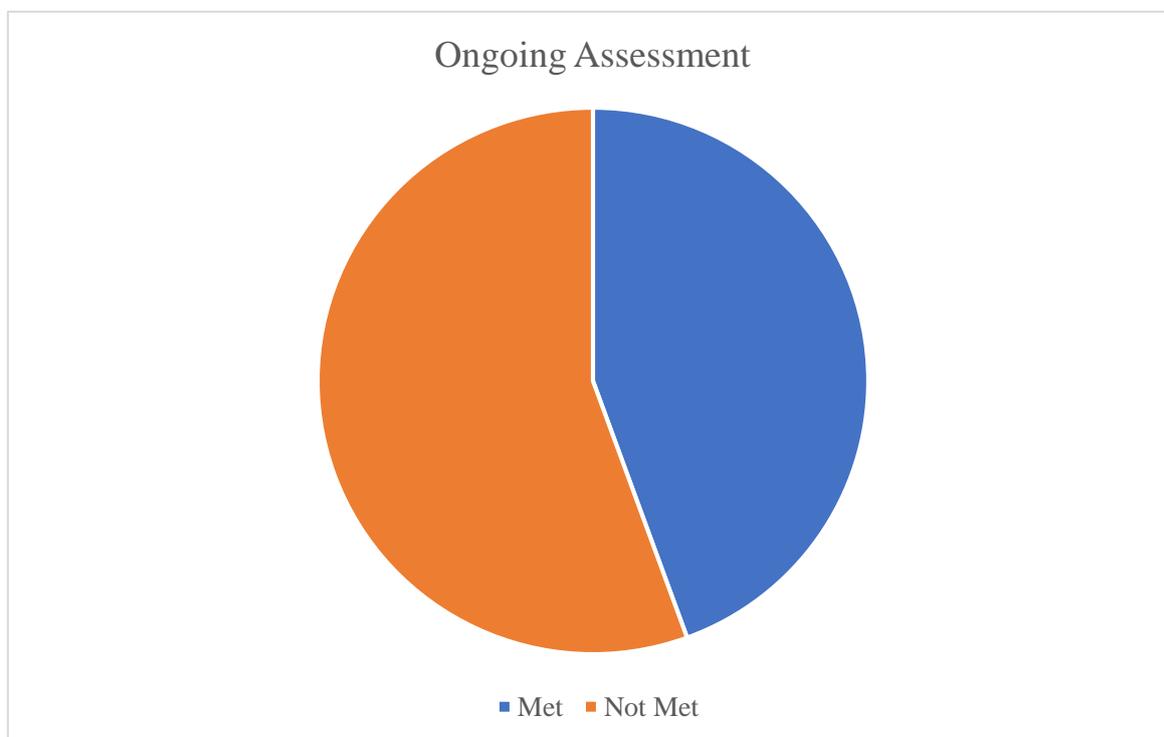
- “Outcome I: Mainstreaming, the first of the PACC outcomes is devoted to mainstreaming. The PACC approach to mainstreaming has a dual purpose: 1) to strengthen the ability of institutional frameworks, policies and plans to take climate change risks into consideration and 2) to improve the capacity of key national government and community decision-makers to integrate adaptation measures in key decisions.
- Outcome II: Pilot Demonstration, to design and demonstrate innovative decision systems, approaches, technologies and practical measures to strengthen the resilience of 14 Pacific Islands to the adverse effects of climate change. The PACC will develop specific guidelines in the coastal zone management, food production and food security, and water resource management sectors on how climate change assessments and demonstrations can be undertaken, taking current and future changes in climate into consideration. This outcome includes two outputs: 1. Vulnerability Assessments, identification and evaluation of adaptation options; 2. Implementation and monitoring of the selected measures.” (UNDP, 2017)

An example of a project that met the Broad Participation criteria was the “Secretariat of the Pacific Community- Global Climate Change Alliance: Pacific Small Island States”:

- “Training in proposal preparation: following a regional training workshop in proposal preparation using the logical framework approach (October 2012), 12 national training workshops were held involving 291 participants in 2013-14.
- With regard to climate change finance, a review was undertaken on the nine project countries and the extent to which climate change is mainstreamed into national and sector policies with a view of informing their access to climate change funds delivered through budget support modalities in particular between June and September 2013. Climate change mainstreaming profiles have been prepared for each country. A regional meeting involving 55 participants from finance and climate change government ministries in Pacific island countries, development partners and international experts was held from 25-27 September 2013 in Tonga to share experiences, promote understanding and advance national priorities relating to climate change finance particularly in relation to budget support.
- To support regional information and knowledge exchange, a matrix of all SPC climate change activities in the Pacific has been prepared, published, and was updated in 2013. Two regional training workshops have also been conducted to train country representatives from the North and South Pacific countries to upload information into the Pacific Climate Change Portal.
- Regional cooperation on climate change has been strengthened, notably in the context of the first steering committee meeting held in December 2012 to plan 2013 activities and preparatory work for the Pacific Platform for Disaster Risk Management and the Pacific Climate Change Round Table (July 2013). The third project Steering Committee meeting was held in Tonga, 30 September- 1<sup>st</sup> October 2013, and also involved Caribbean Indian Ocean and Pacific partners in GCCA bilateral and regional projects and development partners.” (Global Climate Change Alliance, 2012)

The reasoning for the “Pacific Adaptation to Climate Change (PACC)” Project not meeting the Broad Participation criteria was because it needed more participation from those who were not directly decision makers in order to give an overall broad participation. For there to be broad participation there needs to be more inclusiveness for those who are not decision makers but will be directly affected by the projects or potential policies created from them. The “Secretariat of the Pacific Community- Global

Climate Change Alliance: Pacific Small Island States” met the Broad Participation criteria because it allowed those who were not decision makers to participate in the project through attending hosted workshops, and it also heavily promoted regional co-operation for the region along with promoting various areas of Pacific Island Governments, e.g. Ministry of Finance.



For the Ongoing Assessment from the Bellagio Principles, four projects met the criteria and five did not, the criteria for this assessment is:

- Develop a capacity for repeated measurement to determine trends;
- Be iterative, adaptive, and responsive to change and uncertainty because systems are complex and change frequently;
- Adjust goals, frameworks, and indicators as new insights are gained;
- Promote development of collective learning and feedback to decision-making.

