Readiness Preparation Proposal (R-PP)

for Country: Papua New Guinea

Date of submission: *28th September, 2012*

Version 9 Working Draft
September 28th , 2012

Forest Carbon Partnership Facility **(FCPF)**

The United Nations Collaborative Programme on Reducing Emissions from Deforestation and Forest Degradation in Developing Countries**(UN-REDD)**

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Summary of the R-PP

Dates of R-PP preparation (beginning to submission):	August 6, 2012
Expected duration of R-PP implementation (month/year to month/year):	July 2013-July 2015
Total budget estimate:	US$
Anticipated sources of funding:	from FCPF:US$8 960 000 from UN-REDD:US$ 6 400 000 National government contribution: other source:Recurrent Budget PGK 4,000 000

	(2013-2015) other source:PIP 2013-2015
Expected government signer of R-PP grant request (name, title, affiliation):	Department of National Planning and Monitoring
Expected key results from the R-PP implementation process:	Outcome 1) Outcome 2) Outcome 3) Outcome 4)

Executive Summary

The Forest Carbon Partnership Facility (FCPF) which became operational in 2008, was globally focused on reducing emissions from deforestation and forest degradation, forest carbon stock conservation and sustainable management of forests including enhancement of carbon stock. Papua New Guinea is also a member of the FCFP Programme seeking to bridge readiness gaps under both the FCPF and the UNREDD Programme through assistance under each Programme.

For this alone, it reflects PNG's long standing commitment in addressing global climate change. In particular by proposing measures to realise the carbon abatement opportunity offered by preserving and sustainably managing tropical forests, i.e. by introducing the concept of REDD-plus into international negotiations in 2005 alongside Costa Rica.

Domestically, PNG is also committed to mitigating greenhouse gas emissions. The country's Vision 2050 envisages low-carbon economic development, aiming to increase per capita GDP by a factor of three by 2030, while maintaining an aspiration goal of net carbon neutrality by 2050. This Vision is strategic driven by the Development Sector Plan 2010-2030. A ten-year operational plan which will see sectors focusing on practical initiatives to drive forward the implementation of their activities directly or indirectly related to REDD-plus. The government has also further made this become operational throughout levels of government through the MTDP 2011-2015, whereby budget allocations are provided on an annual basis to sufficiently co-support activities. The implementation of this R-PP will be co-supported by the GovPNG in alignment with the national government priorities as well.

The FCFP R-PP Programme for PNG, is intended to continue the work which under the current UNREDD Programme beyond 2013, by addressing key gaps while slowly addressing other issues that needs to be resolved continuously and consistently throughout the implementation of REDD-plus.

In order to achieve this goal, PNG has made significant efforts in the past year to further the domestic agenda on climate change:

- The newly established **Office of Climate Change and Development** (OCCD) provides the institutional structure to coordinate action against climate change in PNG. It supports the whole-of-government **National Climate Change Committee** in steering climate change policy and reports directly to the Prime Minister.
- A **Climate-Compatible Development Strategy** (CCDS) sets out the strategic direction for PNG's action against climate change domestically, with a strong focus on REDD-plus. The main elements of the draft CCDS and the process for multi-stakeholder consultation have been endorsed by the National Executive Council (NEC). The CCDS is envisaged to be finalised and released in its final form later this year.
- In the spirit of promoting a fair and equitable environment for socio-economic development, all stakeholders in PNG both public and private are allowed to carry out their normal organisational roles while addressing both adaptation and mitigation in parallel. Their role is recognised under the auspices of the National Climate Change and Development Policy
- The National Climate Change and Development Policy (Draft)
- National Climate Change Bill (Final Draft)
- The Role and Governance structure of the REDD+ and MRV TWG Institutions who provide overall support to the Programme in itself. This also exclusively includes the role of CBOs , CSOs, NGOs, and the Private Sector who will be working closely with government to see through the implementation of this R-PP; and in this case most will be drivers of the implementation of the R-PP activities.

Complemented by what has already been implemented under the National UNREDD Programme, PNG is keen on continuing this work through this R-PP.

List of Acronyms

BAU	Business as usual
CBOs	Community Based Organisations
CCDS	Papua New Guinea's Climate-Compatible Development Strategy
CSOs	Civil Society Organisations
DAL	Department of Agriculture and Livestock
DEC	Department of Environment and Conservation
DLPP	Department of Lands and Physical Planning
ESMF	Environmental and Social Management Framework
FAD	Forest Authority Database
FAO	Food and Agricultural Organization
FCA	Forest Clearance Authority
FCC	Joint Government of Papua New Guinea – Development Partner Forum on Climate Change
FCCFA	PNGFA's Forest and Climate Change Framework for Action 2009-2015
FIMS	Forest Inventory Mapping System
FIPS	Forest Inventory Processing System
FLEGT	Forest Law Enforcement, Governance and Trade mechanism
FMA	Forest Management Agreement
FPIC	Free, prior and informed consent
FRI	Papua New Guinea Forest Research Institute
GDP	Gross Domestic Product
GEF	Global Environment Facility
GHG	Greenhouse gas
GIS	Geographic Information System
GoPNG	Government of Papua New Guinea
HDI	Human Development Index
IFCI	Australia's International Forest Carbon Initiative
IIED	International Institute for Environment and Development
ILG	Incorporated Land Group
IPCC	Intergovernmental panel on climate change
ITTO	International Tropical Timber Organization
JICA	Japan International Cooperation Agency
LNG	Liquefied natural gas
LULUCF	Land use, land-use change and forestry
MDTF	Multi-Donor Trust Fund

MRV	Measurement, Reporting and Verification System
MTDP	PNG's Medium Term Development Plan
NADP	National Agricultural Development Program
NCCC	National Climate Change Committee
NEC	National Executive Council
NFDP	National Forest Development Program
NGOs	Non-Government Organisations
NP	National Programme
NPD	National Programme Document
NPMF	National Programme Monitoring Framework
OCCD	Office of Climate Change and Development in Papua New Guinea
OLPLLG	Organic Law on Provincial and Local Level Governments
PEB	Programme Executive Board
PGK	Papua New Guinean kina (1 kina = 0.39 USD)
PMC	Programme Management Group/Committee
PMU	Programme Management Unit
PNG	Papua New Guinea
PNGFA	Papua New Guinea Forest Authority
PSP	Permanent sample plot (for biomass measurements)
QA	Quality assurance
QC	Quality control
QWP	Quarterly work plan
REDD	Reducing Emissions from Avoided Deforestation and Forest Degradation
RL/REL	Reference Level/ Reference Emission Level
RIL	Reduced impact logging
RL/REL	Reference Levels
SESA	Strategic Environmental and Social Assessment
SLMS	Satellite Land Monitoring System
ToR	Terms of Reference
UNDP	United Nations Development Programme
UNEP	United Nations Environment Programme
UNFCCC	United Nations Framework Convention on Climate Change
UNITECH	PNG University of Technology
UN-REDD	United Nations Collaborative Programme on Reducing Emissions from Deforestation and Forest Degradation in Developing Countries
UPNG	University of Papua New Guinea

Component 1: Organize and Consult

1a. National Readiness Management Arrangements

A. Background

The Government of Papua New Guinea's (GoPNG) effort to become a global partner in the discussions under the UN's Framework on Climate Change includes taking a leadership role after Bali 2007 13th Conference of Parties (COP). The then Prime Minister from 2007-2012, was a co-chair of the Coalition of Rainforest Nations and had a leading role in the current REDD+ discussions. Papua New Guinea has chosen to support the Copenhagen Accord and has worked through the Paris-Oslo process to promote an interim REDD+ agreement as a prelude to a globally applicable, legally binding climate change treaty. In complementing that, PNG once accepted a position as co-chair of the interim REDD+ Partnership Secretariat in 2010 alongside Japan. In February 2010, the GoPNG made a conditional commitment, submitted to the UNFCCC under the Copenhagen Accord, that greenhouse gas emissions would be reduced by ~30 percent from current levels, or ~50 percent from the BAU forecast, by 2030.[1] The bulk of this abatement comes from reducing emissions caused by land use, land-use change and forestry, which currently account for over 95 percent of emissions, but generates less than 20 percent of GDP.

PNG has made significant progress domestically to meet its international commitments in terms of establishing the institutional and management arrangements to develop and manage strategies to address climate change issues including REDD+ within the country and region. National climate change readiness began in 2008 with the establishment of the then Office of Climate Change and Environment Sustainability which phased out and was re-established as the Office of Climate Change and Development (OCCD) in 2010. Since its inception, the OCCD has progressed well in identifying and developing key overall climate change and REDD+ strategies such as the Climate Compatible Development Strategy (CCDS), the REDD+ Roadmap and the national REDD+ Guidelines. This effort has culminated with the GoPNG's endorsement of five REDD+ pilot initiatives including other REDD+ demonstration activities initiated by conservation NGOs. The aim of the pilot activities is to test the strategies developed in collaboration with key implementing partners including development partners. PNG has a three-tier governance system - the national, provincial and district with their local level governments (LLGs; refer to Figure 3), therefore it is envisaged that REDD+ implementation should be conducted in a coordinated manner within this government systems such that the links between implementation of REDD+ activities at the sub-national level influence and or captured clearly in the national level policies.

- **B. Governance structure for REDD+ management in Papua New Guinea**

1. The National Executive Council (NEC) is the highest ranking decision making body in the country which endorses all policies and legislations. A new Ministry of Forests and Climate Change (MFCC) has been created under the current government allowing the OCCD Executive Director and the National Climate Change Committee (NCCC) to report directly to the MFCC (Figure 1) and not to the Prime Minister as happened previously. In the previous government regime (1997-2012), PNG had the opportunity to have its climate change portfolio under the leadership of the Prime Minister. With this highest political commitment, a lot of things were able to be progressed which includes the long term

[1] http://unfccc.int/files/meetings/application/pdf/pngcphaccord_app2.pdf

plan for the country (Vision 2050), the Medium Term Development Plan (2011-2015), the Climate Compatible Development Strategy, the UNREDD Programme, and initial work on both the country's Climate Change Policy and Bill, which are in their final stages pending submission to Cabinet,

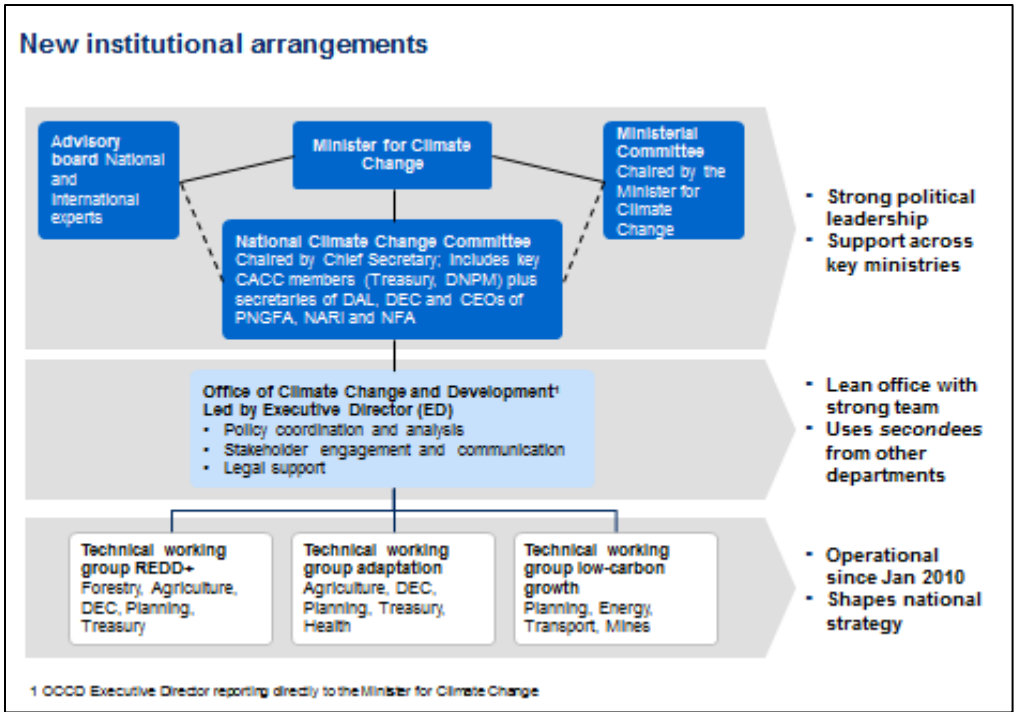
The previous Ministry played a leading role in shaping the Government's strategy and provided direction and assistance to OCCD's many tasks.According to the PNG Readiness Plan Idea Note (R-PIN), the Departments of the Prime Minister, Agriculture, Trade and Industry and the National Planning Office were included in the development of a REDD+ policy framework. The review of the R-PIN for PNG by the World Bank FCPF recommended that the Ministry of Finance should also be included, which currently at this stage plays a crucial role. Another recent stakeholder who entered the scene in PNG's REDD+ preparation is the Internal Revenue Commission, who has also made commitment to assist the government in its policy development towards carbon taxation.

2. The National Climate Change Committee (NCCC)

Climate change is coordinated in a whole-of-government approach by the National Climate Change Committee (see Figure 1). Established in 2011 under NEC Decision 54/2010, the NCCC is the decision-making body on climate change action and policy in PNG. It approves major climate change policies, plans and strategy decisions before receiving the immediate endorsement of the Cabinet at the highest political level.To ensure coordination among the various activities, the NCCC discusses and decides on GoPNG's activities to address climate change. The NCCC brings together the sector heads of all GoPNG departments and agencies that are affected by climate change and is chaired by the Chief Secretary, PNG's highest-ranking bureaucrat. The NCCC comprises:

- Department of Agriculture and Livestock (DAL)
- Department of Environment and Conservation (DEC)
- Department of Foreign Affairs
- Department of Justice
- Department of Lands & Physical Planning
- Department of Personnel Management
- Department of Petroleum and Energy (DPE)
- Department of the Prime Minister and National Executive Council
- Department of Treasury
- National Fisheries Authority (NFA)
- Office of Climate Change and Development (OCCD)
- PNG Forest Authority (PNGFA)
- National Research Institute (NRI)

Figure 1. PNG institutional arrangements on climate change (Source: OCCD, 2012)



3. The Office of Climate Change and Development (OCCD)

The Office of Climate Change and Development, known as OCCD, acts as the Secretariat to the NCCC and is the coordinating entity for all climate change policy in PNG and the Designated National Authority under the UNFCCC. Established under NEC Decision 54/2010, OCCD replaces the Office of Climate Change and Environmental Sustainability.

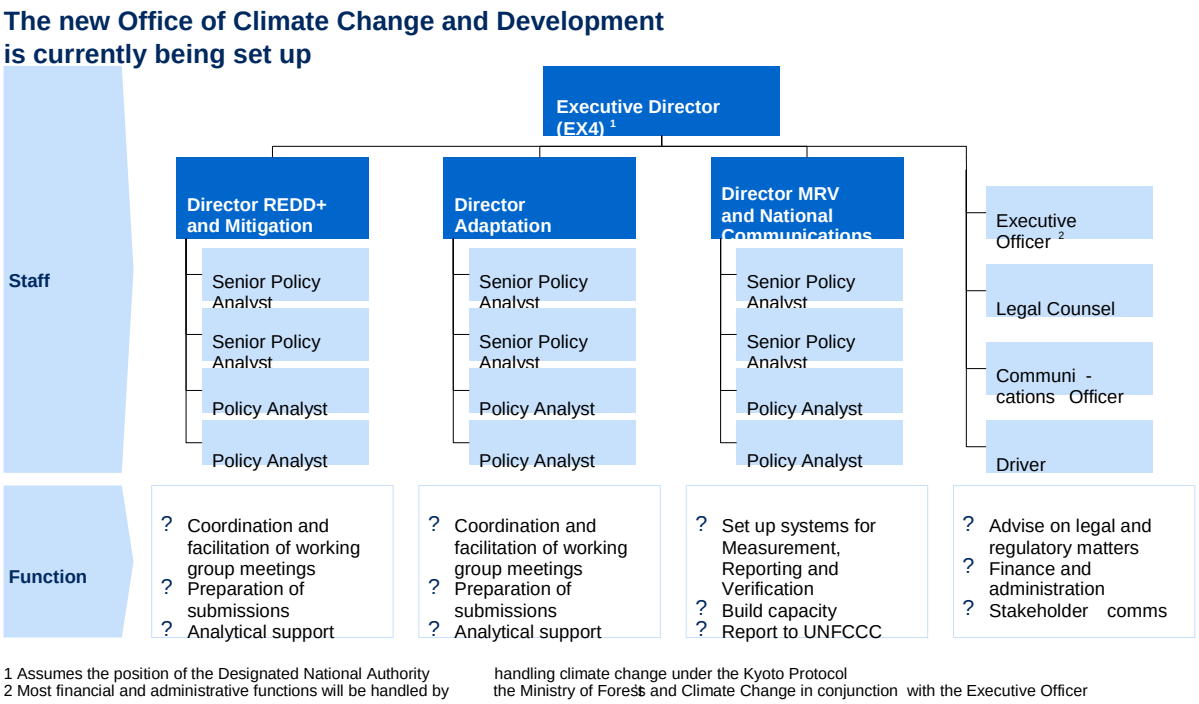
OCCD's mandate is founded upon the principles of the Fourth Goal of PNG's National Constitution which stipulates that "Papua New Guinea's natural resources and environment are to be conserved and used for the collective benefit of all and are replenished for the benefit of future generations. The mandate is derived from NEC decision 54/2010, which specifies:

1. That the National Climate Change Committee (NCCC) and the OCCD as its secretariat take full and exclusive responsibility for all policies and actions under Pillar Five of the Vision 2050, concerning Climate Change and Environmental Sustainability;
2. That the OCCD engages and involves all stakeholders to build a common vision and pathway on action to tackle climate change;
3. That the OCCD works in close collaboration with, and in support of other departments and agencies to achieve these goals.

The OCCD is designed as a lean, efficient organization that coordinates the climate-change efforts of the GoPNG (

Figure 2). Capacity development for the OCCD's staff to enable the OCCD carry out its tasks effectively will remain a key priority over the coming months and years.

Figure 2. Structure of OCCD (Source: OCCD, 2012)



3.0: The roles of the Office of Climate Change and Development

With the guidance and support of the Minister of Climate Change, its immediate responsibilities include:

- Conduct a national and provincial consultation on climate-compatible development and REDD+. The consultation will engage a broad range of stakeholders including government, civil society, private sector and local communities. At the local level, the consultation is designed to yield a better understanding the climate-change issues facing communities, obtain feedback on what it would take communities to participate in a national REDD+ program and prioritize adaptation measures most appropriate for communities.
- Launch immediate Fast Start Actions including 'readiness activities' for REDD+ and pilot projects for different approaches to mitigation, adaptation and low carbon growth.
- Prepare the final version of PNG's National Climate-Compatible Development Strategy (CCDS), which includes REDD+.
- Determine financing requirements of Fast Start Actions and scale up and establish an overall investment plan, which can form the basis for international negotiations of REDD+ support.

The long-term responsibilities of OCCD include:

- Support the Government in the overall steering and coordination of the climate-compatible development strategy

- Conduct rigorous policy analysis and manage inter-agency policy development on climate change-related issues
- Liaise and manage relationships with development partners
- Approve climate-change related initiatives (e.g., REDD+ pilot initiatives)
- Implement pilot activities and programs, working, where appropriate with NGOs and others
- Monitor and evaluate project and program performance (including a coordinating responsibility for a national system of MRV for REDD+).

The OCCD only acts as a coordinating body for all government agencies. The OCCD will not implement specific sector programmes and activities. Each existing government organisation will be allowed to implement a component of its REDD+-related programme, aligned with its institutional obligation but reports to the OCCD on what it does. The OCCD's strategic position also allows for inclusiveness in the process, where it allows private sectors and NGOs to collaborate with the existing government bodies in implementing activities.

