

OFFICE OF CLIMATE CHANGE AND DEVELOPMENT



INFORMATION BRIEF



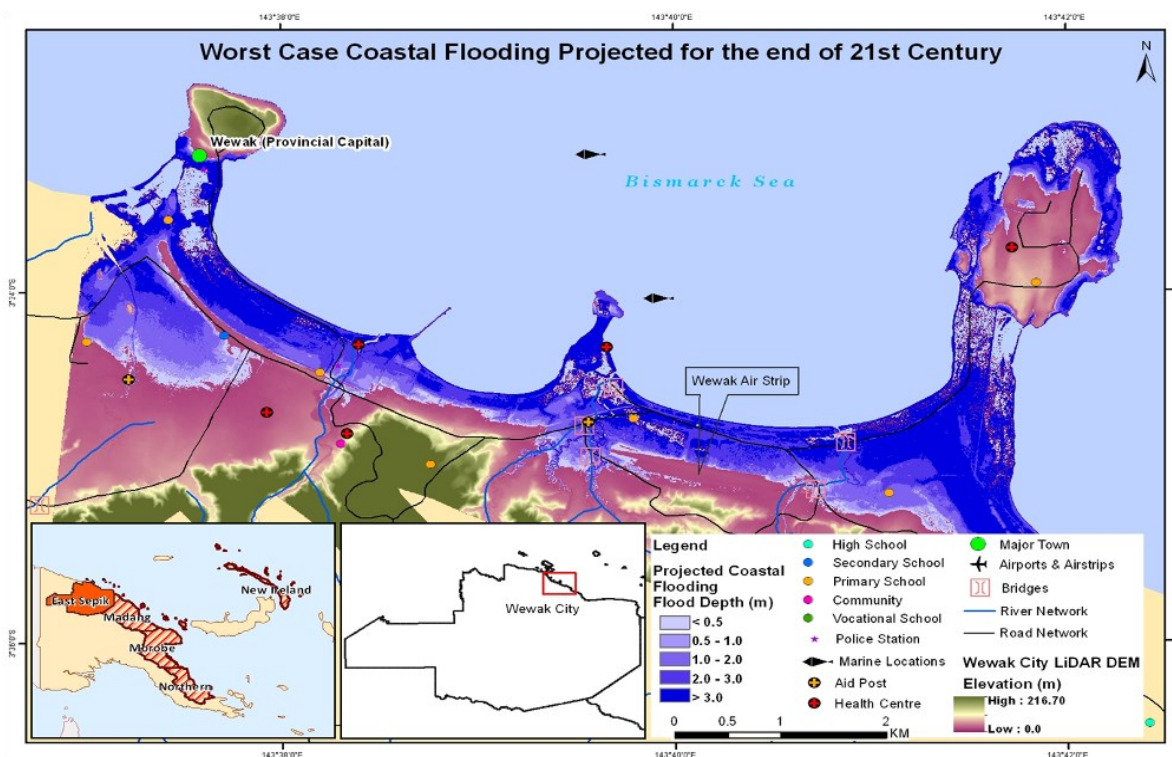
Published by the Office of Climate Change & Development

Port Moresby
 National Capital District
 Papua New Guinea
 8 May, 2015

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Findings of the Coastal Hazard Assessment - Wewak Town. Please kindly contact the OCCD if you are interested in other Coastal Hazard Assessment maps of your provinces. See story on pg. 9

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Preface

Papua New Guinea (PNG) has been a Party to the United Nations Framework Convention on Climate Change (UNFCCC) since signing it at the UNCED in Rio de Janeiro, Brazil in June 1992. The UNFCCC was ratified by the Government of Papua New Guinea (GoPNG) in April 1993. The signing and ratification of the UNFCCC by the GoPNG is a testimony of our strong commitment to fulfilling our obligations to the Convention. It also signifies the concerns that PNG has about the issues pertaining to the impacts of climate change affecting its people and their survival.

An important pillar of this climate Convention is the commitment, common but differentiated responsibilities, by all Parties to take the necessary steps and measures to reduce greenhouse gas (GHG) concentrations in the atmosphere at a level that would prevent dangerous anthropogenic interference with the climate system. This is further strengthened and reflected by the commitment of all Parties to submit to the Conference of the Parties (COP) National Communication under Articles 4 and 12 of the Convention.

The Kyoto Protocol (KP), the only legal binding agreement by Parties to the UNFCCC to address the issue of climate, was setup immediately after the establishment of UNFCCC in 1992. Signed in Kyoto, Japan, in 1997, it commits developed country Parties to reduce their greenhouse emissions by 5% to their respective 1990 levels by 2012. To assist in this, they can use carbon offsets by implementing “Clean Development Mechanism (CDM)” in countries like PNG.

A new Agreement to supersede the KP is anticipated in December 2015. The agreement is aimed to include all countries, both developed and developing, to commit to carbon emissions reductions according to their own intentions and circumstances. PNG must submit its “Intended National Determined Contributions (INDCs) which covers the period before the Paris COP. The INDCs will serve as a target to be achieved as a Party to the new agreement beyond 2020.

The GoPNG has also gone ahead in embarking on a number of new initiatives aimed at supporting our commitment to the UNFCCC. These included mainstreaming climate change in our current national long term political vision, plans and strategies, namely the Vision 2050 and the National Strategic Plan 2010-2030. Furthermore, government’s strategy on climate change, the PNG Climate-Compatible Development Strategy, already identifies key priority areas to improve our economic growth whilst reducing greenhouse gas emissions and enhancing climate resilience. Another milestone is the establishment of the Office of Climate Change and Development (OCCD) to facilitate and develop appropriate policies and where required, necessary legislation to address the issues relating to climate change. In addition, PNG has been leading a proactive Coalition of Rainforest Nations, engaging in negotiation under UNFCCC for its 52 member countries especially on REDD+ issues since raising the issue at COP11 in 2005 in Montreal, Canada.



Honourable John Pundari CMG, MP
Minister for Environment & Conservation and Climate Change



Mr. Varigini Badira
Executive Director

ADAPTATION & PROJECTS DIVISION

Adapting to changing climate is vital for communities

Adaptation to the adverse effects of climate change is vital in order to reduce the impacts of climate change that are happening now and increase resilience to future impacts.

The cost (both monetary and casualties) of climate-related hazards will continue to increase annually unless the Government through the Office of Climate Change and Development initiates cost effective adaptation measures to reduce the intensity, frequency, magnitude or severity of a risk.

The Adaptation and Projects Division of the Office of Climate Change and Development has put its emphasis on identifying the specific hazards prevalent in PNG.

The Divisional objectives are; to establish climate projection systems that can inform and guide appropriate actions to prevent or minimise the damage caused by climate change thereby ensuring development is climate proofed, or take advantage of opportunities that may arise, to identify gaps in existing policies, and guide policy formulation process and present policy options in various sectors that are required to protect PNG from the adverse impacts of climate change.

Through the process, the Division has come up with or ascertained nine priority hazards;

1) Coastal Flooding and Sea-level Rise

2) Inland Flooding

3) Food Insecurity

4) Cities and Climate Change

5) Climate Induced Migration

6) Damage to Coral Reefs

7) Malaria and Vector Bourne Diseases

8) Water and Sanitation

9) Landslides



Manger, Projects Ms. Luanne Losi said they envisage nine climate-related risks within which we need to plan, prioritize and implement.

“Climate Change has no boundaries and cuts

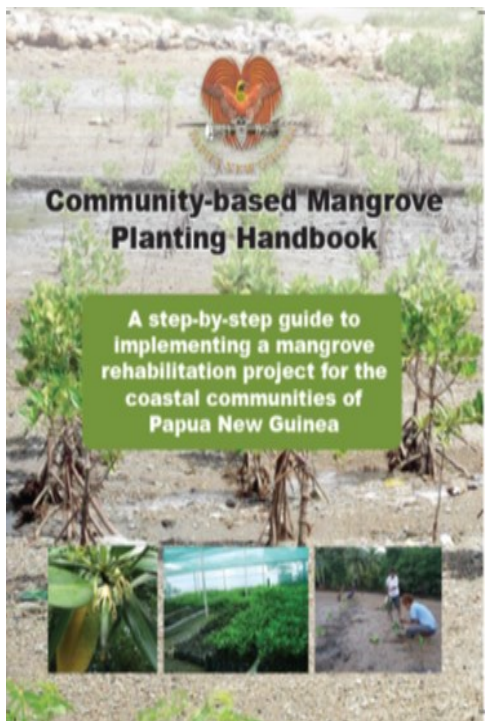
across all sectors, hence must be mainstreamed and implemented through the policies of other sectors, in particular, agriculture, transport, water resources, land-use and environment. Also, it aligns with the national goals of poverty alleviation and sustainable development. It is in this context that all stakeholders including government, private sector, development partners, non-government organizations and the civil society in general must work together to address this emerging issue of Climate Change.

Adaptation - the process or state of changing to fit a new environment or different conditions, or the resulting

Our Development Partners have also been our key partners in addressing Climate Change Adaptation and Mitigation initiatives in-country. This picture on the right shows US Ambassador His Excellency Walter North and OCCD Executive Director Varigini Badira during the launch of PAN American Climate Fund - Adaptation Project to assist coastal PNG.



Community Mangrove Support



Mangroves are trees and shrubs that grow along coastlines and estuaries mainly in tropical areas. They provide critical ecosystem services to coastal environments and communities serving as: breeding grounds for fishes, crabs and prawns; protect coastal communities from cyclones and storm surges; purify inland water and trap sediment before it reaches near-shore habitats like sea grasses and coral reefs; provide important non-timber forest products like nipa; and provide wood for cooking and construction. Mangroves have demonstrated a range of tolerances to environmental conditions and store significant amount of carbon. In addition to the many ecosystem services, mangroves have gained attention for their carbon sequestration potential. OCCD has since its creation recognized mangrove rehabilitation as the most cost effective method of coastal defense against storm surges/coastal flooding.

Some of the key achievement under this support include;

- Planting thousands of mangroves, communities have embarked on mangrove replanting and rehabilitation activities to protect their shorelines from coastal erosion and coastal flooding.
- Launching of the Mangrove Foundation, encourage support from both public and private sectors to participate in community led mangrove initiatives.
- Developed a Community based mangrove planting handbook, a user guide to enable mangrove practitioners to implement mangrove rehabilitation projects or initiatives.
- Karama Mangrove Rehabilitation & restoration, in Malalua District, Gulf Province - Community members trained to carry out mangrove planting, community built nursery for mangrove seedlings, and options for alternate livelihoods.

COASTAL AND INLAND FLOODING DATABASE DEVELOPMENT

The data base is to reduce exposure and increase adaptive capacity of coastal and riverine communities to flood related risks and hazards. Expected outputs include developing an effective early warning system for both inland and coastal for observation, data collection and information management.

The high resolution elevation LiDAR data, delivered through the Pacific Australia Climate Change Science Adaptation Program (PACCSAP) is currently used to support future coastal planning and management in PNG, particularly the vulnerable communities of the North Coast. It is also useful for other areas of work including design of drainage system, road infrastructure and other public amenities.