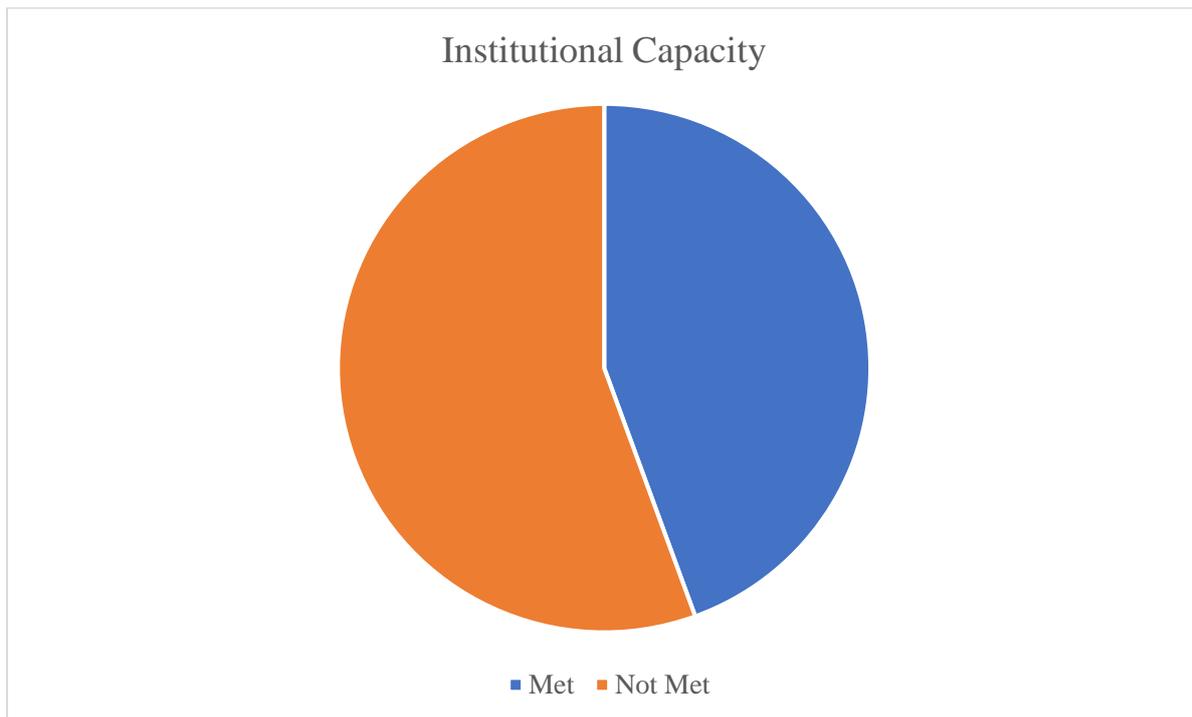
An example of a project that did not meet the Ongoing Assessment Criteria was the “Cook Islands: Asset Management for Sustainable and Improved Infrastructure Services Delivery”:

- “While the Cook Islands was ready for and needed a new AMIS, the quality and state of the asset data available was not sufficiently developed for use in the AMIS. A significant amount of time and effort was required to complete the datasets. The Cook Islands have quite a commitment ahead of them to ensure good quality data is input and maintained within the AMIS.
- Government’s formal adoption of the Asset Management Plan legislation will ensure the ongoing practice and rollout of asset management across government and the remaining outer islands. CIIC is committed to following this through. To achieve the full potential of the process and ensure maximum effort is sustained in the long term, sound asset management practices (reliable data collection and input into AMIS, compilation of asset registers, asset valuations, and audits) should be rolled out across government and the outer islands.” (Asian Development Bank, 2015)

An example of a project that met the Ongoing Assessment criteria was the “Solar Photovoltaic power generation capacity in Cook Islands”:

- “The Phase 1 subproject solar power systems will deliver approximately 95% renewable energy, using a solar PV based generation system with battery storage to manage overnight load. Battery storage and the control system will manage grid stability in light of rapid fluctuations in PV output. Further, in the event of a system failure of the solar system, the existing diesel generators will be able to meet continuous load, and hence provide a level of redundancy. A reliable, 24/7 power supply, which is less vulnerable to diesel supply volatility, is thus expected to be achieved.
- The Aitutaki subproject will deliver approximately 30% renewable energy using a solar PV based generation system with either a forecasting system or battery storage. The unmet load will be managed through the use of existing diesel generators with the addition of the new diesel generator installed as part of the sub project.
- The Rarotonga subproject will enable the installation of a greater quantity of renewable energy on to the Rarotonga grid without compromising system stability and reliability. (Government of Cook Islands Ministry of Finance and Economic Management, 2016)

Reasoning for “Cook Islands: Asset Management for Sustainable and Improved Infrastructure Services Delivery” not meeting the Ongoing Assessment criteria was because it only left recommendations for the Cook Island Government to do to further the achievements made in the project, it did not tell them the means of what they would need to do and how they could do it without assistance from the Asian Development Bank. The “Solar Photovoltaic power generation capacity in Cook Islands” met the Ongoing Assessment Criteria because it left options the Cook Islands could use if something went wrong with the Renewable Energy and explained how these new forms of Renewable Energy could be used after the project ended.



For the institutional Capacity assessment from the Bellagio Principles, four of the projects met the criteria and five did not, the criteria for this assessment is:

- Clearly assigning responsibility and providing ongoing support in the decision-making process;
- Providing institutional capacity for data collection, maintenance and documentation;
- Supporting development of local assessment capacity.