3.1: The role of the Technical Working Groups under the OCCD's governance structure

Basically, there are five different Technical Working Groups currently operating under the governance structure of the OCCD. However, in this R-PP proposal, the focus will be narrowed down to the role of the REDD+ Technical Working group, its institutional members and their implementing capabilities as part of the REDD+ TWG.

REDD+ Technical Working Group

Since 2010, the GoPNG ensured the establishment of a multi-stakeholder participation and input through a number of Technical Working Groups meetings. This includes the multi-stakeholder REDD+ Technical Working Group (TWG) which also has three sub-working groups – Forestry, Agriculture and MRV Sub-Working Groups (SWG). These working groups have the task of coordinating and progressing REDD+ activities (REDD+ readiness and pilot activities) with the participation of non-government stakeholders and civil society representatives as well as church representatives. There have been regular meetings and informing of major policy documents since 2010.

The REDD+ TWG normally meets once a month to share progress made and finds solutions for common issues, and is further supported by three sub-working groups (SWGs) on Agriculture, Forestry and MRV. The Forestry SWG is responsible for coordinating the incorporation of social and environmental safeguards into a REDD+ regulatory framework. The FSWG also reviews and informs forest sector policy reforms and regulations. The Agriculture SWG collates views and addresses issues relating to land use change due to agricultural activities including special agricultural business leases. The MRV SWG is charged with stock-taking technical capacities within existing institutions, identify areas of improvement and set up PNG's national MRV system. The overall governance structure ensures that existing capabilities in PNG are utilized effectively and that additional capacity can be built up in a targeted and lasting manner. A non-exhaustive list of TWG membership is annexed at the back[2]

The main responsibilities of the REDD+ Technical Working Group (REDD+ TWG) are to:

- Provide overall REDD technical knowledge and guidance for the implementation of REDD+ activities based on global, regional and national best practices
- Promote exchange of knowledge and information sharing among all members
- Provide substantive inputs for the design, coordination and implementation of Annual Work

[2]This membership also includes representation from the Private Sector, Academia, NGOs, CBOs, Media, Development Partners and Diplomatic Missions

Plans (AWPs) and Budgets

- Review the FCPF Programme documents for technical feasibility and propose recommendations for Program Executive Board (PEB) endorsement of the REDD+ activities

In complementary to the REDD+ TWG as well as the other TWG is the formation of the Development Partner Forum on Climate Change. The Joint GoPNG – Development Partner Forum on Climate Change (FCC) which was established during that time has ensured that GoPNG and donors have an opportunity to exchange views and coordinate climate change efforts on the ground. If it becomes necessary, the NCCC will be complemented by a ministerial committee and advisory board with membership drawn from international and national experts in future where appropriate and necessary. The role of the TWG group, the Development Forums, as well as the overall governance structure under the Climate Compatible Development Strategy is recognised under the current National Climate Change and Development Policy which is under draft and undergoing consultations.

4. Other Government Agencies as REDD+ implementing partners

Various government agencies have been identified as critical to implementing and sustaining REDD+ initiatives in line with their responsibilities and mandates as government institutions. These are institutions that deal with issues relating to land use change, forestry and agriculture and more importantly, already have some capacity upon which REDD+ strategies can be adopted and developed.

Department of Environment and Conservation (DEC)

The Department of Environment and Conservation is one of the most important government stakeholders in PNG, who will be assisting government with the implementation of environmental safeguards under REDD+. DEC is the implementing agency for the National Parks Act, the Fauna (Protection and Control) Act and the Conservation Areas Act, among others. DEC is responsible for the creation of Wildlife Management Areas, National Parks, Reserves and Sanctuaries. It consists of three branches: Conservation Management, Biodiversity Assessment and Species Management.

The core objectives of DEC are[3]:

- environmental impact assessment of major projects including forestry, mining and petroleum proposals;
- environment policy development;
- pollution control and the regulation of hazardous substances;
- management of water resources
- conservation of flora and fauna;
- establishment and management of national parks and protected areas;
- species management;
- biodiversity assessment;
- biodiversity data management;
- hydrological investigation, data collection and analysis;
- education and awareness, and
- administration of PNG's international environmental convention agreements.

[3] http://www.ipa.gov.pg/index.php?option=com_content&task=view&id=182&Itemid=128

The DEC has a specific responsibility to achieve a stated target of the Government of PNG of having 20% land and coastal waters under some form of conservation management.

PNG Forest Authority (PNGFA)

PNGFA is responsible for implementing the *Forestry Act 1991* and regulations. The Act allows for the development of the National Forest Development Guidelines which give a significant direction to the National Forest Plan which underpins all forest based activities.

The core objectives of PNGFA are:

- to manage, develop and protect the forest resources and environment of PNG in such a way as to conserve and renew them as an asset for succeeding generations;
- to maximize participation in the wise use and development of forest resources as a renewable asset;
- to use forest resources belonging to the nation to achieve economic growth, employment creation and increased downstream processing of forest resources;
- to encourage scientific study and research into forest resources so as to contribute towards a sound ecological balance, consistent with the national development objectives;
- to increase acquisition and dissemination of skills, knowledge and information in forestry through education and training; and
- the pursuit of effective strategies, including improved administrative and legal machinery, for managing forest resources

Amongst all the implementing REDD+ partners in PNG, PNGFA takes the lead in driving REDD+ initiatives on the ground due to its existing policy and legislative framework that guides the activity implementation.

PNGFA as the leading government agency plays a very close collaborative role with the OCCD, NGOs and the private sector in trying to progress REDD+ initiatives, and utilizes their technical expertise and experience from the field to influence policy development process at the national level.

Within PNGFA, the National Forest Service (NFS) has the legislative responsibility to monitor and assess logging operations, but has neither the staff nor capacity to presently do this. The NFS hosted the Forest Inventory Mapping System, and in mid-1990s had undertaken national forest mapping surveys. It has yet to undertake a national forest inventory and to-date no such inventory has been done in PNG. In addition, the PNG Forest Research Institute (PNGFRI) is the research arm of PNGFA and will be the main implementing agency for PNG's national multi-purpose forest inventory in collaboration with JICA.

Other government bodies that will play a crucial role in assisting the government and the country to progress REDD+ are listed but not limited to the following organizations below;

- The Department of Lands & Physical Planning (DLPP)-Is responsible for managing the alienated and customary land in PNG, including support for land use plans at the national, provincial and district levels.
- The National Mapping Bureau- Is responsible for providing Papua New Guinea, specifically also GoPNG, with mapping products and services.
- The UPNG Remote Sensing Unit- Is currently operating PNG's most advanced GIS system and supporting GoPNG in many of the tasks related to establishing MRV system for PNG as well as running short courses on GIS and remote sensing techniques.
- The Papua New Guinea University of Technology (UNITECH)-Is mandated to build capacity in lands, surveying and forestry, involving research and training on GIS, remote sensing and biomass

- Private Sector Organizations- The Private Sector in PNG also play a crucial and significant role in REDD+ readiness from Policy development to implementation, capacity building and community consultation
- NGOs and CBOs- These are amongst the most trusted and efficient implementing partners for government in PNG, with the absence of a solid sub-national capacity to bridge with the national level agencies. The government at this stage recognize the role of NGOs and CBOs in their involvement in policy development, education and awareness

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C. Linking National and Sub-National Government Systems

National government agencies have a close working relationship, currently under the coordinating guidance of the OCCD. Sub-national government systems are those who operate at the sub-national level, known as provincial and local level governments.

All REDD+ related activity will be implemented at the community level in different provinces. For this reason, the government at the national level will use its existing three-tier government mechanism to accommodate implementation at the community level.

National Agencies- Institutions at the national level, which includes mainline government departments, central agencies and authorities. These agencies all have their headquarters in the capital of Papua New Guinea, in Port Moresby, with offices in all the provinces in Papua New Guinea.

The institutions at this level are mostly responsible for national policy and legislative development which are translated into programmes and activities that are mostly implemented at the provincial level. The institutions at this level are also responsible for coordinating programme monitoring and evaluation in coordination with the provinces. An annex detailing a full list of organisations that have their offices at the sub-national or provincial level is annexed at the back.

Sub-National Agencies-The Sub-national agencies are provincial offices of the government agencies which are established at the provincial level, and a few at the regional level. The provincial governments are independent government organs at the provincial level with their planning and budgetary roles are guided by the Organic Law on Provincial and Local Level Government (OLPLLG). They accommodate the implementation of national government policies through translated programmes at the provincial level which are further implemented in Districts by the District governments.

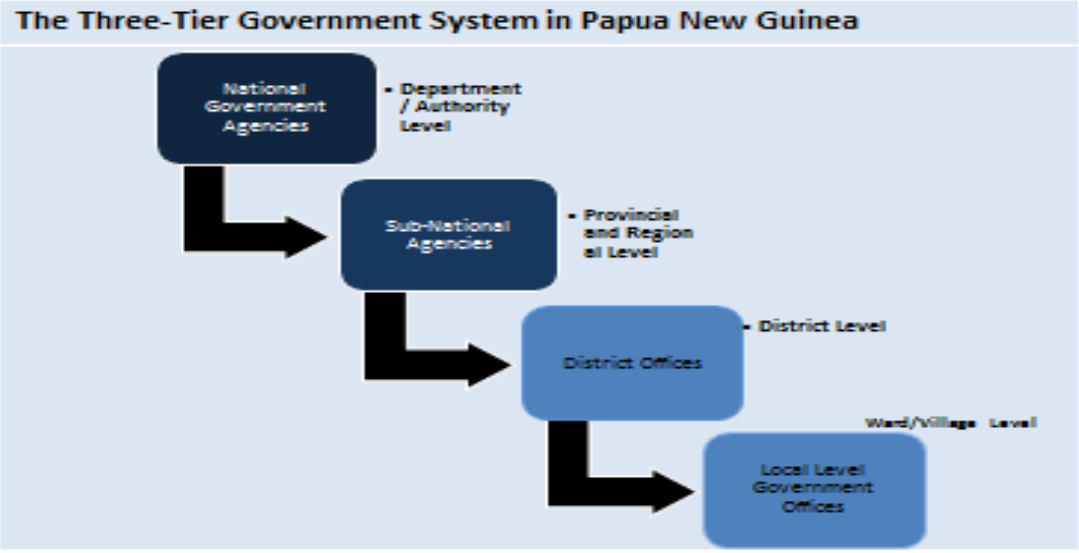
Provincial governments are required to align their planning and budgeting with National Policy priorities outlined in the Vision 2050, the DSP 2010-2030 and the MTDP 2011-2015.Capacity building such as on technical and managerial skills at the sub-national levels (i.e. provincial and districts) will be a major funding activity that will support existing government financing systems which is currently not prioritized or insufficient to support REDD+ Readiness, and ultimately ensure REDD+ programs are sustained in the provinces including local stakeholders 'buy-in' and ownership. In the readiness phase, targeted capacity building will be conducted in the provinces undertaking REDD+ pilot initiatives.

Still at the provincial level, government policies are normally aligned with the Provincial policies and plans and then translated into programmes for implementation.

District Offices- These are implementation organs of the government established closer to local communities and are given direct mandate under the OLPLLG to deliver services directly to their districts and assist the LLG offices in managing the affairs of the communities at the village level

LLG Offices- These are offices who are directly involved in bringing development assistance straight to the communities at the village or mostly known as the ward level. They coordinate with their main District Offices to do this.

Figure 3. The structure of governance in PNG (Source: OCCD 2012)



It is important to note that provincial and district authorities will play an important role in the implementation of a REDD+ mechanism, particularly the provincial forestry offices. Both human and financial capacities at this level of government are very limited, and for successful implementation of REDD+ activities considerable effort will need to be out into developing these capacities.

It is very important to establish this link and understanding in the very beginning to demonstrate the level of implementation of different activities. It also gives a basic idea on how the implementation of REDD+ be acknowledged at different levels, by gaining an insight of what government mechanisms implementers will be dealing with while they are on the ground.

The current gap which have never been addressed under the UNREDD Programme, and is still a working progress for the government is the link between the provinces and the national agencies in the facilitation of REDD+ at the sub-national level. PNGFA has commenced well by demonstrating the will to start with four provinces. In addition to that, this R-PP will also look into providing complementary support to key activity areas that will be pursued to slowly progress REDD+.

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Work plan

Presented below are the activities PNG will undertake under this component of the R-PP which were identified that needs funding support from the FCPF Programmed. Table 1 below including other budget tables throughout this document highlight ongoing activities with their associated funding while funding gaps and any additional activities are indicated where FCPF funding can support via this R-PP

Activity 1a.1.Continued support to National REDD+ Readiness Process

- Coordination of NCCC meetings and REDD+ TWG meetings
- Management Arrangement-Continuation of the UNREDD PMU beyond 2013
- Sub-National REDD+ Implementation Structures
- Provincial Restructures

Table 1: Summary of National Readiness Management Arrangements Activities and Budget						
Main Activity	***Sub-Activity***	***Estimated Cost (in thousands US$)***				
		2012	***2013***	***2014***	***2015***	***Total***
Continued support to National REDD+ Readiness Process	*Coordination of NCCC and REDD+ meetings*	*$10*	*$10*	*$10*	*$10*	***$40***
	Management Arrangement to continue the PMU under the UNREDD beyond 2013	*$75*	*$75*	*$75*	*$75*	***$300***
	An initial study on the appropriate restructures at the Provincial level for REDD+	*$0*	*$25*	*$25*	*$50*	***$100***
	Technical Support for any provincial restructure (Policy and Infrastructure)	*$40*	*$50*	*$50*	*$50*	***$190***
	Total	***$125***	***$160***	***$160***	***$185***	***$750***
Domestic Government (Development Budget)		*$60*	*$10*	*$10*	*$10*	***$90***
FCPF		***$0***	***$75***	***$150***	***$175***	***$400***
UN-REDD Programme (if applicable)		*$75*	*$75*	*$0*	*$0*	***$150***

1b.Information Sharing and Early Dialogue with Key Stakeholder Groups

A. Background

Information sharing and early dialogue with key stakeholders who are also members of the REDD+ TWG are important in terms of effectively coordinating stakeholder engagements on key REDD+ strategies. It is also necessary to clearly determine how REDD+-related information will be disseminated vertically between the different levels of government including, and horizontally across different sectors and agencies including local communities. Hence, it is envisaged that an effective platform for stakeholder engagement, management and coordination is vital in successful implementation of REDD+ strategies.

Stakeholder analysis

Prior to the establishment of the OCCD, GoPNG organized a stakeholder analysis and mapping in the preparation of the draft Climate-Compatible Development Strategy. At the time, there were insufficient resources to conduct broader outreach to provinces and resource owners, particularly on REDD+. However, key stakeholders from government, private sector, and civil society were identified and brought in to participate in the formation of the REDD+ TWG.

Stakeholders were also mapped through an analysis of governance structures in PNG and institutional arrangements between national agencies and focal points and provincial and local level governments. Provincial and local level governments have been identified as key stakeholders in the REDD+ readiness process, with provincial governments as a key focal point for coordination and alignment with relevant national agencies, as well as for information sharing and feedback from local communities (through their local level governments and district governments). Provincial governments, along with national agencies, serve as focal points of information sharing for other sectors of PNG society, including the private sector and civil society.

The level of consultation and information dissemination varies depending on information absorption capacity of various stakeholders. As a result, the government has relied heavily on the private sector and NGOs who have vast experiences especially in working with local communities to assist with coordination and the dissemination and decentralization of information in specific areas.

Papua New Guinea's National Consultation Process on Climate Change

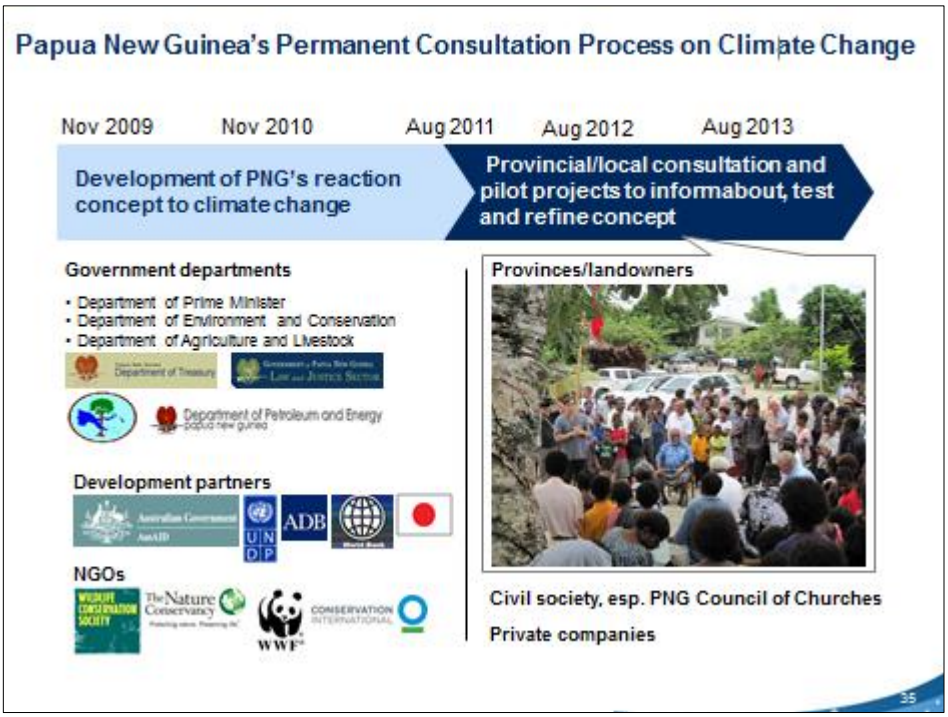
Early stakeholder dialogue and information sharing has been centered around PNG's permanent consultation process on climate change. This permanent consultation process is managed and coordinated within the OCCD through its National Consultation Division with the aim of disseminating broad climate change-related messages through all provinces of PNG. In addition to that, a REDD+ Training program is planned for the period November 2012 through to early 2013 for the REDD+ pilot implementing provinces particularly officers within relevant sub-national government departments, NGOs, CBOs and local communities. These trainings are aimed to ensure adequate understanding of REDD+ and its associated processes and dynamics. The first training will run in Port Moresby as a 'Training for Trainers' before rolling out to the provinces, and is funded under the UNREDD Program.

The engagement of all stakeholders in this process is non-discriminatory, with special emphasis on participation. The participation of stakeholders is open to government partners, the private sector, non-government organizations (NGOs), community based organizations (CBOs). The roles of all these different players are very crucial in the dissemination of vital information to the people of Papua New Guinea. Sub-national acceptance of this process is fundamental to supporting channels of communication between agencies from different sectors at the national level. At the same time,

community consultations will not be successful unless national agencies are aware of the significance of the matter at hand, and are engaged sooner.

