Niue's Joint National Action Plan for Disaster Risk Management and Climate Change

April 2012

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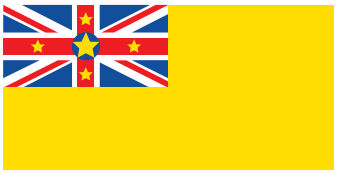

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Foreword

Niue is classified as a small Island developing state. Like its Pacific island neighbours, Niue is economically, environmentally and socially vulnerable to external shocks over which it has little or no control. This places Niue at a distinct disadvantage compared with larger developed countries.

In January 2004, Tropical Cyclone Heta struck the island of Niue. The cyclone's centre is estimated to have passed within 15 km of the Niuean capital, Alofi. Niue is particularly vulnerable to the impacts of climate change and climate variability with the projected increased frequency and intensity of the storm events that may result from climate change proven to already have profound effect on the economy and environment.

The combination of a high, spring tide, directional travel, wind velocity, spiral direction, and a sloping seabed combined to maximum effect in producing a sea surge estimated at 50m that overtopped the cliffs and in cases pushed 100m inland devastating all in its path. The net effect was what may be termed a 'super-cyclone' – possibly of greater intensity than the category five at the top end of the scale. Damage from Cyclone Heta was estimated at over $NZ37 million.

In its commitment to building resilience, Niue has developed the Niue Joint National Action Plan. This plan is the result of a thorough consultative process with stakeholders on Niue. It is therefore a direct response to their concerns, issues and needs and is consistent with the Niue Strategic Integrated Plan, the Niue Climate Change Policy as well as other key national policies.

Furthermore, this document is a reaffirmation of our commitment to the Pacific Island Framework for Action and Climate Change 2006–2015 and the Pacific Disaster Risk Reduction and Disaster Management Framework for Action 2005–2015. These are the overarching Pacific regional policy instruments guiding action on Climate Change and Disaster Risk Management at national and sub national levels in Pacific island countries.

We are particularly grateful to our regional agencies as well as the donor community for their ongoing support that will inevitably provide the enabling environment that this plan needs to be fully and successfully implemented.

In the end it is us - the people of Niue who need to support the implementation of this plan to build a more resilient Niue, where our Taoga and our livelihoods are not only protected from the impacts of climate change and disaster risks, but that they are improved in spite of these.

I am pleased therefore, to present the Niue Joint National Action Plan.

Hon. Toke Talagi
Premier of Niue

TAU ULUAKI MANATU

Fakahigoa a Niue, ko e motu tote atihake agaia – ke fakatatai atu ke he tau motu he Pasifika, ko Niue ke he faahi uku monuina, takatakaimotu mo e moui fehagai kua tū hagahagakelea ke he tau lekua tupu fakalutukia ki fafo he hana malolo ke totoko atu. Lagākina mai he tuaga hagauka ia kua nakai lata ke fakatatai atu a ia ke he tau motu lalahi kua tū tokoluga atu.

Lauia lahi a Niue ke he tau lekua tupu fakaofo ha ko e hikihikiaga he matagi ke he leva he tau vahā pihia mo e kehekehe he tau lekua nei. Ko e tau fuafua to tumau ke malikiti hake e loga pihia mo e mahomo atu e malōlō he tau matagi afa lagākina mai ha ko e tau hikihikiaga he matagi. Kitia ai foki kua fita ni he lauia kelea e motu ke he moui ukumonuina mo e takatakaimotu ka e mua atu ke he tau amaamanakiaga ke he atihakeaga he motu ko Niue.

Ko e mahina Ianuari 2004, ne tō e matagi Afa ko Heta ki Niue. Ko e uho tonu he matagi afā nei ne iloa pehē kua agi tata mai ke he motu 15 kilomita mo e taone ko Alofi. Lagā ni ha ko e tukuna peau tokoluga, hana tafe, mafiti mo e malōlō e agi mo e gū he matagi, agi mavikoviko mo e papatī e toka he moana, kua fakafelau ke moua mai e tau peau kua mua atu he tokoluga, fuafua ki ai ko e 50 mita he tokoluga kua hoko ti molea e tau kaukau feutu kua tafe atu 100 mita ki loto he motu ko Niue. Ko e lauiaaga he lekua nei kua fakakupu ko e tapunu he tau afā kua mahunu atu haana malōlō molea hake he matagi afā fakaotiaga ke he fufuta lima.

Fuafua e tau koloa he motu ne malona ha ko e Afa ko Heta kua molea e $37 miliona. Kua kitia ki ai kua kamatamata e moui tū mauokafua he tau tagata Niue kua eke foki mo tāmataaga ke he liu atiahakeaga he motu.

Ke fakamoho aki e hana manako ke liu atihake e moui tū mauokafua he motu, kua talaga e Niue Joint Action Plan. Ko e Palana nei ko e fakaotiaga he gahua kaufakalataha mo e fakamakamaka mo e tau tagata oti he motu ko Niue. Ko e taliaaga pauaki ke he tau tagata ha ko e ha lautolu a tau manatu tupetupe, tau matolitoli mo e tau manakoloto.

Kia eke e Palana nei mo takitakiaga mo e lagomataiaga ke he feakiaga he aga tu mauokafua he tau tagata Niue. Mahuiga atu foki kua fakapiki ke he Tohi Niue National Strategic Plan, Niue Climate Change Policy mo e falu a hatakiaga he motu. Ke lalafi atu, ko e Palana nei ko e fakamohoaga ha tautolu ke he Pacific Island Framework for Action and Climate Change 2006-2015 mo e Disaster Risk Reduction mo e Disaster Management Framework for Action 2005-2015.

Tuku atu ha mautolu a tau manatu Oue Tulou ke he tau Matakau he Pasifika pihia foki mo e tau matakau foaki tupe ke he hā lautolu a tau lagomatai tumau mai ke fakatupu olaola e Palana nei mo e fakamooli hana tau fakagahuaaga.

Ko e fakahikuaga, ko tautolu ni – ko e tau kakai tagata he motu ko Niue kua lata tonu ke lagomatai mo e felagoaki ke fakagahua e Palana nei ke fakaholokimua e aga mo e mahani tū mauokafua ha Niue, mua atu ke he puipuiaga he tau momoui taitai, kamata mai he vao uhi ke hoko ke he tofia mai he tau lekua tupu fakaofo ha ko e hiihikiga he matagi, ka e mahomo atu ki mua pete ni kua pihia.

Kua hā hā ia au e lilifu ke fakamooli e tohi mahuiga nei ko e Niue Joint Action Plan (JNAP).

Toke T Talagi
Palemia Niue.

Acknowledgements

Acronyms

AWS	Automatic Weather Station
BoM	Bureau of Meteorology (Australia)
CCA	Climate Change Adaptation
DAFF	Department of Agriculture, Forestry and Fisheries
DCA	Department of Community Affairs
DJLS	Department of Justice, Lands and Surveys
DM	Disaster Management
DRR	Disaster Risk Reduction
DRM	Disaster Risk Management
DoE	Department of Education
EEZ	Exclusive Economic Zone
ENSO	El Niño Southern Oscillation
FAO	Food and Agriculture Organization
GDP	Gross Domestic Product
GEF	Global Environment Facility
GFDRR	Global Facility for Disaster Reduction and Recovery
GoN	Government of Niue
ICCAI	International Climate Change Adaptation Initiative
INC	Initial National Communications
IPCC	Intergovernmental Panel on Climate Change
JNAP	Joint National Action Plan
M&E	Monitoring and Evaluation
NDC	National Disaster Council
NDMCC	National Department of Meteorology and Climate Change
NEOC	National Emergency Operations Centre
NNSP	Niue National Strategic Plan
NPSC	National Public Service Commission
NTO	National Tourism Office
PACC	Pacific Adaptation to Climate Change
PaRIS	Pacific Risk Information System
PCCSP	Pacific Climate Change Science Program
PCCR	Pacific Climate Change Roundtable
PDRMPN	Pacific Disaster Risk Management Partnership Network
PMU	Project Management Unit
PTWC	Pacific Tsunami Warning Center
PWD	Public Works Department
SNC	Second National Communications
SoG	Secretary of Government
SOPAC	Applied Geoscience & Technology Division, SPC
SPC	Secretariat of the Pacific Community
SPREP	Secretariat of the Pacific Regional Environment Programme
TA	Technical Assistance
TC	Tropical Cyclone
UNDP	United Nations Development Programme

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Executive Summary

Niue is a self-governing nation in free association with New Zealand, located partway between Tonga, Samoa and the Cook Islands. Niue's economy is heavily dependent on support from New Zealand and aid accounts for 70% of Niue's GDP. Niue has a population of approximately 1625 people, making it the world's least populated state.

Niue is vulnerable to climate risks such as Tropical Cyclones (TCs) and droughts; geological risks such as earthquakes and tsunami; and human-caused risks such as disease outbreaks and contamination of the water supply. As the world's largest elevated coral atoll, its rocky and rugged coastline has steep cliffs which offer marginal protection from risks such as tsunami. However as experienced in 2004 with the category 5 Tropical Cyclone Heta, TC-induced waves have the capacity to overtop the steep cliffs and wash boulders inland up to +25 m above sea level. Niue's isolation, small population, reliance on donor aid, limited water resources and marginal agricultural potential also contribute to its overall risk profile.

Niue's Joint National Action Plan (JNAP) for Climate Change Adaptation and Disaster Risk Management provides a three year plan of action to address existing gaps relating to vulnerability to climate change impacts and disasters. Developed in partnership with Pacific regional organisations (SPC/SOPAC and SPREP), the Government of Niue have identified five priority areas of attention, which form the goals in the JNAP Implementation Matrix:

1. **Strong and effective institutional basis for disaster risk reduction / climate change adaptation**
2. **Strong public awareness and improved understanding of the causes and effects of climate change, climate variability and disasters**
3. **Strengthened livelihoods, community resilience, natural resources and assets**
4. **Strengthened capacity to adapt renewable energy technologies and improve energy efficiency**
5. **Strengthened disaster preparedness for effective response**

This report provides the details of how the JNAP was developed and how it will be implemented. It also maps out the actions, activities and tasks required to meet these goals, and provides indicative costing in preparation for implementation. A summary of the full implementation matrix, which also includes outcomes and indicators, is provided on next page.