GeoNode is a web-based application and platform for developing geospatial information systems (GIS) and for deploying spatial data infrastructures (SDI). It is open source platform for sharing geospatial data and maps. Its important features are that it is open source geospatial software, map composing, controlled access and data sharing. The Geonode frameworks is used to build a web based risk atlas for Central and Gulf province to help disaster management specialists, experts etc. to estimate the impact of disasters.

Resilience - ability to react to potential crisis: the ability of government to identify, assess, and respond to a potentially disruptive situation in order to prevent it from becoming a crisis

Hazard Risk Assessment System - Geonode Platform to be launched

The OCCD through its Adaptation and Projects Division in collaboration with the Department of Works (DOW) will soon *launch* the “Geonode Platform,” Component A, which is the “Establishment of a Hazard Risk Assessment System.” The ‘System’ is the first component of a four (4) year Project: “*Building a more Disaster and Climate Resilient Transport Sector*,” funded by the Japanese government through the World Bank.

All three (3) components of the Project are: i. Establishing a System for Risk Assessment and ii. Support for Strengthening Data Collection for Better Data Generation and Small Pilot Works that demonstrate effective Mitigation of Transport Hazard Risks.

The System has an overall objective to improve the resilience of PNG to the impact of natural disasters and climate change in the transport sector. This objective will be achieved through building capacity for hazard risk assessment affecting the transport sector and thereby minimizing disruption of services, and improve transport access. This System will help minimize the losses that result to the road networks from natural hazards and anticipated climate change, and subsequent losses to the local communities, businesses and the national economy arising from loss of accessibility and connectivity. Specifically, the component will help develop suitable tools for the evaluation and communication of the risks to sensitize decision makers as to the potential losses from natural hazards; understand the causes and consequences of disasters to the transport sector; develop evidence based strategies for risk management in the transport sector at local and national levels; and develop maps and scenarios for hazards and risk to assess assets and other elements exposed using



ICT Officer Camillo Paru tests the Hazard Risk Assessment System while OCCD Manager, Projects Luanne Losi and Works Project Manager Crusoe Dili look on.

modeling and visualization tools. Geonode is a web-based application and platform for developing geospatial information systems (GIS) and for deploying spatial data infrastructures (SDI). It is an *open source* platform for sharing geospatial data and maps.

The Geonode Platform was created as a result of data generated from the activities conducted under the project. Component A of the project saw an in depth identification and analysis of disaster risks faced by select provinces of Papua New Guinea for setting up the process for disaster risk assessment

that could be expanded in the future. The scope of the assignment included Hazard Identification and exposure and Vulnerability for Gulf and Central Provinces, the 2 pilot provinces. Risk profile determined, capacity building and workshops for identified agencies and data sharing and updation on Geonode.

The Geonode frameworks is used to build a web based risk atlas for Central and Gulf province to help disaster management specialists, experts etc. to estimate the impact of disasters. A Hazards inventory for ten different disaster prone provinces has also been created and hosted on the Geonode platform.

The Geonode Web-based risk Atlas can be used by disaster management specialists to estimate the impact of disasters and is an avenue for data holders of different data sets related to disaster risk can share data as it is being managed from a central database for all users.

All agencies and sectors who generate data on hazards include NMSA, PMGO, NWS, OCCD and DOW.

FOOD IN-SECURITY SUPPORT

Under the thematic area of Food In-security, we assist to build resilience and climate change adaptation in communities that are vulnerable or exposed to the impacts of climate change particularly in terms of food production and its security.

The Office of Climate Change and Development has set up pilot food processing, preserving and storage systems in vulnerable communities. We undertake ecosystem based climate resilient fisheries management including measures to reduce pollution of water and marine biodiversity through sustainable fishing practices and restocking programs.

Key achievement under this support includes: the establishment of a Ice making project at Keagolo village in Central Province, assistance to vulnerable communities with livelihood options and extra income opportunities and a partnership forged with Pacific Adventist University to pilot use of the bio-diesel fuel.

COMMUNITY VULNERABILITY ASSESSMENTS IMPORTANT

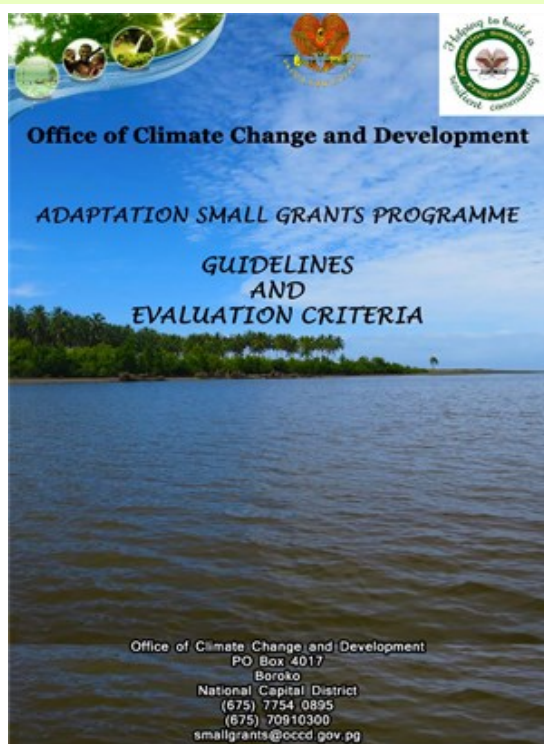
In order to come up with strategies to strengthen climate resilience, it becomes apparent that we need to conduct vulnerability assessments all over the country from coastal communities to terrestrial to highland communities.

We have recognised that it is important to focus on the local situation in the village communities in terms of environmental and socio-economic vulnerability. The latter assessment would cover issues such as housing infrastructure, demography, water and sanitation, food security and income level.

These are important parameters that ultimately determine the level of exposure in any given village community in PNG.

The vulnerability assessment will enable informed decisions to be made and that will entail budgetary considerations and prioritisation and appropriate adaptation measures to undertake.

COMMUNITY BASED MICRO-PROJECTS



The Adaptation and Projects Division will continue to identify, coordinate and monitor micro-projects that support the development of specific adaptation solutions that protect the country's assets and people against the risk of climate change.

Our objective is to reduce-climate related risks in vulnerable communities in PNG through an integrated approach that addresses both short and long term impacts, hence making climate risk management a part of national development planning. Progress has been made to integrate climate change adaptation and risk reduction both at the national policy level and the local level. What has emerged is that, while drawing on international expertise and support, most initiatives and support are targeted at local needs and problems and can be addressed from within, such as protecting ecosystems, improving farming methods, accessing safe drinking water, enhancing public awareness and education and research. A key milestone achieved include: Development of an Adaptation Small Grants Strategy (ASGP) and operationalizing the ASGP to support small community-based adaptation initiatives within the nine priority areas.

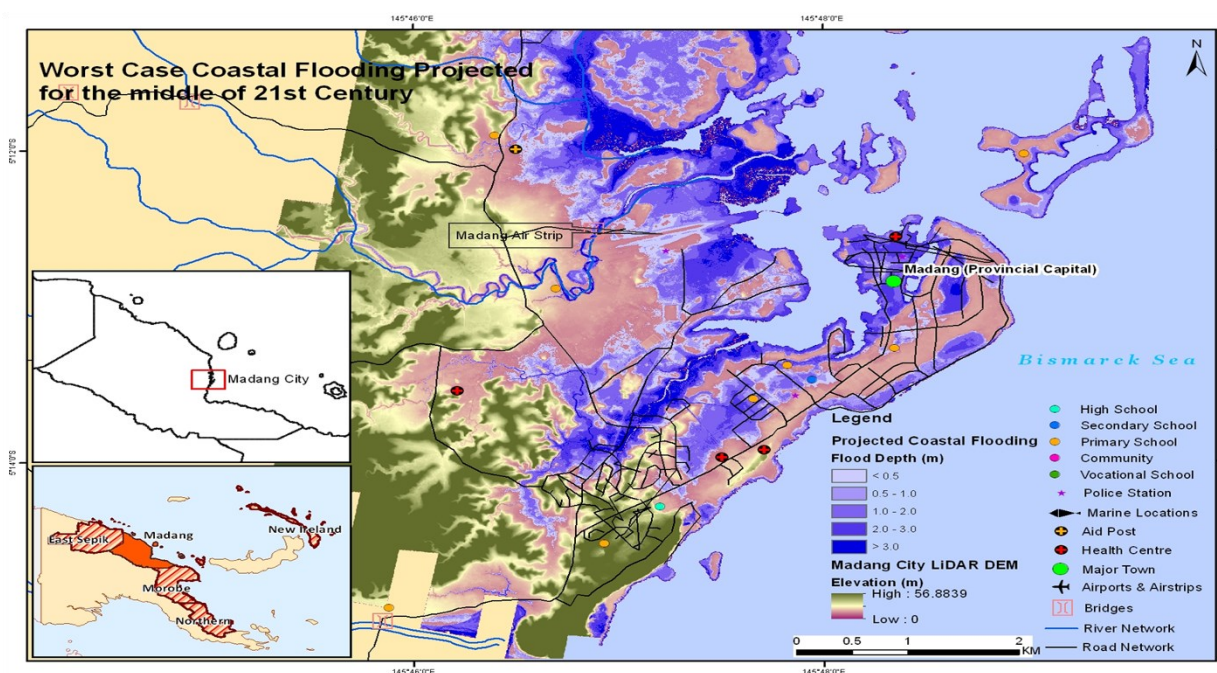
Vulnerability assessment maps present vital findings on climate change related impacts in provinces

The Office of Climate Change and Development presented vulnerability assessment maps to the Provincial and Local Level Government Services Monitoring Authority (PLLGSMA) last year during a meeting held in Lae at the Melanesian Hotel. The purpose of the presentation were a twofold; to share findings of climate change related coastal and inland flooding hazards in Madang, East Sepik, Morobe, New Ireland and Northern Provinces and highlight the importance of applying coastal and inland flooding maps for provincial, district, local level/ward development planning.

Participants of the workshop were presented with the background on the country's climate where PNG experiences two seasons; the North West from December to March referred to as the wet season, and the Southeast monsoon season that brings trade winds, extending from May to October which is referred to as the dry season. The presentations were done by our Adaptation team. Executive Director Mr. Varigini Badira further elaborated that that these were the main drivers of PNG's climate which is also influenced by the high and low pressures and the pacific warm pool of ocean. "Rainfall is at its heaviest into the western interior of New Guinea (including Kikori, Tabubil, Mendi and Tari) with mean annual precipitation varying from less than 1000 mm in Port Moresby up to 9000 mm in the higher west. Global climate has been changing through natural processes over the years", Mr. Badira said.

In the pacific, there are natural phenomena such as the El Niño Southern Oscillation that influences the climate of the region including Papua New Guinea. With human influences of greenhouse gas inputs into the atmosphere, there are changes in the frequency and occurrences of these phenomena resulting in sea level rise, floods and other extreme weather events. Studies show that in the Pacific, there are increasing temperature and changes in intensity and variability of rainfall patterns. These events have impacts on the lives of humans including social, cultural, economic, infrastructure, environment. Human influenced climate change is resulting in changes in the frequency and occurrences of global phenomena such as El Nino Southern Oscillation that is likely to lead to extreme weather events and hazards such as the coastal and inland flooding. The impacts of such hazards are many including on human population, settlements/villages, infrastructure including bridges and roads, airports, towns, schools, aid posts/health centres.