An example of a project that did not meet the requirements for the Institutional Capacity was the “Strengthening the resilience of our islands and our communities to climate change (SRICC)” project:

- “In common with many other Pacific Island Countries, the Cook Islands are still working out an affordable, yet affective Community Service Obligation strategy that will ensure that all Cook Islands residents enjoy a basic standard of living wherever they reside in the country. In the meantime, the climate is changing and the difficulty of meeting this challenge is growing. As discussed below, there is much that is being done, albeit in a piecemeal and somewhat uncoordinated fashion, to contain the extra costs to the communities as a result of living and remaining their land in the face of climate change. Even with an improved and much more closely integrated national effort, the expense involved in keeping the islands productive and habitable will be high, notwithstanding that the populations that live in many of the islands are quite small, particularly in the Northern Group.
- The coastal zone and coral reefs are currently vulnerable to sea-level rise, increases in sea surface temperature, and increases in extreme weather events. The impacts of these threats will almost certainly include accelerated coastal erosion, saline intrusion into freshwater lenses, and increased flooding from the sea. In some areas of the coastal plain there are low lying areas behind the beach ridge which are prone to flooding from storm surges. In addition, there are areas of intensive infrastructure development with poor water drainage systems that are prone to flooding during rainstorms. These factors make the coastlines of the islands increasingly sensitive to variations in sea level, and to storm events.
- As shown in the island vulnerability and adaptation studies carried out under the Initial and Second National Communications to the United Nations Framework Convention on Climate

Change (UNFCCC), the different island types which make up the Cook Island result in different coastal vulnerability profiles. Even the high makatea islands (raised atoll formation) are not as resilient to sea level rise as might be expected. Despite limestone cliffs seemingly protecting the agricultural growing areas, sea storm surges and cyclones still lead to salt-water intrusion into the low-lying swampy areas.” (UNDP, 2010)

An example of a project that met the requirements for the Institutional Capacity criteria was the “Pacific Adaptation to Climate Change (PACC)”:

- “One of the major activities of the PACC has been in promoting climate change awareness in communities, schools throughout the country. During the year the PACC team took part in the Ministry of Environment, Climate Change Disaster Management and Meteorology’s provincial consultations in the Rennell and Bellona, Central Province and in Honiara. The consultations focused on promoting awareness on change issues, how it affects communities, responses and the Solomon Islands new Climate Change Policy. Climate Change Officer, Thaddeus Siota says the awareness workshops were staged with communities to explain in detail about the new government policy. One of the major events in 2012 was World Environment Day where PACC worked with Ministry of Environment, Climate Change Meteorology and Disaster Management (MECDM) to stage awareness talks. In November the PACC Project Management Unit (PMU) took part in a media workshop on climate change in where the journalists were briefed on the work of the PACC and climate change issues facing Solomon Islands. The workshop brought together senior journalists and potential climate change stories were discussed with climate change specialists. A number of journalists from media organisations in Honiara also expressed their interest to visit PACC activities on Ontong Java.” (Wickham, 2012)
- “One of the key aspects of the intervention says PACC coordinator, Casper Supa, was the involvement of the community. Prior to leaving Honiara the PACC team met with Pelau community representatives in Honiara to explain their plans and to give the community time to inform the island about the trip. The PACC team’s first port of call on arrival in Pelau was the House of Chiefs where four farmers were nominated by the chiefs, to lead the demonstration plots. ‘For any intervention to be successful it had to have the support and be driven by the local community.’ Following the chief’s meeting the project was introduced to the public in an open meeting where four women farmers were selected to assist the lead farmers. At the meeting the community decided that all produce harvested from the demonstration plots would be equally divided amongst the community.” (Wickham, 2013)

The reasoning for the “Strengthening the resilience of our islands and our communities to climate change (SRICC)” not meeting the Institutional Capacities was because it did not really engage with the Cook Island Communities. This project was more of the UN doing its own work and not involving the Cook Island Community or helping to improve their institutes so that they will need less policy and initiative help in the future. The “Pacific Adaptation to Climate Change (PACC)” met the Institutional Capacities criteria because it had heavy involvement from the Communities it was working in, in most cases it even allowed the communities to take almost full control (e.g. workshops, meetings), it also aimed to balance the representation of gender by involving women in the project as much as possible.

## Discussion

The hypothesis in this thesis has been proven to be correct as the EU’s projects in both the Pacific Region and more specifically in the Cook Islands have been successful in reducing the effects of climate change and increasing sustainable development within the region. However, there could be more emphasis in increasing awareness and participation from more community members in future projects. The projects matched the Sustainable Development Normative approaches that were introduced by

Baker, these are the Principle of Need, Principle of Inter-Generational Equity, Principle of Intra-Generational Equity, Principle of Common but Differentiated Responsibilities, Principle of Justice, Principle of Participation and Principle of Gender Equality. Although every project did not meet all the Bellagio Principles apart from one, there was enough in the analysis to show that most of the Principles were met and there was not a project that failed in all the areas. There is room for improvement for future projects, the EU should use the Bellagio Principles for the planning and execution of future projects to ensure they are increasing the ability for the Pacific Region to adapt to Climate Change and to increase Sustainable Development in the Regio.

There was only one project that met all the requirements for the Bellagio Principles, this was the “Secretariat of the Pacific Community- Global Climate Change Alliance: Pacific Small Island States”, this project was strictly funded and ran by the EU with Pacific Organisations and had the most success with meeting the Bellagio Principles. This shows that projects that are funded and ran by the EU are successful in their goals of increasing sustainable development and strengthening another region in withstanding the effects of climate change. There is a probability that this is due to the EU’s own fundamental values, respect for human dignity and human rights, freedom, democracy, equality and the rule of law. It would only make sense that the EU would promote their own fundamental values when they are working on development projects which is the best way to approach projects as it was proven that this made one of the projects meet the Bellagio Principles.

The Bellagio Principles the EU met successfully were “Guiding Vision and Goals, Holistic Perspective, Practical Focus and Openness”, the EU will have success in these areas if they continue to work on projects with these principles in mind during the planning and execution of projects.

The Bellagio Principles the EU almost met successfully were “Essential Elements and Adequate Scope”, the EU had some success in these areas but there is still room for improvement in these areas for future projects. These areas should be made as a priority during the planning and execution of future projects as these are areas the EU needs to work on.

The Bellagio Principles the EU did not meet successfully were “Broad Participation, Effective Communication, Ongoing Assessment and Institutional Capacity”, these areas will need a lot of work and improvement by the EU for future projects in the Pacific Region.