Goal 1: Strong and effective institutional basis for disaster risk reduction / climate change adaptation

Actions:

- Mainstream climate change and disaster risk reduction considerations at national level
- Build strong consultative and participatory community approach (including Village Councils, NGO, Civil Society and private sector) in climate change adaptation, mitigation and disaster risk reduction planning, implementation and monitoring and evaluation.
- Establish a Steering Committee to coordinate CCA and DRR activities and to oversee the JNAP unit
- Establish and fund a JNAP Unit within the Department of Environment to coordinate and monitor JNAP implementation and provide secretariat support to above Committee
- Incorporate disaster reduction and climate change considerations into Niue's National Building Code
- Develop an integrated risk based approach to land use and development
- Build national and local capacity to access external funding mechanisms

Goal 2: Strong public awareness and improved understanding of the causes and effects of climate change, climate variability and disasters

Actions:

- Integrate traditional knowledge in CCA and DRM
- Establish a platform to share lessons learned and best practices
- Develop and implement an effective Communications Strategy consolidating outputs and outcomes of CCA and DRM related initiatives
- Include disaster risk management and climate change adaptation in School curricula
- Distribute 2nd National Communications Report
- Develop 3rd National Communications Report

Goal 3: Strengthened livelihoods, community resilience, natural resources and assets

Actions:

- Strengthen community-based disaster risk management and climate change adaptation programmes
- Establish effective early warning systems to provide accurate and timely warning for all hazards to the community
- Ensure food security
- Develop integrated information management system(s) to support DRM and CCA decision making processes and inform JNAP implementation

Goal 4: Strengthened capacity to adapt renewable energy technologies and improve energy efficiency

Actions:

- Strengthen governance to support energy efficiency and renewable energy options in line with the Niue Strategic Energy Policy and Action Plan
- Improve energy security

Goal 5: Strengthened disaster preparedness for effective response

Actions:

- Strengthen capacities to respond effectively to disasters
- Develop awareness of International and Regional Humanitarian Assistance

Background Information

a. Geographical Setting

Niue is a small Pacific Island Country (PIC) located partway between Tonga, Samoa and the Cook Islands. The island is approximately 259 square kilometres and is the world's largest elevated coral atoll (Barnett, 2008) with its highest point being less than 70m above sea level. Niue has an Exclusive Economic Zone (EEZ) of 390,000km^2 and has two reef atolls, Anitope and Beveridge, where commercial fishing is banned (SOPAC, 2000). Niue's coastline is rocky and rugged, with steep cliffs, caves, deep chasms and blowholes (GoN, 2000). The island of Niue is comprised of three terraces with the lower terrace being 28m above sea level and the upper terrace averaging 69m above sea level (GoN, 2000). Niue's capital is Alofi, which is located on the western side of the island, as shown in Figure 1. A total of 14 villages are scattered across the island, and a 64km circuit road passes through all the villages (SPREP, 2009).

Figure 1. Map of Niue.

Niue is dominated by two distinct district seasons: the wet (or hot) season, which lasts from November until April and the dry (cool) season, lasting from May to October. Torrential downpours of rain during the wet season are common and account for approximately 68% of Niue's total annual rainfall, which averages 2180mm per year (SPREP, 2009). Rainfall is highly variable in nature and ranges between 839-3226mm per year, with trends strongly associated with El Niño Southern Oscillation (ENSO) patterns. Other climatological drivers affecting Niue include the South Pacific Convergence Zone (SPCZ – which is close to the island in the wet season, contributing to high rainfall totals), the sub-tropical high pressure zone and south-easterly trade winds (NDMCC, 2011). Figure 2 shows Niue's average temperature and rainfall at Hanan Airport.

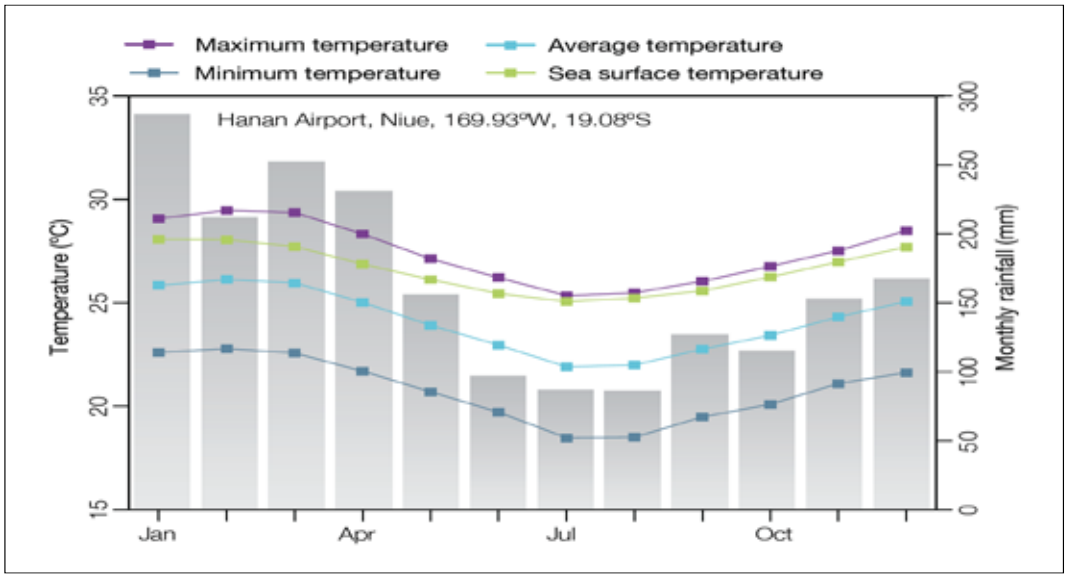

Figure 2. Seasonal rainfall and temperature at Hanan Airport (Source: PCCSP, 2011).

Being a coral atoll, Niue's soils are marginal, rendering intensive agriculture and long-term monoculture difficult due to shallow soil depth, low nutrient content and poor soil structure (SPREP, 2009). FAO note that only 11.6% of Niue's land is considered arable (FAO, 2010). Despite this, subsistence level agriculture accounts for most agricultural productivity and contributes to 23% of Niue's Gross Domestic Product (GDP). Subsistence agriculture is also important for cultural, dietary and economic reasons (UNDP, 2010). Taro, cassava, sweet potato and yams are commonly grown, while livestock include chickens, pigs and a small number of cattle are also kept to support subsistence livelihoods (SPREP, 2009).

Niue's dominant coral reefs are found on the western side of the island, which is where most fishing activities occur. Fishing occurs mainly at the subsistence level (accounting for 90% of total fish catch) due to the limited inshore fishing resources (UNDP, 2010).

b. Population

Niue has a population of approximately 1625 (data from the last census in 2006), people, making it the world's least populated state (Barnett, 2008). Large scale outward migration from Niue, usually from younger age groups, has occurred since 1971 (aided by the opening of Niue's Hanan International Airport in 1970), predominantly to New Zealand for education and employment opportunities and family ties, as well as perceived higher standards of living abroad (GoN, 2006a). As a result, there are over 20,000 people identifying themselves as Niuean in New Zealand (Barnett, 2008). More than four times the number of Niueans born in Niue live in New Zealand, compared to in Niue (Bedford et al., 2006) and Niueans are freely able to migrate to New Zealand with no restrictions in entering the New Zealand or Australian labour markets. See Figure 3 for a depiction of population decline since the 1970s.

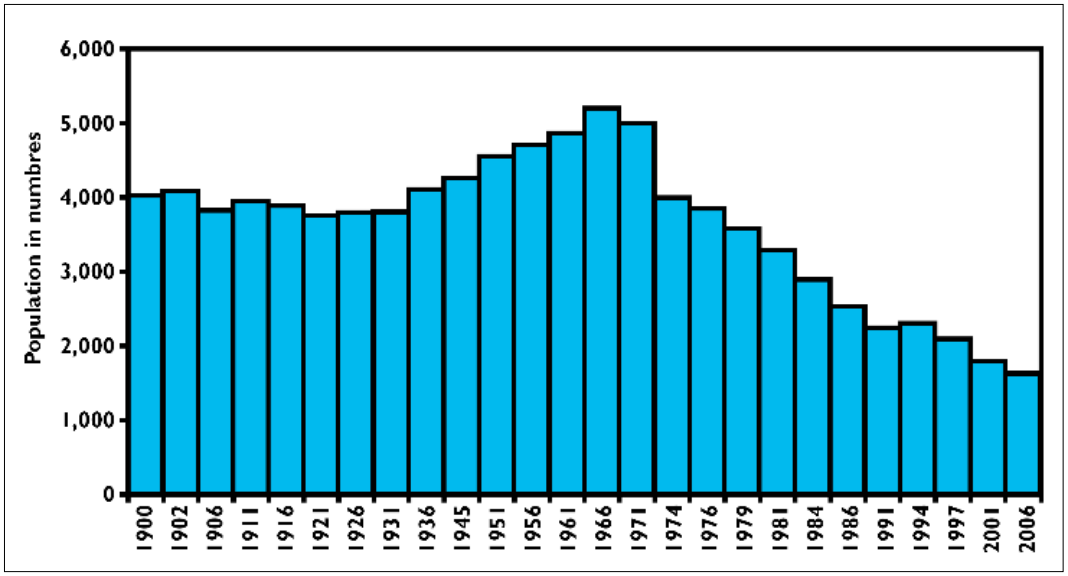

Figure 3. Population of Niue, 1900 – 2006 (Source: GoN 2006b)

Population decline is a concern, with the Premier noting in 2003: "There are serious concerns that if our population drops much lower, then the very things that make us a nation, such as our spiritualism, language, heritage and social values will be threatened" (GoN, 2003). Population decline leads to a decrease in human capital when workers leave, which leads then to a strain on Niue's development capacity. This was noted in Niue's report on the Millennium Development Goals, and the addition of "Promote sustainable population development" as a new goal (GoN, 2006a).

c. Governance

Since 1974, Niue has been self-governing in free association with New Zealand, under the Niue Constitution (GoN, 2009). Niueans are also New Zealand citizens. The Premier is the Head of Government and the Executive Government (Cabinet) consists of the Premier and three ministers (GoN, 2009). The Legislative Assembly (Parliament) consists of 20 members which represent 14 village constituencies and 6 common roll members (GoN, 2002). Elections are held every 3 years.

Devolution of responsibility from the Legislative Assembly to Village Councils recognises the need to preserve and build strength of family and community systems and village life in general, which remain the focus of Niue's cultural and political organisations (GoN, 2002). Tãoga Niue is a government department established to sustain Niue's national identity, including through language; customs and traditions; and arts and crafts. The purpose of Tãoga Niue is also to address the threat of declining population and the penetration of Western values and practices on the people and culture of Niue (Barnett, 2008).