Thus, the use of hazard maps are important for development planning at all levels including budget allocations. This is because the use of coastal and inland flooding maps; show areas that are likely to be affected by flooding, identify areas that are vulnerable, can be applied as inputs to risk and vulnerability assessments, forms a basis for land use planning and flood plain regulation, disaster response and recovery, community awareness, flood insurance and risk financing, evacuation planning, mitigation planning, provincial, District, LLG, and Ward development plans. Below are examples of the maps that were presented to PLLGSMA.



Findings of the Coastal Hazard Assessment - Madang Town

PROVINCIAL CLIMATE CHANGE COMMITTEES SET-UP

Climate Change impacts are being felt all around the country and more so in the rural vulnerable communities.

Adaptation measures need to be made a formal part of development processes and budgeted and programmed into relevant sector projects especially at the sub-national government level, for example in the design of settlements, infrastructure, coastal zone development, forest use and sustainable land-use plans.

The Division has supported the establishment of Provincial Climate Change Committee (PCCC) in East Sepik Province, Madang Province, Morobe Province, Northern Province and New Ireland Province to serve as a bridge between the National Government and the local communities. The PCCC once resourced will aim to address all aspects of climate change at the provincial and local level. In addition, Provincial Project Assistants have been placed in all of the five provinces (mentioned above) to support implement climate change initiatives and also to provide secretariat support to the PCCC.

Below is a picture of Manager, Projects Ms. Luanne Losi undertaking Vulnerability Assessment with Engineer Group of Islands community in the Milne Bay Province.

ADAPTATION TECHNICAL WORKING GROUP & PROJECT STEERING COMMITTEE MEETINGS

The Adaptation Division will endeavour to lead and coordinate climate change adaptation initiatives by consulting and soliciting expert advice from all stakeholders including our development partners, central government line agencies, non-government organizations, private sector and the civil society at large.

OCCD views itself as playing a more coordination and facilitating role while our Technical Working group member's carry out implementation in their respective sectors.

CO-FINANCING DEVELOPMENT INTERVENTIONS

Climate Change is a global agenda. There are so much financial and technical resources out there for PNG to access.

The question now for the government is to take ownership and that requires commitment and the drive and willingness to work with our development partners particularly where it comes to program/project implementation. On that note, the co-financing aspect of the money earmarked for PNG (refer Table below) from international financiers is important for effective implementation.



Development Partner	Programme/Project	Objective	Amount Ear-marked	Target Areas	Key achievements
Adaptation Fund Board/ UNDP	Enhancing Adaptive Capacity of Communities to Climate Change- related Floods in the North Coast and Islands region of PNG	Enhance adaptive capacities of Communities	USD6.5m	East Sepik, Madang, Morobe, Northern and New Ireland	Initial assessment of potential sites for establishing tidal gauges for coastal early warning system. Grant agreements signed with NGOs to implement community based mangrove initiatives and disaster risk management planning. Hazard assessment conducted for 5 pilot provinces. Capacities Needs Assessment conducted to assess capacity gaps to implement CCA.
SPC/GIZ Secretariat of the Pacific Community and Deutsche Gesellschaft für International	Coping with Climate Change in the Pacific Islands Region	Pilot mainstreaming climate change considerations into the Agriculture sector.	USD1m	Central & Milne Bay	Establishment of resource centres/multiplication sites in 3 communities in Kivori to provide appropriate crop varieties. Simple irrigation system set up (using rope and pulley) Assessment for the conservation of traditional taro irrigation system. Training on food processing and preservation techniques for women. Assessment of community vulnerabilities and responses.
World Bank	Disaster Risk Management and Climate Change Adaptation Project	Improve the resilience of Papua New Guinea to the impacts of Natural Disasters	USD2.67m	Department of Works	A system for risk assessment established (using the Geonode Platform). Installation of automated tidal gauge in Kimbe Wharf for National Maritime Safety Authority to record real time tidal data. Installation of 2 automated weather stations for the National Weather Service. Road maintenance manual developed and tested on selected sites along the Magi Highway.
USAID	Coastal Community Adaptation Project (CCAP)	Working directly with communities to initiate community based adaptation projects	USD20m (for 12 Pacific Countries)	Central, NCD and New Ireland	Delivery of climate proof Health clinic in PARI, Central Province. Instalment of water catchment and storage equipment. Developed Disaster Risk Reduction and Response Plans and disaster committee plans in 5 sites in NCD and Central.
European Union/ GIZ	Community Based Solar-Water Project	To support socio-economic development of selected communities to reduce their vulnerability against climate change impact through the provision of reliable sustainable clean energy and water.	EU1million	Central Province	Secured funding and MOU signed to develop Project Document for implementation.

REDD+ & MITIGATION DIVISION

PNG has a role in reducing greenhouse gas (GHG) emissions and contributing to global effort to curb climate change. Global GHG emissions are the cause of climate change, their increased concentration in the atmosphere over time has altered the natural climate system.

PNG contributes less than 1% of total global emissions. However, we have and can use our natural forests to assist in reducing atmospheric carbon dioxide by enhancing and better managing our forests which are very good carbon storage systems. Our economic development is also demanding more power generation and fuel use. The number of vehicles and industrial activities has increased significantly. The REDD+ and Mitigation Division is tasked to manage mitigation of GHGs, lead policy development and coordinate mitigation actions.

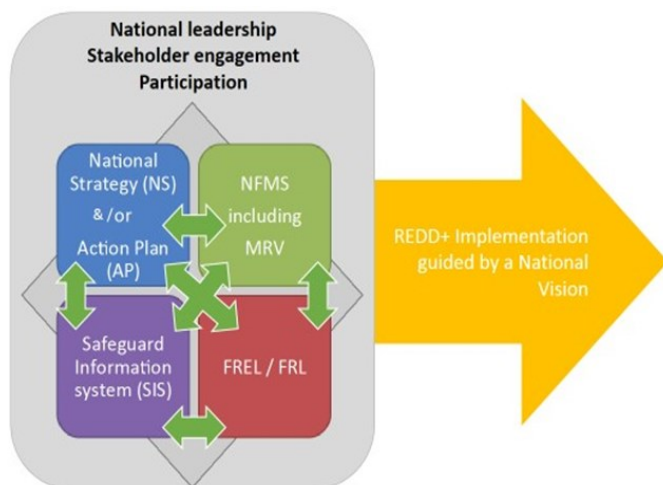


Figure 1: The UNFCCC request Parties when implementing REDD+ in a transparent manner must have the four principles supported by national policies.

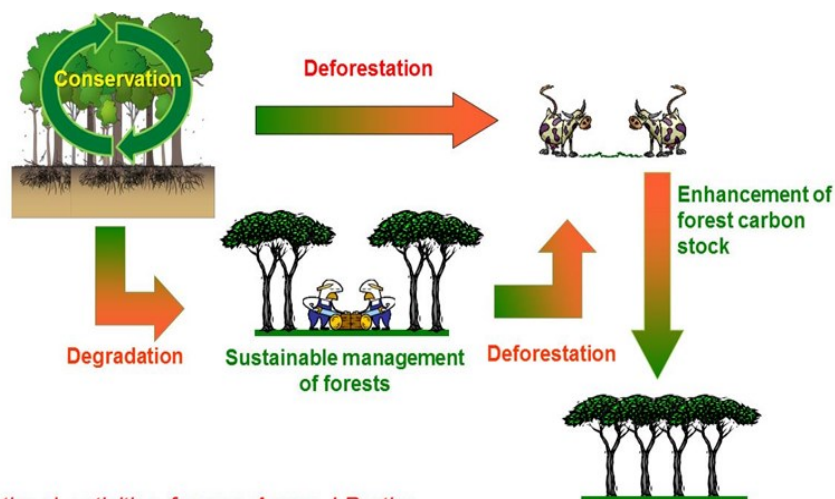
What is REDD-plus?

Reducing emissions from deforestation and forest degradation in developing countries including forest conservation, sustainable management of forest, and enhancement of carbon stocks or REDD-plus are mitigation activities (and a potential mitigation mechanism under the future agreement on climate change) that non-Annex I Parties (developing countries Parties) are encouraged to use to contribute to mitigation actions.

REDD+ Mitigation activities as defined by Dec. 1/CP.16 of the Cancun Agreement

Paragraph 70 of that Decision states as follows, “encourages developing country Parties to contribute to mitigation actions in the forest sector by undertaking the following activities, as deemed appropriate by each Party and in accordance with their respective capabilities and national circumstances”:

- a) Reducing emissions from deforestation;
- b) Reducing emissions from forest degradation;
- c) Conservation of forest carbon stocks;
- d) Sustainable management of forest;
- e) Enhancement of forest carbon stocks;



National activities for non-Annex I Parties

Figure 2: REDD+ Mitigation activities as defined by Decision 1/CP.16 of the Cancun Agreement

REDD+ PHASES

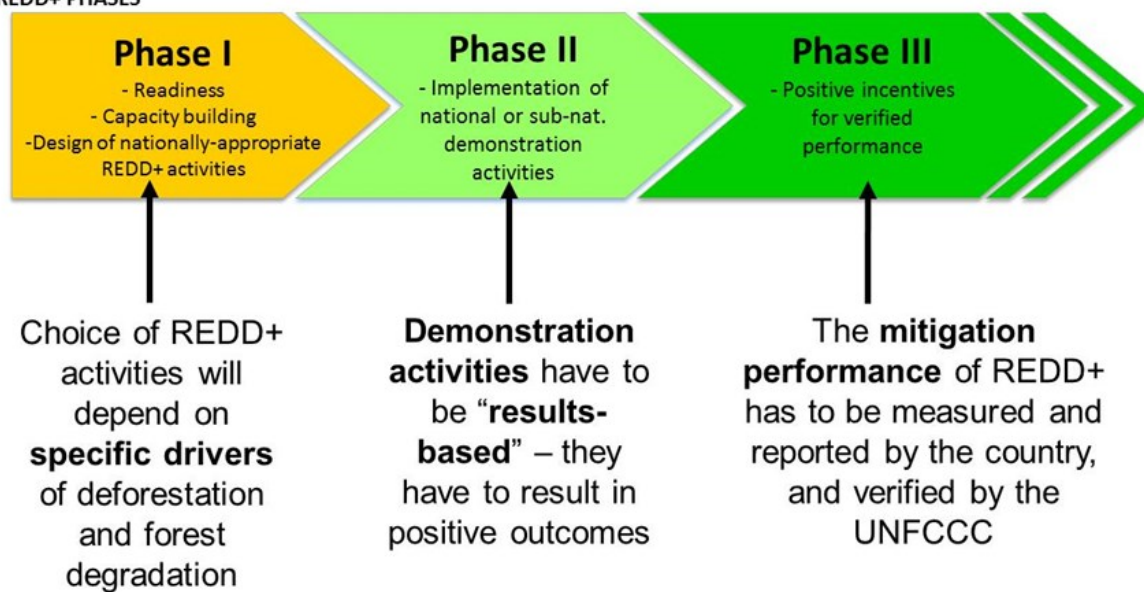


Figure 3: REDD-plus phases as defined by Dec. 1/CP.16

Figure 2 demonstrates the five REDD+ activities as decided by Parties to UNFCCC as stipulated exclusively under Decision 1/CP.16 which Figure 3 demonstrates the REDD+ Phase Approach to ensure that mechanism achieve its objectives making it a robust mitigation measure. Both are guided by the UNFCCC and its Parties as outline in Figure 4. PNG with Costa Rica and few like-minded Parties introduced this issue on avoided deforestation or now called REDD+ in 2005, it has gain great support in the subsequent COPs has outline here in Figure 4.