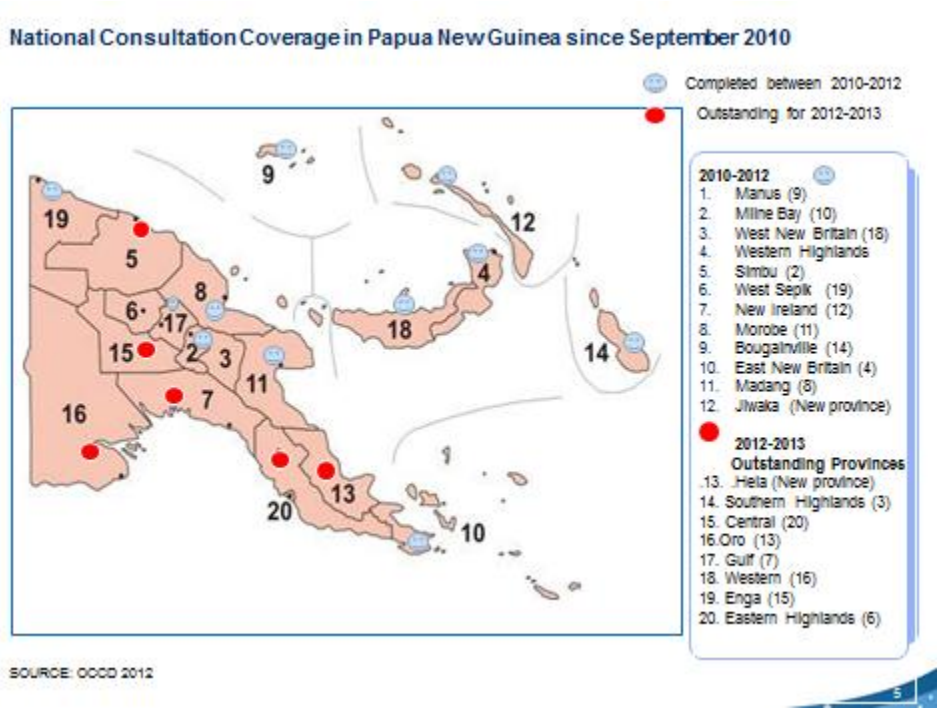
Hence, establishing the institutional and management arrangements and enhancing capacity of key departments or units within sub-national governments is essential in maintaining permanent point of contacts and sustaining REDD+ activities on the ground. This is an area where funding from the R-PP could possibly support. Additional funding may also be needed to support stakeholders such as NGOs and civil society including private sectors to conduct climate change and REDD+ consultations.

Figure 3. PNG's consultation process on climate change (Source: OCCD 2012)



The NEC has estimated that PGK 4.5 million (~USD8-9 million) will be spent on initial information sharing and early dialogue on climate change over the period from 2011 – 2013, to be funded out of the GoPNG budget. It is envisaged that the UN-REDD NP and other development partners will provide additional funding support and international expertise in this important area, including a comprehensive stakeholder consultation plan for GoPNG and an independent review that monitors the implementation of the national consultation process in PNG. Until August 2012, OCCD completed initial consultations on climate change in 11 of PNG's 22 provinces. Reports on these consultations are available on the OCCD's website: www.occd.gov.pg.

Figure 4. Consultations on climate change in PNG (Source: OCCD 2012)



Work plan

Presented below are the activities PNG will continuously undertake to support this component of the R-PP.

Activity 1b.1 Information sharing and early dialogue with key stakeholders

- Conduct initial climate change consultations in 9 provinces

Activity 1b.2 Provide funding support to stakeholder engagement in conducting climate change consultations

Activity 1b.3 Support establishment of key climate change focal points and information units within provinces

Table 2. Summary of Information Sharing and Early Dialogue with Key Stakeholder Groups Activities and Budget						
Main Activity	***Sub-Activity***	***Estimated Cost (in thousands)***				
		2012	***2013***	***2014***	***2015***	***Total***
Information sharing and early dialogue with key stakeholders	*Initial climate change consultations in 9 provinces*	*$225*	*$200)*	*$100*	*$100*	***$625***
Support stakeholders to conduct consultations			*$20*	*$20*	*$20*	***$60***
Establish sub-national climate change information units			*$20*	*$20*	*$20*	***$60***
Total		***$225***	***$240***	***$140***	***$140***	***$745***
Government (Development Budget)		*$225*	*$200*	*$100*	*$100*	***$625***
FCPF		***$0***	***$40***	***$40***	***$40***	***$80***
UN-REDD Programme		*$40*	*$0*	*$0*	*$0*	***$40***

1c. Consultation and Participation Process

A. Background

The stakeholder consultation and participation process is significant in terms of maintaining ownership, transparency and dissemination of key REDD+ strategies amongst stakeholders. Although the consultation actions to be funded by the R-PP are not clear yet as most of these activities are still ongoing, some progress has been made under the UN-REDD Program especially on the identification and endorsement of REDD+ pilot initiatives. The five (5) REDD+ pilot sites were selected by a group of experts representing various organizations based on several criteria. The REDD+ pilot initiatives should meet certain criteria such as reviewing and alignment to provincial forestry plans, must be representative of each region, include representation of altitude and forest types, consider the different land use types, consider the areas prone to natural disasters and risks, land ownership and tenure issues such as matrilineal ownership. A stakeholder consultation process such as through the REDD+ TWG is seen as a platform to consistently dialogue and provides guidance to national readiness by linking on-the-ground implementation with national level strategies and policies.

B. Papua New Guinea's Consultation and Awareness Process is an integral component of information sharing with key stakeholders

Papua New Guinea does not separate this component of the R-PP as separate from the existing, continual consultation program on climate change, which is supported by GoPNG and integrated into annual work plans and budgets (discussed in Component 1b). This existing process will also be used to

solicit views from all relevant stakeholders for any climate change related issues including the introduction of future Programmes such as REDD+ implementation frameworks.

The existing consultation process, which will be used to engage stakeholders in discussing the R-PP and also for its implementation beyond 2013 when the UNREDD Programme phases out in PNG. The process itself is non-exhaustive but includes the following:

- Provincial Consultation
- Community Consultation
    - In 2012, OCCD signed a Memorandum of Understanding with the PNG Seventh-Day Adventist Union for collaboration in climate change awareness and education.
- School Visits
- Radio Talk Back Shows
- REDD+ and MRV TWG Consultation Meetings
- Community REDD+ Engagement Process
- Specific Implementation Agency Meeting on the R-PP
- Review and develop appropriate mechanism (s) to resolve disputes relating to REDD+ implementation.

One main issue with this process specific to REDD+ readiness is the type of information to be disseminated and the type of feedback expected back from the communities themselves. The government at this point cannot risk raising expectations to levels on which it cannot deliver.

In addition, the implementation of the Free, Prior and Informed Consent (FPIC) at the sub-national and community levels in REDD+ demonstration areas will be supported and closely monitored to inform the refining of an FPIC policy guideline that reflects national circumstances. For instance, gender analysis and participation especially of women in REDD+ strategies will inform policy document on the effectiveness of women in decision making under complex and diverse socio-cultural settings in PNG whilst making comparison to UN-REDD FPIC standards.

The autonomy and strength of civil society in PNG will be a key factor in determining whether forest carbon will be managed for the benefit of all of the citizens. An outreach programme to all stakeholders is therefore a critical element to ensure the success of REDD+ readiness efforts in PNG. In the near term, this focuses on communicating and improving the CCDS. In the longer term, the consultation process has the following objectives:

- Build a local understanding of the facts of climate change, clearly communicate the proposed REDD+ strategy and building understanding of options for climate-compatible development that could form part of a national strategy;
- Gain an on-the-ground understanding of local needs and desires so that REDD+, mitigation and adaptation initiatives can be best tailored to meet them;
- Test community interest and willingness to participate in REDD+ schemes;
- Develop working relationships between the OCCD, local government, the private sectors and civil society; and
- Empower local level government to implement and communicate the national strategy.

C. R-PP integration with UN-REDD Programme consultation and participation process

The PNG UN-REDD National Programme (NP) will continue to contribute to building awareness and capacity among all domestic stakeholders, particularly at the provincial and community level, to understand and support GoPNG's efforts and progress to establish a REDD+ framework in PNG. The

overall objective is to strengthen the OCCD's capacity to effectively maintain an ongoing dialogue with communities and landowners on climate change. This will include guidance on effective cooperation between GoPNG and civil society organizations that have existing links to communities. NP support complements the comprehensive stakeholder consultation, awareness building and education activities that the OCCD, PNGFA and other stakeholders are already carrying out. Indicative activities for this output of establishing a framework for stakeholder engagement include:

- Development of a comprehensive consultation plan and guidelines for stakeholder engagement including the formal agreements for technical, advisory and public consultation levels. This output will be strongly informed by the joint UN-REDD and FCPF Guidelines on Stakeholder Engagement in REDD+ Readiness.
- Facilitate a constructive and reciprocal dialogue between national multi-stakeholder groups, OCCD/GoPNG and development partners, e.g., through the development of outreach material;
- Assist in the review and refinement of the OCCD's consultation strategy through an independent monitoring of the consultative and stakeholder awareness process.

It is important to note that the OCCD plays a critical coordinating role in ensuring all REDD+ pilot initiatives developed by stakeholders either by PNGFA as lead with support from JICA and those initiated by NGOs directly influence national level REDD+ and climate change policies and strategies. The OCCD acts as the central coordinating entity having the information system or registry to receive and disseminate information. Information may relate to key strategies such as a dispute resolution mechanism, FPIC, benefit sharing and distribution, carbon rights and ownership and other safeguard information that are tested by implementing stakeholders.

Work plan

Presented below are the activities PNG will undertake under this component of the R-PP:

Activity 1c.1 Sub-national capacity building for meaningful participation in REDD+ process. Priority REDD+ consultations in 5 pilot provinces including those implemented by NGOs

Activity 1c.2 Development of a national consultation and validation process on the national REDD+ strategy and implementation frameworks that has the capacity to incorporate stakeholder feedback as well as SESA for the following:

- REL at the national and sub-national level (nested approaches)
- National REDD+ strategy framework: national consultations and validation meetings of drafts for all key stakeholders on the candidate REDD+ strategy options; and national consultation on the validation meetings of draft for all key stakeholders on the revised REDD+ strategy framework.
- National REDD+ implementation frameworks: national consultation and validation meetings with key stakeholders on the components of REDD+ implementation frameworks, including the Feedback and Grievance Mechanism, benefit sharing and distribution systems, carbon rights frameworks, eligibility of activities and proponents in REDD+ activities, national REDD+ funding mechanism, national REDD+ registry, the integration of sub-national activities (jurisdictional and nested approaches), the design of a dispute resolution mechanism, MRV, and Monitoring and Evaluation Framework
- SESA consultations will need to be held on most of the activities identified here, including: REL, national REDD+ strategy, national REDD+ implementation frameworks, MRV, and the monitoring and evaluation framework.

Table 1 c: Summary of Consultation and Participation Activities and Budget						
Main Activity	***Sub-Activity***	***Estimated Cost (in thousands)***				
		2012	***2013***	***2014***	***2015***	***Total***

Conduct consultations on topics relevant for REDD+ Readiness	*Provincial REDD+ Training*	*$50*	*$50*	*$150*	*$100*	***$350***
	Production of REDD+ Communication Materials for Communities	*$50*	*$50*	*$50)*	*$50*	***$200***
	Academia Training for University Student Groups	*$0*	*$0*	*$50*	*$50*	***$100***
Multiphase consultation and validation processes	*REL: national and sub-national level research study(nested approaches)*	*$100*	*$100*	*$100*	*$100*	***$400***
	Provincial REDD+ Profiling	*$25*	*$25*	*$25*	*$25*	***$100***
	District REDD+ Profiling	*$25*	*$25*	*$25*	*$25*	***$100***
	Community REDD+ Profiling	*$25*	*$25*	*$25*	*$25*	***$100***
Total		***$275***	***$275***	***$375***	***$325***	***$1,250***
Government(Development Budget)		*$150*	*$50*	*$100*	*$100*	*$400*
FCPF		***$0***	***$100***	***$275***	***$225***	***$600***
UN-REDD Programme (if applicable)		*$125*	*$125*	*$0*	*$0*	*$250*

Component 2: Prepare the REDD-plus Strategy

2a. Assessment of Land Use, Land Use Change Drivers, Forest Law, Policy and Governance

A. Background

Papua New Guinea is the largest of the Pacific Island nations, both in terms of population, estimated at some 6.1 million, and in terms of land mass, covering approximately 460,000 square kilometres. Around 87 percent of the population lives in rural areas of Papua New Guinea's varied and rugged terrain that supports an extraordinary range of ecosystems and biodiversity, most of which are not accessible by road. PNG contains six to eight per cent of the world's biodiversity in only <1.0% of total global landmass. The country has a rich and unique cultural and ethnic diversity, with some 815 languages

spoken by a population distributed over the mainland and the many islands. The population is forecast to grow to more than 11 million by 2050. Currently 40 percent of the population is under the age of 18.

The country's level of human development remains low and has, in some areas, deteriorated over the recent years. In 2011, Papua New Guinea's Human Development Index (HDI) ranked at 153 out of the 187 countries and territories surveyed.[4]

A large part of the rural population, and to a lesser extent, the urban population relies for their livelihoods on forest use, fishing, hunting, and subsistence agriculture. Weak infrastructure, weak social service delivery mechanisms, marketing difficulties as well as low government and civil society capacity constrain possibilities to improve standards of living.[5]

In this very specific section, a current update of PNG and its forest status will be given. There will also be an insight into what the government has done so far, and also the different sources of funding support so far which has been received to progress REDD+. Under the previous support that the government of PNG received through the UNREDD Programme, most activities mentioned below have been partially resourced and will continue to be through both the FAO and UNDP funding components. However, attempts have been made to concentrate any resources from this RPP on activities that were not fully considered under the UNREDD Programme, but needs adequate resourcing apart from government budget alone.

B. Forest inventory and deforestation and forest degradation

Papua New Guinea (PNG) has one of the most significant areas of largely intact tropical forest in the world, although these forests appear to be facing acute and imminent threats. Together with the provinces of Papua and Papua Barat in Indonesia, the forests of PNG are the third largest expanse of rainforest on earth after the Amazon and Congo basins. Forests are also a vital resource for the local population particularly in the remote rural areas of PNG. These forests provide food, fibre, building materials, and support a variety of wildlife, ecosystem services such as carbon sequestration, watershed protection, water supply, soil stability and fertility.

PNG forests harbor important plant and animal species of which most are poorly known to science. Along with freshwater rivers, streams and water bodies, forests provide a large proportion of the natural resources, raw materials and food that communities utilize and consume. Furthermore, forests also have co-benefits such as biodiversity conservation which also present prospects for biological research and conservation related projects.

Nevertheless, forest cover data, commercial timber stocks, rate of deforestation and relative contributions of the drivers of deforestation are all subject to some uncertainty and much debate among academics and NGOs interested in forest cover change in PNG.

The Papua New Guinea Forest Authority (PNGFA) estimates that approximately 60 percent of the total area of the country is covered by natural forests, of which 52 percent are classified as *production forests*(for exploitation of timber and other products), and 48 percent are for conservation (not for timber extraction due to inaccessibility or ecological constraints).

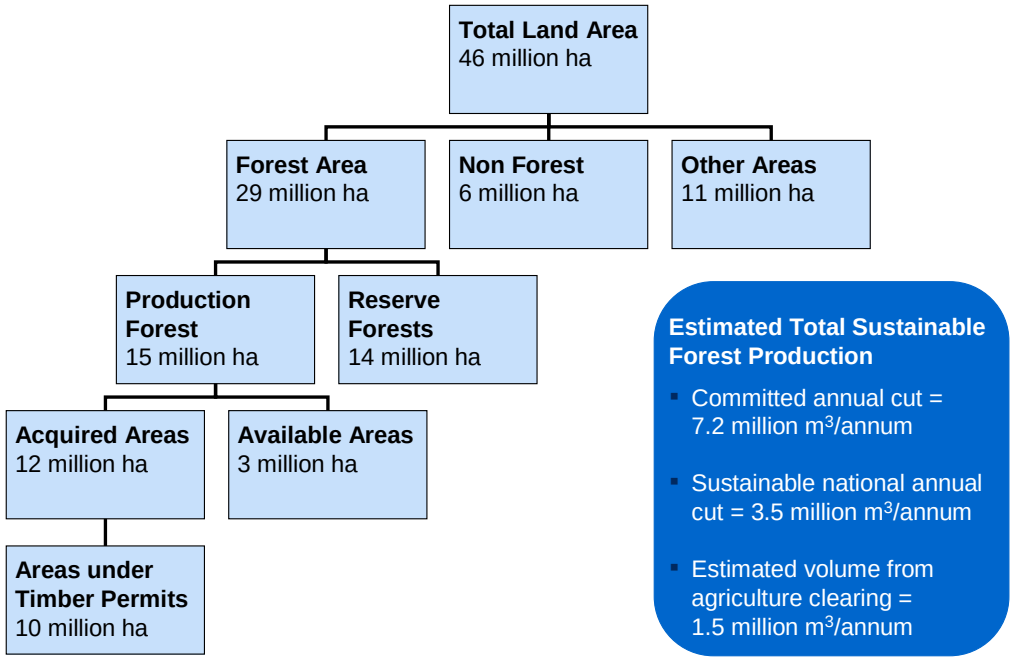
There is a long history of debate regarding the forestry sector in PNG in numerous reviews, independent audits and studies of the forestry sector, e.g.:

- IIED 1998 Country Study
- IIED 2001 Report edited by Colin Hunt
- PNG Forest Industry Association analysis 2006

[4] http://hdr.undp.org/en/statistics/
[5] This section is based on the Situation Analysis in the UN Country Programme Action Plan.

An official assessment of the Forest Resource Base by PNGFA indicates that about 29 million hectares of land are forested of which 15 million hectares are classified as production forest having potentially high quality hardwoods species suitable for commercial development.[6] The remaining 14 million hectares are classified as Reserve Forests (Figure 5).

Figure 5. PNG's forest resource base (Source: UN-REDD NP, 2011)



FAO's *Global Forest Resources Assessment 2010* reports lower forest coverage. Based on their report, in 1990 primary forests covered 31.3 million hectares, declining to 26.2 million hectares in 2010. The annual change of total forest area increased significantly from -180,000 hectares between 1990-2000, to -427,000 hectares between 2005-2010. This translates into an annual deforestation rate of 1.55 percent between 2005-2010.

Table 3. Change in the extent of primary forests in PNG (Source: FAOFRA, 2010)

Area of Primary Forests (1,000 ha)				Annual change of total forest area (1,000 ha/year)		
1990	**2000**	**2005**	**2010**	**1990-2000**	**2000-2005**	**2005-2010**
31,329	29,534	28,344	26,210	-180	-238	-427

More recent estimates by Shearman et al (2008)[7] and Shearman and Bryan (2010)[8] suggest that intact forests covered 33 million hectares in 1972, or 82 percent of PNG's land area. In 2002, PNG's primary forest area is reported to have decreased to 25.3 million hectares, suggesting that 23 percent of the area

[6]PNGFA (2009) Parliamentary Brief for Minister for Forests, Nov 2009, Port Moresby
[7]See Shearman P., Ash, J, Mackey B, Bryan J.E, and Lokes B (2008), The State of Forest in Papua New Guinea: Mapping the Extent and Condition of Forest Cover and Measuring the Drivers of Forest Change in the Period 1972-2002, University of Papua New Guinea, Port Moresby.
[8]See Shearman, P and Bryan J (2010) A Bioregional Analysis of the Distribution of Rainforest Cover, Deforestation and Degradation in Papua New Guinea, Austral Ecology, A Journal of Ecology in the Southern Hemisphere

in 1972 has been cleared or degraded at a rate of 0.79 percent, or 360,000 ha, per annum. The analysis is based on change detection between a forest map derived from aerial photo of 1972 and a forest map derived from Landsat ETM+ satellite data. The cumulative change (which is in line with the annual rate of deforestation reported by PNG to FAO) has been further elaborated with a socio-economic model to support the definition of a forest loss trend which report for 2002 a combined annual rate of deforestation and degradation of 1.41 percent.

