

Climate Change Adaptation Communication Strategy

Papua New Guinea Office of Climate Change and Development



Adaptation Fund Project Enhancing Adaptive Capacity of Communities to Climate Change-related Floods in the North Coast and Islands Region of Papua New Guinea



ADAPTATION FUND



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Context

Climate and Environment

Papua New Guinea as a tropical and mountainous island nation has a diverse array of bio-geographical areas, topographies, ecosystems and cultures, all of which, through climate change impacts; environmental degradation; and natural hazards have critical challenges and vulnerabilities to their future prosperity and pose a significant developmental challenge to PNG.

Located within the geologically active Pacific 'ring of fire' and the tropical cyclone belt, many communities within PNG are regularly at risk of being exposed to hydro-meteorological events such as: floods, cyclones, storm surges, and droughts; and geophysical events such as earthquakes, volcanic eruptions, and tsunamis. Papua New Guineans have faced risks from climate-related hazards and geophysical hazards for centuries. In addition, however, they now face new risks from climate change.

The main characteristics of climate change in Papua New Guinea are increases in average global temperature (global warming); changes in cloud cover and precipitation particularly over land; melting of ice caps and glaciers and reduced snow cover; and increases in ocean temperatures and ocean acidity – due to seawater absorbing heat and carbon dioxide from the atmosphere. These changes will have wide-ranging effects on the environment, and on socio-economic and related sectors including water resources, agriculture and food security, human health, terrestrial ecosystems and biodiversity and coastal zones.

Disaster Risk Reduction

Climate change has led to a dramatic and continuing rise in the number of small- and medium-scale climate-related disasters; since the 1980s, the average number of people reported as affected by these has doubledⁱ. These countless small-scale, unreported disasters put a cumulative strain on health, lives and livelihoods, undermining communities' ability to cope and driving millions of people deeper into crisis and povertyⁱⁱ.

Analysis by the Adaptation Fund of hazards in PNG that require adaptive measures has found existing hazards have a significant impact on people each year: severe coastal flooding affects over 6,000 people annually; based on 19 years of data, inland flooding affects over 22,000 - 26,000 people, displacing a third of these annually, resulting in a few deaths each year; landslides affect approximately 600 people annually with up to 10 deaths per year; Malaria epidemics are expected to affect more than 200 thousand people in the Highlands each year; 3 million people depend on climate sensitive crops subject to reduced yields; and over 70,000 people are dependent on coral reefs for income and livelihoodsⁱⁱⁱ. These existing hazards will be exacerbated further by climate change.



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The United Nations' Global Assessment Report on Disaster Risk Reduction^{iv} concludes: “*Climate change magnifies the interactions between disaster risk and poverty. On the one hand it magnifies weather-related and climatic hazards. On the other hand it will decrease the resilience of many poor households and communities to absorb the impact and recover from disaster loss due to factors such as decreases in agricultural productivity, increases in disease and shortages of water and energy in many disaster-prone regions.*”

Summary of Climate Projections^v

For the period to 2100, the latest global climate model (GCM) projections and climate science findings indicate:

- El Niño and La Niña events will continue to occur in the future (*very high confidence*), but there is little consensus on whether these events will change in intensity or frequency;
- Annual mean temperatures and extremely high daily temperatures will continue to rise (*very high confidence*);
- Average rainfall is projected to increase in most areas (*medium confidence*), along with more extreme rain events (*high confidence*);
- Droughts are projected to decline in frequency (*medium confidence*);
- Ocean acidification is expected to continue (*very high confidence*);
- The risk of coral bleaching will increase in the future (*very high confidence*);
- Sea level will continue to rise (*very high confidence*); and
- No changes in waves along the Coral Sea coast of Papua New Guinea are projected (*low confidence*). On the northern coasts, December–March wave heights and periods are projected to decrease (*low confidence*).

Climate change impacts affecting Papua New Guinea^{vi}

The impact of climate change-related hazards has been increasing in intensity and frequency, which is particularly evident in increasingly frequent and impactful occurrences of tropical storms and cyclones able to produce significant natural disasters.

Further impacts from climate change include the loss of food gardens widely used for subsistence farming due to extensive flooding in both coastal and riverine areas, combined with extended periods of drought.

Rising sea level is causing some of PNG's islands to be gradually submerged. In addition, salt water intrusion is causing dropping limits of clean groundwater levels and loss of freshwater, particularly on islands and in coastal areas, which poses a challenge for innovative agricultural expansion.



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In the highlands increasing episodes of hailstorms and frost have resulted in the destruction of gardens used for subsistence farming. Irregular rainfall patterns with periods of prolonged dry seasons affect soil fertility and yield while increasing the spread of infectious diseases and pests, which are further decreasing agricultural productivity and producing shortage of food in some areas of the country.