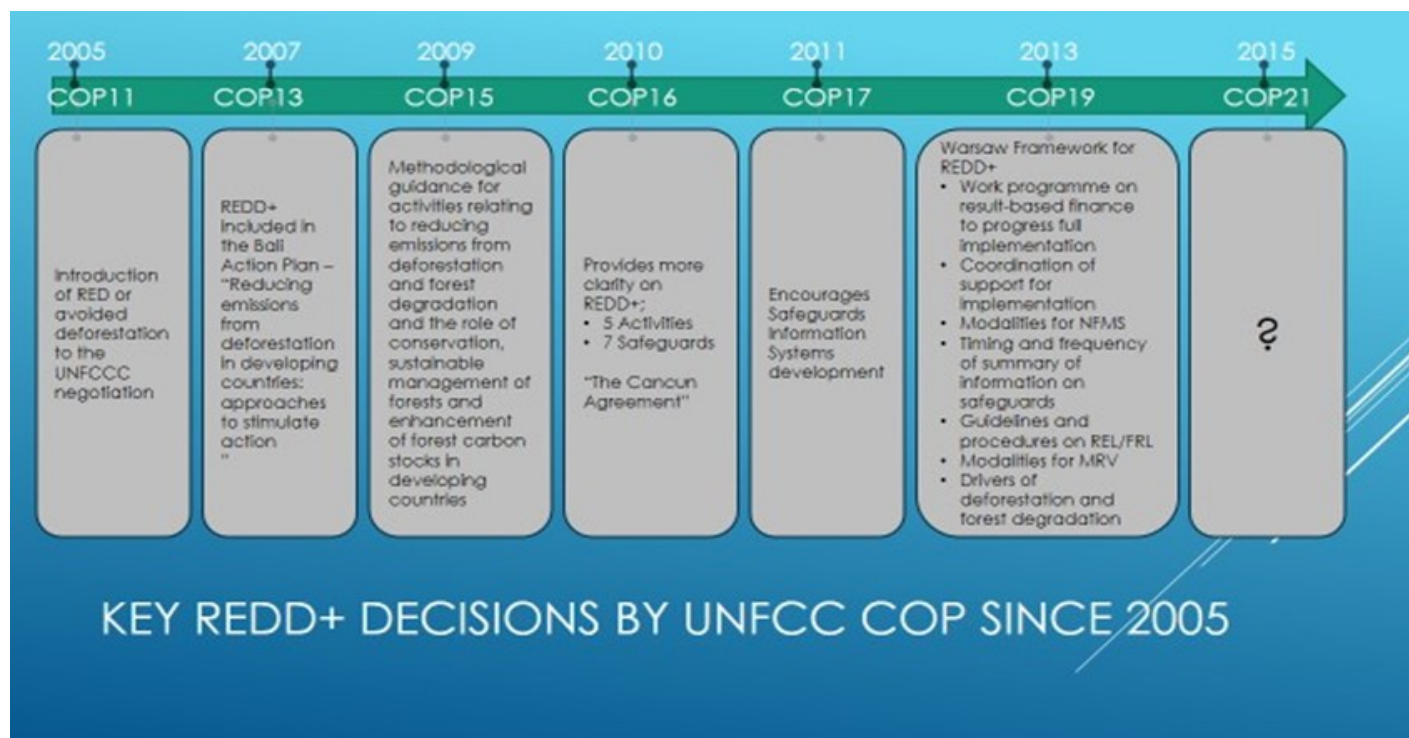


Figure 4: Key Conference of Parties (COP) Decisions relating to REDD+ under the United Nations Framework Convention on Climate Change (UNFCCC)

REDD+ Achievements since 2010

The GoPNG has shown a very strong political will on the issue of climate change since ratifying the UNFCCC in 1993 and introducing the REDD+ initiative to the UNFCCC negotiation in 2005. With its overarching policies; Vision 2050, Development Strategic Plan 2010-2030, the Medium-term Development Strategy 2011-2015 and The Sustainable Strategy 2014 providing more clarity in addressing climate change. REDD+ has been one of the pillar for the GoPNG to reinforce its commitment to the international community as a mechanism to reducing its greenhouse gases. The OCCD Corporate Plan 2014-2016 and the National Climate Compatible Development Management Policy demonstrate the GoPNG commitment in the Climate Change sector. Over the last five years, it has demonstrated national actions through Policies and Measures and pilot demonstration which are outline in the table and figure below.

#	Achievements	Status
1	National REDD+ Guidelines	Completed and currently being trailed.
2	REDD+ Training Manual	Completed. An evolving document utilized for a “training of trainers” initiative. Roll out completed in pilot provinces- ready for roll in other provinces.
3	National Free, Prior, Informed Consent Guideline for REDD+	Completed. Currently being field tested.
4	National REDD+ Social and Environmental Safeguards Guidelines	On-going. Necessary National Principles and Criteria developed. Policy to actions document created. Currently undergoing field testing.
5	National REDD+ Benefit-Sharing Distribution System (BSDS)	Work Initiated 2014. A framework will be proposed in due course. System will require field testing.
6	National REDD+ Communication Guidelines	Work initiated 2015. A National REDD+ Communication Strategy to be presented in due course. Field testing required.
7	Establishment of Satellite Monitoring System (TerraPNG)	Work initiated 2013. Progress ongoing, commission in May 2015.
8	Establishment of a web-portal	Monitoring Laboratory established within the MRV Division- OCCD.
9	Support regional policy development and capacity building (eg. Asia and Pacific)	Framework completed, implemented and under review
10	Establishment of Climate Change Provincial Committees and capacity to address climate change	On-going with six provinces completed
11	Supporting the development of the National Climate Change Policy	Completed and policy endorsed in 2014
12	Establishment of REDD+ Technical Working Group	Completed and implemented
13	Provincial Consultation	On-going and near completion
14	Establish registry of REDD+ Client interest	Completed- ongoing. Currently attains 87 clients spanning back to 2010.
15	National Forest Inventory	Initiated by OCCD and lead by PNGFA under UN-REDD Programme and implemented under the new EU/FAO funding support
16	Reference Emission Level and Reference Level	Initiated by OCCD and lead by PNGFA under UN-REDD Programme
17	Livelihood Option Study	On-going
18	Social Mapping	On-going
19	Grievances Redress Mechanism	On-going

Table 1: REDD+ Policies and Measures developed by GoPNG through the OCCD

REDD+ Pilot Demonstration

There are five national REDD+ Pilot Demonstrations and the OCCD supports its key stakeholder, Papua New Guinea Forest Authority (PNGFA) and several sub-national demonstrations in different provinces in PNG.

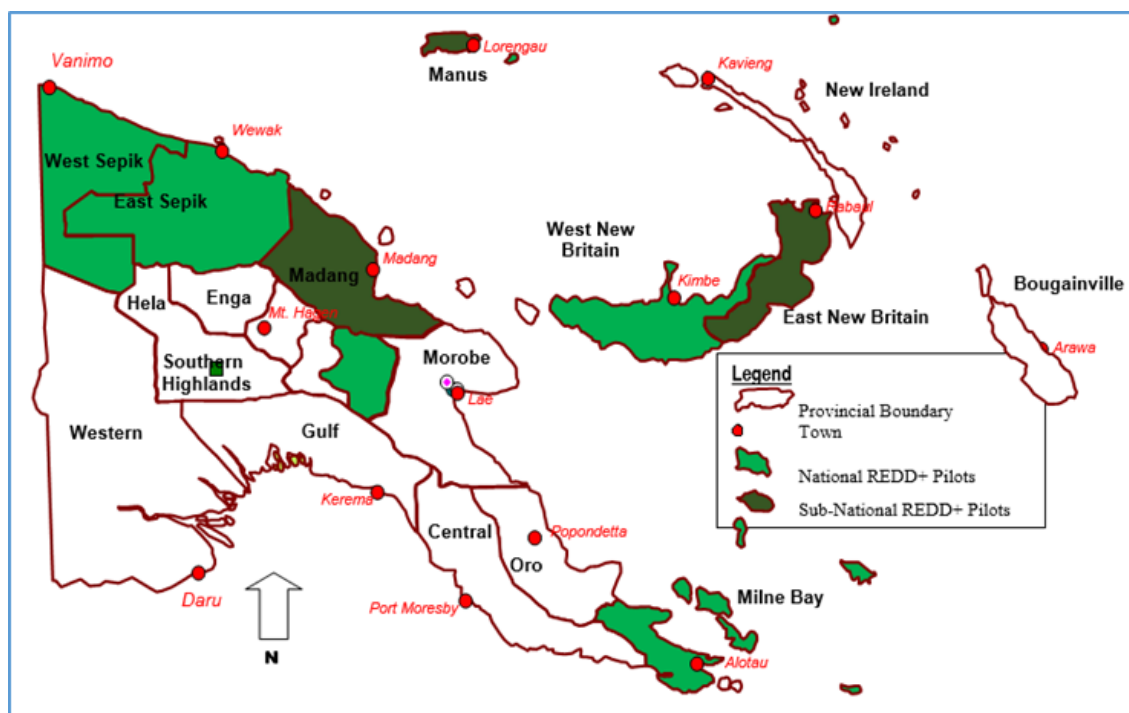





Figure 6: PNG National and Sub-national REDD+ Pilot Demonstration Sites

Funding Support

The REDD+ activities have been since 2011 supported by the UN-REDD Programme with a funding support of US\$6.4 million and recently, a further US\$3.8 support through the World Bank Forest Carbon Partnership Facility (FCPF) program (2015-2018).

#	Program	Funding Amount	Objective	Status
1	  <i>Empowered lives. Resilient nations.</i>	US\$ 6.378 million	Outcome 1 – Readiness Management Arrangements in Place Outcome 2 – National MRV system developed Outcome 3 – Establishment of Reference Emission Levels (REL) and Reference Levels (RL) supported Outcome 4 – Monitoring of abatement concepts supported Outcome 5 – Stakeholders engaged in PNG’s REDD readiness process	Ending December 2015
2		US\$ 3.8 million	Outcome 1: Capacities exist for effective and efficient management of REDD+, including full and effective participation of all relevant stakeholders Outcome 2: The National REDD+ strategy	Start March 2015

Other Donor Support for REDD+ Activities

Other financial and technical support to other key stakeholders to address REDD+ in the country are the following; Australia, Japan, European Union, United States of America and Germany. These are both bilateral and multilaterally arranged.