Table 4. Area of primary forest 1972 and 2002, and change due to deforestation and degradation, 1972-2009[9]

Area of Primary Forests (1,000 ha)		**Change of total forest area 1972-2002** (Percent)		
1972	**2002**	**Deforested area**	**Degraded area**	**Total**
33,228	26,462	15	9	24

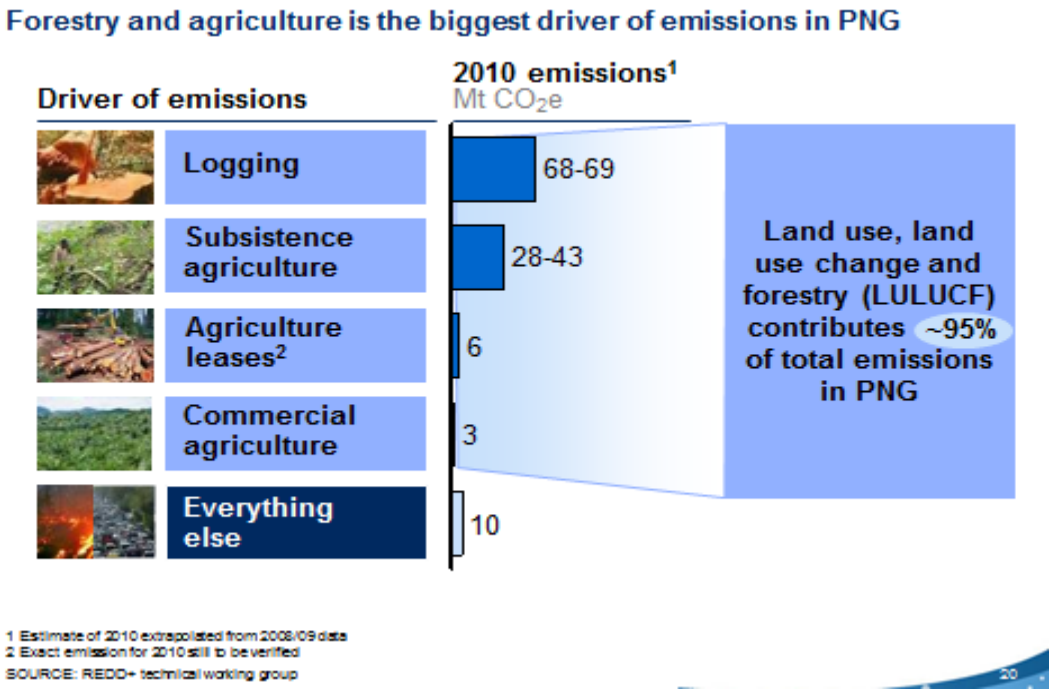
Additional conclusions of the report point to an imminent threat to PNG's forests over the next 2-3 decades:

- Of the 1972 commercially accessible forest areas, it is estimated that by 2021, 83 percent will have been cleared or degraded if current trends continue;
- About 4.7 billion tonnes of carbon were stored in PNG's primary forests in 2002. This does not include carbon in forest soils; and
- Between 1972 and 2002 deforestation resulted in the release of a net 926.5 million tonnes of carbon through logging-related forest degradation.

However, the lack of an updated analysis of the drivers of deforestation and forest degradation is a major gap in the readiness process. While further studies are needed, the main drivers of this deforestation and forest degradation are large-scale selective logging and subsistence and commercial agriculture, and to a lesser extent mining activities and forest fires.Recent studies have found that between July 2003 and January 2011, almost 5 million hectares of customary land representing 11 percent of PNG's total land area has passed into the hands of national and foreign corporate entities).

[9]See Shearman et al (2008). Swamp, mangrove, and dry evergreen forest are excluded.

Figure 6. Estimate of 2010 sources of emissions in PNG



Source: (OCCD 2012)

C. Land use and ownership in Papua New Guinea

Over 80 percent of the population live in rural areas and are largely dependent on the local environment for their livelihoods, particularly subsistence agriculture in shifting cultivation.[10] Legitimate landownership and the right to exploit most natural resources are vested with the people and protected by the constitution. A commonly asserted figure puts 97 percent of the land in PNG under customary ownership, typically managed among landowners through Incorporated Land Groups (ILGs). About three percent of the total land area in PNG, or about 600,000 hectares, is held privately under a 99-year State Lease or is government land.

Customary land in PNG has the following characteristics:

- Land is vested communally in a clan, tribe or extended family;
- Land is inherited through lineage (either patrilineal or matrilineal)
- Land has boundaries which are established by memory, transmitted through oral tradition, and often use natural features in their establishment;
- Land is managed according to customary law, and
- Land cannot be sold, leased (except for lease-leaseback) or otherwise disposed of, except to other PNG citizens in accordance with custom.[11]

Customary land enjoys strong statutory protection under PNG law. The purpose for restricting dealings in customary land is to provide members of a community self-sufficiency and security, unite them as a

[10] http://www.worldbank.org/en/news/2011/04/12/papua-new-guinea-up-30000-farmers-benefit-agriculture-project-over-next-six-years
[11] Land Act 1996, s 132.

unit, and protect them from becoming a landless class.[12] Customary land gains its protection from section 132 of the Land Act 1996, which provides as follows:

> *"Subject to Sections 10 [State acquisition] and 11 [lease leaseback], a customary landowner has no power to sell, lease or otherwise dispose of customary land or customary rights otherwise than to citizens in accordance with custom, and a contract or agreement made by him to do so is void."*

Thus, customary land cannot be sold, leased, mortgaged, subdivided or otherwise disposed of except in accordance with custom, and any document authorizing any of these activities (such as a contract for sale of land) could be declared void by a court, if challenged.

Disputes over land, resources and benefit sharing remain key justice issues at the local level. Informal dispute resolution structures outside of the state remain strong at local level but face increasing challenges with changes in society and demands on the quality of their outcomes. This is evident in areas where rapid changes in natural resource development are occurring, the inevitability of conflicts that follow these developments, and the inability of traditional authority structures to govern and resolve disputes. Current legislative reforms aim to improve land administration, land dispute settlement processes and customary land development.[13]

It has been argued that the land tenure system is an impediment to rural development because land is owned by clans and can neither be alienated nor used as collateral for business loans. The mobilisation of blocks of land for rural development is constrained by the fragmentation of ownership, the difficulties of identifying the "true" owners where there are disputes, and excessive "compensation" demands. However, proposals to "register" the land to facilitate development have faced vehement public opposition. At the village level, the lack of investment opportunities is a more serious constraint. Poor infrastructure, remoteness from markets, the collapse of government extension services, and the high cost or lack of credit, impede the creation of business enterprise.

Land registration processes allow the formalization of land title and the opening of customary land for development and or/commercialization. Under PNG law, there are five ways that customary land can be brought out from under the statutory protection of section 132 and thus used for development. These are:

- tenure conversion (registering the land title as freehold);[14]
- lease-leaseback;
- clan land (usage) agreements, such as where a clan agrees that another clan individual or a different clan group can exclusively use land for a certain period, eg usually for agricultural purposes, such as for individual coffee gardens);[15]
- acquisition by the State of customary land, but only by agreement;[16]
- The amendments introduced by the *Land Registration (Amendment) Act 2009* have added a fifth option in the registration of customary title as "registered clan land."

Registering freehold title over customary land

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[12] Papua New Guinea Constitutional and Law Reform Commission, Review of incorporated land groups & design of a system of voluntary customary land registration, May 2008 (p 2)

[13] These three areas summarize concerns raised at the 2005 National Land Summit, out of which the reference to the Constitutional Law Review Commission called for a review of Land Groups Incorporation Act. In 2009, the Justice Minister moved before Parliament, two amendment bills on the Land Groups Incorporation 1974 Act and Land Registration Act, which were enacted on March 19, 2009. The reforms on land dispute settlement processes are currently being done through the Magisterial Services, which include having in place specialist land court magistrates.

[14] Land (Tenure Conversion) Act 1963.

[15] Clan land usage agreements do not have any statutory basis, can only be made to other clan members or between clans (ie therefore excluding foreigners), and do not result in the alienation of the customary land

[16] Land Act 1996, s 10.

Since 1987, customary landowners have been able to convert the title to their customary land to a registered title by following the processes set out in the *Land (Tenure Conversion) Act 1963*.[17] Once a certificate of title is issued, the land then ceases to be customary land is regulated instead as freehold land under the *Land Registration Act 1981*. However, in practice, very little land has been registered under this process. Landowners have generally been reluctant to convert their customary land for a range of reasons, including:

- the process for registration has been very slow and cumbersome, with significant delays within in the Land Titles Commission
- the effect of registration is to release the customary land from its statutory protection, and it can then be sold, leased, mortgaged, subdivided or otherwise disposed of,
- conversion to freehold is thus potentially very destructive of the traditional system because it results in the permanent "alienation" of the land from customary control.

Lease leaseback arrangements: agriculture leases

In 1979 the *Land Act* was amended to allow the State to lease customary land from landowners for periods of up to 99 years on condition that the land would be "leased back" to people approved by the customary landowners.[18] The purpose of the lease-leaseback mechanism was to get around the blanket restrictions on selling or leasing customary land which was restricting agricultural and commercial development. Under this scheme, customary land is leased to GoPNG for a period of up to 99 years. In a second step, it is then leased back to registered landowner companies or "other incorporated bodies," including private companies approved by the customary landowners. These leases are issued by the Department of Lands and Physical Planning (DLPP) as a prerequisite for approval by the Department of Agriculture and Livestock (DAL). The State is not required to pay any rent or compensation to the landowners; nor is the lesser required to pay rent.[19]

In practice, the lease lease-back scheme has largely been used to facilitate agriculture through Special Agricultural and Business Leases (SABLs). The majority of leases (55 percent) have been granted for oil palm development. Following oil palm projects, the next most common leases are cocoa, rubber and coffee, and large ruminant livestock. Approximately 15 percent are related to combined reforestation and agriculture projects.

There are concerns that some of the approved projects do not currently contribute to agriculture development as expected, or deliver benefits to local landowners. The scheme could also result in the conversion of large intact tracts of primary forest (discussed further in Component 2b).[20]

Other problems with the agriculture lease system demonstrate a lack of transparency, including the lack of requirement for a special agricultural lease to be advertised. The Minister can also choose to grant a State lease directly, thus waiving the need for a public Land Board hearing into the lease application. [21] There have been disputes over whether landowners have given their genuine consent to the leases.

[17] The *Land (Tenure Conversion) Act 1963* was amended in 1987 to allow ILGs and other customary groups to apply to convert customary land to freehold. The process involves the following steps: a citizen (an individual, company or land group) makes an application for registration to the Land Titles Commission; the Commission then calls for objections and holds a public hearing into the application; the Commission then makes a "conversion order" directing the Registrar of Titles to enter the applicant's name as the owner of the land in the Land Title Register.
[18] Land Act 1996, s 11, 102(2), (4).
[19] Land Act 1996, s 11(3), 102(5).
20 See Greenpeace, Up for Grabs: Millions of hectares of customary land in PNG stolen for logging, August 2012, reporting that 72 Special Agricultural and Business Leases (SABLs) totalling 5.1 million hectares of customary-owned land representing over 11 percent of the country and over 16 percent of accessible commercial forests have been granted to unrepresentative landowner companies and foreign-owned corporations for up to 99 years. Logging companies are cited as the biggest beneficiaries of the SABL system, and PNG log exports grew by almost 20 per cent in 2011 due almost entirely to logging within SABLs. SABLs have resulted is an increase in deforestation of primary forests for oil palm.
[21] Land Act 1996, s 69, 72, 102(6).

This is important because once an agricultural lease is granted, all customary rights are suspended for the period of the lease (up to 99 years) and the land is effectively "alienated".[22]

Incorporated land groups (ILGs)

Since 1974, landowners in PNG have been able to incorporate themselves into land groups under the *Land Groups Incorporation Act 1974*. ILGs were intended to provide clans and customary landowners a mechanism for managing their land, but no means complementary means for land registration was established. The 1974 legislation also established a very weak process for incorporation, while being administered poorly by the Department of Lands and Physical Planning. As a result, while there is widespread use of the ILG mechanism, ILGs have suffered from a serious lack of democracy, transparency and accountability.[23] In PNG, the ILG mechanism has a long history of being used to obtain consent from landowners for resource development, primarily in the areas of forestry, oil extraction and mining, with complaints that benefits have not been distributed fairly.

An ILG has broad powers to control the use and management of clan land under the *Land Groups Incorporation Act 1974*.[24] The powers of an ILG include the power to:[25]

- enter into agreements for the use or management of land,
- acquire, hold and dispose of customary land and customary rights in customary land, but only in accordance with custom, and
- to distribute any product of the land or any profits arising out of the use or management of it (e.g. such as REDD+ revenues)

These powers are arguably broad enough to enable an ILG to enter into an agreement for REDD+ activities on their customary land (subject to the correct procedures being followed under the Act and ILG Constitution), and to distribute REDD+ revenues through the ILG structure if desired. However there remains some legal uncertainty as to whether such an agreement might breach the provisions which prohibit dealings in customary land.[26]

New process for registering clan land

Many of the defects in the ILG process have been remedied by legislative changes to the process of incorporating and managing ILGs.

First, the *Land Registration (Amendment) Act 2009*[27] introduced a new process by which Incorporated Land Groups (ILGs) can voluntarily register the title of their customary land. Such land is called "registered clan land".[28] The stated purpose of the *Customary Land Amendment Act* is to:[29]

- Promote and facilitate the registration of land held under customary law;
- **To allow development to take place primarily through the use of ILGs**; and
- To encourage traditional villages and communities to remain as viable units of PNG society while improving their culture, social, economic and ethical quality.

[22] Land Act 1996, s 11(2).
[23] See Filer (2007), Chapter 8, Local Custom and the Art of Land Group Boundary Maintenance in Papua New Guinea, published in Customary Land Tenure and Registration in Australia and Papua New Guinea: Anthropological Perspectives, Weiner JF and Glaskin K (eds), ANU, E-Press.
[24] *Land Groups Incorporation Act 1974*, s 13.
[25] *Land Groups Incorporation Act 1974*, s 13 (Powers of Incorporated Land Groups).
[26] *Land Act 1996*, s 132.
[27] This Act was passed on 19 March 2009 and became effective in March 2011.
[28] Note: the new registration process does not amend the existing process for registering customary land under the *Land (Tenure Conversion) Act 1963* (which presumable still remains an option), but rather inserts a new Part IIIA into the *Land Registration Act 1981*.
[29] *Land Registration (Amendment) Act 2009*: Objectives.

The intention is for an ILG to register the parcels of customary land suitable for development.[30] An ILG must be incorporated before land can be registered under the *Customary Land Amendment Act*. The amendments create a Director of Customary Land Registration, who is responsible for overseeing the new registration process.[31] This process requires the Director to independently verify the membership of the ILG and check the proposed boundaries. The Director also exercises a great deal of control over the registration process, has wide investigative powers, and is responsible for hearing and resolving objections. The manner in which the Director carries out his or her duties will therefore be critical to the integrity of the land registration process. The *Customary Land Amendment Act* also establishes a new Register of Clan Land that the existing Registrar of Titles is responsible for maintaining.[32]

The amendments contain a provision that expressly allows an ILG registered as the owner of clan land to grant *derivative rights and interests* in the land to another person, on payment of rent.[33] "Derivative rights and interest" are not defined in the Act, and the process appears to resemble a lease. It is arguable that entering into a REDD+ contract might constitute a "derivate interest" in land, and it may therefore be possible to use this provision as a vehicle for a REDD+ Agreement, although further research into this possibility should be done.

On 19 March 2009, the National Parliament passed the *Land Groups Incorporation (Amendment) Act 2009,* which substantially improves the processes by which ILGs are incorporated and managed. Like the *Land Registration (Amendment) Act*, this legislation did not go into effect until March 2011. The objectives of the amendments are to:

- Allow development to take place primarily through the use of PNG forms of social and political organization
- To ensure the integrity and viability of ILGs engaging in development activities, and
- To provide for the transparent and effective management of ILGs.

The amendments to the *Land Groups Incorporation Act 1974* now require landowners to provide much more detail in their application to register an ILG.[34] Applicants are now required to identify the boundaries of the land over which the ILG wishes to claim ownership (including noting any areas in dispute).

The purpose of the amendments is to remedy the problems caused by the old ILG registration process, which did not require adequate detail of land boundaries and group membership to be given in the application, thus resulting in conflicts arising following incorporation. The amendments to the ILG process also establish a much more thorough process for resolving internal disputes between landowners which are apparent prior to incorporation. For example, the amendments now require the District Administrator and Village Courts to circulate an application for incorporation to people whom they think are most likely to have knowledge or interest in the application, and the Registrar of ILGs has additional powers to reject an application or to withhold issuing a Certificate of Recognition until all internal disputes have been settled.[35]

However, the creation of a new ILG *does not* automatically result in the registration of the land title, and the land which is managed by the ILG retains its tenure as customary land. Once an ILG is incorporated under the new procedure, the ILG can then decide whether it wishes to take the further step of

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[30] Tararia, A. and Ogle, l., 2010. Incorporated land groups and the registration of customary land: Recent developments in PNG in Tim Anderson and Gary Lee (Eds) In Defence of Melanesian Customary Land, Aid Watch, Sydney. p 21., http://www.aidwatch.org.au/sites/aidwatch.org.au/files/Land%20report%20April2010%20for%20web.pdf ..

[31] Land Registration (Amendment) Act 2009 s 34B.

[32] Land Registration Act 1981, s 4, 9; Land Registration (Customary Land) (Amendment) Act 2007, s 5.

[33] Land Registration (Amendment) Act 2009, s 19, inserting new s 34 O.

[34] For a list of the old requirements, see Land Group Incorporation Act 1974, s 5(2) (now repealed), and Land Groups Incorporation Regulation, Cl 3(1) and Form 1.

[35] Land Groups Incorporation (Amendment) Act 2007, s 5A, 5B.

registering the title to its land in accordance with the provisions in the *Land Registration (Amendment) Act.*

Reforms to strengthen management of ILGs

The *Land Groups Incorporation (Amendment) Act 2009* also introduced many improvements to the way in which ILGs are governed by Management Committees, including:[36]

- The requirement to hold an Annual General Meeting
- The requirement for a Management Committee to have between 6 -10 people, including at least two women
- The requirement for a quorum of at least 60% attendance at meetings in order for business to be transacted, with at least 10% present being of the other gender.
- The need for the Management Committee to keep bank accounts, which must be open to inspection by the Registrar, the dispute-settlement authority, or any member, at all times
- The need for the Management Committee to maintain an up to date register of its members.
- The introduction of a detailed Code of Conduct for members of the Management Committee, which includes a prohibition on "self dealings":

The *Land Groups Incorporation (Amendment) Act* provides that all current and existing ILGs will cease to exist five years after the amending Act comes into force. Within the five-year transitional period, existing ILGs can reapply for incorporation under the new provisions.

The ILG dispute resolution process

If an ILG conducts a REDD+ demonstration activity it will need to have a mechanism by which disputes can be resolved. One of the stated purposes of the *Land Groups Incorporation Act 1974* is to encourage better and more effective settlement of disputes within ILGs by encouraging ILGs to resolve disputes themselves.[37] As a result, the *Land Groups Incorporation Act 1974* contains very detailed dispute settlement provisions to address disputes which arise after incorporation has taken place.

However, dispute settlement provisions do not apply to *all* disputes concerning ILG's. They can only be used to resolve:[38]

- Internal disputes between members of an ILG concerning the property or affairs of the group, including disputes over the distribution or disposal of any property or income of the group (e.g. which could arguably include disputes over REDD+ revenues); and
- Disputes as to membership of an ILG, which includes disputes as to whether somebody is entitled to membership in the ILG.