## Conclusions

Some policy recommendations from this thesis would be when planning climate change and sustainable development projects in the Pacific Region there should be more importance in allowing involvement from community members that will be affected by the project. I would recommend this because the “Broad Participation” criteria were the least met in the Bellagio Principles. For future projects the community members that will be affected should be allowed to contribute from the planning process through to the final stages of the project. Not only would this meet the “Broad Participation” requirement, but it might also contribute to the economies of the communities as it could open more job

opportunities for community members. It is also important that community members are informed of projects as there needs to be greater awareness of the aspects and effects of climate change.

A second area that the EU could work on more is “Effective Communication” during planning and the execution of future climate change and sustainable development programmes in the Pacific Region. This is because this is a crucial element in the Bellagio Principles as it allows for everyone who is involved and those who will be affected to be on the same page. If there is more “Effective Communication” then projects will have a greater chance at being successful due to everyone having a similar understanding of what the project is about and how it will work.

A third area that the EU could work on more is “Ongoing Assessment” during planning and the execution of future climate change and sustainable development programmes in the Pacific. During the planning phase it should be taken into consideration that risks and changes may happen during the programme, and there should be plans for how to adapt to these when they occur. It would also be recommended that there is an ongoing discussion after programmes end with community members to see how they feel about the results after the end of a project and if there needs to be further aid in the future.

A fourth area that the EU could work on more is “Institutional Capacity” during planning and the execution of future climate change and sustainable development programmes in the Pacific. With this policy, there just needs to be more cohesion with locals that will be affected by climate change and should have an input in the EU’s projects. It is also recommended that the EU should allow more involvement of community members during important decision making in projects as they will be the ones affected by what the EU does in the Pacific, it is also good to have opinions from locals as they know the economic, social and environmental factors for locations.

The EU could approach other nations or organizations for a global and united approach to helping the Pacific Region with climate change and increasing sustainable development. The major actors that help the EU with its work in the Region are Australia, New Zealand, Korea, Japan, the respective Governments of the Pacific Island Nations mentioned in this thesis, the United Nations, the Asian Development Bank, the Pacific Island Secretariat and the Global Environment Fund. Examples of other nations or organisations the EU could approach that could help are the United States of America, China, nations that the EU has relations with but are not members of the EU (e.g. Turkey, Switzerland). It would be possible for the EU to approach these nations as the EU is one of the leading actors in climate change and sustainable development, so the EU has legitimacy and influence in this aspect.

With the Cook Islands being a case study in this thesis, future projects should continue to target the energy and transport areas in order to reduce the consumption of fossil fuels and increase the chances for sustainable development in the region. It would also be recommended that the EU continues to spread more awareness of climate change in the Cook Islands and to also further improve education around this issue for the Cook Islands.

A final policy recommendation for the EU when it comes to climate change and sustainable development over the next twenty to fifty years is that there should be discussions on climate refugees and what plans can be made in the event that a Pacific Nation has climate refugees that have no home due to climate change. These discussions should discuss what rights a climate refugee has, if there is accountability and where can these climate refugees be rehomed.

## Glossary

**Greenhouse Gases:** A group of compounds that can trap heat in the atmosphere, keeping the Earth's surface warmer than it would be if they were not present.

**Climate Change:** When there is an increase in the concentration of greenhouse gases in the atmosphere that causes the Earth to heat more and cause the climate change. Climate change is likely to change temperature and bring about more extreme climate events such as floods, storms, cyclones and droughts.

**Sustainable Development:** Development that meets the needs of the present without compromising the ability of future generations to meet their own needs. It contains two key concepts, the concept of needs, the essential needs of the world's poor, to which overriding priority should be given and the idea of limitations imposed by the state of technology and social organization on the environment's ability to meet present and future needs.

**Renewable Energy:** Energy that is generated from natural processes that are continuously replenished. This includes sunlight, geothermal heat, wind, tides, water, and various forms of biomass, this energy cannot be exhausted and is constantly renewed.

**Biomass:** Renewable organic matter, can include biological material derived from living, or recently living organisms, such as wood, waste and alcohol fuels.

**Fossil Fuels:** Generally, include coal, oil and natural gas, they are currently the world's primary energy source. They are formed from organic material over the course of millions of years, they have fuelled U.S and global economic development over the past century. Yet fossil fuels are finite resources and they can also irreparably harm the environment.

**Migration:** The movement of people across a specified boundary for the purpose of establishing a new or semi-permanent residence. It can either be external migration where one migrates to another country or internal migration where one moves within the same country. There can be various push and pull factors that cause migration.

**Climate Refugee:** People who must leave their homes and communities because of the effects of climate change and global warming. Currently, climate refugees are not protected by international laws, they face greater political risks than refugees who flee their homes due to conflict or political oppression. Unlike traditional refugees, climate refugees may be sent back to their devastated homeland or forced into a refugee camp.

## References

- Asian Development Bank. 2005. *Report and Recommendation of the President to the Board of Directors on a Proposed Loan and Technical Assistance Grant to the Cook Islands for the Cyclone Emergency Assistance Project*. Accessed 14 January 2018, <https://www.adb.org/sites/default/files/project-document/69269/39118-coo-rrp.pdf>
- Asian Development Bank 2011, *The Economics of Climate Change in the Pacific*, Asian Development Bank, <http://ebookcentral.proquest.com.ezproxy.canterbury.ac.nz/lib/canterbury/detail.action?docID=3111081>
- Asian Development Bank. 2010. *Cook Islands: Cyclone Emergency Assistance Project*, Accessed 3 January 2018. <https://www.adb.org/projects/39118-013/main>