Six of the most serious climate-induced hazards:

- Coastal flooding and sea level rise
- Inland flooding driven by irregular rainfalls
- Landslides triggered by increased rainfall intensity
- Spread of Malaria amidst rising temperature
- Variability in agriculture yields due to temperature rise and rainfall variability
- Rise in sea water temperature with adverse effect on coral reef systems

Climate change impacts are not equal across society

There are a number of climate impacts in PNG which lead to key vulnerabilities. Local climate variability can influence peoples' decisions with consequences for their social, economic, political and personal conditions, and effects on their lives and livelihoods^{vii}. The Adaptation Fund^{viii} cites research by National Agricultural Research Institute that general knowledge in PNG of climate change effects is poor, particularly in rural areas and low recognition of hazards and climate change leaves many unable to assess risks properly: for example, 80 percent of people live in rural subsistence communities and have traditionally been susceptible to extremes of climate (rains and drought) related to El Niño, but are often unaware of the risks.

The poorest communities in developing countries are being hardest hit because they are more dependent on climate-sensitive ecosystems and natural resources such as agriculture and fisheries; more likely to live in areas that have greater exposure to climate hazards, such as urban slums and flood plains; and less able to respond to climate change and disasters because of limited human, financial and institutional capacity^{ix}. Climate change increases the risk of permanent poverty traps. The poor are often forced to sell their only productive assets for survival during emergencies. They may resort to low-risk, low-return activities (such as subsistence agriculture using low-yield varieties) in the face of increasingly frequent extreme weather events^x. Even amongst the poorest communities, and specific members of those communities, there will be differing exposure, vulnerabilities and capacities that make individuals and groups more or less susceptible to climate change.

Women and children, due to underlying reasons of poverty and inequity are often the most vulnerable to climate change impacts. For example, access to natural resources by women is already inequitable and may be put under increasing pressure through the further degradation of resources



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caused by climate change. Women are often disproportionately affected by the victims in floods, cyclones or displacement events, generally suffering a higher mortality rate, due to gender inequality and discrimination, including the lack of equal access to adequate information, economic opportunities, different family responsibilities, and social exclusion^{xixii}. Beyond the immediate impact of disasters, the loss of homes, valuables, food gardens and livelihoods can place new stresses on family life.^{xiii}

Sector Impacts

Agriculture

85% of PNG's labour force is absorbed by the agricultural sector. A World Bank suggests that small-scale farmers who have very little capital will not be able to pursue the new strategies that will be required to adapt to the change in climate^{xiv}. Within PNG, the Fresh Produce Development Agency (FPDA) has reported that climate change has affected crop production in Central Province with knock on effects for Port Moresby. The April – June 2014 bulletin from FPDA^{xv} reported that a Central Province vegetable project established with the purpose of supplying POM markets had 80% of gardens under water due to heavy rainfall. This follows observations from farmers seeing an increase in local rainfall and village elders noting changing weather patterns. The market gardeners face financial consequences, including a shortfall in funds available for payment of school fees for their children. Such impacts put not only food security at risk for rural and urban communities, but put at risk other development objectives.

Crop productivity is expected to be negatively affected. Increases in temperature can alter the timing and rate of crop development, resulting in early maturity and reduced biomass accumulation and yield. Tropical cyclones can destroy vegetation, crops, orchards, and livestock; damage infrastructure, wells and tanks; and can cause long-term loss of soil fertility from salinity intrusion^{xvi}. Based on evidence submitted to the United Nations Framework Convention on Climate Change in Malaysia's national communication, the yield of oil palm is expected to decrease by 30% with each 2 degree increase in temperature and 10% decrease in annual rainfall due to climate change^{xvii}.

Livestock

Heat can directly reduce animal activity, feeding, growth, and productivity, and can also impede reproductive activity. Increased water deficit stress can diminish forage and feed productivity, thus reducing animal growth and milk and egg production. Changed climatic conditions can change vector and disease transmission and incidence, the effects of which may be exacerbated by direct heat stress. Extreme events and inundation attributable to climate change may reduce forage and feed production areas and increase mortality^{xviii}.



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Marine Economy

The marine and coastal environments of PNG provide a significant source of food and economic security for its coastal communities and population. Rising sea-surface temperatures and more acidic oceans would have direct impacts on coral reefs and on the habitats and food webs that they provide for reef fish and invertebrates. Reduced catches of reef-associated fish would widen the expected gap between the availability of fish and the protein needed for food security^{xxix}.

Effects of Climate Change on Human Health

Climate change will have both direct and indirect effects on health. Direct effects include effects from heat stress and water shortages and from water-borne, food-borne, and vector-borne diseases. Indirect pathways include effects on increased climate variability on infrastructure and economic development, as well as of climate change effects on agriculture and food security^{xx}. Significantly, climate change is expected to have a disproportionate impact on the health of the poor. The poor tend to have more pre-existing conditions, less immunization, and limited access to health care. When disaster strikes they resort to temporary shelters, where the risks of disease transmission are elevated^{xxxi}.