The dispute settlement procedure under the *Land Groups Incorporation Act 1974* is characterized by flexibility and an absence of legal formality. It relies heavily on processes that aim to achieve consensus rather than coercion and in this vein gives a very limited role to the courts. There is great emphasis on the parties to a dispute be able to reach agreement between themselves on who the decision-maker should be, in preference to having one imposed on them externally, by the Act. The process places a great deal of power in the hands of the "dispute settlement authority", which is nominated by the ILG when they incorporate, so it will be very important that great care is taken when making this appointment. This approach appears to reflect a desire to encourage disputes to be resolved in a customary manner according to traditional dispute settlement processes. In cases where the dispute settlement process breaks down, the Act appoints the Registrar of Incorporated Land Groups as a kind of "circuit breaker". For example, if there is some reason why it is inappropriate for the dispute-settlement authority appointed under an ILG's constitution to judge a particular case (e.g. if they have a

[36] See the new provisions in "Division IIIA – Management of Incorporated Land Groups" which have been inserted into the *Land Groups Incorporation Act 1974*.
[37] Land Groups Incorporation Act 1974, s 1 (Purposes of this Act).
[38] Land Groups Incorporation Act 1974, s 20.

conflict of interest), then the Registrar can, after consultation, appoint a different dispute-settlement authority to resolve the matter. This might be a Village Court, or if there is none, a customary authority.[39]

In the context of a REDD+ project, these restrictions would mean that a dispute between an ILG and an adjoining landowner who is not a member of the ILG could not be dealt with under the dispute settlement provisions of the Act. If the land title has been registered, then disputes over the ownership of, interests in, or boundaries of land would be dealt with during the process of land registration.

Land tenure arrangements for REDD+

The major forms of land use and land ownership in PNG will need to be assessed, especially in tandem with further research on the actors and drivers of deforestation, as part of a broader analysis of national laws and policies relevant for REDD+. The risks and benefits to customary landowner communities in the proposed REDD+ implementation framework will also be assessed, with land tenure arrangements to be ultimately aligned with safeguards required by the UNFCCC, UN-REDD, FCPF and international best practices relating to the rights of local communities and indigenous peoples. In particular, ILGs will be closely assessed for their suitability as a principal mechanism in formulating land tenure arrangements for REDD+. Landowner representation in REDD+ through the ILG mechanism has the potential advantages of 1) building on existing and familiar legal structures in PNG. There is also significant potential to harness improved processes for the incorporation and management of ILGs at the sub-national level for REDD+, for use in piloting approaches to land-use planning, forest governance, benefit sharing mechanisms and sustainable forest management.

D. Logging in the forestry sector

Logging is carried out in natural forests by a small number of large private logging companies, generally foreign owned. Companies pay royalties to landowners. Landowners are usually represented by a landowner company formed to look after the owners' collective interests, or to an agent. Many problems occur with such representation. In many cases, royalty payments were received by company representatives or agents but never fully paid to the appropriate landowners, or were reduced by illegal deductions made by the companies.

The landowner share of logging proceeds in terms of timber royalties ranges from a flat royalty of PGK10 per m^3 up to PGK35 per m^3, depending on the type of timber. In addition to this royalty, landowners negotiate separate in kind benefits and price premiums as part of the concession negotiations. These may vary considerably. Royalties and premiums are often not paid in full, are not fairly distributed and contribute little to rural welfare, according to the Independent Forestry Review Team.[40]

Given the land tenure system in PNG, determining the opportunity costs of logging and providing appropriate payments is difficult. Most previous efforts to provide conservation alternatives that meet the logging opportunity costs have failed.[41] Yet at the same time, questions have been raised about the contribution of logging in PNG.[42] According to the PNGFA, significant funding is needed to support the limited staff and capacity that is required to be out monitoring and reporting on logging operations. The JICA funding covers technical capacity in terms of GIS and RS hardware and software including the acquisition of satellite imageries while the EU funding covers the multi-purpose forest cover inventories. The monitoring and reporting component of field activities need serious funding support in terms of enhancing existing staff and recruiting new staff since annual government funding is insufficient.

According to PNG's Forest Industries Association, the timber industry provides jobs to only around 9,000 people, mostly located in remote areas where few other forms of employment exist. NGOs and the

[39] Land Groups Incorporation Act 1974, s 2(2).
[40] Independent Review of Disputed Timber Permits and Permit Extensions (2003) established by the PNG Government in 2003 to review issues surrounding a proposed World Bank loan to improve forest management. The loan was not taken and the review was not completed.
[41] See Race for the Rainforest: Evaluating Lessons from an Integrated Conservation and Development "Experiment" in New Ireland, Papua New Guinea, by Rob McCallum and Nikhil Sekhran, UNDP, 1997.
[42] Drawn from www.odifpep.org.uk/activities/environmental_governance/S0153/png_paperthree_issues.pdf

Review Team preparing the 2009 NP submission, however, assert that these are generally lowly paid jobs that require little training and contribute little to long-term welfare of the local population. Many of the higher-skilled positions are filled by foreign labour.

In addition to providing jobs, logging operators construct infrastructure, as well as health and education facilities, as part of the concession agreements. There is considerable debate about the sustainability and quality of the infrastructure/services provided. The Review Team describes operator performance as under par, while Rimbunan Hijau has commissioned a number of reports to demonstrate the lengths to which it goes to provide infrastructure and services to the landowners and its employees.[43] Under the post-1991 Forest Management Agreements, companies pay for the construction of facilities but are no longer responsible for putting them in place.

The forestry sector has contributed 3.8 percent to PNG's GDP in 2008, and provided 0.3 percent of employment in the formal sector. In 2009, approximately 2.8 million m^3 of logs were harvested. Of the country's total logs harvested, 80 percent is exported as round logs while 20 percent or less is processed locally. Domestic timber processing is not well developed in PNG although considerable tax incentives and current 'zero' tax on export of processed timber is offered. The major domestic export products are sawn timber, plywood, veneer and Balsa wood products.

Table 5. Declared log harvest and round log exports, 2001-2009

Year	Volume Harvested (m^3)	Volume Exported (m^3) – Round Logs
2009	2,802,277	2,066,854
2008	2,755,554	2,514,915
2007	3,481,617	2,835,402
2006	3,389,891	2,638,296
2005	2,832,162	2,282,414
2004	2,776,900	2,012,136
2003	2,100,284	2,015,208
2002	2,140,953	1,853,549
2001	1,646,047	1,556,220

Source: PNGFA Field Services Division, *PNGFA - SGS monthly reports and database*

Commercial logging operations are permitted under the following categories:

- Timber concessions approved under timber permits;
- Allocation of small timber resource areas under timber authorities;
- Allocation of large-scale forest conversion for agriculture development and road construction under the National Agriculture Development Program (NADP).

Commercial Timber Operations

Commercial logging operations are permitted in timber concessions approved under Timber Permits governed by Section 73 of the Forestry Act. A Forest Management Area (FMA) is applied to a natural forest area identified for commercial development by PNGFA, where rights have been acquired from customary landowners for a period of 50 years to manage and commercially develop their forests. This is the current forest management regime employed by the PNGFA. Under this arrangement, the

[43]See www.forestryanddevelopment.com/

concession holder can operate within the timber concession for 40 years.[44]

In 2009, there were about 55 approved timber permit operations in the country with a total committed forest area of 9 million hectares of lowland forest.

Allocation of small timber resource areas under timber authorities

A Timber Authority approved under Section 87 of the Forestry Act is granted to enable the supply of timber to sustain small-scale sawmilling, and to clear land for small-scale agriculture development at the village level. A Timber Authority is issued up to an aggregate amount of timber to be harvested annually of 5,000 m^3 or clearance of less than 50 hectares of trees. It is issued by the Chairman of the Provincial Government Committee responsible for forestry matters. Issuance is based on the advice of the Provincial Forest Management Committee (PFMC). The National Forest Board gives consent for the endorsement of Timber Authorities. As of December 2009, a total of 62 Timber Authority applications were processed by PNGFA and referred to the respective PFMC to approve and issue to the various forest industry participants throughout the provinces, primarily for domestic processing operations.

Timber authorities can provide an important opportunity for landowners to participate in and manage small-scale timber operations, as well as contribute to rural development. However, it must be acknowledged that there are challenges to ensure sustainable harvesting and compliance within these areas. The smaller volumes and fragmentation of TAs can reduce incentives to demonstrate sustainability or compliance and makes comprehensive capacity building and monitoring costly and difficult to enforce.

Reforestation

Plantation forestry remains small in PNG, but the development of reforestation is important to PNG as it can ease the pressure on logging of native forests and help to maintain a sustainable forest industry as per GoPNG policy.

Figures for 2004 indicate 52,000 ha of reforested area of which around 60 percent was managed by the private sector and the remainder by GoPNG (Bourke and Harwood 2009).[45] In 2004, the volume of plantation timber was 247,214 m^3, valued at 46 million Kina. This seems to have slightly grown to 62,000 ha by 2008 (PNGFA 2010).

The largest plantations are in East New Britain, West New Britain, and Morobe Province, Highlands and in Madang Province. These plantations accounted for 70 percent of total plantations in PNG, while the rest was distributed in 13 locations in 10 provinces (Bourke and Hardwood 2009).

The PNGFA (2010) has stated that the future of forests in PNG lies in plantation development as the forest resources that are accessible and commercially viable are diminishing at a fast rate. The PNGFA has also formulated a policy on reforestation that is supported by a Plantation Development Program that aims to establish 240,000 ha by 2030.

There are significant tenure and socio-economic barriers to more rapid expansion of plantation forestry. Particularly hardwood plantations take a long lead time before harvest and customary landowners are reluctant to wait for long periods to generate incomes. Coupled with limited engagement of the forest industry and limited downstream processing facilities to date, this has prevented a rapid growth of this forestry subsector. The PNGFA also claims that a major constraint to expansion of plantation was a lack of capacity and resources within the authority.

A successful expansion of afforestation and reforestation activities will require a joint approach by GoPNG, the private sector and landowners in order to address barriers to access, increase investor confidence, and provide mechanism to provide land-owners ownership of such projects. One such potential approach could be through a broader promotion of community forestry extension programs. As

[44]Residual or undersized trees left behind by the initial logging operation will have grown to an acceptable size of more than 50 cm diameter breast height within 40 years (changed from 35 years as of 1 January 2010), thus the resource can be managed and developed in a sustainable manner till the next cutting cycle.
[45]See Bourke, M and Harwood, T (2009) Ed, Food and Agriculture in Papua New Guinea, ANU, Press, Canberra

an important step forward, funding support from the R-PP would be utilised to support the review of existing forest extension programs and increase the areas of plantation forestry throughout PNG.

Special Agriculture and Business Lease System (SABL)

Based on data from DAL, PNGFA, DEC and OPRA, up to an estimated 2.3 million ha of primary and secondary forest lands have been allocated for agricultural use and therefore might be eligible for clear-cut logging. Out of this 2.3 million ha, roughly 670,000 ha have already received Forest Clearance Authorities (FCA) and Environment Permit (EP).

In May 2011, then acting Prime Minister Sam Abal appointed a Commission of Inquiry into potential abuses of the Special Purpose Agriculture and Business Lease (SABL) system, particularly the use of SABLs to secure Forest Clearance Approval for timber harvesting of large virgin forest areas.The Commission originally had until September 2011 to investigate and make recommendations on reforms that will allow the government to mitigate between climate change issues, development needs and landowner issues. Abal also issued an immediate moratorium on the granting of any new SABLs, FCAs and EPs. In ordering the inquiry Abal cited the "rampant abuse" of the laws, regulations, and procedures concerning the granting of these leases. While Commission members were appointed in July 2011, its report was only finalised in May 2012. The Commission of Inquiry will present its report to the Prime Minister for presentation to Parliament as required under the Commission of Inquiry Act.

E. Policy and Legal framework for REDD+

Overview of PNG Legal system

As a legacy of its colonial rule, PNG has Westminster parliamentary system and common law with significant local adaptations. Fundamental rights and freedoms are enshrined in the Constitution, and custom is incorporated as part of the underlying law.[46] The judiciary has an overall reputation as being independent, though its effectiveness is hampered by issues of capacity and resources.

The effectiveness of legal and justice services affected by years of inadequate coordination and poor administration, created a gap between those who can afford to seek legal redress through the courts, and majority who are unable to. Availability of independent legal information and advice is limited to those who can afford lawyers.

The complexity of law and order problems, embedded in cultural, economic and political transformations, makes it a challenge to govern in PNG. Crime and violence are common features of urban life with increasing rural-urban migration of unemployed youths. Tribal conflicts are a major cause of tensions in the highlands region and often related to resource developments. Significant on-going reform Programmes aimed at addressing issues of law and order are achieving gradual results. The Government's ambitious law and justice reform under the White Paper 2007[47] has begun to build institutional capacity especially within the courts (including village and local land courts), correctional services and state law offices.

Natural resource use and management

PNG's legal framework is segregated with each sector having its own regulations on natural resource development. All large-scale development activities are subject to the requirements of the Environment Act and regulations, administered through the Department of Environment and Conservation (DEC). Landowner activities, especially through subsistence activities, remain unregulated.

Over the last 20 years, forest-related laws have evolved toward increasing government control of forest areas. This change has been aimed at enhancing sustainability and overall sector efficiency. However, implementation of the laws and associated codes of conduct often has been difficult because of political

[46] Schedule 2.1.1 of the Constitution adopts custom as part of the underlying Law. The Customs Recognition Act of 1963 further sets out the role and application of custom.
[47] See PNG's White Paper on Law and Justice 2007.

ambivalence and governance problems, and an apparent shortage of human and financial resources to effectively ensure enforcement.

These challenges have been outlined in a number of reports, including reviews of the administration and practice of the logging industry commissioned by GoPNG between 2000 and 2005, and supported by the World Bank.[48] While the reviews found that all but 5 of 32 proposed new logging projects had so far fulfilled "due legal process", shortcomings were also identified that undermine national efforts to achieve economically and environmentally sustainable forest management. Similarly, an International Tropical Timber Organization (ITTO) "Diagnostic Mission to PNG" in 2007 found that PNG has "many solid acts, laws and legislation in place, but implementation are problematic due primarily to administrative and governance constraints and intervention."[49] Particular constraints that the study identified were that the "human resources of both PNGFA and DEC, especially the field staff, appeared overworked, under resourced and, therefore, not surprisingly, unmotivated" and that "they lack facilities" to implement their mandates.[50] The PNGFA is aware of these challenges has complemented efforts to improve policy to enhance the capacity to monitor and enforce government regulations.

Following the Forestry Commission of Inquiry (or Barnett Commission) a considerable amount of new forest policy and legislation have been introduced.[51] These include:

- ***National Forest Policy***: was issued in September 1991 by the National Executive Council and covers the areas of forest management, forest industry, forest research, forest training and education, and forest organization and administration.
- ***Forestry Act, 1991***: was gazetted in June 1992 as a direct result of the Commission of Inquiry, and provided for the establishment of the new and semi-autonomous Forest Authority to replace the old Department of Forests. The Act provides for much tighter controls in the acquisition and allocation of land for forest development.
- ***Forest Regulation No. 15, 1992***: specified the procedure to enable registration of forest industry participants and consultants under the Act.
- ***Forestry (Amendment) Act, 1993***: was certified in April 1993 and provided for a clear administrative function of the National Forest Board, and of the National Forest Service through the Managing Director and the Provincial Forest Management Committees.
- ***National Forest Development Guidelines, 1993***: were issued by the Minister for Forests and endorsed by the National Executive Council in September 1993. The Guidelines established an implementation guide for aspects covered in the new Forest Act, especially in terms of sustainable production, domestic processing, forest revenue, training and education, review of existing projects, forest resource acquisition and allocation, and sustainable development.
- ***National Forest Plan***: under the Forestry Act of 1991 (as amended), PNGFA has been required to prepare a National Forest Plan to provide a detailed statement of how the national and provincial governments intend to manage and utilize the country's forest resources. The National Forest Development Program (NFDP) under the Plan is now under implementation.
- ***Logging Code of Practice, 1996***: was finalized in February 1996 and tabled in Parliament in July 1996. This PNG code is inconsistent with the Regional Code proposed at the 1995 Suva

[48] Review of Forest Harvesting Projects Being Developed Towards a Timber Permit of Timber Authority (2000-01); Review of the Forest Revenue System (2001-02); Independent Review of Disputed Timber Permits and Permit Extensions (2003); Review of Current Logging Projects (2004-05); and Compliance Audits (2004-05)
[49] ITTO (2007) 'Achieving the ITTO Objective 2000 and Sustainable Forest Management in Papua New Guinea – Report of the Diagnostic Mission', Executive Summary, p. 5
[50] Ibid, p. 3
[51] The text of this section is borrowed from the page "Forest laws of PNG" on the Internet site of the Forest Authority (http://www.forestry.gov.pg), and from the 1997 FAO document Asia-Pacific Forestry Sector Outlook Study: Country Report - Papua New Guinea. (Asia-Pacific Forestry Sector Outlook Study Working Paper No: APFSOS/WP/47).

Heads of Forestry Meeting but is more specific to PNG operating conditions. It has been mandatory as of July, 1997, but will shortly be undergoing review.

- ***The 1996 Forestry Regulations***: cover all facets of the industry procedures and control, and were approved by the National Executive Council in 1996, and finalized soon after with some changes. These Regulations provide the legal status for the implementation of many of the requirements specified under the Forestry Act 1991 (as amended).
- ***Forestry (Amendment no. 2) Act, 1996***: was passed by Parliament and certified on the 11 October 1996. The major amendment relates to the membership to the Board to still have eight members, including the representatives of a National Resource Owners Association and CSOs/NGOs. Further amendments were made in 2000 and 2005.
- ***Environment Act, 2000:*** provides the administrative mechanism for the evaluation of impacts on the environment through an environmental approval and permitting system under the administration of the Department of Environment and Conservation (DEC).
- ***National Forestry Development Guidelines, 2009***: act as an update to previous (1993) guidelines and set out the objectives for the Forestry Sector in PNG. They also recognize climate change initiatives under the United Nations Framework Convention on Climate Change (UNFCCC).
- ***Forestry and Climate Change Framework for Action 2009 – 2015*** *(FCCFA):* and outlines the priorities for the GoPNG regarding sustainable development in the forestry sector.

The amended Forestry Act (1991) primarily governs the forestry sector and provides for resource acquisition, allocation and regulation of large-scale industrial logging operations. The main legal components include: requirements for informed consent from customary resource owners, issuance of permits authorizing felling and removal of trees from an area, subcontracting of rights and obligations under logging permits, sustainability of timber harvests, valid environmental plans, and 24 key elements of a logging code of conduct.

Apart from the Forestry Act and regulations, key legal instruments relating to the environment include: the Constitution, which recognizes customary rights of ownership to natural resources and embodies the goal of sustainable development; the *Environment Act 2000* (and regulations), the Environmental Planning Act and the various other legislation governing use of customary land (including *Land Groups Incorporation Act 1974* (as amended).

The requirement for sustainable use of natural resources is enshrined in the preamble of the Constitution and the Forestry Act. In addition to Goal Four of the Constitution, the development direction under Goal Five calls for development to be achieved primarily through the use of PNG's social and political structures. This requirement has been largely ignored. Since the inception of the Act and 1991 National Forest Policy, development of forests in the country has been driven by political demands and economic factors towards large scale industrial logging that is unsustainable.

Forest management under the current regime has reportedly been poor with little regard paid to legal requirements for sustainability, biodiversity conservation, and equitable benefits sharing from the development of forest resources.[52] Landowner participation in practice is minimal (to the extent of the signing of a Forest Management Agreement - FMA) with the law giving no further guidance on their involvement throughout the processes of resource acquisition and allocation.[53] The use of landowner

[52] See for example, recent review and reports including, Forest Trend 2006. *Logging, legality and livelihoods in Papua New Guinea: synthesis of official assessments of the large-scale logging industry*. Vol 1; ODI, 2007 *PNG Forest Studies,* Part 1-2; ITTO 2007, *Achieving the ITTO Objective 2000 and Sustainable Forest Management in Papua New Guinea: Report of the Diagnostic Mission*.