- Asian Development Bank. 2015. *Cook Islands: Asset Management for Sustainable and Improved Infrastructure Services Delivery*. Published August 2015, accessed 25 January 2018. <https://www.adb.org/sites/default/files/project-document/178785/43422-012-tcr.pdf>
- Australian Government 2011, *Pacific Climate Change Science Program: Current and future climate of Papua New Guinea*, accessed 1 August 2017. [http://www.pacificclimatechangescience.org/wp-content/uploads/2013/06/14\\_PCCSP\\_PNG\\_8pp.pdf](http://www.pacificclimatechangescience.org/wp-content/uploads/2013/06/14_PCCSP_PNG_8pp.pdf)
- Australian Government 2011, *Pacific Climate Change Science Program: Marshall Islands*, accessed 25 October 2017. [https://www.pacificclimatechangescience.org/wp-content/uploads/2013/06/8\\_PCCSP\\_Marshall\\_Islands\\_8pp.pdf](https://www.pacificclimatechangescience.org/wp-content/uploads/2013/06/8_PCCSP_Marshall_Islands_8pp.pdf)
- Baker, S 2016, *Sustainable Development: Second Edition*, Routledge, New York.
- Baker, S, 2016, *Sustainable Development*, Routledge, Oxon.
- Bell, JD, Reid, C, Batty MJ, Lehodey, P, Rodwell, L, Hobday, AJ, Johnson, JE, Demmke, A 2013, 'Effects of climate change on oceanic fisheries in the tropical Pacific: implications for economic development and food security', *Climatic Change*, 119, 1, 199-212.
- Campbell, JR 2014, 'Climate-Change Migration in the Pacific', *The Contemporary Pacific*, 26, 1, 1-28.
- Cardiff University 2017, *Professor Susan Baker*, last updated 2017, accessed November 24, 2017. <https://www.cardiff.ac.uk/people/view/38140-baker-susan>
- Central Intelligence Agency 2017, *The World Factbook: Marshall Islands*, last updated 2017, accessed 24 October 2017. <https://www.cia.gov/library/publications/the-world-factbook/geos/rm.html>
- Central Intelligence Agency 2017, *The World Factbook: Tuvalu*, last updated November 14, 2017, accessed 22 November 2017. <https://www.cia.gov/library/publications/the-world-factbook/geos/tv.html>
- Central Intelligence Agency 2017, *The World Factbook: Vanuatu*, last updated 14 November 2017, accessed 22 November 2017. <https://www.cia.gov/library/publications/the-world-factbook/geos/nh.html>
- Cook Islands Ministry of Finance & Economic Management, 2017, *Southern Group Renewable Energy*, accessed 25 April 2017, <http://www.mfem.gov.ck/our-national-systems/57-development/development-programmes/556-southern-group-renewable-energy#information>
- Cook Islands Ministry of Finance & Economic Management. 2018. *Southern Group Renewable Energy*, Accessed 14 January 2018. <http://www.mfem.gov.ck/our-national-systems/57-development/development-programmes/556-southern-group-renewable-energy#information>
- Dew, K 1999, 'National identity and controversy: New Zealand's clean green image and pentachlorophenol', *Health & Place*, 5, 1, 45-57.
- DiMento, J 2015, *Climate Change: What it means for us, our children, and our grandchildren*, MIT Press, Cambridge.
- Encyclopedia.com 2016, *Solomon Islands*, last updated 2016, accessed 2 November, 2017, <http://www.encyclopedia.com/places/australia-and-oceania/pacific-islands-political-geography/solomon-islands>
- European Commission, 2017, *Solar photovoltaic power generation capacity in Cook Islands*, accessed 25 April 2017. [http://ec.europa.eu/europeaid/projects/solar-photovoltaic-power-generation-capacity-cook-islands\\_en](http://ec.europa.eu/europeaid/projects/solar-photovoltaic-power-generation-capacity-cook-islands_en)
- European Commission. 2013. *The EU Strategy on adaptation to climate change*. Published 2013, accessed 6 January 2018. [https://ec.europa.eu/clima/sites/clima/files/docs/eu\\_strategy\\_en.pdf](https://ec.europa.eu/clima/sites/clima/files/docs/eu_strategy_en.pdf)
- Eurostat: European Commission. 2009. *Sustainable development in the European Union: 2009 monitoring report of the EU sustainable development strategy*. Published 2009, accessed 3

- January 2018. <http://ec.europa.eu/eurostat/documents/3217494/5703739/KS-78-09-865-EN.PDF/7ccc9240-03ae-40da-b2d8-2cc8a28df320>
- Gerrard, Michael and Wannier, Gregory, 2013, *Threatened Island Nations*, Cambridge University Press, Cambridge.
  - Global Climate Change Alliance+. 2012. *Secretariat of the Pacific Community- Global Climate Change Alliance: Pacific Small Island States*. Accessed 8 January 2018, <http://www.gcca.eu/regional-programmes/gcca-pacific-small-island-states>
  - GO100% Renewable Energy 2017, *Cook Islands*, last updated 2017, accessed 12 July 2017. [http://www.go100percent.org/cms/index.php?id=70&tx\\_ttnews\[tt\\_news\]=35](http://www.go100percent.org/cms/index.php?id=70&tx_ttnews[tt_news]=35)
  - Government of Cook Islands Ministry of Finance and Economic Management. 2016. *Environmental and Social Monitoring Report: Cook Islands, Renewable Energy Sector Project*. Published June 2016, accessed 25 January 2018. [http://www.mfem.gov.ck/images/MFEM\\_Documents/DCD\\_Docs/ADB/Southern\\_Renewable\\_Energy\\_reports/Jan-June\\_2016- Cook\\_Islands\\_Renewable\\_Energy-Environmental\\_and\\_Social\\_Monitoring\\_Report.pdf](http://www.mfem.gov.ck/images/MFEM_Documents/DCD_Docs/ADB/Southern_Renewable_Energy_reports/Jan-June_2016- Cook_Islands_Renewable_Energy-Environmental_and_Social_Monitoring_Report.pdf)
  - Government of Tokelau 2015, *Tokelau to reduce carbon emissions even more*, published 6 October 2015, accessed 24 October 2017. <https://www.tokelau.org.nz/Bulletin/October+2015/Tokelau+to+reduce+carbon+emissions+even+more.html>
  - Government of Tokelau 2016, *The Changing Climate in Tokelau: Living with Change: Enhancing the Resilience of Tokelau to Climate Change and Related Hazards*, published 20 June 2016, accessed 24 October 2017. [https://www.tokelau.org.nz/site/tokelau/files/2016Docs/TokelauLivC\\_Issue1\\_June2016.pdf](https://www.tokelau.org.nz/site/tokelau/files/2016Docs/TokelauLivC_Issue1_June2016.pdf)
  - Government of Tuvalu 2015, *Intended Nationally Determined Contributions: Communicated to the UNFCCC on 27 November 2015*, published 27 November 2015, accessed 22 November 2017. <http://www4.unfccc.int/submissions/INDC/Published%20Documents/Tuvalu/1/TUVALU%20INDC.pdf>
  - Hopkins, D, Campbell-Hunt, C, Carter, L, Higham, J.E.S, Rosin, C 2015, 'Climate change and Aotearoa New Zealand', *WIREs Climate Change*, 6, 6, 559-583.
  - International Institute for Sustainable Development 2017, *Sustainable Development*, last updated 2017, accessed 23 June 2017. <http://www.iisd.org/topic/sustainable-development>
  - International Institute for Sustainable Development, 2017, *Sustainable Development*, accessed 26 April 2017. <http://www.iisd.org/topic/sustainable-development>
  - Katherine Richardson, Diana Liverman, 2011, *Climate Change: Global Risks, Challenges and Decisions*, Cambridge University Press, Cambridge.
  - Kingdom of Tonga 2015, *Intended nationally determined contributions: Towards achieving the objective of the United Nations Framework Convention on Climate Change*, accessed 3 August 2017. <http://www4.unfccc.int/ndcregistry/PublishedDocuments/Tonga%20First/Tonga%20INDC.pdf>
  - Korea International Cooperation Agency. 2013. *PIF Special Training on Climate Change*. Accessed 5 January 2018. [http://www.koica.go.kr/english/board/new/1303742\\_1967.html](http://www.koica.go.kr/english/board/new/1303742_1967.html)
  - Laszlo, C 2010, *The Sustainable Company*, Island Press, Washington.
  - Ministry for the Environment, 2017, *About Climate Change*, accessed 25 April 2017, <http://www.mfe.govt.nz/climate-change/overview-climate-change/about-climate-change>
  - Mongabay 2009, *Carbon Dioxide emissions for Papua New Guinea*, accessed 1 August 2017. [http://rainforests.mongabay.com/carbon-emissions/papua\\_new\\_guinea.html](http://rainforests.mongabay.com/carbon-emissions/papua_new_guinea.html)
  - multpl 2017, *Marshall Islands CO2 Emissions Per Capita*, last updated 2017, accessed 2 November 2017. <http://www.multpl.com/marshall-islands-co2-emissions-per-capita>