The ecology, habitats and reproduction of disease vectors are affected by climate, and they generally increase under warmer temperatures with climate change. Similarly, transmission of diseases from livestock to humans is anticipated to grow under warmer temperatures. Increases in temperature and humidity would also create more favourable conditions for food-borne disease as well as for diseased transmitted via unsanitary conditions.^{xxii}

Population relocation

The International Organization for Migration state that “climate change will cause population movements by making certain parts of the world much less viable places to live; by causing food and water supplies to become more unreliable and increasing the frequency and severity of floods and storms”^{xxiii}.

The meteorological impact of climate change can be divided into two distinct drivers of migration; *climate processes* such as sea-level rise and salinization of agricultural land, and *climate events* such as flooding and storms, all of which have been observed in PNG and are predicted to continue. However, non-climate drivers, such as government policy, population growth and community-level resilience to natural disaster, are also important contributory factors in population relocation^{xxiv}.

Papua New Guinea will not experience migration in isolation, as research by Bedford and Hugo^{xxv}



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argue that demand for skilled labour in PNG will be amongst urbanization, continuing environmental deterioration in low-lying places, and high numbers of youth demanding training abroad as key forces set to shape mobility patterns across the Pacific.

The Papua New Guinea Office of Climate Change and Development regard migration as a major threat due to the impacts of coastal flooding, inland flooding and sea level rise, malaria, agricultural yield change and coral reef damage: 'As threats from climate change take effect, populations will move to areas that are less affected or where alternative livelihoods are available, such as urban areas. Large-scale migration will increase socio-economic pressures and the government will have to prepare policies and infrastructure. Migration of people poses unique social challenges in PNG as indigenous communities own 97% percent of PNG's land'^{xxvi}.

Coastal flooding has been identified by OCCD^{xxvii} and the Adaptation Fund^{xxviii} as one of the most important climate change related hazards in the North Coast and the Islands Region, where it is not only threatening the people in the coastal communities but also important economic centres, as most provincial capitals and economic centres are situated along the coast. The low-lying coastal and islands areas have 500,000 people in 2,000 coastal villages vulnerable to climate-induced flooding risks^{xxix}.

The impact of climate change and migration on Papua New Guinea is such that PNG is one of the six project countries (alongside Dominican Republic, Haiti, Kenya, Mauritius, and Viet Nam) taking part in IOM research programme "Migration, Environment and Climate Change: Evidence for Policy" (2014-2016) that aims to understand further the environmental factors that influence migration patterns and the concept of migration as adaptation^{xxx}.

The need for adaptation

Even if the growth in greenhouse gas emissions stopped today, global mean temperatures and sea levels would continue to rise over the 21st century because of the emissions already in the atmosphere^{xxxi}. This means that there are some *unavoidable impacts of climate change* already locked into the global atmospheric system. Therefore, to manage the unavoidable impacts of climate change, people, governments and institutions need to adapt. Human beings have been adapting to the variable climate around them for centuries, however the risk of climate change is due to both the rate and magnitude of change and subsequently that previous coping techniques and traditional knowledge may no longer be fit for purpose. The effects of climate change imply that the local climate variability that people have previously experienced and have adapted to is changing and changing at relatively great speed^{xxxii}.

The specific impacts of climate change on a country depend on the climate it experiences as well as its geographical, social, cultural, economic and political situations^{xxxiii}. However, as identified in the UN's 2007 Millennium Development Goals Report, developing countries are the most vulnerable to



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climate change impacts because they have fewer resources to adapt: socially, technologically and financially^{xxxiv}.

Adaptation and Development

Reduced resilience and increased vulnerability to disasters and climate change are critical risks for sustainable development. Management of these risks requires governments, institutions and civil society to address current hazards, increased variability and emerging trends; manage risk and uncertainty; and build their capacity to adapt^{xxxv}.

Future vulnerability depends not only on climate change but also on the type of development path that is pursued^{xxxvi}. As climate change unfolds, impacts on the population are likely to intensify and development will be hindered, if not reversed. The adverse impacts will compromise PNG's ability to meet and sustain international and national policy objectives such as the Millennium Development Goals and their post 2015 replacements, the recently approved National Climate Compatible Development Strategy (2014-2015), PNG Vision 2050, Development Strategic Plan (2030), Medium Term Development Plan (2011-2015), and Interim Action Plan. The most vulnerable communities are at risk of not meeting basic human development needs.



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Rationale

In recognising the devastating impacts of climate change, the Government of Papua New Guinea (GoPNG) has put in place a number of initiatives which address these challenges. Two government institutions, the Department of Environment & Conservation and the Office of Climate Change & Development have responsibility for delivering GoPNG's climate change commitments to the citizens of Papua New Guinea and for fulfilling obligations towards the United Nations Framework Convention on Climate Change.