[53] Land owner participation in the forestry sector is poorly managed with lack of clear guidelines under the policy. Landowner consultation was also required under selection of a project developer. In 2005, the Government had an amendment Bill passed to do away with the Section 59(a) requirement with an amendment to s 57.

companies and currently, Incorporated Land Groups (ILG), are poor mechanisms to enable equitable benefit sharing. The abuse and misuse of ILGs is widely reported resulting in the current legislative reforms to the *Land Groups Incorporation Act 1974*.

The relevant agencies responsible for development of forests include the PNGFA, DEC, and the Departments of Labor, Agriculture and Livestock, and Lands and Physical Planning. The National Forest Service (NFS), an agency of the PNG Forest Authority and DEC share the responsibility for monitoring compliance of terms of the FMA. Various reviews of the forestry sector highlight the lack of capacity within each of these agencies to implement and enforce their own legislation.

The Forest and Climate Change Framework for Action 2009-2015 (FCCFA)[54] sets forth a future climate change policy with focus on the forestry sector in PNG and a general implementation and monitoring framework, including for the CDM mechanism and REDD+. Thus, the FCCFA can inform the current discussions towards a REDD+ framework for PNG, although the forestry sector will need to evolve in the implementation of its laws and policy to cater for REDD+ initiatives. The FCCFA focuses on seven main issues:

- Ownership of carbon credits
- Implementing adaptation measures
- Contributing to mitigation of greenhouse gas emissions
- Improving decision-making and governance
- Improving the understanding of forestry and climate change
- Education and awareness
- Partnerships and cooperation

The regulatory and policy action above outlines some of the initiatives taken by the PNGFA to move the PNG industry to a more sustainable development path to reflect both PNG's international efforts in REDD+ and domestic priorities set by the Government. The Logging Code of Practice has been reviewed in recent years to improve the standard of logging operations in the country. In addition, the PNGFA is developing a plantation recovery strategic plan to revive and bring some of the existing plantations, particularly those managed by GoPNG, back to sustainable and commercial levels.

Recently, PNGFA sought NEC approval for a forest and climate change policy integrating climate change and conservation issues in its forestry operations. Under the Forestry legislation, areas of conservation value could be set aside as 'reserves' within Forest Management Areas earmarked for large scale logging.

The PNGFA is also refining its strategies to move the forest industry to a more sustainable level. In September 2009, for example, the Minister for Forests announced that no new FMA timber concessions would be allocated with round log export entitlements.

For the forestry sector in the first MTDP (2011-205), GoPNG will focus on improving forest policy and regulation, thus requiring a review of all existing policy documents within the framework of objectives and practices of the PNG Forest Authority (PNGFA). This includes:

- an overview of the National Forest Policy to better address operating challenges of new initiatives related to international environmental issues;
- the progressive evolution of PNGFA activities in areas such as the phasing out of log exports, research,
- carbon trading, operation of the State Marketing Agency, revenue arrangements under financial autonomy, etc;

[54]Forestry and Climate Change Policy Framework for Action. PNG Forest Authority, August 2008.

- continuous review of the PNGFA's corporate plan to ensure it is in line with government policy and the needs of PNG;
- the development of national enterprises within the forestry sector; and
- preparation of all subordinate policy documents including for reforestation and processing and phasing out of log exporting.

The PNGFA will continue to improve field manuals to assist field officers in their duties. Operational reviews of field practices should be of a procedural and structural nature to improve management of the nation's strategic forest resources. The establishment of financial autonomy will significantly assist capacity development of the PNGFA's role under the objectives of the Forestry Act. It is anticipated that financial autonomy will assist greatly in reversing the current negative trends in PNGFA capacity and enable much needed sustainable reform to proceed with significant dividends directed to the National Government.

The application of the National Forest Policy and Forestry Act has resulted in the development of existing systems and practices. The forestry sector is tasked to: increase processed timber exports to 80 per cent of all forestry exports by 2030 from the current rate of 20 per cent; have plantations produce all logs and manage forests by 2030; and increase plantation forests from 62,000hectares to well over 150,000 hectares by 2030. The policy and regulatory framework will form the basis for other strategies to be implemented in subsequent MTDPs.

Internationally, PNG's forestry sector will be increasingly affected by legislation in major markets aimed at increasing the legality of imported wood and wood products. This includes, for example, amendments to the U.S. Lacey Act, EU Timber Regulation and the Forest Law Enforcement, Governance and Trade (FLEGT) action plan, as well as forthcoming Australian due diligence legislation. All are likely to have major impact on timber supply markets in general and in timber producing countries like Papua New Guinea in particular.

Service delivery

Remoteness of communities, state weakness, poor planning processes, corruption and political patronage are key factors hampering effective implementation service delivery in PNG. Significant deterioration in rural service delivery after independence led to changes brought in under the *Organic Law on Provincial and Local-Level Governments1995* (OLPLLG). Implemented in 1997, the OLPLLG is essentially an attempt to decentralise government functions and responsibilities by devolving substantial financial management functions and responsibilities such as planning, budget and finance to the sub-national level (Provincial, District and Local Level Administrations and Treasuries), although management of forest resources is still the mandate of the PNGFA. The OLPLLG introduced to the provincial and local level governments (LLG) new institutional restructures and attendant legal powers, funding arrangements, staffing and other administrative structures. Since the introduction and implementation of the OLPLLG, PNG has gone through an extensive process of national and provincial capacity building in order to apply and comply with the requirements of the law.

However, this process is far from completion and continuing problems prevail especially with regard to the management of financial resources at the provincial and lower level. The changes to these reforms include little public involvement in planning and budgetary process.As a result, the delivery of basic services in the provinces is sub-standard even though it varies among different provinces.

Although the New Organic Law established decentralized responsibilities and authority across three levels of government in a more equitable sharing arrangement, it did not adequately address implementation issues.

Central, line, provincial and local-level government agencies were left to legislate their respective administrative functions and responsibilities with respect to other government agencies. Inadequate guidance and management of this process has resulted in incomplete and open-ended arrangements, with responsibilities poorly matched to authority. Roles and responsibilities under OLPLLG remain unclear and at the lowest level; LLGs meant to deliver services remain weak with little capacity and no control over budget allocations. In most cases, development and service delivery is dominated by

national Members of Parliament with access to sizeable District Grants.Lines of authority between the three tiers of government are insufficiently developed, and transparent and accountable procedures and systems to enhanced decentralization of service delivery remain a huge challenge. In reality, decentralization may have caused accountability at all levels to decrease.[55]

Such challenges are well associated with PNG's complex geographical and cultural diversity. As captured above, periods of decentralisation have not really improved service delivery at the provincial and district level as intended by the OLPLLG. If it had, this would have been the most effective avenue of fostering greater indigenous participation, as per the aspiration of the national government. However, recent improvements within this system have been initiated between GoPNG and Australia through the Sub-National Strategy (SNS), with the aim of improving service delivery through the strengthening of institutional governance at the provincial and district levels.

The effective implementation of REDD+ initiatives will require political will and a shift in priorities by the national government away from development through reliance on large-scale industrial logging and agricultural monocultures in lowland forests. It will also require collaboration between all tiers of government and among many government agencies, and between these government institutions and civil society. Climate change and REDD+ policy is necessarily cross-cutting and needs linkages between the policies for national planning, forestry, environment, and agriculture, among others.

Workplan

Presented below are the activities PNG will undertake under this component of the R-PP:

Activity 2a.1 Better understand the various actors and drivers of deforestation in PNG

- Carry out studies on drivers of deforestation including REDD+ benefits tailored towards addressing these drivers
- Incorporate results of studies into REDD+ strategy

Activity 2a.2 Conduct a review of the forestry law

- Conduct a review of the existing forestry law and regulations, including case studies
- Conduct a review of governance mechanisms
- Commission research study on carbon rights and ownership

Activity 2a.3 Better understand land use and ownership issues in PNG

- Conduct a study on major forms of land use, including incorporation ILGs, social mapping and population projections studies
- Support sub-national and community level land use planning and boundary demarcation including the exploring of land registration versus customary land participation in REDD+
- Incorporate results into REDD+ implementation framework

Activity 2a.4 Further enhance and expand existing forest plantations and increase the total area

Activity 2a.5 Conduct a review of the forestry law including the reviews of provincial forestry plans (PFPs), concessions and the development of two new PFPs for the newly established Provinces of Jiwaka and Hela

[55]From www.adb.org/Documents/Reports/CGA/CGA-PNG-2006.pdf

Activity 2a.6 Support and enhance the NFS officers to conduct effective monitoring and reporting on all logging activities

Table 2a. Summary of Assessment of Land Use, Land Use Change Drivers, Forest Law, Policy and Governance Activities and Budget						
Main Activity	***Sub-Activity***	***Estimated Cost (in thousands)***				
		2012	***2013***	***2014***	***2015***	***Total***
Better understand the actors and drivers analysis	*Carry out studies on drivers of deforestation*	*$*	*$*	*$100*	*$100*	***$200***
	Incorporate results of studies into REDD+ strategy	*$*	*$*	*$20*	*$20*	***$40***
Conduct a review of the forestry law	*Review of existing forestry law and regulation, including case studies*	*$*	*$*	*$50*	*$50*	***$100***
	Review of governance mechanism	*$*	*$*	*$50*	*$50*	***$100***
	Review of provincial forestry plans including concessions		*$20*	*$20*	*$20*	***$60***
Support monitoring & reporting capacity of NFS			*$20*	*$20*	*$20*	***$60***
Support plantation forestry extension			*$30*	*$30*	*$30*	***$90***
Formulate land tenure arrangements under REDD+	*Study on major forms of land tenure and ownership (including ILGs), potential for REDD+, and alignment with safeguards*	*$*	*$*	*$70*	*$60*	***$130***

	Support sub-national and community level land use planning and management for REDD+ through examination and piloting of ILG incorporation, registration and management process					
	Incorporate results into REDD+ implementation framework	*$*	*$*	*$50*	*$70*	***$120***
Total		***$***	***$70***	***$410***	***$420***	***$900***
Government		*$*	*$10*	*$10*	*$10*	*$*
FCPF		***$***	***$60***	***$400***	***$410***	***$870***
UN-REDD Programme		*$*	*$*	*$*	*$*	*$*
Other Development Partner 1 (name)		*$*	*$*	*$*	*$*	*$*
Other Development Partner 2 (name)		*$*	*$*	*$*	*$*	*$*

2b. REDD-plus Strategy Options

A. Background

REDD+ strategy options are needed to clearly determine and align key GHG abatement activities to national level policies and strategies on climate change. This include the identification of the drivers of deforestation and forest degradation and the proposed strategies to address these drivers in a coordinated manner taking into account the social and environmental impacts, safeguards and governance issues and overall impact to PNG's development aspirations. It also includes the alignment of key sectors and stakeholders and identifying synergies within these sectors to ensure successful REDD+ implementation.

B. National climate change and development strategies

C. 1. Long Term Policy : Vision 2050 and the DSP 2010-2030

Papua New Guinea Vision 2050 (Vision 2050) is the country's unified strategic vision for socioeconomic growth that aims to build a "Smart, Wise, Fair, Healthy and Happy Society." Vision 2050 identifies the main challenge of socioeconomic growth to be shifting an economy dominated by the mining and energy sectors, which together represent over 80 percent of PNG's export revenue, towards agriculture, forestry, fisheries, eco-tourism and manufacturing by 2050.Environmental sustainability and climate change represent one of seven pillars of Vision 2050, and many of the targets for achieving environmental sustainability and addressing climate change relate to REDD, including:

- Reduce greenhouse emission by 90 percent to 1990 levels;
- Establish a Sustainable Development Policy in all sectors, especially forestry, agriculture, mining, energy and oceans by 2015;
- Develop mitigation, adaptation and resettlement measures in all impacted provinces by 2015;
- Conserve biodiversity at the current five to seven percent of the world's biodiversity;
- Establish a total of 20 national reserves, wilderness areas and national parks.

2. Medium Term Development Policy: MTDP 2011-2050

All future medium- to long-term strategies and plans must flow from the PNG Vision 2050.The Papua New Guinea Development Strategic Plan, 2010-2030 (DSP) is the long-term, 20-year development blueprint for the country, mapping how to achieve the PNG Vision 2050 through broad frameworks, targets, and strategies. The Medium Term Development Plan, 2011-2015 (MTDP)(October 2010)lays out the sector targets for the DSP.

The advancement of REDD+ is consistent with the overall goal of climate-compatible low carbon development as articulated in the draft Climate-Compatible Development Strategy (CCDS), released by the DEC in March 2010. The CCDS outlines the overall strategic direction for the country to achieve the Vision 2050 goals of 50 percent net GHG emission reductions by 2030 and carbon neutrality by 2050, based on PNG's net GHG emissions profile and the corresponding abatement opportunities. PNG has also developed an Interim Action Plan (August 2010) as a practical step toward realizing a 50 percent decrease in PNG's emissions by 2030 as set out in Vision 2050. Through the Interim Action Plan, PNG's climate change objectives have also been integrated into the MTDP. The Interim Action Plan outlines immediate priorities and actions for the next 6-12 months to set PNG on this path, including stakeholder awareness building and capacity development for all the stakeholders included in the process.

3. National Climate Change and Development Policy and Legislation

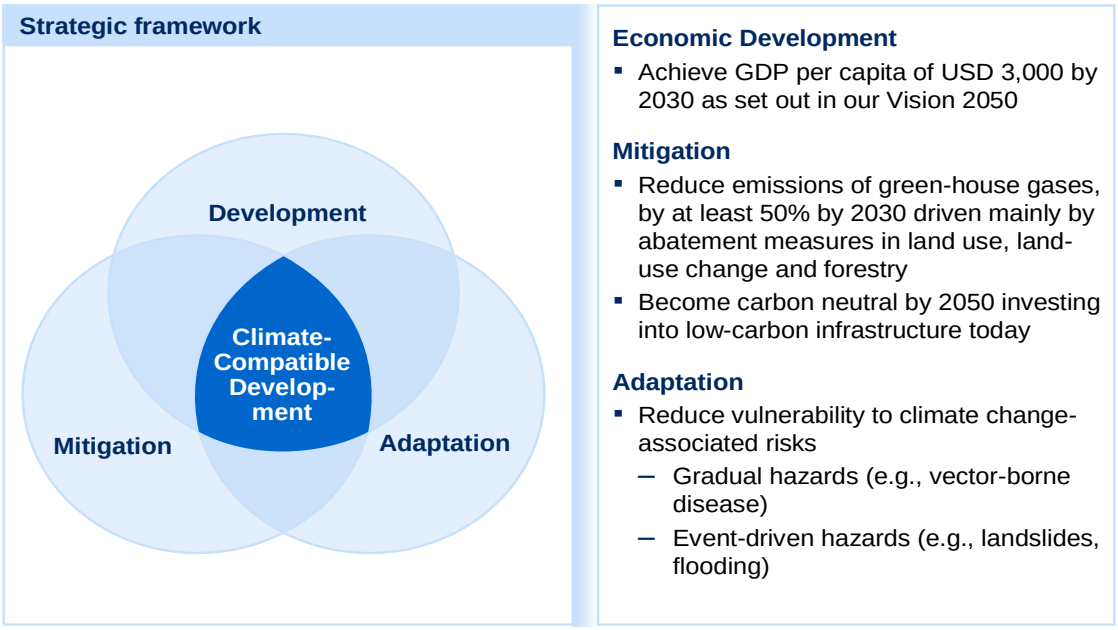
The National Climate Change and Development Policy (NCCDP) was developed by the government of Papua New Guinea through the OCCD with direction and advice from other government stakeholder representatives, and endorsed for development by the NCCC.

By adopting the core elements of the CCDS and the Interim Action Plan, the NCCDP recognized that economic development must be combined with climate change mitigation and adaptation measures as the core climate-related challenges that PNG faces:

- Promotion of economic development through low-carbon growth;
- Mitigation of net GHG emissions through participation in a global REDD+ scheme; and
- Adaptation to climate-related hazards.

The confluence of these three objectives forms the heart of PNG's climate-compatible development strategy, which will foster environmentally sustainable economic growth while capturing the opportunities of carbon mitigation and protecting against the perils of climate-driven hazards.

Figure 7.PNG's Climate-Compatible Development Strategy



Source: OCCD, 2012

4. The National Climate Compatible Development Strategy (CCDS)

The NEC in 2010 endorsed the main elements of the national CCDS (NEC Decision 55/2010, see box 1).

Box 1: Main principles, themes and intended actions contained in the Executive Summary of the Report on Climate-Compatible Development

On 22nd March 2010, Council . . . endorsed and supported **as a matter of National priority**, the main principles, themes and intended actions contained in the **Executive Summary of the Report on Climate-Compatible Development** as follows:

(i) That mitigation of and adaptation to climate change are inseparable from economic development and future prosperity of the people;

(ii) That the national strategies and plans on climate-compatible development are to be adopted and incorporated into the other national development strategies and plans, including the **Vision 2050** and the (renewed) **Medium Term Development Plan**;

(iii) That it is necessary to reform (and in some cases to create) institutions and bureaucratic arrangements to facilitate implementation of the National Strategy on Climate-Compatible Development, taking care to ensure that there is no overlap or duplication of activities with other branches of government or the Prime Minister's Department;

(iv) That a review is necessary of all national development policies and plans which impinge upon and are affected by climate change mitigation, adaptation, and low carbon growth, to ensure climate compatibility;

(v) That research and development is commissioned and conducted to support the development of a comprehensive greenhouse gas inventory and a more comprehensive understanding of the impacts of climate change on the Country;

(vi) That collaborative efforts by stakeholder agencies and inputs from development partners must be coordinated and used to improve upon the Government's preliminary policy initiatives;

(vii) That arrangements for Measurement, Reporting and Verification (MRV) and benefit sharing must be developed such that resource owners' rights and interests are protected and that they share in the benefits from greenhouse gas mitigation schemes, including REDD-PLUS;

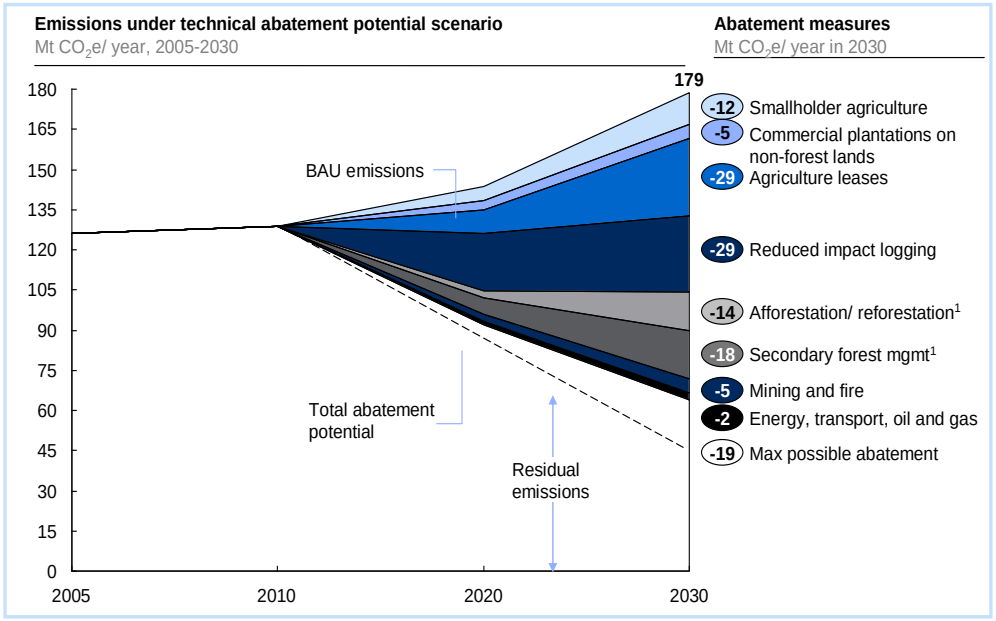
(viii) That pilot projects, demonstration projects and Programmes are established and managed by relevant departments and agencies, to improve knowledge and technical capacity on mitigation, adaptation and low-carbon growth, with a view to incorporating lessons from them into the policy framework and legislation; and

(ix) That a financial strategy be developed in tandem with the above stated activities, to request assistance

For every driver of deforestation and degradation there are multiple abatement options, ranging from full abatement resulting from ceasing an activity, to partial abatement from reducing an activity's carbon intensity. Full abatement of emissions from subsistence agriculture, for example, would require stopping subsistence agriculture altogether, which is clearly not a feasible option. Agricultural extension programs however provide an alternative means reducing emissions related by helping communities to use their agricultural land more effectively, thereby reducing the pressure on forests. Similarly, maximum abatement in the forest sector would be achieved by stopping logging altogether. Such an approach may have conservation merits, but is not strictly required for REDD+. Reduced impact logging could be one alternative option to reduce emissions, particularly for existing concessions. REDD+ opportunities need to be carefully balanced with other important considerations such as economic development.