- Murray McCully, 2015, *Cook Islands solar energy projects opened*, accessed 25 April 2017.
- National Geographic 2017, *Climate Refugee*, accessed 23 June 2017. <https://www.nationalgeographic.org/encyclopedia/climate-refugee/>
- New Zealand Ministry for the Environment 2016, *About Climate Change*, last updated 19 January 2016, accessed 23 June 2017. <http://www.mfe.govt.nz/climate-change/overview-climate-change/about-climate-change>
- New Zealand Ministry of Foreign Affairs and Trade, 2017, *Cook Islands*, viewed 22 April 2017, <https://www.mfat.govt.nz/en/countries-and-regions/pacific/cook-islands/>
- Oberthur, S, Pallemarts, M 2010, *New Climate Policies of the European Union*, Brussels University Press, Brussels.
- Office of the President Republic of Kiribati 2017, *Kiribati Adaptation Program*, published 2017, accessed 18 November 2017. <http://www.climate.gov.ki/category/action/adaptation/kiribati-adaptation-program/>
- Pacific Climate Change Portal, *Cook Islands*, last updated March 2016, accessed 2 January 2018, <https://www.pacificclimatechange.net/node/9481>
- Pacific Climate Change Portal, *Fiji*, last updated March 2016, accessed 2 January 2018, <https://www.pacificclimatechange.net/node/9483>
- Pacific Climate Change Portal, *Niue*, last updated March 2016, accessed 2 January 2018, <https://www.pacificclimatechange.net/node/55>
- Pacific Climate Change Portal, *Papua New Guinea*, last updated March 2016, accessed 2 January 2018, <https://www.pacificclimatechange.net/node/58>
- Pacific Climate Change Portal, *Tokelau*, last updated March 2016, accessed 2 January 2018, <https://www.pacificclimatechange.net/node/60>
- Pacific Climate Change Portal, *Tonga*, last updated March 2016, accessed 2 January 2018, <https://www.pacificclimatechange.net/node/61>
- Pacific Climate Change Portal. 2016. *Kiribati*, last updated March 2016, Accessed 7 January 2018. <https://pacificclimatechange.net/node/52>
- Pacific Climate Change Portal. 2016. *Marshall Islands*, last updated March 2016, Accessed 7 January 2018. <https://pacificclimatechange.net/node/53>
- Pacific Climate Change Portal. 2016. *Solomon Islands*, last updated March 2016, Accessed 7 January 2018. <https://pacificclimatechange.net/node/59>
- Pacific Climate Change Portal. 2016. *Tuvalu*, last updated March 2016, Accessed 8 January 2018. <https://www.pacificclimatechange.net/node/62>
- Pacific Climate Change Portal. 2016. *Vanuatu*, last updated March 2016, Accessed 8 January 2018. <https://www.pacificclimatechange.net/node/63>
- Pacific Climate Change Science 2017, *Observed Climate and Future Climate Change in Tonga*, accessed 3 August 2017. [http://www.pacificclimatechangescience.org/wp-content/uploads/2013/06/13\\_PCCSP\\_Poster\\_Tonga.pdf](http://www.pacificclimatechangescience.org/wp-content/uploads/2013/06/13_PCCSP_Poster_Tonga.pdf)
- Pacific Island Forum Secretariat. 2016. *Framework for Resilient Development in the Pacific: An Integrated Approach to Address Climate Change and Disaster Risk Management (FRDP) 2017-2030*. Accessed 6 January 2018. <http://www.forumsec.org/resources/uploads/embeds/file/Annex%201%20-%20Framework%20for%20Resilient%20Development%20in%20the%20Pacific.pdf>
- PennState Extension 2017, *Renewable and Alternative Energy: What is Renewable Energy?* accessed 23 June 2017. <http://extension.psu.edu/natural-resources/energy/what>
- Pinares-Patino, CS, Waghorn GC, Hegarty, RS, Hoskin, SO, 'Effects of intensification of pastoral farming on greenhouse gas emissions in New Zealand', *New Zealand Veterinary Journal*, 57, 5, 252-261.