The OCCD and Adaptation Fund Project *Enhancing Adaptive Capacity of Communities to Climate Change-related Floods in the North Coast and Islands Region of Papua New Guinea* (the Project) seeks to strengthen communities' abilities to make informed decisions about and adapt to climate change-driven hazards that affect both coastal and riverine communities. A particular focus is on resilience towards occurrences of coastal and inland flooding events in the North Coast area and the Islands Region. Through stakeholder consultations and research it has become apparent that there is little knowledge on effective village level adaptation measures and that provincial Disaster Risk Management (DRM) offices are often isolated from the provincial administration with DRM not viewed as a priority. Understanding of disaster risk reduction among communities is limited as local farmers and others affected by natural hazard events claim compensation, therefore promotion of ownership of adaptation and climate change-related disaster risk reduction strategies village, ward, local government, provincial and national levels is vital in creating resilient communities.

Climate change-related floods and hazards have both short and long-term impacts on peoples' livelihoods. The challenge of climate change requires a widespread mobilization for action individually and collectively. Fundamental to successful adaptation is communication of solutions and best practice to those most vulnerable, and as has been the case in the past communication initiatives have been ad-hoc and have often failed at the last mile – getting to people who most urgently need this information. A key challenge for government ministries and climate change and development organisations is dissemination of information – for example, the outputs of the Adaptation Technical Working Group to a non-specialist, lay audience.

Statement of purpose

Despite GoPNG's efforts, the dissemination and uptake of climate change information amongst provincial and local authorities, farmers and villagers is very limited. There is an absence of awareness, education and advocacy of climate change impacts and practical adaptation measures to manage expected and uncertain changes. Therefore, a communications strategy is required to support the Project and compliment the Climate-Compatible Development Strategy (CCDS) and Interim Action Plan where appropriate.



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Methodology for Developing the Strategy

This Strategy was developed in a participatory manner by involving different stakeholders. The document was drafted by Will Humphries, Climate Change Consultant. A literature review and stakeholder consultations with Adaptation Division, OCCD; MRV Division, OCCD; REDD+ Division, OCCD; Office of the Executive Director, OCCD; Media & Communications, OCCD, NGOS and CBOs were used in the development process; and the Provincial Climate Change Coordinators of East Sepik Province, Madang Province, Morobe Province, Oro Province and New Ireland Province were consulted.

Various strategy papers, research papers and relevant national policies and legislation within and outside Papua New Guinea were used, including:

- Adaptation Fund Programme Proposal, Enhancing the Adaptive Capacity of Communities to Climate Change Related Floods in the North Coast and Islands Region of Papua New Guinea, (2012).
- Australian Bureau of Meteorology and CSIRO, Chapter 11 Papua New Guinea in Climate Change in the Pacific: Scientific Assessment and New Research. Volume 2: Country Reports: Climate Variability, Extremes and Change in the Western Tropical Pacific: New Science and Updated Country Reports (2014)
- Papua New Guinea Country Assessment 2010. Reducing the Risk of Disasters and Climate Variability in the Pacific Islands.
- PNG Climate Compatible Development Strategy, 2010
- Papua New Guinea Vision 2050: National Strategic Plan Taskforce



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Vision, Aims, Objectives

The level of awareness and understanding of climate change issues among stakeholders is very low at sub national levels. One of the major reasons for this is the absence of a national climate change communication mechanism to enable effective communication of climate change knowledge.

The Strategy aims at ensuring learning and raising awareness of the community at all levels on how to adapt to the impacts of climate change. It is also meant to strategically facilitate sharing of best practices on climate change in the country as well as to prepare the district, village and community to take appropriate measures on adaptation and participate in mitigation in the context of sustainable development.

Vision

To create communities knowledgeable about climate change impacts and natural hazards and thus able to make informed choices and educated decisions.

Aims

To significantly raise the level of awareness of vulnerable communities of the opportunities, threats and solutions brought about by climate change, and to accept their responsibilities to adapt to impacts.

Overall Objective of the Strategy

The overall objective of the Strategy is to support communication activities of the Coastal and Inland Flooding Components of the Adaptation Fund Project and improve the general understanding of climate change in Papua New Guinea.

Specific Objectives of the Strategy

To achieve the stated overall objective, the following are the specific objectives of the Strategy:-

- a) To raise the level of awareness of vulnerable communities at all levels on the opportunities and threats brought by climate change;
- b) To enhance the capacity of the vulnerable communities for designing and taking appropriate measures on climate change adaptation;
- c) To enable vulnerable communities to share best practices and lessons learned from adaptation to climate change;
- d) To provide advice and examples of best practice of how to improve community based disaster risk reduction.