What is Low Carbon Growth

The concept of low carbon growth has its roots in the UNFCCC adopted in Rio in 1992. In the context of this convention, low carbon growth generally expressed using the term low-emission development strategies (LEDS - also known as low-carbon development strategies). Low carbon growth is generally used to describe forward-looking national economic development plans or strategies that encompass low-emission and/or climate-resilient economic growth.

In PNG context, low carbon growth describes policies, plans and projects that encourages or promotes greenhouse gas emission reduction development objectives.

Low Carbon Growth Branch

The Low Carbon Growth Branch is located within the REDD+ and Mitigation Division of OCCD. Its objectives are as follows:

- To develop and facilitate the implementation of Low Carbon Growth Plans, Policies, Programs and Projects in the country;
- To coordinate the promotion of and development of renewable energy sources and other low carbon growth initiatives in the public and private sectors and communities;
- To facilitate coordination and implementation of Clean Development Mechanism (CDM) Projects in the country;
- To foster a Low Carbon Growth 'culture' in all sectors in PNG; and,
- To provide advice and assistance to the Executive Director and Minister for Climate Change in implementing Low Carbon Growth policies and initiatives.

Under the Low Carbon Growth Branch Work Plan, three intervention components have been identified as crucial in achieving a climate-compatible development in PNG. These intervention components include:

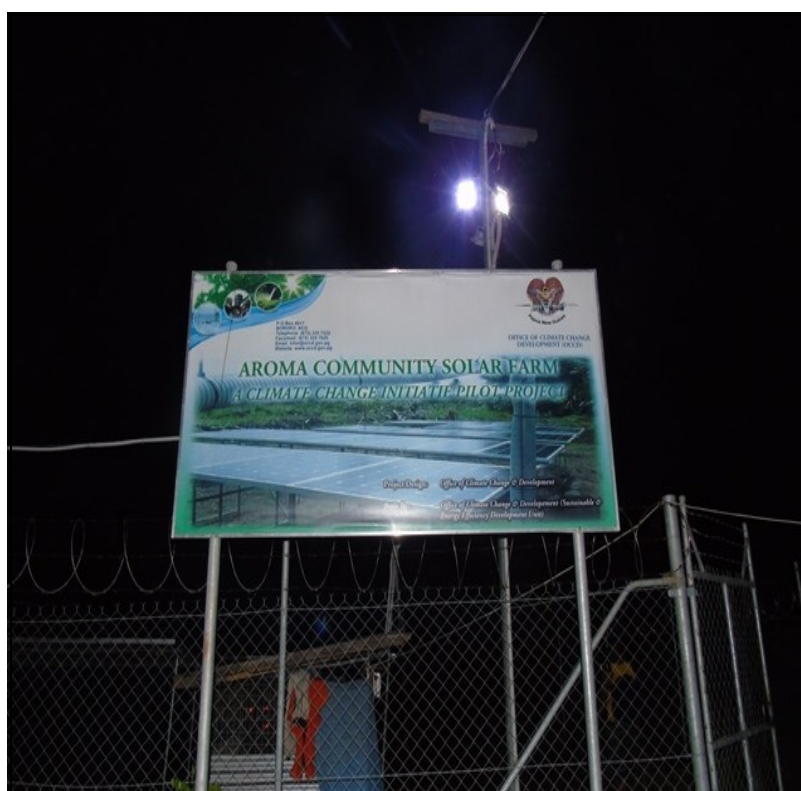
- Encourage the coordination of all industrial activities and policy interventions across all sectors of the economy towards achieving the Government's National Emission Reduction Target of 50% reduction by year 2030 and to become carbon neutral by 2050.

(1) Field Intervention Component

- Coordinate the rehabilitation of mini-hydro systems in PNG with stakeholders;
- Coordinate establishment of new hydropower and geothermal energy projects in PNG;
- Coordinate establishment of new renewable energy development programmes in PNG;
- Coordinate establishment of CDM projects activities and other carbon offset initiatives in PNG;
- Coordinate the development of energy efficiency and demand side management projects in the country with key stakeholders.

(2) Policy Intervention Component

- Facilitate development and coordination of climate compatible development Policies and Regulations on Low carbon growth activities in all sectors of development in PNG;
- Establish and identify Nationally Appropriate Mitigation Actions in PNG;
- Establish a Low Carbon Growth policy framework for mitigation of climate change;
- Encourage and strengthened coordination of low carbon growth policy initiatives between relevant institutions in PNG; and,



Pilot Solar Farming Project in Aroma Coast, Central Province



(l-r): EHP Provincial Administrator Solomon Tato, EHP Governor Hon. Julie Soso MP and OCCD Executive Director Varigini Badira during the MOU signing in Goroka, EHP.



EHP Governor Julie Soso MP seated 5 from left & OCCD Executive Director Mr Varigini Badira flanked by EHP Climate Change Committee members (sworn in), EHP senior Govt. officers and OCCD officers. Pic. by Garau Podi

Eastern Highlands Provincial Government has taken the lead in prioritising Green economy initiatives while addressing Climate Change in the Province. Papua New Guinea requires greater investment in natural ecosystem services as well as in alternative energy and resource efficiency to move forward to a greener economy. Green economy promotes alternative and sustainable way of doing business that is environmentally friendly.

OCCD Executive Director Varigini Badira and his staff have visited provinces to assist them in setting up Provincial Climate Change Committees to provide that linkage to the OCCD. The other Provinces that have set up offices are; Madang, New Ireland, East Sepik and Morobe.

(3) Marketing Intervention Component

- Promote establishment of Low Carbon Growth initiatives in PNG;
- Promote emission reduction programs and initiatives in all sectors of the economy;
- Promote establishment of Low Carbon Growth business or initiatives in PNG through contact with interested project developers overseas, buyers of carbon credits from CDM/Carbon Offset Projects and ensuring that other stakeholders as well are well-informed and well-linked to promote mitigation initiatives in PNG;
- Ensuring PNG have access to international markets that supply affordable low carbon technologies, appliances, etc., that facilitates low carbon growth economic development in the country;
- Ensuring that PNG have access to international markets that will buy our local products, and home-grown technology inventions, etc., that facilitates Low Carbon Growth development; and, Develop a Marketing Information System (MIS) or Guideline to promote CDM and other Low Carbon growth initiatives in the country nationally and internationally.

Current Priority Actions for Low Carbon Growth

- Promote and approve for registration additional Clean Development Mechanism projects
- Facilitate and source funding for low carbon growth demonstration activities (e.g. solar farms, etc.) and collate lessons from existing demonstration sites for policy formulation input.
- Monitor international negotiations and other international developments on CDM and other carbon trading initiatives.
- Undertake consultation and awareness on Low Carbon Growth for different stakeholder groups and develop material for the same.
- Undertake capacity building and training.

Low Carbon Growth Branch Performance Indicators

- CDM Guideline developed to promote CDM development in the country.
- CDM Projects registered with International CDM Executive Board.
- Effective collaboration and cooperation between stakeholders.
- Funds for LCG demonstration activities sourced from international climate change financing agencies such as the World Bank, Global Environmental Facility, and others.
- Solar Farm Pilot Projects developed in selected areas of the country.

NBPOL Kumbango Methane Capture CDM Project.



Business as usual scenario



Project scenario

Low Carbon Growth Key Achievements

Below highlights some of the key achievements of the Branch:

- National CDM Guide developed to promote CDM establishment in the country;
- CDM Project Approval Process developed for facilitating DNA Host Country Approval of CDM projects in the country;
- Ten CDM Projects registered with the UNFCCC CDM Executive Board. Out of the ten projects registered, two projects have been issued Certified Emission Reductions or Carbon credits by the CDM Executive Board. These two projects are the New Britain Palm Oil Limited's Mosa and Kumbango Methane Capture Projects in Kimbe, West New Britain Province;
- Low Carbon Growth Technical Working Group developed to coordinate effective stakeholder collaborations;
- Solar Farm Projects Piloted in Paramana Village in Abau District and Daroakomana Village in Rigo District. Several Feasibility Studies for solar farm projects have also been carried out in Southern Highlands, Enga, Eastern Highlands Province and Bereina in Central Province;
- PNG's ratification and participation as a Global Green Growth Institute (GGGI) Member.

Roles of Low Carbon Growth Branch

Current roles the Low Carbon Growth Branch could potentially play depending on needs of respective Members of Parliament:

- Play a coordinating role in promoting low carbon growth culture in all sectors of economy;
- Provides technical support and advice on low carbon growth policies, programmes and project initiatives;
- Provide PNG Designated National Authority assessment and Host Country Approval on CDM Projects;
- Provide technical support and advice in low carbon growth Policy development; and,
- Assist in facilitating development of CDM and other Low Carbon Growth projects and actions in the country.

Rural Electrification (Community Solar Farm Projects in PNG)



Paramana Village Community Solar Farm Project.

PNG hosts first Forest Carbon Partnership Facility (FCPF) incentive workshop

PNG's first Forest Carbon Partnership Facility (FCPF) incentive workshop was held in Port Moresby in March, 2015 and was attended by relevant stakeholders at the Grand Papua Hotel.

Minister for Environment & Conservation and Climate Change Honourable John Pundari MP officiated at the opening of the workshop. Honourable Pundari MP encouraged all key stakeholders to work together with GoPNG in its efforts in reducing its greenhouse gas levels. Hon. Pundari MP was very vocal on the way donor's support were consolidated pointing out that by-passing government's process by certain donors were very un-protocol and must be stopped. The outcomes of the workshop were to improve understanding and agreement of project objectives, result framework, management and oversight arrangement; agreement on the project implementation modalities including for demonstration activities, agreement on the composition of the project board and consensus reached in the multiyear work plan and budget.

The FCPF has created a framework and processes for REDD+ readiness, which helps countries get ready for future systems of financial incentives for REDD+. Using this framework, each participating country develops an understanding of what it means to become ready for REDD+, in particular by developing reference scenarios, adopting a REDD+ strategy, designing monitoring systems and setting up REDD+ national management arrangements, in ways that are inclusive of the key national stakeholders.



Minister for Environment & Conservation and Climate Change Hon. John Pundari MP with participants of PNG's first FCPF inception workshop in Port Moresby.



Third Automatic Weather Service equipment installed

This is the newly installed Goroka Automatic Weather Service. The system is up and running now and just awaiting for the National Weather Service officers to inspect it before commissioning.

Port Moresby AWS was completed towards the end of April, 2015 and the Kimbe one was installed in 2014.

The installation of these vital equipment is under the project 'PNG: Building a more Disaster and Climate Resilient Transport Sector'. The OCCD and its partners are working together in supporting the Department of Works in developing suitable tools for the evaluation and communication of risks related to natural hazards and the tidal gauge is one such initiative. The project is currently implemented by the Department of Works through the World Bank grant assistance of USD\$2.7 million from the Government of Japan.

MRV & NATIONAL COMMUNICATION

MRV vital projects completed

The Measurement, Reporting and Verification (MRV) & National Communication under the leadership of Divisional Director Omega Nelson, has done exceptionally well with the set up of the MRV lab and the completion and validation of PNG's Second National Communication.