- Pinter, L, Hardi, P, Martinuzzi, A, Hall, J 2012, ‘Bellagio STAMP: Principles for sustainability assessment and measurement’, *Ecological Indicators*, 17, 20-28.
- Promoting Energy Efficiency in the Pacific 2017, *Papua New Guinea*, accessed 1 August 2017. <http://www.ee-pacific.net/index.php/database/country-information/papua-new-guinea>
- Reyes-Garcia, V, Fernandez-Llamazares, Gueze, M, Garces, A, Mallo, M, Vila-Gomez, M, Vilaseca, M 2015, ‘Local indicators of climate change: the potential contribution of local knowledge to climate research’, *WIREs Climate Change*, 7, 1, 109-124.
- Sachs, J.D 2015, *The Age of Sustainable Development*, Columbia University Press, New York.
- Scoop Independent News 2014, *ADB to Help Cook Islands Generate Solar Power*, accessed 25 April 2017, <http://www.scoop.co.nz/stories/WO1411/S00252/adb-to-help-cook-islands-generate-solar-power.htm>
- Sem, Graham & Underhill, Yvonne, 1992, *Implications of Climate Change and Sea Level Rise for the Cook Islands*, University of Papua New Guinea, Port Moresby.
- The Australian Government 2011, *Pacific Climate Change Science Program: Current and future climate of Niue*, accessed 6 August 2017. [http://www.pacificclimatechangescience.org/wp-content/uploads/2013/06/12\\_PCCSP\\_Niue\\_8pp.pdf](http://www.pacificclimatechangescience.org/wp-content/uploads/2013/06/12_PCCSP_Niue_8pp.pdf)
- The Australian Government 2011, *Pacific Climate Change Science Program: Current and future climate of the Solomon Islands*, published 2011, accessed 2 November 2017. [https://www.pacificclimatechangescience.org/wp-content/uploads/2013/06/13\\_PCCSP\\_Solomon\\_Islands\\_8pp.pdf](https://www.pacificclimatechangescience.org/wp-content/uploads/2013/06/13_PCCSP_Solomon_Islands_8pp.pdf)
- The Australian Government 2011, *Pacific Climate Change Science Program: Current and future climate of Tuvalu*, published November 2011, accessed 22 November 2017. [https://www.pacificclimatechangescience.org/wp-content/uploads/2013/06/4\\_PCCSP\\_Tuvalu\\_8pp.pdf](https://www.pacificclimatechangescience.org/wp-content/uploads/2013/06/4_PCCSP_Tuvalu_8pp.pdf)
- The Australian Government 2011, *Pacific Climate Change Science Program: Vanuatu*, published November 2011, accessed 23 November 2017. [https://www.pacificclimatechangescience.org/wp-content/uploads/2013/06/15\\_PCCSP\\_Vanuatu\\_8pp.pdf](https://www.pacificclimatechangescience.org/wp-content/uploads/2013/06/15_PCCSP_Vanuatu_8pp.pdf)
- The Australian Government 2017, *Pacific Climate Change Science*, viewed 22 April 2017, <http://www.pacificclimatechangescience.org/>
- The Australian Government, 2014, *Climate Variability, Extremes and Change in the Western Tropical Pacific: New Science and Updated Country Reports 2014*, accessed 22 April, 2017, [http://www.pacificclimatechangescience.org/wp-content/uploads/2014/07/PACCSAP\\_CountryReports2014\\_Ch2CookIs\\_WEB\\_140710.pdf](http://www.pacificclimatechangescience.org/wp-content/uploads/2014/07/PACCSAP_CountryReports2014_Ch2CookIs_WEB_140710.pdf)
- The Australian Government. 2012. *Pacific Islands Climate Prediction Project 2003-2012*. Accessed 4 January 2018. <http://cosppac.bom.gov.au/pacific-islands-climate-prediction-project/>
- The Australian Government. 2017. *Climate and Oceans Support Program in the Pacific*. Accessed 3 January 2018. <http://cosppac.bom.gov.au/products-and-services/online-climate-outlook-forum/>
- The Cook Island Government. 2016. *Kaveinga Tapapa: Climate & Disaster Compatible Development Policy 2013-2016*. Published September 2016, accessed 7 January 2018. [http://www.mfem.gov.ck/images/Climate\\_Disaster-Compatible\\_Development\\_Policy\\_Final\\_copy.pdf](http://www.mfem.gov.ck/images/Climate_Disaster-Compatible_Development_Policy_Final_copy.pdf)
- The European Commission, 2017, *2020 Climate & Energy Package*, accessed 25 April 2017. [https://ec.europa.eu/clima/policies/strategies/2020\\_en](https://ec.europa.eu/clima/policies/strategies/2020_en)
- The European Commission, 2017, *2030 Climate & Energy framework*, accessed 25 April 2017. [https://ec.europa.eu/clima/policies/strategies/2030\\_en](https://ec.europa.eu/clima/policies/strategies/2030_en)