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Shifting of attitudes

Where we're at		Where we need to be
People aren't clear what causes climate change and don't understand how it will affect them	➔	People understand climate change and how it will impact their life
People don't include climate change as an important issue when making decisions	➔	People feel empowered and positive about incorporating climate change adaptation issues into planning and decision making
People aren't aware of their proximity to river flood zones and the adaptation options that exist	➔	People feel knowledgeable and empowered to work with their communities to enhance their resilience to flood events
People aren't aware of the extent and timeframe of sea level rise and how their behaviour can increase coastal erosion	➔	People feel knowledgeable and empowered to work with their communities to enhance their resilience to coastal erosion, coastal flooding and storm surges
Communities have no system of communication for early warnings and have no plan of action	➔	Communities are prepared for extreme events and have structures and systems in place to increase their resilience. Communities are linked to regional and national early warning systems
Communities have depleted and deforested their mangrove ecosystems and have increased their vulnerability to storm surge and strong waves	➔	Communities have in place strong structures to safeguard existing mangrove and have begun restoration and replanting projects. Communities understand the multiple benefits of healthy mangrove habitat.



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Implementation of the Strategy

The implementation of the Strategy requires commitment and involvement of different organizations and individuals at all levels.

While the Strategy provides key messages, responsible actors will develop and communicate specific messages relevant to their mandate. The following are the roles and responsibilities of key institutions and stakeholders in the implementation of the Strategy:

- a) Ministries and Departments
- b) Provincial Governments
- c) Districts and Local Level Governments
- d) Ward, Village and Community: At ward, village and community levels, Ward Executive Officers, and Village Executive Officers are responsible to communicate and provide feedback on climate change issues. This includes identification of best practices and sharing them across sectors. Community and religious leaders are encouraged to facilitate and communicate climate change information;
- e) Media, Private sector and CSOs: Mass media including news media are expected to communicate information and best practices on climate change at different levels. CSOs are also expected to communicate and raise awareness on climate change issues at different levels.
- f) Academic and research institutions: These institutions are expected to communicate their climate change work as much as possible through the curricula and wider society



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Target Audience

This strategy targets the following broad categories of audience at different levels:-

Primary Target Audience

- Project Communities from Adaptation Fund Project Activities 1, 2 and 3.
- Village Planning Committees (VPCs)
- Ward Planning Councils (WPCs)
- Youth groups
- Schools
- Universities
- Women's groups
- Civil Society Organisations (CBOs, NGOs)
- Religious leaders

Secondary Target Audience

- Provincial Governors
- Provincial Administrations
- District Administrations
- Local Level Government
- Department of Environment and Conservation
- Office of Climate Change and Development
- National Weather Service
- Government Ministries

Stakeholder Communication Matrix

	To Whom	Current situation	Awareness Level	Knowledge Level	Possible Communication Methods	Motivations and Barriers
1	Project Communities	Highly exposed to climate risk and extreme events	High	Low	Newspapers and special supplements; letters; local exhibitions; CBOs; theatre and arts: drama, songs, poetry; newspapers; flyers, posters, booklets (Tok Pisin, Tok Ples); community meetings; workshops; climate change champions and influential leaders; local radio; TV.	Fear of change: unwillingness to change behaviour (e.g. moving food garden away from river bank); Lack of expertise; Lack of funding. Weekly community days spent on community projects: mangrove restoration, etc.
2	VPC / WPC	Highly exposed to climate risk and extreme events	High	Low	Newspapers and special supplements; letters; local exhibitions; CBOs; theatre and arts: drama, songs, poetry; newspapers; flyers, posters, booklets (Tok Pisin, Tok Ples); community meetings; workshops; climate change champions and influential leaders; local radio; TV.	Low governance capacity; low project management skills; limited funding availability.



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3	Youth groups, secondary and tertiary education	Local communities highly exposed to climate risk and extreme events	High	Medium	Newspapers and special supplements; letters; local exhibitions; CBOs; theatre and arts: drama, songs, poetry; newspapers; flyers, posters, booklets (Tok Pisin, Tok Ples); community meetings; workshops; climate change champions and influential leaders; local radio; TV, cinema; websites; social media.	Climate change champions; highly engaged; limited capacity to act.
4	Civil Society	Local communities highly exposed to climate risk and extreme events	High	High	Newspapers and special supplements; letters; local exhibitions; CBOs; theatre and arts: drama, songs, poetry; newspapers; flyers, posters, booklets (Tok Pisin, Tok Ples); community meetings; workshops; climate change champions and influential leaders; local	Climate change champions; highly engaged; high capacity to act when funding and supportive structures in place.