The church is an additional institution important in Niue's governance structure, with Ekalesia Niue being the dominant church, accounting for 60% of the population (Barnett, 2008). In some villages, the Village Council and the Church Council are indistinguishable. Relatively few civil society organisations exist, with their influence generally restricted to their area of interest.

d. National Development Policies and Priorities

Niue's National Strategic Plan (2009-2013) has a vision of "Niue ke Monuina – A Prosperous Niue" and is built upon national development pillars including:

- Financial Stability
- Governance
- Economic Development
- Social Development
- Environment Development
- Tãoga Niue

Aims and strategies for each of the national development pillars describe the ways in which the objectives are to be met. Eleven guiding principles also frame the approach to which Niue takes to achieving Niue ke Monuina. These guiding principles are:

- Relevant to Niue ke Monuina – A Prosperous Niue
- Efficient and effective systems
- Collaboration, communication and consultation with sector wide approaches
- Accountability, responsibility and transparency
- Sustainable healthy development
- Effective resource allocation and use
- A strategic focus and alliances with key stakeholders
- Cohesive and coordinated implementation of the strategic objectives
- Outcome focused, and mindful of cultural and spiritual values
- Constant monitoring and evaluation
- Implementation framework and outcome-based sector plans (outcome focused an prioritised implementation programme)

See Section 2b for further details of Niue's national policy context and its relation to the Joint National Action Plan (JNAP).

e. Economy

Niue's economy is heavily dependent on support from New Zealand, who has a statutory obligation to provide economic and administrative assistance to Niue (GoN, 2009). Aid accounts for 70% of Niue's GDP, which is NZ$10,000 per capita (Barnett and Ellemor, 2007). Other sources of financial resources include taxation, government trading activities, sovereign assets and additional support form development partners (GoN, 2009). Low population, scarcity of natural resources, isolation and high costs of transportation lead to Niue's economy being far from self-sufficient (GoN, 2010a).

The public sector accounts for the vast majority of the economy, employing over 400 people (Barnett, 2008), and representing 56% of those formally employed (GoN, 2006b). Other minority sectors in Niue include tourism, fishing, with noni and vanilla which are being developed as a cash crop for export (GoN, 2009). Trade and tourism suffer from limited transport options, with only weekly flights to/from Auckland servicing the island and the channel accessing Alofi wharf too small for large shipping vessels.

f. Risk Context

Niue is vulnerable to climate risks such as tropical cyclones (TCs) and droughts; geological risks such as earthquakes and tsunami; and human-caused risks such as disease outbreaks and contamination of its only fresh water supply.[1] Niue's risk profile is also inherently linked to its isolation and limited capacity to manage and respond to disasters and climate change impacts. Traditional coping strategies have tended to make way for an increased reliance on external support, as New Zealand fulfils its obligations to provide support to Niue in times of disaster. Finally, climate change is likely to exacerbate most of Niue's risks – see below of details.

Climate and weather driven risks

Niue's tropical cyclone season lasts from November to April. Niue has experienced numerous tropical cyclones in the past and since 1969, 63 tropical cyclones have come within 400km of the island (NDMCC, 2011). ENSO patterns are thought to influence the frequency of tropical cyclones, with more events observed during El Niño episodes in Niue (Kumar, 2011). Recent past tropical cyclone events include Tropical Cyclone Ofa in 1990, the centre of which was believed to pass within 60km of Alofi (Forbes, 1996). TC Ofa transformed Niue from a food exporting country to one dependent on imports for 2 years. Wave damage from TC Ofa was reported 20m above normal sea level (SEAFRAME, 2008).

Tropical Cyclone Heta was a category 5 storm hitting Niue in 2004, and had an even greater impact on infrastructure and agricultural production (Wade 2005), causing damage equalling three times Niue's GDP (NDMCC, 2011). Figure 5 shows a photo post-TC Heta of a boulder washed over the cliffs and 25m inland.

During TC Heta, wind speeds around 130 km/h and wind gusts were recorded at 200 km/h at the Niue Meteorological Office before the power disruption. Nevertheless, the Regional Specialised Meteorological Centre in Nadi, Fiji estimated maximum sustained winds of 210 km/h with gusts up to 300 km/h (Biukoto and Bonte-Grapentin, 2004). Two people died as a result of TC Heta. Damage also included destruction of the hospital and Niue Hotel, along the

[1] See NDMCC, 2011; Biukoto and Bonte, 2004; Australian Government Bureau of Meteorology, 2009; PCRAFI 2011

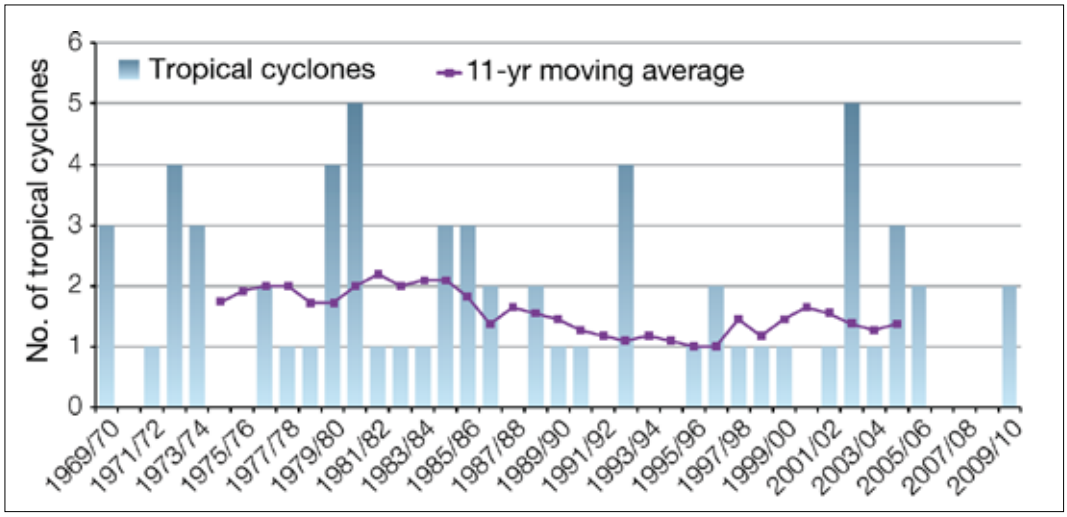

Figure 4. Number of tropical cyclones passing within 400km of Niue (Source: PCCSP, 2011).

Figure 5. Photo taken post- TC Heta, showing a massive boulder washed over the cliffs and 50m inland, smashing into a building. (Source: Biukoto and Bonte-Grapentin, 2004).

Alofi South coast destruction of most of the commercial and financial buildings, destruction of 43 houses and severe damage to a further 20 (Barnett and Ellemor, 2007). The Huanaki Cultural Centre – an important Niuean cultural meeting place – was destroyed, and severe impacts to biodiversity were felt, particularly to the native pigeon and fruit bat (Barnett and Ellemor, 2007).

Despite Niue's tall cliffs, TC induced waves have the capacity to overtop the coastline and wash boulders inland, as happened with TC Heta where waves impacts were observed at sites up to +25 m above sea level. The increased wind speeds, constant wind direction and narrow continental shelf around Niue developed maximum sea conditions and wave amplitude during TC Heta that overtopped the cliffs damaging coastal property and infrastructure. Aside from the damage to the built environment, extensive impacts were also seen on the coral reef, flora and fauna (GoN, 2000), and salt water intrusion affecting agricultural crops and family gardens.

ENSO cycles strongly influence rainfall, with El Niño episodes linked to periods of drought in Niue, affecting rain-fed gardens and household plantations and recharge of the groundwater.

Record dry season rainfall usually occurs during an El Niño, as happened in 1983, 1991 and 1998 where less than 400mm was received, which equates to half the normal dry season total (NDMCC, 2011). Conversely, La Niña episodes are related to above average rainfall, which can result in yam disease outbreaks and heighten the prevalence of mosquito-borne diseases such as dengue (NDMCC, 2011).

Current and projected climate change impacts

Niue's temperature trends indicate an increasing trend since 1950, with increasing maximum temperatures of 0.15°C per decade - a trend consistent with the patterns of global warming (PCCSP, 2011). Patterns for rainfall do not indicate a trend for either annual or seasonal rainfall.

Niue's closest sea level recording instrument is found in Rarotonga in the Cook Islands, which indicates an increasing trend of 5mm per year (PCCSP, 2011). The Intergovernmental Panel on Climate Change (IPCC) indicates over the last hundred years, the global average rise in sea level is 2mm per year, highlighting that in Niue's region, the rate is higher than average. It is important to mention that sea level is also strongly linked to ENSO patterns on an inter-annual basis – for example, the 1997-1998 El Niño event caused sea level to fall by around 20cm (SEAFRAME, 2008).

Climate change is likely to bring a continued increase to average temperature conditions, with an increase of up to 0.9 – 1.7°C by 2055 in a high emissions scenario (PCCSP, 2011). An increase in the number of hot days and warm nights is also likely, with a decline in cool weather. Latest projections for temperature in Niue are provided below in Table 1, showing the range dependent on emissions scenario, and values representing 90% of the range of the climate models relative to the period 1980-1999 (PCCSP, 2011).

Table 1. Projected annual average air temperature for Niue (Source: PCCSP, 2011).

	2030 (°C)	2055 (°C)	2090 (°C)
Low emission scenario	0.2 – 1.0	0.5 – 1.5	0.7 – 1.9
Medium emission scenario	0.2 – 1.2	0.7 – 1.9	1.2 – 2.8
High emission scenario	0.3 – 1.1	0.9 – 1.7	1.8 – 3.2

A decrease in frequency of tropical cyclones is likely for Niue, however it is likely that an increase in the proportion of more intense storms will occur (PCCSP, 2011). Niue's recent experience of TC Heta in 2004 highlights the vulnerability of Niue's population to such events, given the destructive nature of high winds and waves, the reliance on subsistence living, and the threat to water resources. Alongside water security, food security is also likely to be threatened by climate change and more frequent severe weather events, particularly given the marginal nature of Niue's soils.

Climate change impacts on rainfall patterns are uncertain, with inconsistent climate model results (PCCSP, 2011). There is a suggestion from models of a decrease in dry season rainfall and an increase in wet season rainfall. The rain that does fall in the dry season is expected to fall in fewer but more intense episodes, with implications for erosion and potential damage to agricultural crops (Kirono et al., 2008). No clear trend is apparent for the frequency of droughts in the 21st century.

Agricultural production is highly vulnerable to an increase in rainfall variability and changes to soil moisture. After only 3 weeks without rain, the roots of the main food crop – talo – begin to wither (Barnett, 2008). Crop yield and agricultural sustainability are threatened by a decrease in rainfall, and when coupled with higher temperatures, can lead to increased plant stress and a decrease in yield (GoN, 2000). Prolonged periods of drought have occurred in the past, for example between 1940-1944, annual rainfall was almost 24% below the average, while in the two periods of 1925-1926 and 1976-77, rainfall was 32% below average (SPREP,

2009). Agricultural production can also be severely impacted by prolonged flooding and higher humidity, which is also likely as rainfall variability is heightened. An increased incidence of agricultural pests and disease are likely as fungi and bacteria can thrive in wet, humid conditions.

A summary of projected climate change impacts on different sectors in Niue is provided below in Table 2.