- The European Commission, 2017, *Climate strategies & targets*, accessed 25 April 2017. [https://ec.europa.eu/clima/policies/strategies\\_en](https://ec.europa.eu/clima/policies/strategies_en)
- The Government of the Republic of Vanuatu 2015, *Vanuatu Climate Change and Disaster Risk Reduction Policy 2016-2030*, published 2015, accessed 23 November 2017. [http://www.nab.vu/sites/default/files/nab/vanuatu\\_cc\\_drr\\_policy\\_minus\\_att4v4.pdf](http://www.nab.vu/sites/default/files/nab/vanuatu_cc_drr_policy_minus_att4v4.pdf)
- The New Zealand Government, 2016, *New Zealand's Action on Climate Change*, accessed 25 April 2017.
- The World Bank 2013, *Acting on Climate Change & Disaster Risk for the Pacific*, accessed 3 October 2017. <http://documents.worldbank.org/curated/en/354821468098054153/pdf/808690Revised000Box379874B00PUBLIC0.pdf>
- UNFCCC 2011, *Framework Convention on Climate Change*, accessed 1 August 2017. <http://unfccc.int/resource/docs/2011/awglca14/eng/inf01.pdf>
- UNFCCC 2015, *Republic of the Marshall Islands: Intended Nationally Determined Contribution*, published 21 July 2015, accessed 2 November 2017. <http://www4.unfccc.int/ndcregistry/PublishedDocuments/Marshall%20Islands%20First/150721%20RMI%20INDC%20JULY%202015%20FINAL%20SUBMITTED.pdf>
- UNFCCC 2015, *The Solomon Islands Submit their Climate Action Plan Ahead of 2015 Paris Agreement*, published 30 September 2015, accessed 2 November 2017. <http://newsroom.unfccc.int/unfccc-newsroom/the-solomon-islands-submit-their-climate-action-plan-ahead-of-2015-paris-agreement/>
- UNFCCC 2017, *How Fiji is Impacted by Climate Change*, accessed 19 July 2017. <http://newsroom.unfccc.int/cop-23-bonn/how-fiji-is-impacted-by-climate-change/>
- UNFCCC 2017, *Niue: Intended Nationally Determined Contributions*, accessed 6 August 2017. <http://www4.unfccc.int/ndcregistry/PublishedDocuments/Niue%20First/Niue%20INDC%20Final.pdf>
- UNFCCC, 2017, *Republic of Kiribati: Intended Nationally Determined Contribution*, accessed 3 October 2017. [http://www4.unfccc.int/ndcregistry/PublishedDocuments/Kiribati%20First/INDC\\_KIRIBATI.pdf](http://www4.unfccc.int/ndcregistry/PublishedDocuments/Kiribati%20First/INDC_KIRIBATI.pdf)
- United Nations Development Programme. 2012. *Strengthening the resilience of our islands and our communities to climate change (SRIC-CC)*. Accessed 8 January, 2018 [http://www.ws.undp.org/content/samoa/en/home/operations/projects/environment\\_and\\_energy/SRIC\\_CC\\_CookIslands.html](http://www.ws.undp.org/content/samoa/en/home/operations/projects/environment_and_energy/SRIC_CC_CookIslands.html)
- United Nations Development Programme. 2017. *Pacific Adaptation to Climate Change (PACC)*, accessed 14 January 2018, <http://www.adaptation-undp.org/projects/bf-pacc>
- United Nations ESCAP, 2014, *Climate Change and Migration Issues in the Pacific*, accessed 22 April 2017. <http://www.unescap.org/sites/default/files/Climate-Change-and-Migration-Issues-in-the-Pacific.pdf>
- United Nations ESCAP, 2014, *Helping Pacific Islands to Manage Impacts of Climate Change on Migration*, accessed 22 April 2017. <http://www.unescap.org/sites/default/files/PCCM-Project-brochure.pdf>
- United Nations ESCAP, 2016, *Pacific Climate Change and Migration Project*, accessed 22 April 2017. <http://www.unescap.org/subregional-office/pacific/pacific-climate-change-and-migration-project>
- United Nations ESCAP, 2017, *Climate Change and Migration in the Pacific: Links, attitudes and future scenarios in Nauru, Tuvalu and Kiribati*, accessed 25 April 2017. [http://i.unu.edu/media/ehs.unu.edu/news/11747/RZ\\_Pacific\\_EHS\\_ESCAP\\_151201.pdf](http://i.unu.edu/media/ehs.unu.edu/news/11747/RZ_Pacific_EHS_ESCAP_151201.pdf)
- United Nations Framework Convention on Climate Change 2017, *Intended Nationally Determined Contributions: Cook Islands*, last updated 2017 accessed 12 July 2017.

<http://www4.unfccc.int/ndcregistry/PublishedDocuments/Cook%20Islands%20First/Cook%20Islands%20INDCsFINAL7Nov.pdf>

- United Nations Framework Convention on Climate Change 2015, *Fiji's Intended Nationally Determined Contribution*, accessed 19 July 2017. [http://www4.unfccc.int/ndcregistry/PublishedDocuments/Fiji%20First/FIJI\\_iNDC\\_Final\\_051115.pdf](http://www4.unfccc.int/ndcregistry/PublishedDocuments/Fiji%20First/FIJI_iNDC_Final_051115.pdf)
- United Nations Population Fund, Pacific Sub-Regional Office, 2014, *Population and Development Profiles: Pacific Island Countries*, accessed 22 April 2017, [http://countryoffice.unfpa.org/pacific/drive/web\\_140414\\_UNFPA\\_PopulationandDevelopmentProfiles-PacificSub-RegionExtendedv1LRv2.pdf](http://countryoffice.unfpa.org/pacific/drive/web_140414_UNFPA_PopulationandDevelopmentProfiles-PacificSub-RegionExtendedv1LRv2.pdf)
- United Nations World Commission on Environment and Development, *Our Common Future: Brundtland Report*, published 1987, accessed 6 January 2016, <http://www.un-documents.net/our-common-future.pdf>
- US Environmental and Energy Study Institute 2017, *Fossil Fuels*, accessed 23 June 2017. <http://www.eesi.org/topics/fossil-fuels/description>
- Waas, Tom. Huge, Jean. Verbruggen, Aviel. Wright, Tarah. (2011). Sustainable Development: A Bird's Eye View. *Sustainability*, 3 (10), 1637-1661. <http://www.mdpi.com/2071-1050/3/10/1637/htm>
- Wickham, Frank. 2012. *Pacific Adaptation to Climate Change Newsletter: Solomon Islands*. Published 2012. Accessed 26 January 2018. [http://www.adaptation-undp.org/sites/default/files/downloads/pacc\\_si\\_newsletter\\_-\\_2013.pdf](http://www.adaptation-undp.org/sites/default/files/downloads/pacc_si_newsletter_-_2013.pdf)
- Wickham, Frank. 2013. *Pacific Adaptation to Climate Change Newsletter: Solomon Islands*. Published 2013. Accessed 26 January 2018. [http://www.adaptation-undp.org/sites/default/files/downloads/pacc\\_q1\\_newsletter.pdf](http://www.adaptation-undp.org/sites/default/files/downloads/pacc_q1_newsletter.pdf)
- Wurzel, RKW, Liefferink, D, Connelly, J 2016, *The European Union in International Climate Change Politics*, Routledge, Abingdon.