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					radio; TV, cinema; websites; social media.	
5	Local Level Government, Provincial Administrations, District Administrations,	Regional appreciation of climate change and disaster risk not always apparent.	Medium	Medium	Newspapers and special supplements; letters; local exhibitions; CBOs; theatre and arts: drama, songs, poetry; newspapers; flyers, posters, booklets (Tok Pisin, Tok Ples); community meetings; workshops; climate change champions and influential leaders; local radio; TV, cinema; websites; social media.	Inadequate capacity; insufficient resources; lack of coordination e.g between provincial planners and Department of Works; low project management skills; limited funding availability.
6	Government Ministries	Priority area for OCCD and DEC	High	High	Newspapers and special supplements; letters; local exhibitions; CBOs; workshops and seminars; climate change champions and influential leaders; radio; TV, cinema; websites; social media.	Funding dispersal, competing priorities.



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Awareness material themes

Successful climate change adaptation is not necessarily about building flood walls or big engineering projects; it is a shift in behaviours and can include low cost methods.

Key consideration: Translation and development of all material into Tok Pisin (understanding of English in remote locations can be limited) and in context specific situations (Project Communities), translation and development of material into local languages - Tok Ples.

Disaster Risk Reduction

- a. Disaster awareness / Early Warning System
- b. First aid
- c. Food security, agriculture
- d. Community disaster risk response planning and practice
- e. Water safety (WASH – water, sanitation & hygiene)

Hazards

Consider the 9 priority areas identified by OCCD and target vulnerable areas following Hazard Assessment by RMSI Consulting.

Example key messages:

- Inland river flooding
 - o Training and community mobilisation for flood events ‘mock events’
 - o Relocate to higher grounds
 - o Discourage gardening of river banks
 - o Rehabilitate slopes; tree planting or river beds
- Coastal flooding
 - o Training and community mobilisation for flood events ‘mock events’
 - o Relocate to higher grounds
 - o Mangrove rehabilitation and conservation
 - o Sea wall construction
- Sea level rise
 - o Migration – permanent relocation to higher ground
 - o Mangrove rehabilitation and conservation
 - o Sea wall construction



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Resources & Communications Mix

The below resources, knowledge management products and communications materials which will be tailored to different user groups with a particular focus on local communities.

Communications products to consider

Community Handbooks

Following successful production of the Mangrove Handbook by OCCD and Partners, it would be wise to produce a series of handbooks based on key themes to provide educational materials and convey technical knowledge in an accessible way to inform the public about the need for comprehensive, swift, and effective measures to improve their resilience and exposure to climate change and disaster risk:

- Coastal Communities Adaptation Strategies
- River Communities Adaptation Strategies
- Storms: Early Warning = Early Action
- Floods: Early Warning = Early Action

Website for Community Adaptation

To host best practice examples of community based adaptation, to provide a databank of idea, and a place for communities and civil society to showcase progress made.

- Website hosted by wordpress: USD \$299 per year = PGK805.00 e.g 'pngadapt.com'
- Twitter name: @pngadapt
- Facebook page to link to website: 'Adapt PNG'
- Facebook discussion group already existing: *Adapt PNG*

Video Documentaries

Utilising PNG's strong oral cultures and traditions of storytelling and combining this with the emotive power of video documentaries, a series of video documentaries should be produced and disseminated using project funds. For the largest reach, DVDs or USB data sticks should be distributed through schools, universities, CSOs, NGOs, LLGs and Wards. The documentaries could be made available to the National Television Broadcaster and played as a public information video before feature films.

Communication Channels

- National Radio
- Local Radio
- Radio New Zealand / Radio Australia
- Newspapers
- Trade and specialist media



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- Comedy shows
- Theatre Groups
- Cultural Groups
- Youth Networks
- Cycle Associations

Activities

- Participatory 3D modelling
- Adaptation newsletters
- School quizzes, art and poetry competitions
- Posters
- Pamphlets
- Billboards
- T-shirts and caps for selected community leaders

Communication Partners

- Research and Conservation Foundation
- Red Cross Red Crescent Climate Centre
- PACMAS – Pacific Media Service
- Post Courier
- The National
- Pacific Business Review
- EM-TV
- Kundu2
- NBC Radio

Pacific Climate Change Networks

- Solution Exchange, <http://www.solutionexchange-un.net/pacific/index.php>
- Pacific Climate Change Information Network (PaCCIN), http://lyris.spc.int/read/all_forums/
- Pacific Disaster Net (PDN), <http://www.pacificdisaster.net:8080/Plone>
- Pacific Climate Change Portal (PCCP), <http://www.pacificclimatechange.net/>
- Disaster Risk Reduction Project Portal (DRR PP), <http://www.drrprojects.net/drrp/default/index>
- Red Cross Red Crescent Global Climate Net
- Climate Services Partnership Newsletter
- Red Cross Red Crescent Climate Centre's news feed.