Table 2. Climate change impacts in selected sectors in Niue (Source: Kirono et al., 2008).

Sector	Changes	Implication
General aspect	• Increase in extreme rainfall • Increase in tropical cyclone intensity and mean sea level rise	• Increased erosion • Storm surges and large waves causing coastal inundation and erosion, coastal retreat
Water Resources	• Decrease in dry season rainfall • Increase in wind speed and temperature intensity potential evapotranspiration	• Groundwater recharge may be lessened • Depletion in quality and quantity of groundwater
Agriculture	• Decreases in rainfall and increases in evapotranspiration • Increase in wind speed	• Decrease in talo production • Potential increase in wind erosion, reducing size of land suitable for agriculture
Fishing	• Increase in temperature • Changes in ENSO, changes of water current patterns	• Artisanal and subsistence fisheries may decline due to increase in coral bleaching episodes and increased risks of ciguatera poisoning caused by disturbance to the reefs • Availability and seasonality of deep water fish may change
Tourism	• Tropical cyclone frequency not change but its intensity may change • Increase in air and sea surface temperature	• Less safety • Proliferate certain organisms (e.g. mosquitoes and medusas) and pose a health threat

Water resources

Niue has no surface water and relies upon groundwater resources and rain catchments. Groundwater is recharged via rainfall infiltration and rainfall currently exceeds the rate of extraction (Barnett, 2008). However, Niue's porous soil renders its underground fresh water vulnerable to contamination, from both human causes (e.g. agricultural chemicals) and natural sources (e.g. sea water) (see SOPAC, 2007). Pollution of groundwater can also occur as a result of tropical cyclones, with intense rainfall and coastal erosion leading to contamination of sea water and land based pollutants (GoN, 2000).

Any significant reduction in rainfall or contamination of groundwater therefore threatens the dominant source of Niue's water resources, which carries implications for its domestic, commercial and agricultural users – all of whom rely upon it as an available water resource with 80% domestic use, 15% agricultural use and 5% industrial/commercial use. This is particularly concerning in periods of drought, as abstraction wells may become saline, leading to water scarcity and potential competition between users from different sectors – e.g. domestic, commercial, agricultural (UNDP, 2010).

Niue's Water Steering Committee Communications Strategy notes two main issues relating to water in Niue:

- Increasing cost of supplying water
- Pollution

Earthquakes and tsunamis

Niue is situated along a relatively quiet seismic area but is surrounded by the Pacific "ring of fire," an extremely active seismic area capable of generating large earthquakes and, in some cases, major tsunamis that can travel great distances (PCRAFI , 2011). Niue has no historical records of damaging earthquakes or significant tsunami damage.

In 2009, SOPAC, along with the Government of Niue and the Australian Bureau of Meteorology (BoM), conducted a National Capacity Assessment for tsunami warning and mitigation systems to assess Niue's capacity to prepare for, receive, communicate and respond effectively to tsunami warnings. Linked to this was an assessment of the tsunami threat from several sources, i.e. Tonga Trench to the west of Niue, New Hebrides, South Solomon and Puysegur Trenches. The high cliffs and deep bathymetry of Niue suggest it may not be very susceptible to significant shoaling and inundation from a distant-source tsunami. However, Niue's proximity to the Tongan Trench and experience of TC Heta there raises the concern that there is still potential exposure to tsunamis (GoN et al., 2010).

Development and land management processes

Additional risks exist in terms of less than optimal development and land management practices. Already alluded to above, development practices have the potential to threaten Niue's groundwater resource via contamination. Waste management is an additional source of risk of contamination, via solid and sanitation waste disposal. Inadequate waste management in the livestock sector also poses a threat to water quality.

Deforestation also poses a risk to the stability of Niue's shallow soils. Removal of native forests to make way for agriculture – both livestock and crops such as taro - or other human activities can enhance erosion, increase run-off and aid the ability of land based pollutants to enter the groundwater. Over the past 20 years, 22% of indigenous forests have been cleared (UNDP, 2010). Traditional slash and burn methods of land clearing are making way for clearance using bulldozers, which addresses some concerns regarding loss of soil fertility (GoN, 2010a).

Development in the coastal zone is an additional concern which has been acknowledged with the Coastal Development Policy (2008) - see Section 2d for details. Unsustainable harvesting practices in the coastal zone, poaching and illegal fishing, unsustainable harvesting techniques, leaking septic tanks, flow of land pollutants to the ocean and inadequate waste disposal systems have all contributed to degraded environmental conditions (GoN, 2010a).

Development of the Joint National Action Plan for Disaster Risk Management and Climate Change

a. Introduction

The development of the JNAP on CCA and DRM is Niue's response to national, regional and international processes, agreements and frameworks in strategically addressing risk and vulnerability via a holistic approach. The Government of Niue has endorsed an integrated, "whole of country and whole of Government" approach to addressing climate change and disaster risk management. The remainder of this section describes international, regional and national policy instruments relevant to DRM and CCA.

b. Geographical Setting

The United Nations Framework Convention on Climate Change (UNFCCC) is the key international agreement aiming to stabilise greenhouse gases in the atmosphere to prevent dangerous climate change impacts. Due to its political standing and relationship with New Zealand, Niue has special membership with the UNFCCC, joining in 1996. Niue ratified the Kyoto Protocol in 1999 however included the following remarks to the UNFCCC:

"The Government of Niue declares its understanding that ratification of the Kyoto Protocol shall in no way constitute a renunciation of any rights under international law concerning state responsibility for the adverse effects of climate change and that no provisions in the Protocol can be interpreted as derogating from the principles of general international law.

In this regard, the Government of Niue further declares that, in light of the best available scientific information and assessment of climate change and impacts, it considers the emissions reduction obligations in Article 3 of the Kyoto Protocol to be inadequate to prevent dangerous anthropogenic interference with the climate system".[2]

Niue undertook its Initial National Communications to the UNFCCC in 2000. At the international level, the Hyogo Framework for Action (2005–2015) is the primary instrument for a coordinated approach to disaster management and risk reduction and was agreed to by Pacific Forum leaders via the approval of the regional agreement – Pacific Disaster Risk Reduction and Disaster Management Framework for Action 2005–2015 (Pacific DRM Framework). The Pacific Disaster Risk Management Partnership Network (PDRMPN), established in 2006, provides a collaborative and cooperative mechanism to support PICs in disaster risk management capacity building and implementation of the Pacific DRM Framework (SOPAC, 2009).

For climate change at the regional level, the "Niue Declaration on Climate Change" was endorsed by Pacific leaders at the 39th Pacific Island Forum held in Niue in August 2008. It is a key document in the region's efforts to address climate change. The Pacific Islands Framework for Action on Climate Change (PIFACC-2006–2015) & Action Plan for the Implementation (2008) set out issues and response measures to address climate change in the Pacific region. The Pacific Climate Change Roundtable (PCCR) was established in 2008 and meets biannually primarily to support PICs with the implementation of the PIFACC. Additionally, the PCCR provides a networking and information sharing opportunity to achieve a more coordinated approach to adaptation and mitigation in the region, and also provides a platform to link PICs to donor countries.

c. National Policy Context

As noted above, Niue's National Strategic Plan (NNSP) for 2009-2013 underpins the country's objectives for sustainable development and builds upon its previous plan (Niue Integrated Strategic Plan 2003–2008: see GoN, 2003). The NNSP also provides a strong foundation for the JNAP. Reducing risk and enhancing resilience to disasters and climate change complement each of the National Development Pillars, as seen below.

[2] UNFCCC, 2001. Declarations and Reservations by Parties. http://unfccc.int/kyoto_protocol/status_of_ratification/items/5424txt.php

Niue's National Development Pillars:	
Financial Stability	Ensure that sufficient financial resources are secured, and responsible fiscal management is prudent, sustainable and supports healthy development strategies
Governance	Ensure that good governance reflects the principles of transparency and accountability and is practised at all levels
Economic Development	Maximise benefits from Niue's resources in a sustainable manner focusing on private sector development, targeting tourism, agriculture and fisheries supported by safe, reliable, affordable healthy infrastructure
Social Development	Enjoy a harmonious and healthy lifestyle in a thriving, educated and safe community that has access to a wide range of quality social services and healthy development opportunities
Environmental Development	Sustainable use and management of Niue's natural resources and environment for present and future generations
Tāoga Niue	Promote, preserve and strengthen Niuean cultural heritage, language, values and identity

In addition to the NNSP, key National Policies guiding the development of the JNAP also include:

- Niue National Climate Change Policy 2010
- Niue National Sustainable Coastal Development Policy 2009
- Niue National Emergency Plan 2009
- The Ecosystem Approach to Fisheries Management 2010
- Niue National Strategic Energy Policy and Action Plan 2005
- Forest Policy 2004

Additional relevant national policy instruments and legislation relating to DRM and CCA include:

- Niue National Disaster Plan 2010 (see (d) below)
- National Assessment: Tsunami Warning and Mitigation Systems
- Water Resources Act 1996
- Water Resources Bill and Water Management Plan (submitted to Cabinet for approval)
- Integrated Waste Management Strategy 2010
- Integrated Environmental Impact Assessment Regulation (undergoing review for submission to Cabinet)
- The National Action Plan for Land Degradation
- National Forest Policy
- Land Act 1996
- Census Act 1971
- Civil Aviation Act 1999
- Communications Act 1989
- Education Act 1989
- Electric Power Supply Act 1960
- Public Health Act 1965
- Transport Act 1965
- Building Code Act 1992
- Environmental Legislation 2003
- Initial National Communication (INC) 2000 and Second National Communications (SNC) Report 2010 on climate change to the UNFCCC
- Public Emergency Act 1979

d. Existing DRM and CCA Arrangements

Disaster risk management

Niue's National Disaster Plan (2010), which was updated to include lessons learned from TC Heta, contains a number of sub-plans:

- Disaster Management Plan
- Response and Recovery Plan
- Contingency Plans (for cyclone and storm, influenza pandemic) and
- Tsunami Plan.

In times of emergency and disaster, Cabinet maintains overall responsibility for disaster management (GoN, 2010b). On a day-to-day basis, the National Disaster Council (NDC) is the designated authority as the central coordinator for all hazards, while the Police undertake much of the required work (GoN, 2010b).

Village Councils, Government departments and the Police have additional responsibilities in terms of risk reduction and awareness raising which are outlined in the National Disaster Plan (2010). The National Emergency Operations Centre (NEOC) is housed in the Broadcasting Corporation of Niue building and it is the responsibility of the Police to ensure equipment is functioning.

In times of disaster, the Chief of Police is the designated Disaster Controller, providing leadership in overall response, relief and initial recovery. The National Emergency Operations Centre (NEOC) is housed within the Broadcasting Corporation of Niue (BCN), given its communications capacity.