Figure 8 sets out the growth in emissions forecast under BAU and potential emissions reductions from the most important abatement levers under a strategy which encompasses abatement measures that are broadly compatible with the continued development of the forestry and agriculture sectors. Such measures do not generate the maximum potential abatement, but they do achieve considerable reductions while preserving economic growth. WhileFigure 8presents the overall abatement potential for this strategy, it is important to note that the realized abatement volume will depend on the extent of the implementation of the individual abatement levers.

Figure 8.Projected emissions reductions potential by 2030

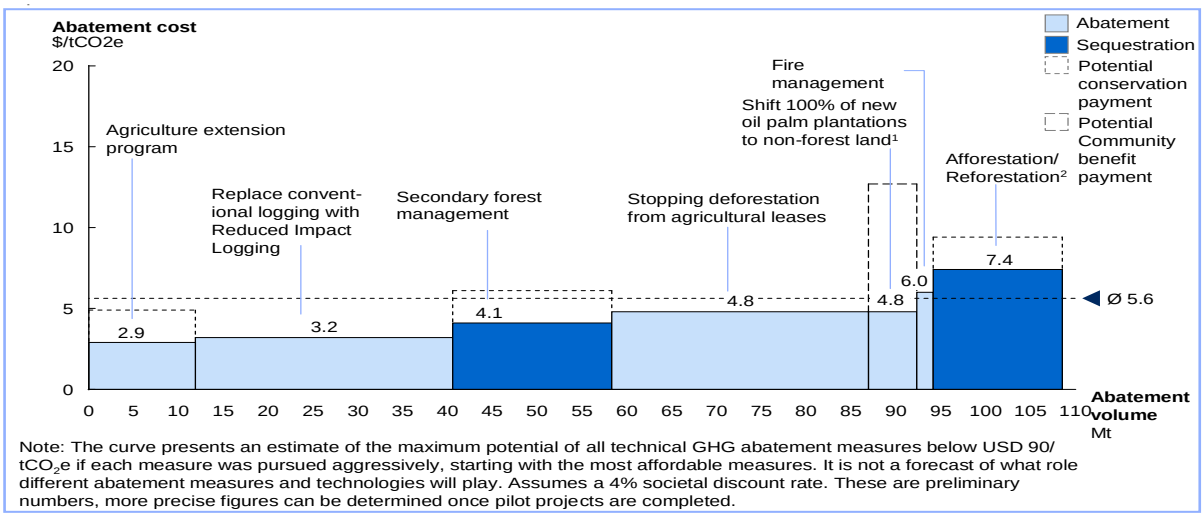


1 A/R and secondary forest management are not emission reduction initiative, but carbon stock enhancement initiatives
2 Assuming A/R abatement potential comes from its usage as conservation areas. If the areas will be used for plantation forestry, further research/analysis is need to calculate the abatement potential
SOURCE: REDD+ technical working group

The theoretical cost of abatement measures such as these is estimated at approximately USD 5.6 per tCO_2e, amounting to ~USD 5.9 billion through 2030. Naturally, these reductions are conditional on an international agreement that will fund REDD+ so that Papua New Guineans are compensated for the ecosystem services and mitigation benefits they contribute to the world, and for the resulting changes to their incomes and livelihoods. Figure 9 below shows the cost curve for the abatement measures related to LULUCF, with the lowest cost measures on the left side near the axis and the most expensive on the

right side.[56] Overall, these measures would reduce emissions by approximately 60-80 percent compared with the BAU scenario.

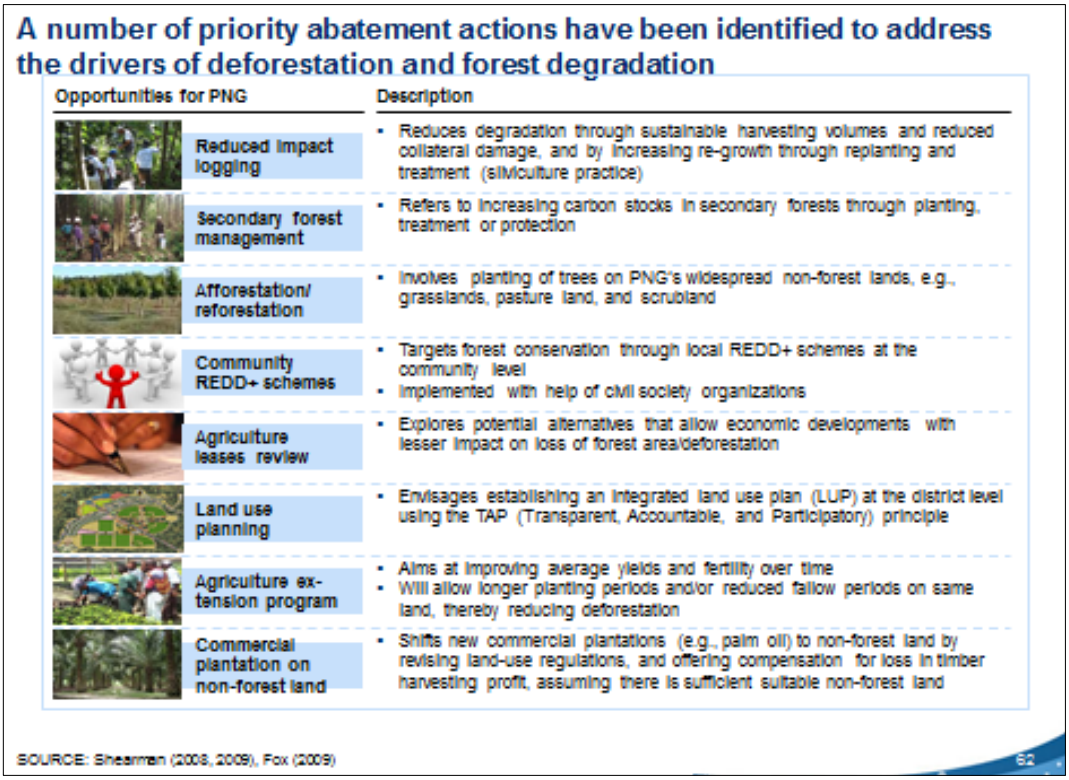
Figure 9. Abatement potential related to LULUCF by 2030



1 Abatement cost is calculated based on foregone profit from timber produced by clearing forest, assuming zero additional cost of establishing oil palm plantation on non-forest land. Further discussion is needed to determine oil palm community benefit payment
2 Assuming A/R abatement potential comes from its usage as conservation areas. If the areas will be used for plantation forestry, further research/analysis is needed to calculate the abatement potential
SOURCE: REDD+ technical working group

[56]Unit costs per tonne of CO_2e abated are calculated based on cost of programmes, with the exception of agricultural leases and shifting oil palm plantations which also include opportunity cost in the form of compensations for stakeholders that would lose revenue or income from a change in activities.

Figure 10. Priority abatement options identified to date



Source: REDD+ Technical Working Group

The abatement measures are all subject to the national consultation process and have not yet become domestic policy. Their translation into policy is contingent upon a piloting and demonstration phase and in some cases on international support. Each measure is described below:

- Increasing yields in subsistence and smallholder agriculture by **investing in agricultural extension programs and market access** could save 9-15 Mt CO_2e by 2030 on the premise that 25 percent of farming communities improve their methods and preserve current forest coverage. The abatement effect of these measures is unproven, but they are likely to increase rural incomes and food security, so have value going beyond climate change mitigation.[57]

- **Stopping deforestation from agriculture leases** could save ~27-30 Mt CO_2e per year by 2030 if ~60-80 percent of the ~670,000 ha of approved agriculture leases (as of May 2010) could be withdrawn (roughly 40,000 ha are estimated to have already been logged). These ~670,000 ha only include projects with full approval from PNGFA and DEC. It is assumed that starting 2015, some of the land deforested for agriculture leases areas will be used for commercial agriculture plantations particularly oil palm, which is considered a separate driver of deforestation in the period from 2010 to 2015. Moreover, agriculture leases may be perceived as an alternative source of timber production with more limited regulation that might replace some of the production from existing and new FMA (Forest Management Agreement) areas. Additional agriculture leases that have not yet obtained final approval have not been included in these calculations. As agriculture leases are one of the main drivers of the projected increase in GHG emissions between 2010 – 2030 in their current form and because

[57]Improved agricultural practices need to be carefully implemented so that communities receiving agricultural extension services as part of a program which protects the existing forests instead of additional clear cutting to increase the amount of land used for agricultural purposes.

they can be an important contributor to economic development if implemented sustainably, GoPNG is currently preparing a review of agriculture leases in order to minimise the clearance of primary forest for large-scale agricultural development while ensuring that sustainable economic development is enabled.

- **Reducing deforestation in commercial agriculture** could save ~2-9 Mt CO_2e per year by 2030. The primary means of achieving this would be by shifting 100 percent of new oil palm plantations from forested to degraded land. We assume that starting in 2015, 40-50 percent of new oil palm plantations will be established on former agricultural lease areas, while the rest will be planted on degraded lands (e.g., pasture land, grassland). Alternative land uses and economic development opportunities for landowners will need to be developed for areas where BAU clear felling is displaced. One example of such alternative economic development opportunities is forest conservation measures, which are an important option for these forest areas that could complement agricultural development on degraded and grass land.
- **Implementing Reduced Impact Logging (RIL) practices**[58] in all logging concession areas could save 21-36 Mt CO_2e per year by 2030. This includes the potential to reduce emission from forest degradation by ~33-55 percent in carbon stock loss and to reduce the deforested area by ~33 percent within forest concessions. As an alternative to RIL, restricting logging to plantation forests through a moratorium on new forestry concessions would reduce more than double the emissions (~66 Mt CO_2e per annum by 2030), though at a higher opportunity cost. If applied at scale, this option could negatively impact on plans for downstream value adding activities and employment in the sector, although new employment opportunities for local communities created in forest conservation could offset some job losses.
- Promoting **afforestation/reforestation** on marginal lands, with a view to protecting watersheds and in some cases developing forest plantations could sequester ~14 Mt CO_2e per year by 2030.
- **Managing secondary forests,** promoting re-growth through selected replanting and silvicultural practices in logged-over forests could save 14–21 Mt CO_2e per year by 2030.
- **Forest conservation** provides critical opportunities to protect carbon stocks and most importantly biodiversity from deforestation and forest degradation. Furthermore, implementing forest conservation measures will create new employment opportunities for local communities. The abatement potential of this initiative has not been calculated, since it heavily depends on the prior land allocation. For example, the abatement potential will be different between conservation areas that were formerly assigned for agricultural leases or wildlife management areas. In this context, it has to be pointed out that the eligibility of REDD+ funding for the latter case remains somewhat unclear. If there is no threat to an area, because it is too steep for logging, uninhabited or already designated as protected area, it may be difficult to include it in REDD+ as it does not lead to direct, measurable abatement. This does not lessen the value for the country that conservation measures would have in such areas, and other sources of funding may be available.
- **A national fire management program** and continued efforts to reduce the environmental impact of large-scale mining could save ~5.4 Mt CO_2e per year.

[58]Reduced impact logging (RIL) differs from conventional logging inasmuch as it extracts commercially viable timber at sustainable volumes while minimizing collateral damages. RIL reduces degradation by minimizing logging roads, managing directional timber falling and optimizing cutting methods. RIL can reduce biomass loss to 20-30 percent from ~40-50 percent through conventional logging practices and reduce the eventual area deforested by 33 percent.

The abatement measures set out above have the potential to put Papua New Guinea onto a low-carbon growth pathway that will have benefits beyond reducing emissions. The number of jobs created in new sectors, such as tourism and forest management, should more than outweigh those lost in the traditional logging sector. Overall, with the right additional inputs, the economy can therefore achieve the same 6-7 percent annual growth rate under a low-carbon growth path as under the BAU scenario, with over 20,000 additional jobs created and a more equitable income distribution. In order to translate the identified initiatives into real action, pilot projects and programs need to be rolled out over the next three years.

Workplan

Presented below are the activities PNG will undertake under this component of the R-PP:

Activity 2b.1 Support the Continuation of the SABL review process in PNG

Activity 2b.2 Conduct a review of co-benefits from REDD+:

- Analyze case studies & lessons learnt from other countries - understand key elements to be investigated for PNG
- Investigate existing studies for PNG (e.g., by NGOs, agencies)
- Develop draft report and actions needed to fill in gaps & make recommendations for the NFI workshop
- Plan next steps at the workshop

Activity 2b.3 Conduct a study on alternative livelihoods options for forest-dependent communities

Activity 2b.4 Harmonization of REDD+ strategies and relevant sectors

- Identify relevant sector plans (e.g. PFP, NADP, DEC and Fisheries plans.)
- Identify synergies and/or inconsistencies with REDD+ framework in collaboration with relevant departments (e.g., Dept. Planning)
- Review of provincial forestry plans

Activity 2b.5 Finalize national REDD+ strategy

- Identification of synergies and conflicts, conflict mitigation measures
- SESA of candidate REDD+ strategies
- Continuous work done to refine the REDD+ Strategy document over the 3-years

Table 6. Results framework and budget of REDD-plus strategy

Output (major activity)	***Organizations involved***	***Activities or Sub-activities***	***Budget allocation in thousand (estimated cost in thousands)***				
			2012	***2013***	***2014***	***2015***	***Total***
Outcome 1: Identification and quantification of abatement options							
Output 1.1 *Strengthen understanding of strategy options*	*NRI, INA*	*Support for the continued work under the SABL process by relevant stakeholders in areas relating to Policy and Research*	*$500*	*$100*	*$100*	*$100*	***$800***
Output 1.2	*OCCD,*	*Provide Funding Support for a*		*$100*	*$100*	*$60*	***$260***

Co-benefits and Capacity Building	*PNGFA,UPNG/ UNITECH*	*Domestic or International Scholarship Programme for a maximum of two Papua New Guineans in a related study*					
Output 1.3 *Sustainable Livelihoods Study*	*NARI*	*Study on alternative livelihoods options for forest-dependent communities, e.g. reduce deforestation by improving sustainable garden techniques & increased yields*	*$100*	*$100*	*$70*	*$60*	***$330***
Outcome 2: Harmonization of REDD+ strategies and relevant sectors							
Outcome 2.1 REDD+ considerations integrated into sector plans	*OCCD*	*Identify relevant sector plans (e.g. PFP, NADP, DEC and Fisheries plans.)*	*$100*	*$20*	*$20*	*$20*	***$160***
	PNGFA	*Review and integration REDD+ at the sub-national level*	*$100*	*$30*	*$30*	*$40*	***$200***
	PNGFA	*Review of provincial forestry plans*	*$50*	*$50*	*$50*	*$50*	***$200***
Outcome 3: Alternative livelihoods for forest dependent communities identified							
Outcome 3.1: *Study on alternative livelihoods options for forest-dependent communities*	*NARI*	*1. Investigate and monitor existing alternative livelihood options in PNG (e.g. from sector plans, NGOs, private sector.* *2. Investigate case studies & lessons learnt from similar countries* *3. Investigate the viability of the options in PNG in collaboration with other stakeholders (e.g., NGOs) once there is clear identification of the areas of action on REDD+ and mitigation.*	*$50*	*$100*	*$100*	*$100*	***$350***
Outcome 4. Finalization of national REDD+ strategy							
Outcome 4.1: Evaluation of candidate REDD+ strategies	*NRI, INA*	*Identification of synergies and conflicts, conflict mitigation measures*	*$25*	*$25*	*$50*	*$50*	***$150***
	OCCD	*SESA of candidate REDD+ strategies*	*$25*	*$25*	*$50*	*$50*	***$150***
Outcome 4.2: Development of national REDD+ strategy	*OCCD*	*Continuous work done to refine the REDD+ Strategy document over the 3-years*	*$50*	*$50*	*$50*	*$50*	***$200***
Total			***$1000***	***$600***	***$620***	***$580***	***$2,800***
Government (Development Budget)			*$1000*	*$100*	*$200*	*$200*	***$1,600***
FCPF			***$0***	***$400***	***$420***	***$380***	***$1,230***
UN-REDD Programme (if applicable)			*$0*	*$100*	*$0*	*$0*	***$100***

2c. REDD-plus Implementation Framework

A. Background

The priority initiatives for GoPNG in the upcoming Readiness phase (2013-2015) initiative will follow a whole-of-government approach and will require close cooperation with landowners, civil society organizations, private sector and development partners.

The actions below will help to contribute to PNG's REDD+ Readiness and ensure that climate-compatibility is deeply anchored into PNG's socio-economic development, but also that benefits beyond GHG abatement will be embedded into a REDD+ readiness framework. The implementation of these priority actions will be carried out in a coordinated manner by stakeholders both within and outside GoPNG. Development partner support, such as the FCPF, will contribute to individual actions within the broader REDD+ readiness framework.

B. Capacity building

PNG has laid the ground to create the institutional and governance structure to effectively deal with climate change and REDD+, as described component 1a. Through the UNREDD Programme, since 2011, PNG was able to build the capacity of TWG Member Institutions who will be able to provide extensive support to its REDD+ and MRV Work in-country. Under this was the participation of the University of Papua New Guinea and the PNG Forest Authority in various programmes both at the national and international level.

To ensure that capacity building will be carried out in a targeted and focused manner, it will be important to continuously and clearly identify the needs of each stakeholder group in the capacity building efforts for REDD+ readiness.

Accordingly, capacity building will cover a broad range of topics with a different focus for different stakeholders depending on their specific role in REDD+ readiness efforts and the envisaged REDD+ mechanism.

- During this initial readiness phase also under the support of the Gov of PNG, AUSAID, JICA and the UNREDD Programme, implementing institutions such as PNGFA, FRI, UPNG, DAL, DLPP and DEC, were required to coordinate, and identify how best to build their institutional and individual capacity, and will continue through this program support. Capacity building will come through the process of learning by doing on pilot and demonstration activities. In some case, training of trainers will be required to improve the existing capacity e.g., of provincial staff engaged in local communities for some of the current sustainable forestry activities.
- Where technical advisory services are sought, e.g., for the development of an MRV system as proposed under the National UNREDD Programme, strong emphasis have been placed on the inclusion of sufficient training to ensure that relevant implementing partners and stakeholders were fully capable of independently carrying out their tasks – such as for example operating a new MRV system – beyond the duration of the technical advisory support. Parallel MRV Activity support requiring mostly domestic support in terms of capacity building through existing universities were fundamental gaps under the UNREDD Programme which are intended to be continued through this R-PP in PNG.
- In addition, specific capacity building and training programmes, including the training of trainers, have been consistently carried out by the PNGFA through its Field Offices to enable stakeholders to effectively implement and monitor abatement actions. This includes, for example, training programmes for reduced impact logging – both for logging operators and PNGFA field officers – such as proposed under a project proposal submitted to ITTO. Additional to continue and fully cover this work will be continued under this R-PP

- Each of these activities will include components of training and capacity building that enables landowners, operators and GoPNG staff at the national, provincial and local level to support and sustain demonstration activities, and eventually a REDD+ mechanism, in the long term. Training and capacity building will need to address capability gaps at all points in the pilot planning, roll-out and ongoing operation. For instance, at the planning stage, capacity building will address such issues as land-use planning at the ward, district and provincial level. At the same time, OCCD will play a facilitating role in ensuring that the lessons from those activities are available to other initiatives and can be replicated in other areas of PNG. Similarly, the provincial consultation process outlined below aims at equipping landowners with the skills and understanding to effectively act at the local level.
- Capacity building will also cover institutional and governance structure to address climate change in PNG. Capacity building initiatives will be inclusive, and all concerned stakeholders who are part and partial of the REDD+ Implementation process will be included.