To top that up, Director Nelson also mentioned the importance government had given to climate change with OCCD's restructure to fully function. Also major accomplishment was the endorsement of Climate Compatible Development Management Policy in 2014 and the subsequent decision by government to develop the Climate Change Bill. With this we endeavour to make 2015 a more productive year", he said.

Mr. Nelson's division has a primary responsibility in developing and maintaining a comprehensive MRV system that will allow to measure, report and verify the rate of forest change, greenhouse gas emissions or the country's carbon emissions and comply with the requirements of global climate change rules (e.g. UNFCCC). Furthermore the division is responsible for; coordinating the establishment of the country's Climate Change information hub; and the national MRV system to report and verify the country's GHG emissions, coordinate the OCCD's role in national consultation, stakeholder engagement and information sharing, coordinate the Government's attendances and participation under the Climate Change Convention negotiations, and coordinate and reporting all climate change actions in PNG to the UNFCCC and other related treaties. The division aims to establish transparency, accountability and trust among all sectors and stakeholders.



Conducting Feasibility study in a proposed solar farm site in Ivingoi Village, Okapa District, Eastern Highlands Province.

Activity 1: OCCD PROJECT REGISTRY SYSTEM

Commission system on server and OCCD Network
Retain technical assistance from developer
Annual Review of the System

PROGRAM: NATIONAL COMMUNICATION

Program Objectives: The objective is to communicate PNG's official information on climate change, including PNG's greenhouse gas emissions as required by the appropriate international treaties.

Program Description: The MRV and National Communication Division is responsible for implementing activities to ensure the development of National Communications Report to the UNFCCC and the establishment of a National GHG Inventory as part of the National MRV system.

This program will be run in close collaboration with the GEF's National Communications Project.

Activity 2: GHG Inventory - Development of National GHG Inventory System for National Communication 3 and BUR2

Activity 2: Vulnerability assessment and adaptation

Development of NC3 Vulnerability and Adaptation Assessment

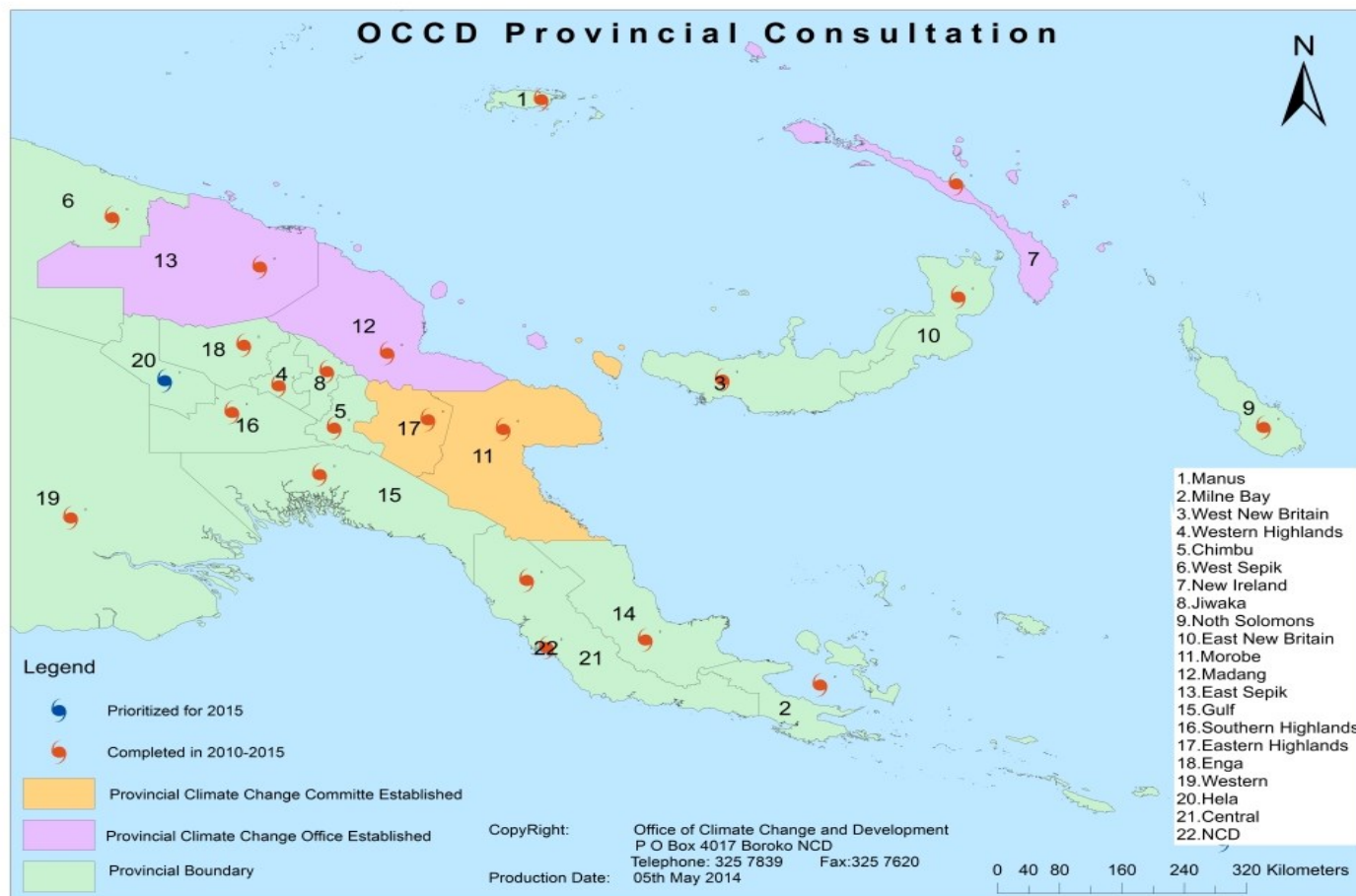
Activity 3: Mitigation analysis

Develop NC3 Mitigation Analysis

Activity 4: Development of Data Collection & Archiving System for National Communications components

Activity 5: Training and Capacity Building for National Communication Preparation

- NC3 Consultation (All components, including National Circumstance, RSO, ToT, Gaps & Needs)
- National Communication Three (NC3) monthly updates
- National Communication Education and Awareness Plan
- Workshops



PROGRAM: National Consultation

Program Objectives: The objective is to inform the people of PNG about the impact and opportunities arising from climate change and to consult on key policy issues.

Program Description: National Communication branch is also responsible for implementing activities to ensure provincial and stakeholder consultations are undertaken. This program will inform communities in the provinces about climate change. It will also ensure pilot projects and programs are developed in close cooperation with provincial administrations and their communities.

Activity 1: Provincial consultations

- Western
- Southern Highlands
- Hela
- Enga
- Establish Climate Change Committee in 19 Provinces
- Capacity Building for Provincial climate change officials
- Set up and establish PCC Offices within the Provincial Government structures
- Feedback Workshop (x 4 regional workshops)
- Other Workshop (launching of reports)
- Draft climate change legislation (x 4 regional workshops)

Activity 2: Stakeholder Consultations

- Non-Government Organization (NGO)
- Youth
- Women's Group
- Private Sector
- Memorandum of Understanding (MoU)
- Program collaboration
- Church Groups

Activity 3: Awareness and Communication material

- Competitions (quiz, essays, debate)
- National and international Events
- World Environment Day
- International Day for Natural Disaster Reduction Day
- World Water Day
- World Earth day
- Climate Change Open day
- Schools
- University Student-Led Awareness Initiative
- Resource Material Development for Primary and Secondary Schools
- School Visits during Provincial Consultation
- Technical Working Group (TWG)
- National Consultation (NC) & MRV TWG monthly

PROGRAM: International Negotiations and Meetings

Program Objectives: The objective is to drive the international negotiations both under the international treaties as well as to conclude bilateral and/or multilateral negotiations to conclude bilateral or multilateral funding agreements on climate change for PNG.

Program Description: This program will be cross-Divisional and will require the OCCD to participate in ongoing global negotiations organized by the UNFCCC and its Kyoto Protocol. In addition the OCCD will also conduct bilateral and multilateral negotiations with selected development partners.

Activity 1: Negotiations

- UNFCCC Consultative Group of Experts (CGE)
- UN-REDD Policy Board Meetings
- UNFCCC SBSTA
- JICA
- PNGFA-JICA Project
- International Cooperation
- Germany
- COP 20
- Other technical training and Expert meetings

Activity 2: International Work Program

- Coordinate with Foreign Affairs on the establishment of a Sub-Working Group
- Coordinate with Foreign Affairs on the drafting of a TOR
- Attend all related regional Meetings
- Attend to negotiate on all SBSTA and SBI Meetings
- Coordinate with Foreign Affairs and UNFCCC on Country Submissions
- Successful Coordination of Updates and Briefs

SUMMARY

The division has 2 branches which are MRV and National Communication. Within these branches we have five (5) programs which we coordinate; National Consultations, MRV, National Communication, Negotiations and General Management. In summary;

- National Consultations has 27 key priorities which we have completed 15 activities
- National Communication has 9 key priorities which we are currently undertake 5 activities which are still ongoing
- Negotiations has 15 key priorities which 10 of them had been undertaken
- Measurement, Reporting and Verification has 9 key priorities which 3 of them are work in progress
- General management has 18 key priorities which we have undertaken 13 of the activities in collaboration with the corporate service division
- **The division has 76 key priorities which 52 activities are work in progress and completed for 2014. This is 68% of our activities completed and ongoing.**



International Negotiation is all about gaining support from the 'big guns' (developed countries) to push your agenda. Director, REDD+ & Mitigation Gwen Sissiou mingles with US, UK negotiators on REDD.