Climate change

Niue's Climate Change Policy was developed in 2009 and defines the position of government and other stakeholders on the issues of climate change, variability and sea level rise. The vision and goal of the Climate Change Policy are as follows:

Vision	"A safer, more resilient Niue to impacts of climate change and towards achieving sustainable livelihoods."
Goal	"To promote understanding of and formulate appropriate responses to the causes and effects of climate change in support of national sustainable development objectives."

The Climate Change Policy also contains six objectives which include:

1. Awareness Raising
2. Data Collection, Storage, Sharing and Application
3. Adaptation
4. Mitigation
5. Governance and Mainstreaming
6. Regional & International Cooperation

Niue has completed its Initial and Second National Communications (SNC) to the UNFCCC. This process involved some stakeholder consultation, alongside developing and tracking greenhouse gas emissions in line with UNFCCC requirements.

The JNAP strongly recognises the links between disaster risk management and climate change action, and thus aims to operationalise the Climate Change Policy and vulnerabilities identified in the SNC via the actions contained in the Results Matrix (see Section 5)..

Niue's Coastal Development Policy, developed in 2008, has the following aims:

- Sustain coastal benefits through integrated coastal area management and development.
- Reduce disaster risks to coastal development and the people of Niue.
- Promote proactive and co-operative governance.

The JNAP also fulfils meeting the task of operationalising the Coastal Development Policy via its actions contained in the Results Matrix.

Niue also has in place a number of projects aimed at risk reduction and climate change adaptation. Existing steering committees are already in place for the Pacific Adaptation to Climate Change (PACC) Project (which has a water focus); the Integrated Water Resources Management (IWRM) Project and the National Communications for climate change. See Section 4 for details on JNAP implementation arrangements.

e. JNAP Development Process

Development of the JNAP for DRM and CCA began at the request of the Government of Niue in October 2010. The initial mission from SOPAC and SPREP was in March 2011, with two follow up missions in May (2011) and October/November 2011.

Cabinet approved the development of a JNAP in March 2011, which allowed for the establishment of a JNAP Task Force Committee which soon followed. The Committee's purpose is to oversee and progress the development of the JNAP activities and implementation plan. The JNAP Committee is comprised of representatives from the Police, Niue Department of Meteorology and Climate Change (NDMCC), Department of Environment and Department of Public Works.

Development of the JNAP proceeded with a highly consultative approach, with each support mission from regional organisations meeting at length with government and non-government representatives to ensure the JNAP reflects the needs and capacity of Niue, and also complements existing projects in place such as PACC and IWRM integrates the implementation of existing DRM and CCA interventions such as the Niue Climate Change Policy, Coastal Development Policy and Niue National Disaster Plan. Related DRM and CCA projects and initiatives can be found in Annex D. Several national stakeholder workshops were held to identify key risks and areas of concern and also to prioritise issues and discuss implementation. See Annex A for chronological details of the JNAP's development.

Joint National Action Plan: Vision and Goals

a. Vision

Building upon the vision of the Climate Change Policy, Niue's vision under the JNAP is: "A safer more resilient Niue"

b. Goals

The following five goals have been developed to progress Niue to a safer, more resilient future:

Goal 1 Strong and effective institutional basis for disaster risk reduction / climate change adaptation
Objectives (i) Mainstream climate change adaptation and disaster risk management into national economic development planning and budgetary processes; and into sector policies and plans (ii) Establish an effective regulatory and institutional framework to facilitate the development and implementation of appropriate national risk reduction measures and responses (iii) Strengthen partnerships and collaboration with national, regional and international organisations
Goal 2 Strong public awareness and improved understanding of the causes and effects of climate change, climate variability and disasters
Objectives (i) Develop and implement a communications strategy (ii) Strengthen and coordinate public awareness campaigns through educational and promotional programs such as public seminars, workshops and training, including through the use of multi-media (iii) Develop national partnerships with NGOs and the private sector to raise awareness and target special interest groups such as community bodies, village councils, youth and business community (iv) Incorporate climate change and DRM advocacy into school curricula, as appropriate (v) Facilitate effective coordination and dissemination of special climate change promotional resources and programs for better understanding of concepts such as adaptation, mitigation, REDD, carbon trading, CDM, green growth, IWRM, PACC
Goal 3 Strengthened livelihoods, community resilience, natural resources and assets
Objectives (i) Strengthen community capacity to cope with potential climate change and disaster impacts (ii) Strengthen resilience of key infrastructure (communications, power, water, air and sea ports) and key development sectors including agriculture, forestry, fisheries and tourism tourism (iii) Strengthen technical and institutional capacity to collect, store and analyze climate and disaster risk information
Goal 4 Strengthened capacity to adapt renewable energy technologies,improve energy efficiency and energy security
Objectives (i) Promote mitigation actions and energy efficiency and conservation measures in sectors such as electricity, buildings, transportation, industry, tourism, agriculture, forestry, communications and water (ii) Identify, develop and implement viable renewable energy technologies such as solar and wind energy and other alternative energy sources
Goal 5 Strengthened disaster preparedness for effective response
Objectives (i) Strengthen disaster preparedness and the capacity for effective response and recovery

JNAP Implementation Strategy

a. Introduction

This section describes the implementation arrangements of this JNAP and includes:

- a description of the approach utilised to develop the implementation arrangements;
- the guiding principles for the implementation;
- the costing methodology used by partners to identify resource requirements and related costs for the implementation of actions under the JNAP;
- the implementation and management structure to be responsible for leading and coordinating JNAP implementation;
- a financing strategy and approaches for the resourcing of JNAP actions;
- the platform for an appropriate communications strategy to help ensure that the underlying message of increased safety and resilience is conveyed to all stakeholders using the most appropriate media; and
- the basis for a monitoring and evaluation system which not only addresses issues in relation to transparency and accountability but also facilitates a systematic approach to change and improvement as a direct consequence of progress reporting.

b. Approach to Development of an Implementation Program

Niue's JNAP Implementation arrangements were developed through extensive consultations with stakeholders and members of the JNAP Task Force, as well as the Secretary of Government and additional government officials. Discussions that began in March 2011 continued through the in-country SOPAC/SPREP visit in October 2011 to ensure the final arrangements reflected the views and needs of government.

Final implementation arrangements were presented at the second JNAP Task Force workshop in November 2011, allowing for ownership and commitment from government to adhere to the implementation structure to progress the actions contained in the JNAP.

Following the November 2011 workshop, a number of key priorities for immediate implementation were identified:

- Establish and fund a JNAP Unit within the Department of Environment to coordinate and monitor JNAP implementation and provide secretariat support to above Committee
- Niue National building code incorporates disaster reduction and climate change considerations
- Strengthen evacuation plans and strategies

c. Guiding Principles

Niue's JNAP borrows its guiding principles from existing policies including the NNSP, the Coastal Development Policy and the Climate Change Policy. All three have a strong focus on coordination, collaboration and good governance; social equity and sustainable development.

d. Indicative Costing Methodology

Table 3 provides a total indicative cost to implement the JNAP. The estimated cost of the JNAP includes both the financial cost of actions and the in-kind contributions made by the Government of Niue and partners (such as SPC/SOPAC and SPREP) to execute actions.

Some assumptions are inherent in the costing methodology. For example, we use three consistent amounts for national, regional and international consultants. Costs are also based on average costs of conducting workshops (including venue hire and catering), procuring office supplies, travel costs and publication costs. These costs are based on information relevant as at October 2011.

e. Indicative Costs

Details for each goal

Table 3. Indicative costs for JNAP goals.

Goal	Financial Cost	In-Kind Contribution	Total Cost (NZ$)
Goal 1	$477,480	$200,063	$677,543
Goal 2	$265,630	$40,307	$305,937
Goal 3	$653,318	$17,083	$1,033,111
Goal 4	$53,030	$6000	$59,010
Goal 5	$399,760	$4583	$404,343
TOTAL	**$1,849,218**	**$268,037**	**$2,117,255**

The greatest costs are associated with Goals 1 and 3, accounting for approximately 32% each. Other goals account for the following percentages: Goal 2- 14%; Goal 4- 3% and Goal 5- 19%.

f. Implementation Approach and Structure

Niue's JNAP is developed as a three year program, aiming to encapsulate actions and activities relating to CCA and DRM that have not yet been actioned under existing policies and plans – i.e. it aims to address gaps regarding vulnerability and resilience rather than be a comprehensive plan for DRM and CCA. The JNAP does not include actions from projects already funded, for example the PACC project, the IWRM or the National Communications projects, given these initiatives are well underway and fully resourced.

The JNAP aims to bring together relevant CCA and DRM activities to ensure a coordinated and collaborative approach, and one in which includes indicative costs to allow external assistance to be readily provided. It provides the GoN with a key document which provides leverage with donors, as the consultative, whole-of-government approach to development of the JNAP fulfils many donor requirements when providing development support.

The implementation arrangements have been developed in consultation with the JNAP Committee comprising representatives of the major sectors within Government. It is intended that the JNAP Committee leads the implementation and coordination effort and monitoring, evaluation and reporting of progress.

Given the prior existence of several committees relating to specific projects (PACC, IWRM, National Communications), a new committee is to be established to incorporate the work of all DRM and climate change related initiatives and concerns. The new committee will drive inter-sectoral and ministerial coordination on DRM and climate change activities and initiatives. The new National Climate Change and DRM Committee will provide guidance for the JNAP and also oversee the specific unit established to coordinate JNAP activities (see below).

A key role of the Committee is monitoring and evaluation of the JNAP, and ensuring progress against the prioritised activities is achieved. It is also expected that the National Committee will participate in advocacy of the JNAP with development partners and donors, with the aim to secure funding and technical assistance (TA) to implement JNAP actions.

The National Climate Change and DRM Committee will include the following members with roles as follows (note: this is to be confirmed by JNAP Steering Committee):

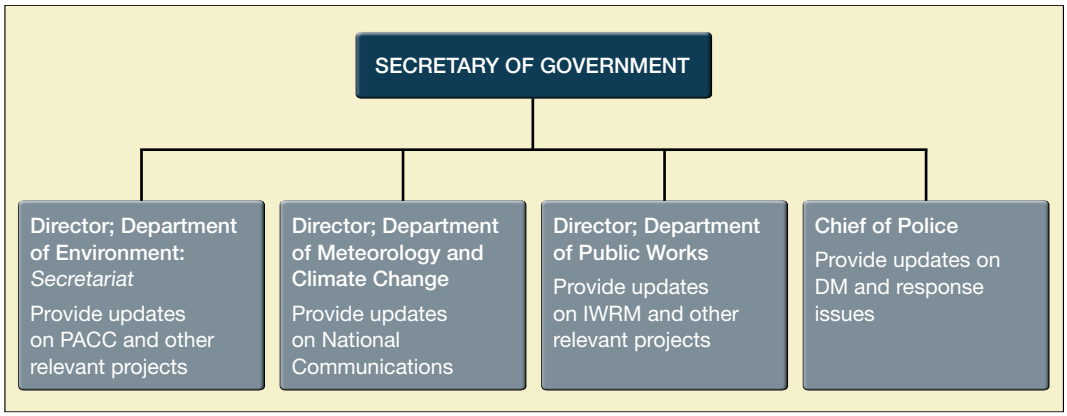

Figure 2. Seasonal rainfall and temperature at Hanan Airport (Source: PCCSP, 2011).