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Resource List

□ Arts

- *Performance Arts*
- *Theatre*
- *Dance*
- *Film*
- *Sculpture*
- *Exhibitions*

□ Press

- *Press release*
- *Radio*
- *Opinion editorial*
- *Features*

□ Media

- *Videos and animations*
- *Games: traditional games, board games*
- *e-mail newsletter*
- *Social media: Facebook, Twitter, podcasts, online newspapers, online interactive training tools, digital stories*

□ TV

- *News and features*
- *Long-format documentaries*
- *Short-format documentaries*

□ Advertising

- *Print*
- *Radio*
- *Television*

□ Print

- *Books*
- *Brochures*
- *Posters*
- *Letters*



ADAPTATION FUND



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- *Leaflets*
- *Scientific reports*
- *How to guides*
- *Toolkits*

□ **Public Relations**

- *Events: e.g. participatory 3D modeling (Theresa Kas, The Nature Conservancy; Annisah Sapul, Wildlife Conservation Society)*
- *Workshops*
- *Seminars*
- *Telephone calls*
- *Conferences*
- *Face-to-face meetings*



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Strategy Implementation Matrix

The Strategy Implementation Matrix describes the strategic framework for communicating climate change information. It covers theme/issues; key messages to be delivered to the audience; target audience; media and channels of communication; and responsible actors for each theme.

Theme / Issue	Key messages	Target audience	Tools and channels of communication	Responsible Actor
General knowledge on climate change and disaster risk reduction	i) General knowledge on climate change, its causes and impacts, vulnerability, adaptation and mitigation strategies as well as associated opportunities. ii) Linkages of climate change and sustainable development	General public; religious leaders; journalists / media; community leaders; schools; development partners; politicians and other policy and decision makers	Radio; TV; cinema; flyers; posters; newspapers; booklets; community meetings; workshops; seminars and outreach; school visits; drama and songs; websites; social media; letters; local and international exhibitions; promotional materials; climate change champions and influential leaders.	OCCD; CSOs; Media; private sector; schools
Coastal flooding	i) Impacts of climate change on coastal and marine environment ii) Coastal and beach erosion	Project communities; CBOs; general public; religious leaders; journalists / media;	Community meetings; workshops; seminars and outreach; local exhibitions	Provincial governments; Disaster Management Office / Climate Change Office;



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	<p>control systems</p> <p>iii) Livelihood diversification for coastal communities</p> <p>iv) Alternative sources and technologies to enhance fresh water availability</p> <p>v) Sustainable coastal land use planning</p> <p>vi) Protection and conservation of coastal and marine ecosystems.</p> <p>vii) Restoration of coastal and marine ecosystems (planting of mangroves and coral reefs)</p> <p>viii) Sharing of any best practices and lessons learnt e.g. traditional knowledge</p> <p>ix) Early warning system, training</p>	<p>community leaders; schools; development partners; politicians and other policy and decision makers</p>	<p>and events; school visits; drama and songs; flyers; posters; newspapers; booklets; radio; TV; climate change champions and influential leaders.</p>	<p>LLGs; OCCD; CSOs; Media; private sector; schools</p>
Inland flooding	<p>i) Impacts of climate change on river systems and water catchments</p> <p>ii) River morphology control systems</p> <p>iii) Relocation of food gardens away from river banks</p>	<p>Project communities; CBOs; general public; religious leaders; journalists / media; community leaders; schools; development partners; politicians and other policy and decision makers</p>	<p>Community meetings; workshops; seminars and outreach; local exhibitions and events; school visits; drama and songs; flyers; posters; newspapers; booklets; radio; TV; climate</p>	<p>Provincial governments; Disaster Management Office / Climate Change Office; LLGs; OCCD; CSOs; Media; private sector; schools</p>



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	<ul style="list-style-type: none"> iv) Sustainable land use planning vi) Protection and conservation of river ecosystems, tree planting to prevent sedimentation of river vii) Sharing of any best practices and lessons learnt e.g. traditional knowledge viii) Early warning system, training 		change champions and influential leaders.	
Gender and vulnerable groups	<ul style="list-style-type: none"> i) Impacts of climate change on gender and vulnerable groups ii) Participation of women and other vulnerable groups in planning, decision making and implementation of climate change initiatives iii) Gender mainstreaming iv) Empowerment of Women and other vulnerable groups v) Sharing of gender sensitive best practices and lessons learnt 	Disadvantaged groups; project communities; CBOs; general public; religious leaders; journalists / media; community leaders; schools; development partners; politicians and other policy and decision makers	Radio; TV; cinema; flyers; posters; newspapers; booklets; community meetings; workshops; seminars and outreach; school visits; drama and songs; websites; social media; letters; local and international exhibitions; promotional materials; climate change champions and influential leaders.	Higher Learning Institutions; provincial governments; Disaster Management Office / Climate Change Office; LLGs; OCCD; CSOs; Media; private sector; schools
Climate change research	<ul style="list-style-type: none"> i) Adaptation options ii) Sustainable and integrated natural resources management 	Project communities; CBOs; general public; religious leaders; journalists / media;	Radio; TV; cinema; flyers; posters; newspapers; booklets; community	Higher Learning Institutions; provincial governments; Disaster Management Office