KEY ACTIVITIES	ACTIVITIES DONE TO ACHIEVE GOALS	
	TASK ANALYSIS OF GOALS (ACTIVITIES)	PERFORMANCE INDICATORS
NATIONAL CONSULTATION		
Provincial Consultation	Completed 21 provincial work-shops	Draft feedback report and provide options to provincial government on climate change
NATIONAL COMMUNICATION		
Biennial Update Report and Third National Communication Report to UNFCCC	Development of National Circumstances and Institutional Arrangement	- TORs developed for different key sector leads
	Development of national greenhouse inventory system	-
	Vulnerability and adaptation assessment	Development of NC3 V&A
	Mitigation Analysis	Development of NC3 and BUR1 Mitigation Analysis
	Archiving of GHG data	Development of data collection and archiving system
	Other information considered relevant to achieve the objectives of the convention	Develop reports on; Technology transfer Capacity building Education, training and awareness Information and networking Research and systematic observation
MEASUREMENT, REPORTING AND VERIFICATION		
Web-Portal	Initial installation	
Commissioning of SLMS	Establishment of Central server	Completed



Climate Change awareness with schools in Madang

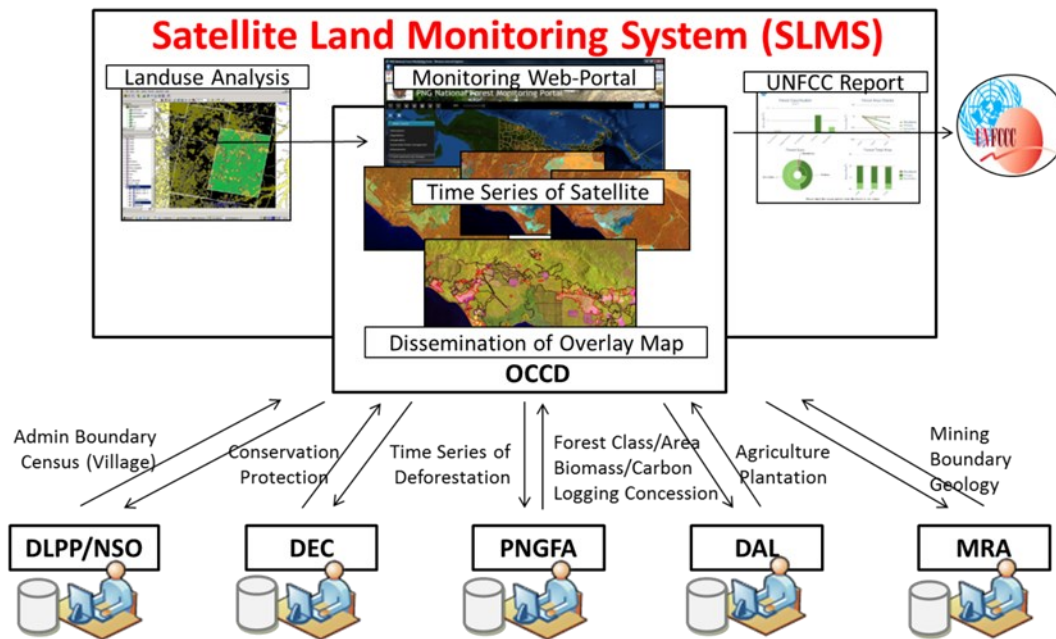
OCCD launches Satellite Land Monitoring System

The Office of Climate Change and Development is now launching the Satellite Land Monitoring System (SLMS) which is housed within its office premises at the Avara Annex building in downtown Port Moresby. The Satellite Land Monitoring System is a remote sensing system to monitor forest cover which uses software to interpret and classify data such as the images taken by earth observation satellites.

Several key government agencies are involved in this project and have worked with OCCD over time to see this project to where it is now.

These agencies are; PNG Forest Authority (PNGFA), Conservation Environment and Protection Authority (CEPA), Mineral Resource Authority (MRA) and National Statistic Office (NSO). The SLMS team including OCCD's ICT officers was formulated and have been in consultative meetings to progress this project to the next stage. Through these meetings, the SLMS team have now received vital existing data on the following:

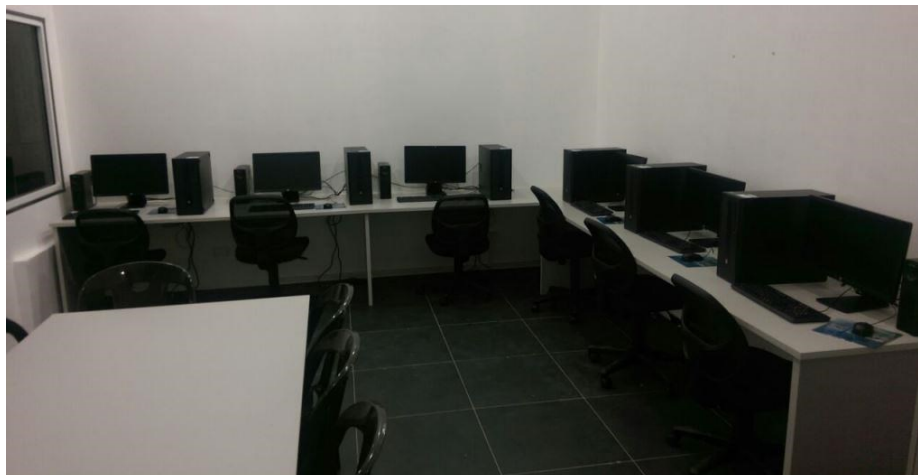
Forest Basemap, NFI pre-assessment results, concession boundaries, protected area, biodiversity priority area, mining boundaries, and on other basic information including administrative boundaries, road network and river network, etc. The team also got some free available data published by University of Papua New Guinea (UPNG). Director, Mr. Omega Nelson says that "it is important that developing SLMS incorporates/collaborates with existing achievements in



PNG".

He said Japan International Corporation Agency (JICA) and the PNG Forest Authority (PNGFA) have developed the database system on forest basemap for their sustainable forest management. The United Nation's REDD and Food Agricultural Organisation (FAO) are supporting the National Forest Inventory (NFI) and have developed the tool sets under Open Foris initiative such as pre-inventory system called Collect Earth.

Mr. Nelson adds that with respecting these achievements in PNG, the SLMS aims to develop monitoring system for REDD+.



Satellite Land Monitoring System (SLMS) Lab on ground floor, Avara Annex Bldg

Achievements (from April to December 2014)

1. Satellite Land Monitoring System (SLMS) Lab Layout and Partition have been completed in OCCD new office building and 1st procurement of PCs and furniture's have been delivered.
2. The SLMS team was formulated and participated in the training on TerraAmazon at INPE/Brazil then the team understood TerraAmazon and established the communication channel with INPE
3. The target and basic design of Terra-PNG analysis were identified and the team has been conducting preliminary analysis using PNG data for Terra-PNG with communication with INPE
4. Demonstration version of PNG REDD+ Web Portal has been developed with support of FAO/Rome with the information collected through the meeting with the relevant stakeholders
5. NFI pre-assessment results were combined with existing data (soil-type, population and precipitation) collected and compiled through the activities for the statistical analysis



OCCD technical staff attending a Greenhouse Gas Inventory training organised by Food Agriculture Organisation (FAO)

Corporate Services Division

Introduction

The Corporate Services Division provides the supporting role to all internal divisions, stakeholders, partners and other service providers in maintaining effectiveness and efficiency services in the areas of administration. In this division there are three branches:- Finance; Information, Communication & Technology and Human Resource.

HR and Personnel encompasses all activities and practices related to the employment, management, development and promotion of an organisation's employees. Thus, OCCD strives to promote in its policy drive to have a very dynamic and effective HR branch to cater for such vibrant and young workforce. The average age of employees would be 25years.

Human Resource & Personnel Branch

As clearly shown in the Organizational Structure, we effectively implemented the Equal Opportunity policy and Capacity Building - the process for developing both organisational and individual competencies and capabilities which will lead to sustained and self-generating performance improvement.

Implementation of NEC Decision 92/2011 has taken the transition from the old organizational structure of 22 employees to the current 92 staff on both the Alesco Payroll and the PGAS indicating growth in recruitment and business.

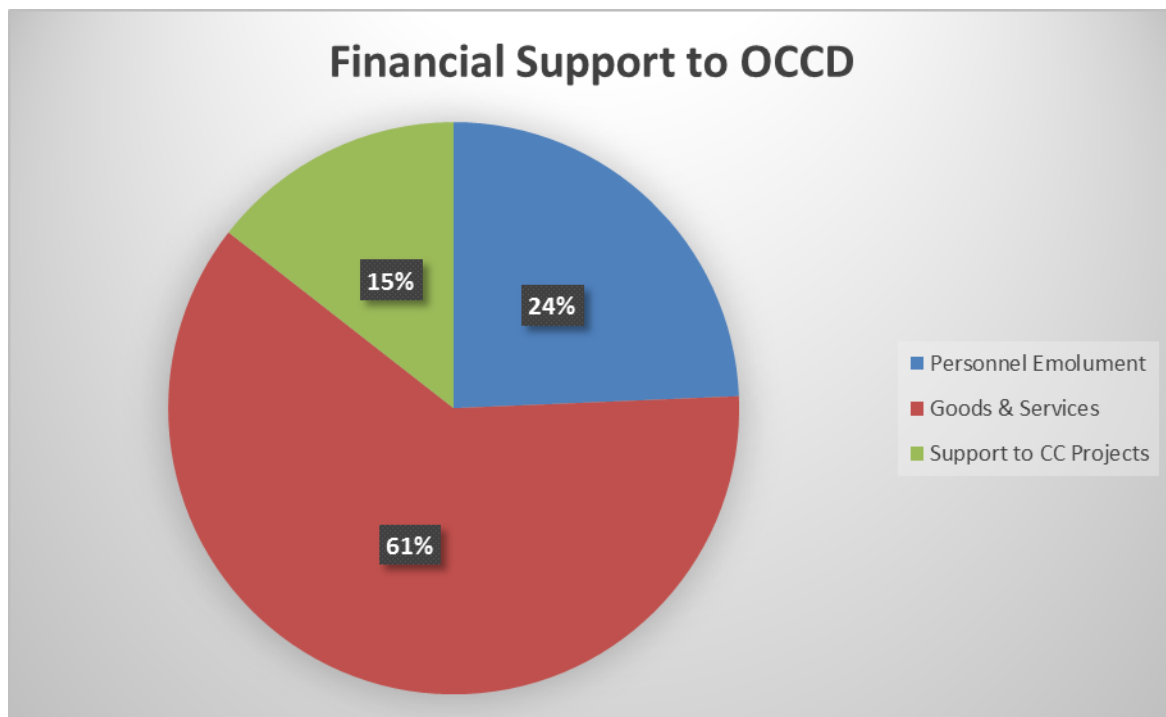
- **Employee Recruitment:**
Achievements: Staff on Strength = 92 Staff Ceiling = 75 Staff on Alesco Payroll = 58 Staff on PGAS = 34 Over staff by 17 employees'. **Way Forward:** Get the 34 staff on PGAS onto Alesco Payroll.
- **Employee Development**
IBBM Training going on.
Way Forward: Renew the MOU for another year to upskill our staff.
- **Employee Career Path Management**
Long term training/attachment for staff e.g (a) Director REDD+ & Mitigation, Ms Gwendoline Sissiou – Masters Business Administration. (b) MRV Officer, Ms Rensie Panda – Humphrey's Program in USA.
Way Forward: Identify potential candidates for Masters, degree programs and for global exposure – attachment to international organizations/programs.

Information Communication & Technology (ICT) Branch

The Information Communication and Technology (ICT) Branch under the Corporate Services Division provides support to OCCD staff, stakeholders, and service providers by promoting efficiency, effective services, and the most up to date ICT systems required for the smooth operation of the Office.

OCCD Finance

The Office of Climate Change and Development is a state body, which gets its annual Budget funding from the Government for its operations. The funds support operations for the technical divisions of adaptation, REDD+ and Mitigation, Measurement Reporting & Verification (MRV) divisions as well as the Corporate Services to reduce the impacts of climate change. As indicated in the chart below, a good portion of the funding has been used to support climate change projects to show the Government's commitment to addressing climate change that involves institutional strengthening of the Office. It is critical that the Office receive government development budget (PIP) as well as donor funding to complement the recurrent budget.