A JNAP Unit will also be established to provide technical and coordination support to ensure each sector is able to undertake specified activities. To ensure efficient implementation in the short term, the current PACC coordinator will assume the role as JNAP focal point prior to the establishment of the JNAP committee, given existing skills in coordination and M&E.

It is not the role of the JNAP Unit to implement JNAP activities: this is to be done by relevant sectors. The JNAP Unit will be situated within the Department of Environment and provide feedback to the National Committee (described above) on capacity and needs regarding the JNAP activities. The establishment of the JNAP Unit does not deflect the need for mainstreaming of DRM and CC into national budgetary and planning processes. It is but one step towards achieving this.

The makeup of the JNAP Unit will be as follows:

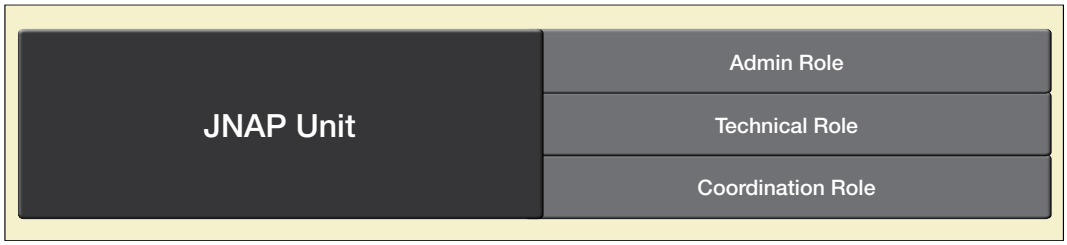

Figure 7. Composition of proposed JNAP Unit.

Proposed overall coordination and implementation of the JNAP is provided below.

Figure 8. Overall coordination and implementation of JNAP [Note: connecting lines represent communication and dialogue rather than lines of reporting]

Roles and responsibilities for each stakeholder are described below.

Stakeholder Group	Roles and Responsibilities
Cabinet	High level oversight when needed
National Climate Change DRM Committee	[To be refined with development of ToR] • Ensure overall coordination of all climate change and DRM activities at a national level with regular meetings • Overall oversight of JNAP coordination and ensure JNAP aims and objectives are aligned with and complementary to other related projects (e.g. PACC, IWRM, National Communications) • Communicate as necessary with NDC regarding DM initiatives
JNAP Unit	• Provide technical assistance and coordination to sectors involved in implementing JNAP activities • Provide National Committee with reporting and M&E updates from sectors as required • Continually advocate for DRMand CC within sectors • Liaise with donors and development partners through mechanisms established by the Government like the PMU

National Disaster Council	• Ensure disaster preparedness and response initiatives are aligned with JNAP activities
CCA and DRM Development Partners	• SPC/SOPAC: Inform members of the DRM Partnership Network of the JNAP and implementation programme • SPREP: Inform members of the Pacific Climate Change Roundtable of the JNAP and maintain contact with National Committee and provide or facilitation provision of TA when required
Ministries and Departments	• Implement JNAP activities as per the implementation matrix, including integration of JNAP activities into Corporate and Annual Plans • Maintain regular reporting of progress of JNAP activities • Provide updates to JNAP Unit and National Committee as required
Community and Church Groups	• Support implementation of JNAP activities • Provide feedback to assist M&E
Communities	• Support implementation of JNAP activities • Provide feedback to assist M&E

g. Financing Strategy

The indicative costing provided in Section 4e provides the basis for effective national coordination and external assistance to target priority sectors relating to DRM and CCA in Niue. The The costs reflect the inputs required to implement actions identified in the implementation strategy. These include capacity (staff, consultancies, in-kind support from technical agencies), consultations with stakeholders , equipment and institutional arrangements as needed.

Specific funding facilities

Examples of potential sources of funding in the Pacific region for DRM and climate change activities include:

- AusAID NAP Facility
  - *AUD$2.265 million for PICs*
- EDF 9 ACP-EU Natural Disaster Facility
  - *€1.868 million for PICs*
- EDF 10 ACP-EU Natural Disaster Facility
  - *€20 million for PICs*
- EU Energy Facility
  - *€9 million for PICs*
- World Bank Global Facility for Disaster Reduction & Recovery (GFDRR)
  - *€11.8 million over 5 years from 2012 for PICs*

h. Communications Strategy

Widespread communication of the importance and relevance of the JNAP to all stakeholders (including nationally, regionally and internationally, particularly to donors) is critical to the success of the initiative. At the national scale, communicating the reasoning behind the JNAP may achieve a change in attitudes and practices relating to the impacts of climate change and the risks posed by natural hazards and disasters.

The JNAP Task Force will develop a comprehensive communication strategy following the Cabinet approval of the JNAP. It is recognised, however, that as the implementation of the JNAP commences some communication and awareness will need to be undertaken. This will foreshadow the main communications strategy that will be developed.

Some of the considerations the communications strategy will cover include:

- Ensuring that Cabinet and key government sectors such as the Project Management Unit (PMU) are regularly updated on JNAP implementation progress
- Strengthening communication linkages with Village Councils in order to facilitate the communication of the JNAP to village communities
- Maximising the use of free-to-air broadcasts on radio and television
- Utilising specialist public relations expertise to help define and develop awareness campaigns and associated material
- Using the networks provided through church and affiliated groups to ensure wide dissemination of information

i. Monitoring and Evaluation

The ongoing task of monitoring and evaluation (M&E) will fall under the responsibility of the National Climate Change and DRM Committee as noted above. However, it is also important for each sector to maintain up to date in reporting on JNAP activities as they are implemented – the JNAP Unit will assist sectors in undertaking this task. This should include compiling lessons learned as JNAP activities are implemented across the range of sectors.

In addition to JNAP M&E, it is expected that the National Climate Change and DRM Committee will contribute to project reports and oversee M&E for:

- Pacific Disaster Risk Reduction and Disaster Management Framework for Action 2005-2015
- Pacific Islands Framework for Action on Climate Change (PIFACC)
- Hyogo Framework for Action 2005-2015
- UNFCCC National Communications

Support from regional organisations will be provided to the National Committee in fulfilling regional and global reporting obligations.

Implementation Matrix

a. Structure of Implementation Matrix

The JNAP matrix builds upon the seven goals listed in Section 3b. Each goal is accompanied an outcome, which describes the change that is expected to take place as a result of the **objectives**, **actions** and **outputs** listed under each goal. The JNAP matrix is divided into the following column headings:

- **Objectives:** for each of the five broad goals. Taken together, a collection of objectives can be thought of as the strategy to be used to achieve the higher-order goal.
- **Actions & Sub-Actions:** an unpacking of each objective into a collection of strategic and/or specific actions
- **Outputs:** the tangible products of the completed actions that will collectively lead to the achievement of the higher-order outcome.
- **Indicators:** means of monitoring and evaluating progress of each output.
- **Responsible agency:** The agency that has been nominated to take the leading role in ensuring that a specified objective and its actions are implemented.

Table 4. JNAP Implementation Matrix

Goal 1: Strong and effective institutional and governance arrangements for disaster risk reduction and climate change adaptation				
Strategic Objective 1.1 Mainstream climate change adaptation and disaster risk management into national economic development planning and budgetary processes; and into sector policies and plans				
ACTIONS	**SUB-ACTIONS**	**OUTCOMES**	**INDICATORS**	**RESPONSIBLE AGENCY**
1.1.1 Mainstream climate change and disaster risk reduction considerations at national level	Review existing planning, decision making and budgetary processes, integrated sector plans and strategies and identify where and how DRM/CCA could be mainstreamed	Strategic entry points for mainstreaming of disaster and climate risk identified Revisions made to national budgetary and sectoral planning processes to integrated risk management considerations	All sector plans reviewed Current national budgetary process reviewed Operative circulars for planning and budgeting stipulate requirements for the use of hazard/risk information in national and sectoral planning processes	Environment, PWD, Meteorology, Police, Planning
	Conduct training for department policy and planning units in on climate change and disaster risk reduction mainstreaming and the use of mainstreaming tools	Enhanced capacity of policy makers to draw upon mainstreaming tools to effectively mainstream climate change and DRR/DRM where appropriate	Number of staff from each key sector responsible for DRM/ CCA that successfully completed mainstreaming training	Environment, Meteorology, Economics, Policy and Planning, PWD, Niue Power
	Review regulations for development consent such as the Integrated Environmental Impact Assessment to incorporate disaster and climate change considerations	Development consent regulations incorporate DRM and climate change	Integrated EIA explicitly features DRM and CCA	Environment, Crown Law
1.1.2 Build strong consultative and participatory community approach (including Village Councils, NGO, Civil Society and private sector) in climate change adaptation, mitigation and disaster risk reduction planning, implementation and monitoring and evaluation.	Develop policy, guidelines and programs for strong community engagement in addressing climate change adaptation, mitigation and disaster risk reduction	Guidelines for community engagement developed and utilised	Local community groups more active in local-level risk management	JNAP Unit, Community Affairs, Environment, PWD, DAFF, Health, Police, Taoga Niue

Strategic Objective 1.2 Establish an effective regulatory and institutional framework to facilitate the development and implementation of national responses				
ACTIONS	**SUB-ACTIONS**	**OUTCOMES**	**INDICATORS**	**RESPONSIBLE AGENCY**
1.2.1 Establish a Steering Committee to coordinate CCA and DRR activities and to oversee the JNAP unit	SoG to discuss and formalise new DRR and CCA committee, chaired by Environment, which coordinates JNAP, PACC, IWRM and National Communications with PWD, Met, Police and Environment	Finalised Steering Committee structure developed and approved	Fully functioning Steering Committee	SoG [PWD, Met, Police and Env]
	Review the Environment and Disaster Acts (including other relevant legislations) and their mandated committees to provide guidance on streamlining the coordination of climate change adaptation and disaster risk reduction	Revision of Environment of Disaster Acts to provide recommendations for coordinated approach to DRM and CCA via streamlined committees	All committees concerned with DRM and CCA are streamlined and coordinated	NDC with co-opted members, Crown Law, Environment, Meteorology
	Develop a policy paper and seek Cabinet approval based on the recommendations of the review. [facilitate administration; funding coordination	Policy paper developed and Cabinet approval sought	Cabinet approval of Steering Committee and sustained support for JNAP	NDC with co-opted members, Crown Law, Environment, Meteorology
1.2.2 Establish and fund a JNAP Unit within the Department of Environment to coordinate and monitor JNAP implementation and provide secretariat support to above Committee (1.3.2)	Develop and submit a proposal to fund the JNAP Unit for the first 3 years.	JNAP Unit with three staff funded for 1st three years	JNAP Unit established	Environment, Treasury Environment
	Document lessons learned and best practices	JNAP Unit maintains Lessons Learned documentation based on JNAP implementation	Activities draw from Lessons Learned documentation	JNAP Unit
1.2.3 Incorporate disaster reduction and climate change considerations into Niue's National Building Code	Develop a ToR for the review of the Building Code including compliance and enforcement	Building Code review scoped and carried out with recommendations included	Completion of Building Code Review	PWD (building, water), Health
	Strengthen in-country capacity on the use and application of the building codes	Strong national capacity for undertaking building inspections via training and scholarships	Number of building inspectors participating in training	PWD, Health, local builders and contractors