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	<p>systems. iii) Sustainable management of coastal and marine environment iv) Drought-tolerant, early-maturing and pest-resistant crop varieties and livestock v) Climate change related diseases and other health risks. vi) Appropriate technologies for adaptation. vii) Gender and climate change viii) Sharing of any best practices and lessons learnt e.g. traditional/indigenous knowledge</p>	<p>community leaders; schools; disadvantaged groups; development partners; politicians and other policy and decision makers</p>	<p>meetings; workshops; seminars and outreach; school visits; drama and songs; websites; social media; letters; local and international exhibitions; promotional materials; climate change champions and influential leaders.</p>	<p>/ Climate Change Office; LLGs; OCCD; CSOs; Media; private sector; schools</p>
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Key Events and Opportunities

There are key events which provide opportunities for communicating climate change issues:

- a) World Wetlands Day (02 February);*
- b) International Women's Day (8th March);*
- c) World Meteorological Day (23 March);*
- d) World Malaria Day (25 April);*
- e) International Worker's Day (1st May);*
- f) International Family Day (15 May);*
- g) World Environment Day (05 June);*
- h) International Child Day (13 June);*
- i) World Mangrove Day (24 July)*
- j) International Day for Preservation of the Ozone Layer (16 September);*
- k) World Food Day (16th October);*
- l) International Day for Eradication of Poverty (17th October);*
- m) Climate Change day (November each year); and*
- n) Climate Change Conference of the Parties (December each year).*



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Monitoring and Evaluation

Consider annual milestones to measure progress towards outcomes.

The following are output and outcome indicators which will be used for monitoring and evaluation of the Strategy:

a) Output indicators

- i. Number and type of resources and knowledge products used
- ii. Number and type of messages disseminated
- iii. Number of times and type of Tok Ples language translations
- iv. Number and type of communication channels used
- v. Number and type of communication partners used
- vi. Number and type of activities used
- vii. Number of events conducted
- viii. Frequency of communication
- ix. Number of best practices and lessons learned on adaptation to climate change-related flooding and climate-related natural hazards
- x. Number of publications to SPREP climate change portal; Adaptation Learning Mechanism; UNDP's Energy and Environment Network; WeAdapt climate change portal.
- xi. Number of unique visitors and overall visits to web based adaptation platform focused on support to community level adaptation initiatives
- xii. Number of unique visitors and overall visits to OCCD Adaptation web pages
- xiii. Number of views of climate change adaptation documentaries
- xiv. Number of radio interviews and talk back / discussion shows
- xv. Number of newspaper features
- xvi. Number of news articles
- xvii. Number of letters from citizens written to newspapers

b) Outcome indicators

1. Strengthened awareness and ownership of climate change-related risk reduction practices at sub-national level: village, ward, local government, provincial government.
2. Lessons learned and best practices generated and disseminated to Project communities, civil society and private sector through targeted mechanisms;
3. Enhanced capacity of the vulnerable communities for designing and taking appropriate measures on climate change adaptation;
4. Increased resilience of Project communities to the impacts of climate change and climate-related natural hazards.



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Shifted attitudes

Where we are now		Where we were
People understand climate change and how it will impact their life	➔	People weren't clear of the causes climate change and didn't understand how this would affect them
People feel empowered and have begun incorporating climate change adaptation issues into planning and decision making	➔	People didn't include climate change as an important issue when making decisions and felt discouraged and resigned to climate change impacts
People are knowledgeable and empowered with new skills to work with their communities to enhance their resilience to flood events	➔	People weren't aware of their proximity to river flood zones and the adaptation options that exist to them
People are knowledgeable and empowered with new skills to work with their communities to enhance their resilience to coastal erosion, coastal flooding and storm surges	➔	People weren't aware of the extent and timeframe of sea level rise and how their behaviour can increase coastal erosion
Communities are prepared for extreme events and have structures and systems in place to increase their resilience. Communities are linked to regional and national early warning systems	➔	Communities had no system of communication for early warnings and had no plan of action or evacuation procedures
Communities have in place strong structures to safeguard existing mangrove and have begun restoration and replanting projects. Communities understand the multiple benefits of healthy mangrove habitat.	➔	Communities had depleted and deforested their mangrove ecosystems and subsequently had increased their vulnerability to storm surge and strong, destructive waves



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Budget

Timeline

Year 1: 2015
Year 2: 2016
Year 3: 2017

Funding from Office of Climate Change and Development; Adaptation Fund; United Nations Development Programme.

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