OCCD staff visit a community-based Mangrove nursery in Madang



OCCD ED Mr. Varigini Badira carrying out Climate Change Awareness with locals of Lorengau in Manus Province

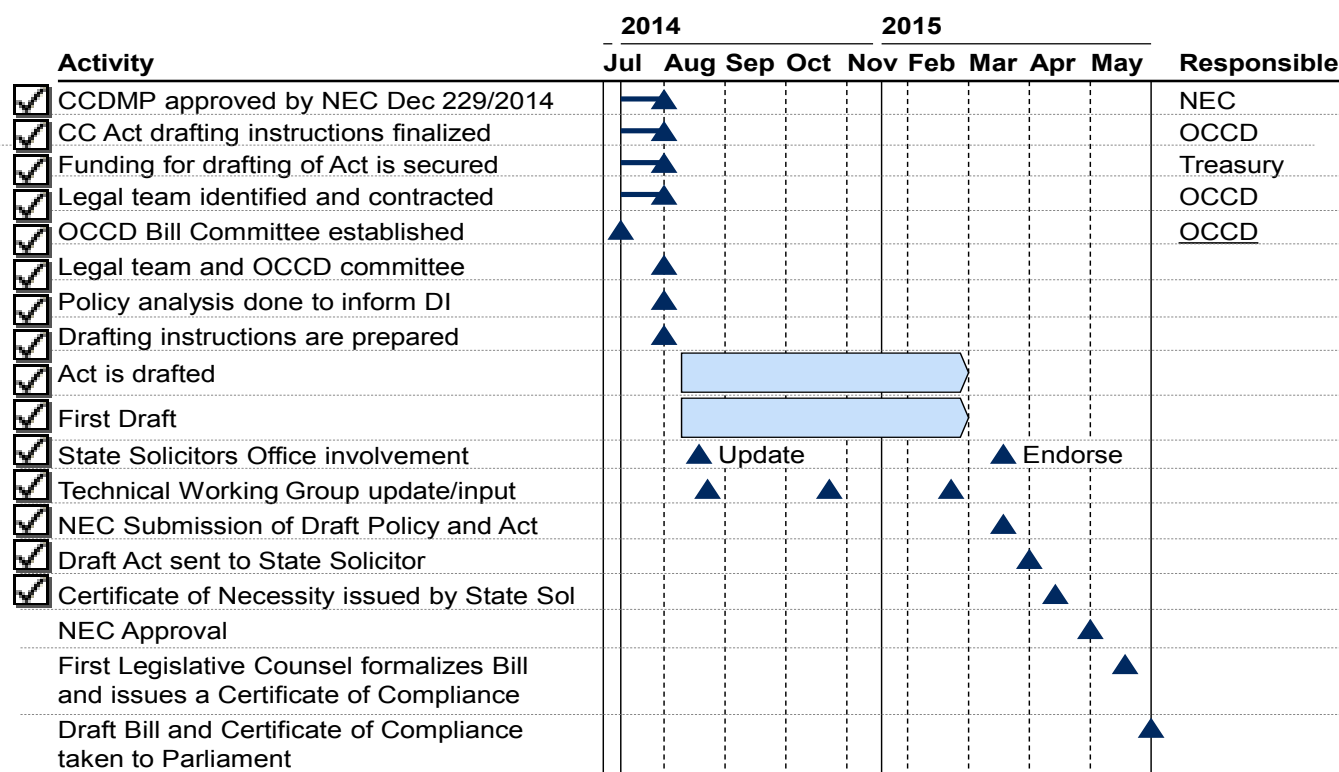
Climate Change Bill

NEC Decision 229/2014 of the 31st July 2014 endorses the National Climate Compatible Development Management Policy as the overall guidance on matters relating to climate change in Papua New Guinea and which was formulated pursuant to the implementation of the National Climate Compatible Development Strategy which the government has been implementing in collaboration with partners since its approval in 2010.

In the same NEC Decision Cabinet also approves the immediate development of a legislative framework to further strengthen the domestic institutional and governance framework for implementing climate change policies and measures.

This Decision was put in action in August 2014 by the OCCD. A small team of legal experts was sourced and tasked to support the OCCD legal Committee to develop the process and content for delivering a Climate Change Bill as soon as possible.

Process taken to date to develop Climate Change Management Bill



The Climate Change Management Bill is the first climate change law to be developed for PNG, other than those that have been and/or being reviewed to legislate some aspect of climate change. The Bill provides the legal framework for institutional arrangements for climate change in PNG, it provides for funding arrangements and actions by sectors to mitigate emissions and adapt to climate change.

As shown in the Figure above, Climate Change Management Bill has been consulted on and the Certificate of Necessity has been issued by the State Solicitor. At the time of writing the Bill is being prepared for NEC Submission. It is expected that the Bill will be tabled in Parliament at the May session of Parliament (22nd May 2015).

ACRONYMS

BSDS	Benefit-sharing Distribution System for REDD+
COP	Conference of Parties
CP	Conference of Parties
FCPF	World Bank Forest Carbon Partnership Facility
GoPNG	Government of Papua New Guinea
KP	Kyoto Protocol of the United Nations Framework Convention on Climate Change
MRV	Measurement, reporting and verification
NFI	National Forest Inventory
OCCD	Office of Climate Change and Development
PNG	Papua New Guinea
PNGFA	Papua New Guinea Forest Authority
REDD+	Reducing emissions from deforestation and forest degradation in developing countries including forest conservation, sustainable management of forest and enhancement of forest carbon stocks.
REL	Reference Emission Level
RL	Reference Level
UNCED	United Nations Conference on Environment and Development
UNFCCC	United Nations Framework Convention on Climate
UN-REDD Programme	The United Nations global efforts on reducing emissions from deforestation and forest degradation in developing countries including forest conservation, sustainable management of forest and enhancement of forest carbon stocks.

A broad consultation was undertaken since 2010 by OCCD staff where a total of 21 provinces was visited. These are some pictures taken during these visits.



GLOSSARY

Abatement	Refers to reducing the degree or intensity of greenhouse-gas emissions.
Adaptation	Adjustment in natural or human systems in response to actual or expected climatic variability or their effects, which moderates harm or exploits beneficial opportunities.
Afforestation	Planting of new forests on lands that historically have not contained forests
Carbon market	A popular but misleading term for a trading system through which countries may buy or sell units of greenhouse-gas emissions in an effort to meet their national limits on emissions, either under the Kyoto Protocol or under other agreements, such as that among member states of the European Union. The term comes from the fact that carbon dioxide is the predominant greenhouse gas and other gases are measured in units called "carbon-dioxide equivalents."
Carbon Sequestration	The process of removing carbon from the atmosphere and depositing it in a pool.
Clean Development Mechanism	A mechanism under the Kyoto Protocol, the purpose of which, in accordance with article 12 of the Kyoto Protocol, is to assist Parties included in Annex I in achieving sustainable development and in contributing to the ultimate objective of the Convention, and to assist parties included in Annex I in achieving compliance with their quantified emission limitation and reduction commitments under article 3 of the Kyoto Protocol.
Climate Change	A change of climate which is attributed directly or indirectly to human activity that alters the composition of the global atmosphere and which is in addition to natural climate variability observed over comparable time periods.
Conference of Parties (COP)	The supreme body of the Convention. It currently meets once a year to review the Convention's progress. The word "conference" is not used here in the sense of "meeting" but rather of "association," which explains the seemingly redundant expression "fourth session of the Conference of the Parties."
Deforestation	Conversion of forest to non-forest
Designated National Authority (DNA)	An office, ministry, or other official entity appointed by a Party to the Kyoto Protocol to review and give national approval to projects proposed under the Clean Development Mechanism
Emissions	In the climate change context, emissions refer to the release of greenhouse gases and/or their precursors and aerosols into the atmosphere over a specified area and period of time
Forest degradation	Occurs when the structure or function of a forest is negatively affected, reducing the ability of the forest to provide services or products.
Greenhouse effect	Greenhouse gases effectively absorb infrared radiation, emitted by the Earth's surface, by the atmosphere itself due to the same gases, and by clouds. Atmospheric radiation is emitted to all sides, including downwards to the Earth's surface. Thus, greenhouse gases trap heat within the surface-troposphere system.

Greenhouse gases (GHGs)	The atmospheric gases responsible for causing global warming and climate change. The major GHGs are carbon dioxide (CO ₂), methane (CH ₄) and nitrous oxide (N ₂ O). Less prevalent –but very powerful – greenhouse gases are hydro fluorocarbons (HFCs), per fluorocarbons (PFCs) and sulphur hexafluoride (SF ₆).
Intergovernmental Panel on Climate Change (IPCC)	Established in 1988 by the World Meteorological Organization and the UN Environment Programme, the IPCC surveys world-wide scientific and technical literature and publishes assessment reports that are widely recognized as the most credible existing sources of information on climate change. The IPCC also works on methodologies and responds to specific requests from the Convention's subsidiary bodies. The IPCC is independent of the Convention.
Kyoto Protocol	An international agreement standing on its own, and requiring separate ratification by governments, but linked to the UNFCCC. The Kyoto Protocol, among other things, sets binding targets for the reduction of greenhouse-gas emissions by industrialized countries.
Land use, Land Use Change, and Forestry (LULUCF)	A greenhouse gas inventory sector that covers emissions and removals of greenhouse gases resulting from direct human-induced land use, land-use change and forestry activities.
Mitigation	In the context of climate change, a human intervention to reduce the sources or enhance the sinks of greenhouse gases. Examples include using fossil fuels more efficiently for industrial processes or electricity generation, switching to solar energy or wind power, improving the insulation of buildings, and expanding forests and other "sinks" to remove greater amounts of carbon dioxide from the atmosphere.
Reducing Emissions from Deforestation and Forest Degradation (REDD)	REDD is an effort to create a financial value for the carbon stored in forests, offering incentives for developing countries to reduce emissions from forested lands and invest in low-carbon paths to sustainable development. "REDD+" goes beyond deforestation and forest degradation, and includes the role of conservation, sustainable management of forests and enhancement of forest carbon stocks
Reforestation	Replanting of forests on lands that have previously contained forests but have been converted to some other use.
Renewable energy	This form of energy can be used to provide electricity, heating or fuel for transportation similar to the way we use fossil fuels for these purposes. Unlike oil, gas and coal, renewable energy sources are not finite. Key sources include wood, waste decomposition, geothermal activity, wind and solar energy. The use of renewable sources for generating energy usually involves lower emissions of greenhouse gases than the use of fossil fuels does.
Sink	Any process, activity or mechanism which removes a greenhouse gas, an aerosol or a precursor of a greenhouse gas from the atmosphere. Forests and other vegetation are considered sinks because they remove carbon dioxide through photosynthesis.
United Nations Framework Convention on Climate Change (UNFCCC)	The Convention was adopted on 9 May 1992 in New York and signed at the 1992 Earth Summit in Rio de Janeiro by more than 150 countries and the European Community. Its ultimate objective is the "stabilization of greenhouse gas concentrations in the atmosphere at a level that would prevent dangerous anthropogenic interference with the climate system." It contains commitments for all Parties. Under the Convention, Parties included in Annex I aim to return greenhouse gas emissions not controlled by the Montreal Protocol to 1990 levels by the year 2000. The Convention entered into force in March 1994.



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