1.2.4 Develop an integrated risk based approach to land use and development	Enforce EIA regulation for guiding development and land use practices to including development of critical infrastructure on coastal areas [Compliance and Enforcement]	Development of a guidebook on the EIA regulation (also translated into Vagahau Niue) and linking of EIA regulation to investment and development under the Economic and Planning Unit	Environment impacts from development activities are minimised	Environment, Crown Law, Economic Planning,
	Undertake cost-benefit analysis of various adaptation and disaster risk reduction options. [Practice adaptation or risk reduction]	Cost benefit analysis undertaken of adaptation/ risk reduction in ONE sector ie Taoga Niue, Water with the development of documentation to support EIA regulation and Building Code enforcement	Cost effective adaptation initiatives pursued	JNAP, PACC, PWD
	Identify and promote use of appropriate tools to support risk assessments [Coastal Hazard Mapping, GIS, vegetation mapping etc]	Appropriate risk assessment tools used widely in DRM and CCA related projects	Proportion of uptake of risk assessment tools across sectors	DJLS, Environment, DAFF, PWD (water), Health (monitoring),
Strategic Objective 1.3 Strengthen partnerships and collaborations with national, regional and international organisations				
ACTIONS	**SUB-ACTIONS**	**OUTCOMES**	**INDICATORS**	**RESPONSIBLE AGENCY**
1.3.1 Build national and local capacity to access external funding mechanisms	Provide appropriate training for key personnel in: • negotiations for climate change including regional and global disaster platforms • Grant and proposal writing to access funds such as GEF, EDF • Training for writing proposal for Small Grants Programme	National staff have increased capacity in climate change negotiations and grant writing for various funding schemes	Number of staff from each key sectors that successfully completed training Number of successful grant applications	External Affairs - Project Management Unit Environment, Meteorology, DAFF, PWD, Niue Power

Goal 2: Strong public awareness and improved understanding of the causes and effects of climate change, climate variability and disasters				
Strategic Objective 2.1 Strengthen and coordinate public awareness campaigns through educational and promotional programs and partnerships such as public seminars, workshops and training, including through the use of multi-media and national partnerships with NGOs and the private sector				
ACTIONS	**SUB-ACTIONS**	**OUTCOMES**	**INDICATORS**	**RESPONSIBLE AGENCY**
2.1.1 Integrate traditional knowledge integrated in CCA and DRM	Document and share traditional practises regarding crop production, forestry and fisheries management, climate forecasting and water to share how these lend to coping mechanisms for climate variability and extreme events	Niueans have enhanced understanding of traditional practices	Proportion of uptake of traditional practices relating to agriculture, forestry and water management	JNAP Unit, Taoga Niue, DAFF, Environment, Education
	Niue Cultural Mapping	Mapping of old village settlements including physical sites, origins, names and stories, cultural practises	Strong knowledge of past culture amongst Niuean population	Taoga Niue
	Consult with sectors to identify appropriate mechanisms for integrating traditional knowledge into DRM/CCA at the appropriate level	Sectors have integrated traditional practices relating to DRM/CCA	Proportion of sectors with DRM/CCA traditional knowledge integrated into activities	Environment, Taoga Niue, DAFF, Community Affairs
2.1.2 Establish a platform to share lessons learned and best practices	Review Taoga Niue and BCN's capacity to coordinate initiatives that support knowledge management and implement recommendations of the review	Enhanced capacity for knowledge management	Recommendations from review lead to enhanced capacity of BCN and Taoga Niue	Taoga Niue, BCN
	Share nationally, regionally and globally through appropriate mechanisms such as the Adaptation Learning Mechanism (ALM), SIDSNET	Strengthened awareness of Niue's lessons learned and best practice	Niue material present on appropriate forums / mechanisms	Taoga Niue, BCN

Strategic Objective 2.2 Develop and implement a communications strategy				
ACTIONS	**SUB-ACTIONS**	**OUTCOMES**	**INDICATORS**	**RESPONSIBLE AGENCY**
2.2.1 Develop and implement an effective Communications Strategy consolidating outputs and outcomes of CCA and DRM related initiatives	Develop TOR for the Communications Strategy and recruit a TA	Advertised TOR leads to TA recruitment	TA recruited	
	Develop the Communications Strategy, noting IWRM and PACC Comms Strategy 2009, in collaboration with key agencies focusing on producing outputs with key messages for a) Technical audience b) Community focus and c) Parliamentarians, decision makers and policy advisers and translation into Vagahau Niuean	Effective Communications Strategy developed with a well-informed public	Strong uptake of Communications Strategy	Environment; JNAP Unit, Broadcasting Corporation of Niue (BCN), Education, Meteorology
	Produce relevant multimedia materials with key messages on CCA and DRM targeted at targeted audiences	Target audiences well informed of CCA and DRM via multi-media materials	Strong uptake of multi-media materials	Environment, BCN

Strategic Objective 2.3 Incorporate climate change advocacy into school curricula, as appropriate				
ACTIONS	**SUB-ACTIONS**	**OUTCOMES**	**INDICATORS**	**RESPONSIBLE AGENCY**
2.3.1 Include disaster risk management and climate change adaptation in School curricula	Review current curricula to integrate CCA & DRM with guidance from the Curriculum Development Task Force. Consultant to develop outputs that include: • Resources for teachers and students adapted to the Niue context. These should include but not be limited to template lesson plans for teachers incorporating DRM and CCA into existing curricula to assist in the delivery of the modules, workbooks for teachers, teaching materials and programmes for schools • Training of Teachers in delivering DRM/CCA modules • Trial of the modules being delivered by trained teachers and assessment in schools with future program improvement	Curricula integrates DRM and CCA	Students are aware of CCA and DRM issues in Niue	Curriculum Development Task Force - Education, Environment, Meteorology, NDMO
	Develop Training materials, school programmes, community awareness programmes and curricula incorporating climate change issues	Broad toolkit available for incorporation of CCA	Published toolkit	Education, Environment
	Monitoring and Evaluation of Training of teachers and students continued and further enhanced materials through food security-related adaptation experience. Sectoral CCA & DRM initiative.	M&E supports continuous improvement of teachers and materials	Ongoing improvement of educational products and practices relating to DRM and CCA	Education, DAFF & Other sectors

Strategic Objective 2.4 Facilitate effective coordination and dissemination of special climate change promotional resources and programs for better understanding of concepts such as adaptation, mitigation, REDD, carbon trading, CDM, green growth, IWRM, PACC				
ACTIONS	**SUB-ACTIONS**	**OUTCOMES**	**INDICATORS**	**RESPONSIBLE AGENCY**
2.4.1 Distribute 2nd National Communications Report	Raise the awareness on the 2nd National Communications Report on CC	Wide distribution of SNC	Proportion of government and community members knowledge of SNC	Meteorology/Climate Change Project, Environment,
	Conduct a stocktake of CCA initiatives and report on progress of implementation with a view that this will form the basis of 3rd National Communications Reports and other reporting requirements	Strong understanding of CCA initiatives in Niue across all sectors	Updated stocktake of CCA initiatives complied	JNAP Unit, Meteorology, Environment
2.4.2 Develop 3rd National Communications Report	Wider stakeholder consultation in the development and review of the 3rd National Communications Report on CC	Strong national support for 3rd National Communications based on good understanding of its uses	Number of stakeholders effectively consulted	Meteorology
	Use the stocktake to assess progress made from 2nd National Communication	3rd National Communications progresses with the use of the stocktake	Stocktake included in 3rd National Communications	Meteorology, Environment

Goal 3: Strengthened livelihoods, community resilience natural resources and assets				
Strategic Objective 3.1 Strengthen community capacity to cope with potential climate change and disaster impacts				
ACTIONS	**SUB-ACTIONS**	**OUTCOMES**	**INDICATORS**	**RESPONSIBLE AGENCY**
3.1.1 Strengthen community-based disaster risk management and climate change adaptation programmes	Develop Community Risk Profiles	Strong awareness of the risks at each village	Community Risk Profile for each village	Community Representatives, Police/ NDMO/MCDEM, PWD (Water, Building), Meteorology, Police/ MCDEM Tourism, Environment, DAFF, Health, DJLS
	Build community capacity to participate in water, reef, coastal and forest monitoring activities	Strong capacity for community to conduct monitoring	Community (in partnership with govt) responsible for monitoring	PWD (Water), Health, DAFF
3.1.2 Establish effective Early warning systems to provide accurate and timely warning for all hazards to the community	Strengthen capacity to monitor and assess land and water resources, hazards and climate change	Strong capacity for community to monitor and assess land and water resources, hazards and climate change	Community (in partnership with govt) responsible for monitoring and assessment	Meteorology, NIWA, Environment (PACC), PWD (water), DAFF, Police
	Develop a Climate Early Warning System and tailored information products to support primary sectors	Climate Outlook Modelling Programme provides usable products to support sectors such as agriculture	Wide use of products across sectors	Meteorology, DAFF, PWD (Water)
3.1.3 Ensure food security	Introduce climate-resilient techniques and related technologies	Climate resilient technologies drawn upon to support ongoing adaptation efforts		Agriculture, LRD/SPC, FAO
	Strengthen community-managed forest and marine conservation areas and buffer zones	Baseline for conservation areas (e.g. based on IUCN indicators) established and training provided on the selection and monitoring of indicators for community and project unit	Number of community members trained Number / size of conservation areas Change against baseline	
	Communities are trained on the use of climate early warning and information services in decision-making processes	Development of climate change indicators in consultation with communities and technical departments and link climate indicators to natural resources and hazards	Number of community members trained Uptake of climate early warning information services	Meteorology, DAFF, PWD, Taoga Niue

Strategic Objective 3.2 Strengthen technical and institutional capacity to collect, store and analyze climate and disaster risk information				
ACTIONS	**SUB-ACTIONS**	**OUTCOMES**	**INDICATORS**	**RESPONSIBLE AGENCY**
3.2.1 Develop integrated information management system(s) to support DRM and CCA decision making processes and inform JNAP implementation	Establish a centralised information management system to support DRM and CCA initiatives	DRM and CCA initiatives are supported by centralised information management system	Key sectors draw upon centralised information system to assist in coordination of CCA and DRM activities	Meteorology, DJLS, Statistics, Environment, PWD (Water), Police, DAFF
	Compile and standardise statistical information and data on climate and disaster risks, impacts and losses [build on 3.3.1]	Centralised repository developed to host data and information related to climate and disaster risks including that from Pacific Climate Change Science Programme, Pacific Risk Information System (PaRIS), South Pacific Sea Level Climate Monitoring Programme	Number of trained staff and uptake / use of centralised repository	PWD (Water-HYCOS), DAFF, Health
	Strengthen the capacity of sector focal points to analyse the data and information to support programmes	Training conducted on the analysis of data and information to support sectoral and national development programmes Develop information products for policy makers on the applications of climate and risk information collected for Niue	Number of staff in key agencies that completed training on data and information analysis and use information products	PWD, Environment, Meteorology, DAFF, Energy, Bulk Fuel

Goal 4: Strengthen Niue's capacity to adapt renewable energy technologies and improve energy efficiency				
Strategic Objective 4.1 Promote mitigation actions and energy efficiency measures in sectors such as electricity, buildings, transportation, industry, agriculture, forestry, communications and water				
ACTIONS	**SUB-ACTIONS**	**OUTCOMES**	**INDICATORS**	**RESPONSIBLE AGENCY**
4.1.1 Strengthen governance to support energy efficiency and renewable energy options in line with the Niue Strategic Energy Policy and Action Plan	Review National Strategic Energy Policy and Action Plan	Review of Energy Policy and Plan and recommendations for progress	Implementation of recommendations	Project Management Unit EDF 10 Economics and Planning
	Develop incentives and packages to support private sector participation in renewable energy and energy efficient initiatives including supply and demand management.	Up-skilled electricians on the use of RE in place of / or with grid power	Number of electricians trained	Economics and Planning, Chamber of Commerce, Niue Power
	Develop relevant education and awareness programs on energy efficiency and renewable energy	Trained teachers on RE and Production or Adaptation of Multimedia packages	Proportion of teachers including RE in classroom teaching	Niue Power, Environment, Dept Ed, BCN
Strategic Objective 4.2 Identify, develop and implement viable renewable energy technologies such as solar and wind energy and other alternative energy sources				
ACTIONS	**SUB-ACTIONS**	**OUTCOMES**	**INDICATORS**	**RESPONSIBLE AGENCY**
4.2.1 Improve energy security	Assess disaster and climate risk on existing and planned energy infrastructure and implement cost effective risk reduction options	Review of existing infrastructure in regards to hazard and climate risks and EDF10 replacement of high V cables	Recommendations from review implemented and proportion of high V cables replaced	Niue Power, PWD, Meteorology, Environment
	Develop contingency plans and response mechanisms to address energy supply issues, particularly during and after natural disasters	Contingency plan and response mechanisms developed	Contingency plan and response mechanisms developed	Niue Power, NDC, PWD,
	Identify and promote use of appropriate technology transfer to support mitigation actions and energy efficiency measures	Identification of needs for technology transfer	Implementation of appropriate technology	Niue Power, Environment, PWD
	Review and develop renewable energy options (e.g. solar) for water pump	Assess Report of solar power generation to drive pump (17 bore sites) to be distributed to Water and other relevant sectors	Implement recommendations of assessment	Project Management Unit EDF 10, PWD, Niue Power

Goal 5: Strengthen disaster preparedness for effective response				
Strategic Objective 5.1 Strengthen disaster preparedness and capacity for effective response and recovery				
ACTIONS	**SUB-ACTIONS**	**OUTCOMES**	**INDICATORS**	**RESPONSIBLE AGENCY**
5.1.1 Strengthen disaster management arrangements	Develop a TOR and undertake a review of the Niue National Disaster Management Arrangements with a view to establish a Disaster Management Office	DRM arrangements reviewed and recommendations made regarding the potential establishment of NDMO	Implementation of recommendations of the DRM review	Police and PSC, MCDEM
	Develop Standard operating procedures (SOPs) and Contingency plans in the event of a disaster	SOPs and contingency plans developed	SOPs and contingency plans developed	MCDEM/NZAID
	Establish an adequately resourced Disaster Management Office and functional National Emergency Operations Centre	Adequately resourced NDMO (based on recommendations above) and EOC	Adequately resourced NDMO (based on recommendations above) and EOC	MCDEM/NZAID, NDC
	Identify and establish an alternative communications and/or broadcasting system to provide redundancy in the event of failure during an emergency event.	Appropriate alternative communications and/or broadcasting system for times of emergencies	Fully functioning alternative communication system	Police, Telecom, Health Department, BCN (secondary)
	Review of emergency communications equipment to support MCDEM proposal	Recommendations developed from review of emergency communications equipment	Appropriate procurement of emergency communications equipment based on review	Police/DMO, EOC, MoH, PWD, Met

5.1.2	**Strengthen community preparedness and response to disasters and CC impacts**	Develop a manual to guide communities in preparing for disasters and adapting to CC.	Development of a how-to guide and checklist for communities to assess the status and effectiveness of their disaster preparedness and climate change adaptation programmes LINK WITH 3.1	Disaster preparedness manual drawn upon by communities	Police/NDMO, Meteorology, Households
		Training of village councils, NGOs and community groups and households in disaster preparedness, response and recovery.	Trained key personnel involved in community based DRM and CCA to work with communities to * respond to alerts an * secure property * conserve food and water in the event of a disaster * encourage the use of evacuation centres which have been vetted as shelters by PWD and Police * ensure vulnerable groups in the community are considered in the plans	Number of key personnel trained	Police/NDMO, Environment Meteorology, Households
5.1.3	**Strengthen evacuation plans and strategies**	Review and update existing evacuation plans including testing of procedures for national departments and villages.	Evacuation plans reviewed and recommendations made for improvement	Implementation of recommendations of the review	Police, PWD
		The installation of appropriately signed roadway barriers at the highest entry points to the Sir Roberts Wharf and other identified sea access points to restrict pedestrian and vehicular entry in times of emergency	Installation of appropriate warning signs at sea access points from main road	Number of signs installed at appropriate points	
		Review/Retrofit existing evacuation centres in the upper terrace (linked to the national disaster emergency plan)	Evacuation centres assessed based on Building code and capacity of people it should contain. PWD to submit a report based on the assessment, including a clear basis on why / if Lower terrace Evacuation Centres need to be moved	Proportion of evacuation centres retrofitted	Village Councils, PWD, Police/ NDMO, MoH

5.1.4	**Strengthen capacities to respond effectively to disasters**	Develop a procedure that ensures the community receives the correct and timely information during any emergency	Review of current procedures for receipt, dissemination and capacity to respond to warnings of all hazard warnings and roles and responsibilities of various departments	Implementation of review recommendations regarding receipt and dissemination of warnings	Police, Meteorology, NDC, MCDEM
		Strengthen Community Affairs capacity in post disaster support	5 trained trauma counsellors to support Community Affairs during an event	5 trained trauma counsellors to support Community Affairs during an event	Community Affairs
			Strong awareness of services available - public awareness TV ads and programme, newspaper ad	Number of brochures, newspaper, TV and radio ads	
		Strengthen Niue's response efforts through training and their involvement in the Intergovernmental Coordination Group of the PTWS and the Southwest Pacific Tsunami Working Group (SWPWG)	Strong involvement in Intergovernmental Coordination Group of the PTWS and the Southwest Pacific Tsunami Working Group (SWPWG)	Number of staff trained, participation in PTWS activities	Meteorology, Police,
5.1.5	**Develop awareness of International and Regional Humanitarian Assistance**	Develop awareness of international and regional assistance available	Strong awareness of the coordination mechanism by SOPAC and OCHA	Level of awareness of the coordination mechanism by SOPAC and OCHA	NDC, Community Affairs, Health

Annexes

a. JNAP Country Engagements

March 2011 – Initial scoping mission from SOPAC and SPREP

May 2011– Follow up SOPAC/SPREP mission for further refinement of JNAP Results Matrix

October/November 2011 – Final regional mission to Niue to finalise JNAP Results Matrix, implementation arrangements and financing strategy.

b. JNAP Taskforce Membership

- Police
- Niue Department of Meteorology and Climate Change
- Department of Environment
- Department of Works

c. Stakeholders Consulted

JNAP consultations:

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d. Related DRM and CCA Projects

- Pacific Adaptation to Climate Change (PACC - UNDP-GEF) & Integrated Water Resources Management Project (IWRM – UNDP-GEF, EU): these projects focus on water-sector related policies and pilot measures addressing water supply and storage in communities. Lessons learnt on water management techniques will be applied in the implementation of integrated village-level adaptation plans and measures, to enhance water supply for both household and agricultural irrigation purposes (UNDP, 2010).
- • FAO "Telefoods Project" – Grassroots-level projects to assist disadvantaged families in improving their means of production, enabling them to produce more food, and to generate cash income which will allow them better access to food. Includes assistance in the area of crop production, small animal & fish production; and value adding (FAO, 2010).
- Renewable Energy and Energy Efficiency Programme – EU Funded (see Niue Energy 2010)
- UNDP Adaptation Fund – Food Security (Proposal submitted to GEF Adaptation Fund) - Project currently under development jointly between DAFF, DOE and UNDP following first consideration by AF secretariat of concept paper. Concept paper was not approved, returned for further justification. Decision to move to full proposal development as at 16/02/11.
- Community Centred Sustainable Development Programme (CCSDP) – UNDP
- Niue National Communications – Niue's First National Communication and subsequent national communications are ongoing assessment type reports on the vulnerability and adaptation, Greenhouse Gas Inventory and other relevant sectors. (Currently Draft SNC to be completed by 2011 and Third National Communication to start in 2012).
- Forest Conservation and Management – GEF and FAO, 2011 - 2015
- Sustainable Land Use Management Project (SLM) - Capacity Building for Sustainable Land Management in Niue (UNDP-GEF): this project will draw on lessons learnt from the community demos of the SLM project, support their replication in other communities and will introduce necessary adjustments into land use practices to reduce potential climate change risks (UNDP, 2010).
- Young Farmers Training Programme, Organic Development Programme
- Development of Sustainable Agriculture in the Pacific (DSAP) funded by the European Union
- Food Security & Sustainable Livelihoods Programme (FSSLP) – FAO funded and an expansion of the pilot project on Regional Food Security in the Pacific. (UNDP, 2010)

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