C. Sub-national capacity building for REDD+ readiness

One of the main objectives of undergoing a consultation process on climate change across Papua New Guinea is to build the capacity of provincial governments to enable government restructuring that create sub-national institutional arrangements to address climate change. This is a bridging capacity that links sub-national governments with arrangements that have taken years to establish at the national level.

The objective of this restructure is to further the ability of a select number of provinces to create institutional structures that;

1) Progress their current REDD+ community initiatives and

2) Be responsible for delivering directly to communities.

This process is complex and requires a great deal of coordination and planning across multiple sectors. For example, such institutional restructuring going forward in Central Suau, Milne Bay province will require the PNGFA to revisit and review provincial forestry plans.

Potential activities for capacity building at the sub-national level include:

- Gap assessments on REDD+ readiness for the provinces will be carried out to clearly identify what capacity development is needed for the different aspects of readiness in the various jurisdictions. This capacity gap assessment will inform the capacity building and training programs to address the needs of provincial governments, non-government institutions, and local communities. Full engagement of all involved GoPNG agencies, civil society organizations, provincial authorities, and – at the appropriate times – local communities will be critical to developing a robust and inclusive capacity building strategy.
- Growth of local capabilities will come primarily from experience on the job, e.g., project design and implementation, both with the support and guidance from advisors and experts as needed. Where necessary this will be complemented by formal skills training. Capacity building will be through targeted training sessions aimed at supporting the scale-up of pilot projects. After pilot programs have demonstrated impact, the challenges and capability gaps for future implementation will be codified and built into a training curriculum. To ensure that capacity development efforts targeting OCCD benefit PNG stakeholders beyond the OCCD, including both GoPNG and non-governmental actors, additional participants will regularly be invited to join the OCCD's training sessions. In addition, workshops that bring together civil society representatives, and whole-of-government workshops similar to those conducted in 2010-2012 will be held at least once per year to focus both on content and capacity building.
- Pilot and demonstration activities complementing REDD+ readiness activities will be carried out with the full and effective participation of landowners and local level government. This means not only comprehensive awareness building and consultation at the local level, but also a commitment to local training and capacity development. For instance, local involvement – and hence capability building – will be critical to the successful implementation of sustainable forestry pilots, agricultural extension programs, or demonstration of reduced impact logging, but also to

readiness activities such as ground truthing for PNG's MRV system. The OCCD and GoPNG recognize that a wide range of groups and institutions will need to contribute to developing this capacity. Community-based organizations, NGOs and local churches will for example play a major role in building awareness, consulting, and providing training to local communities. Indeed, many of these activities are already on-going, emphasizing the role of the OCCD as a coordinating and supporting body for local capacity building.

As far as the REDD+ Implementation framework in PNG is concerned, the OCCD alone will not be responsible for the success of all capacity building initiatives. All government organizations and bodies will have a responsibility towards contributing to some elements of the above set initiatives. Such would also include the role of the private sectors and leading NGOs who have are currently playing a very strong supportive role to the overall process itself.

2) Strategy and Policy development

GoPNG has taken important first steps to incorporate climate-compatible development, including REDD+, into its overall development planning. The CCDS provides the fact base and prioritizes areas for immediate action and thus guides the policy formulation process.

NEC Decision 55/2010, accepting the principles of climate-compatible development, mandates that, "A review is necessary of all national development policies and plans which impinge upon and are affected by climate change mitigation, adaptation, and low carbon growth, to ensure climate compatibility." Therefore, the Government is taking steps to ensure that:

- The Forestry and Climate Change Framework for Action (FCCFA) is implemented.
- A review is conducted of the National Agricultural Development Plan including the allocation of forest land for agriculture leases.
- An updated CCDS will be completed that incorporates feedback from a provincial consultation process and the ongoing international REDD+ negotiations.
- An updated CCDP will be completed by incorporates feedback from ongoing climate change consultation process.

Many of these activities have already been commenced by GoPNG and will be continued with the support of a broad range of stakeholders, such as civil society organizations, the private sector and development partners. This is guided by the established principles of the current National Climate Change and Development Policy (NCCDP), which gives impetus to the role of the different stakeholders in the process, and takes into consideration their existing policies and legislations that gives direction to the related REDD+ work they do to contribute to the implementation of the REDD+ strategy.

3) REDD+ Regulatory Framework

The outcome of the climate change policy and strategy development activities will inform the continuous evolvement of PNG's National REDD+ policy framework. An effective REDD+ regulatory framework will consist of comprehensive and detailed laws, regulations and policies to enable the implementation of REDD+ which includes the current and non-exhaustive policy and governance interventions.

3.1: Land use and spatial planning

At the moment, PNG's capacity for land use planning at the local, provincial and national levels is limited. Spatial planning is therefore an important factor that enables the integration of REDD+ into consistent sectoral plans. This will need to recognise recommendations of the National Land Development Program and assess its impact on REDD+. At the local level, the Organic Law on Provincial and Local Level Government will need to be enforced in all REDD+ demonstration activities to make sure wards develop land use plans which are then to be incorporated to LLG plans, rolled in to district plans and eventually to

Provincial Plans. The demonstration activities will thereby inform longer-term policy enhancement in this area for REDD+, including land use planning at the national level, but at the same time require significant capacity building support as is already offered in some cases by civil society organisations in PNG today.

During the various consultation level at the Provincial level, each of the sub-national government mechanism have indicated similar challenges in addressing sub-national land use planning due to land tenure-ship issues. The possible way forward as suggested by most resource owners who normally participate during the consultation process have expressed a solution that will begin with registration of ILGs and ward planning starting with communities at the ward level.

3.2: Land ownership and carbon rights

Achieving REDD+ readiness requires a careful consideration of PNG's unique land tenure system. 97 percent of the land is under customary ownership and usually managed among landowners through Incorporated Land Groups (ILGs). The implementation of REDD+ activities will therefore also require a legal structure that clearly defines rights and responsibilities of landowners, potential project developers and GoPNG. The development of such a mechanism will build on the experiences in other sectors, e.g., FMA agreements in forestry and oil and gas projects, in order to guide land tenure considerations for REDD+ that protect the interests of forest resource owners and minimise the risk of disputes. As a first step in that direction, PNGFA, OCCD and DEC have started to assess an existing FMA area as a potential REDD+ pilot site. This assessment will include a review of current processes and regulations for FMA areas and their applicability to REDD.

The OCCD has also finalized a TOR for a carbon rights study that will review and identify gaps in the existing legislation in PNG relevant to carbon rights for the development of a REDD+ framework, provide recommendations on amendments or on a new legislation and draft subsidiary legislation to the Climate Change and Development Act that will adequately address the issue of carbon ownership

3.3: Dispute resolution mechanism

In addition, the PNG REDD+ regulatory framework will need to include a simple and transparent dispute resolution mechanism. Specific safeguards will need to be included in any such mechanism, in order to protect the interests of resources owners and avoid the escalation of conflict that could endanger the objectives of REDD+ activities. Such a mechanism will cover disagreement over the distribution of REDD+ funds, but also disputes over land rights and claims, conflicting land use plans and other issues. The exact structure of a dispute resolution mechanism for REDD+ is still to be determined, and will consider both judicial and non-judicial elements. The system will address PNG's specific cultural heritage and customs and build on existing legal frameworks, e.g., the Land Disputes Settlement Act 1975 and the Oil and Gas Act 1998, as well as on the experience from civil society organizations from their work with communities (e.g., Peace Melanesia). It should also explore, for example, the concept of an Independent Environmental Land Court to ease pressure on the current system. As a first step, the OCCD will commission research and recommendations for the development of such a mechanism.

3.4: Models for fund distribution and benefit sharing

Two critical decisions need to be made for the distribution of international REDD+ funds at the local level. First, how will funds be handled on a national level? Second, how will funds be used and distributed to pay for the costs of REDD+ activities and to compensate and incentivise local communities for potential livelihood changes?

There are many examples of benefit sharing at the local level, each with its own challenges and potential for improvement. These include the arrangements for mining, petroleum and forestry projects and conservation work. One of the most important challenges that GoPNG faces is to design a simple, transparent and equitable system for distributing and allocating REDD+ funds that learns from these examples. It is important that this system also takes into account the broader development perspective of PNG and also addresses other benefits alongside with GHG abatement in a holistic way. Besides ensuring the equitable distribution of funds, the mechanism will also need to structure incentives in such a way for all stakeholders as to minimise the risk of reversal and non-permanence.

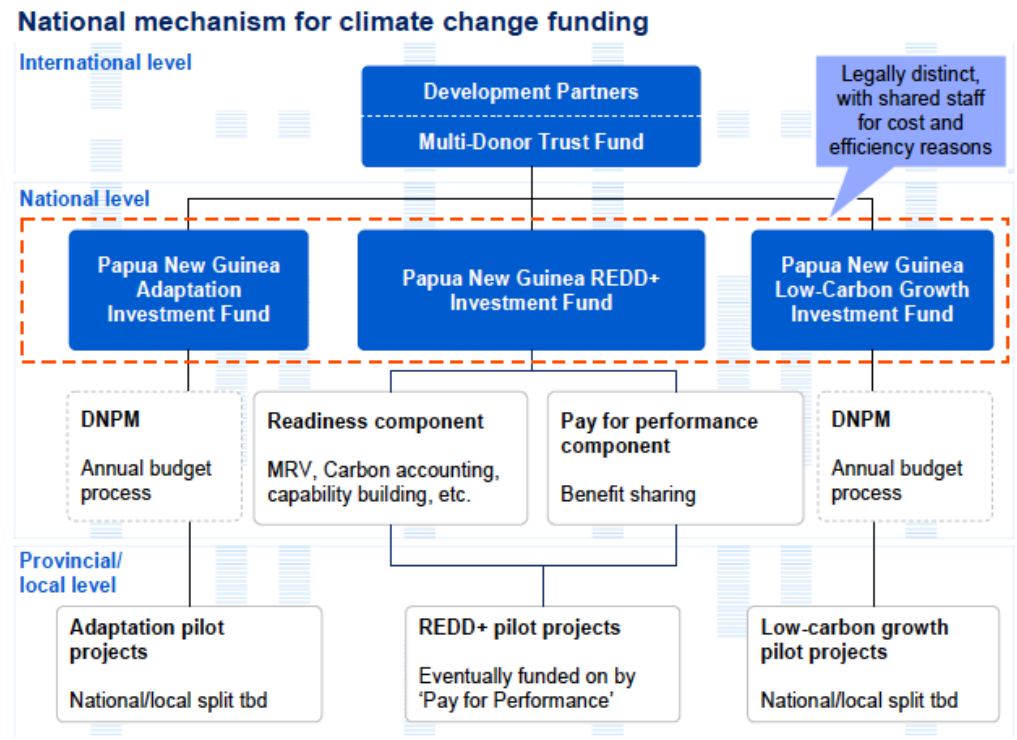
The REDD+ Technical Working Group has finalised the Terms of Reference for a review and design study aimed at (i) reviewing the benefit sharing models and their implementation in existing sectors (e.g., mining and forestry) domestically and internationally, and (ii) designing the principles and framework for a model specific to REDD+ in PNG as a first step towards a REDD+ benefit sharing mechanism.

This study was intended to be carried out under the UN-REDD Programme; however, delay with actual disbursement of resources has been problematic in seeing activity progressed. The OCCD has approached AusAID to assess opportunities for co-funding through the PNG-Australia Forest Carbon Partnership.

3.5: Funding mechanism

The work on a benefit sharing and distribution mechanism will have to be matched with similar work at the national level to develop a transparent mechanism for GoPNG to receive and manage future REDD+ payments. This will include, amongst others, a system and institutional setup for fund administration, payment processing mechanisms including links to MRV, risk mitigation mechanisms, including permanence guarantee mechanism and the mitigation of timing risks through the use of structured financial mechanisms.

Figure 11. National mechanism for climate change funding



4) Implementation plan for pilot initiatives and programs

Technical working groups have identified potential mitigation, growth and adaptation initiatives, which are designed to test new concepts as well as programs which involves scaling up and rolling out solutions that have already been developed elsewhere. Given resource constraints – both human capital and financial – mitigation and adaptation initiatives have been prioritized based upon efficacy in carbon mitigation and protecting people and economy from climate-related hazards.

In PNG, a number of activities by GoPNG, development partners, civil society organisations and the private sector are already under way, aiming at furthering PNG's progress on REDD+ readiness and field testing. There are two types of pilot initiatives – sectoral and geographical pilot projects.

4.1: Sectoral demonstration activities-forestry sector

Sectoral pilot projects aim to solve challenges related to various REDD+ mechanisms, such as MRV, fund disbursement, community engagement, capability building and a benefit sharing mechanism. The REDD+ working group and its sub-working group on forestry have developed a series of initiatives in the forestry sector .These are in line with the Forestry and Climate Change Framework for Action (FCCFA) developed by PNGFA.

PNGFA, for example, is preparing five pilot projects to support the FCCFA. The projects are covering each of PNG's 5 official REDD+ pilot provinces and target Reduced Impact Logging, Afforestation/ Reforestation, Sustainable Forest Management and Conservation.After extensive stakeholder consultation, GoPNG designated five official pilot provinces: Milne Bay, West New Britain, East Sepik, West Sepik, and Eastern Highlands.

Table 7. REDD+ related sectoral/regional demonstration activities in PNG

REDD Pilot Province	Vegetation Types	Current REDD+Activities
Milne Bay (Central Suau)	Mangrove, Swamp Forest, Low Altitude Forest on Plains & Fans, Low Altitude Forest on Uplands	Reduced Impact Logging (RIL)
East Sepik (April Salumei)	Swamp Grasslands, Swamp Forest,Low Altitude Forest on Plains & Fans and Low Altitude Forest on Uplands	Conversion of proposed logging Area to REDD+ Pilot REDD+ activities will be determined after a development option study (DOS)
Eastern Highlands	Grassland Lower Montane Forest	Afforestation of grassland areas Forest conservation
West New Britain	Low Altitude Forest on Plains & Fans, Seral Forest, Littoral Forest, Low Altitude Forest on Uplands	Secondary Forest Management Afforestation / Reforestation Forest conservation Reduced Impact Logging (RIL)
West Sepik	Grassland, Low Altitude Forest on Plains and Fans	Afforestation / Reforestation Forest Conservation Secondary Forest Management? Reduced Impact Logging?

Reduced Impact Logging

Given the large potential abatement from RIL, it is necessary to compare its impact and enforcement costs with current logging practices. PNGFA has identified the provinces of Milne Bay, West New Britain and West Sepik as priority areas for this initiative. Pilots will provide an opportunity to test RIL enforcement, silvicultural practices and MRV methodologies (both field measurements and remote sensing), and were initiated early in 2012.

Secondary forest management

A pilot will identify biomass regeneration rates from post-logging silvicultural practices. PNGFA has identified Eastern Highlands, West New Britain, and West Sepik to trial this initiative, which will also build the capacity of PNGFA and FRI to implement silvicultural practices, in partnership with other organizations.

Afforestation and reforestation

PNG already has considerable expertise and data in this area. Consequently, the scale up of afforestation and reforestation should begin immediately and proceed rapidly. The PNGFA has identified Milne Bay, Eastern Highlands and West New Britain as potential locations. Implementation presents an opportunity to test different approaches (e.g., spacing of29trees, mix of species and monoculture) over a range of geographic and climatic conditions to determine the methods that offer optimal growth at minimal costs.

Forest conservation

Conservation initiatives present an opportunity to use REDD+ scheme to maintain biodiversity and critical ecosystem services provided by forests. This initiative can also be linked with the Payment for Ecosystem Services (PES) mechanism. PNGFA has identified West New Britain, Milne Bay and Eastern Highlands as potential locations. Implementation will require strong collaboration between PNGFA and DEC.

4.2: Sectoral demonstration activities-agriculture sector

Integrated land use planning at the local government level should clarify and rationalize the allocation of land between forestry, commercial agriculture, subsistence agriculture and other uses, such as hunting. Pilot projects are proposed for Madang, West New Britain, Eastern Highlands and Central provinces. In order to realize the full impact, the plans need to be combined with measures to increase agricultural productivity and improve access to markets.

Agricultural extension programs in combination with integrated land use programs these should lead to increased yields. A pilot has three purposes: 1) increase productivity 2) improve market information and farmers' access to markets and 3)reduce emissions associated with clearing forest for agriculture by intensifying the use of existing plots. Implementation will require collaboration among research institutions such as NARI.

Commercial oil palm plantations on non-forest lands

Additional research into the feasibility of using non-forest land for new oil palm should be conducted. Data generated will highlight economic differences such as yields and input requirements. Collaboration with the private sector is key, and there is scope to build on existing projects, such as oil palm plantations that have been established on pasture land (in Ramu) and also on anthropogenic grasslands (in Popondetta).

The idea of diverting implementation of commercial oil palm plantations to non-forest lands was also a consensus reached by the REDD+ TWG in 2010, as a recommendation for SABL developers. This was also intended to test the candidness of the Palm Oil projects to be established through the SABL approval process, so as to minimize perverse intentions for timber extraction through the pretext of Palm Oil development in PNG.

5.Bilateral and Multilateral support for the progression of REDD+ Implementation in PNG

5.1: Papua New Guinea – Australia Forest Carbon Partnership

The Prime Ministers of Australia and Papua New Guinea established the Papua New Guinea- Australia Forest Carbon Partnership on 6 March 2008. Under this Partnership, Papua New Guinea and Australia have agreed to cooperate in three main areas: policy dialogue on national and international REDD+ policy; increase PNG capacity in forest carbon monitoring and assessment; and cooperation on

participation in international carbon markets, including on REDD+ demonstration activities. As announced at the PNG-Australia Madang Ministerial Forum, Australia is contributing up to A$3 million in initial funding which will include technical, scientific and analytical support for the design of Papua New Guinea's carbon monitoring and accounting systems. This Partnership represents one of the support windows under the Australian Government's A$273m International Forest Carbon Initiative (IFCI).

Australia has worked with the GoPNG to identify an initial package of assistance under the PNG-Australia Forest Carbon Partnership. It aims to:

- Build the capacity of GoPNG institutions to articulate and implement national climate change policies that meet relevant international standards;
- Build the capacity of GoPNG and other relevant institutions to develop a robust national carbon monitoring and accounting system;
- Support GoPNG to engage in international dialogue on REDD+.

GoPNG has requested that the Forest Carbon Partnership work plan be updated which is under consideration by officials. It is envisaged that the updated work plan would complement the REDD+ readiness efforts covered under the National Programme by lending support to areas that are not comprehensively covered in the NP.

Other IFCI windows of direct relevance to PNG are:

- An allocation for NGOs to develop concepts for demonstration activities to inform the development of a national REDD+ framework—this work is nearing completion, with four of the five NGO concepts presented to the Government of Papua New Guinea in July 2010;
- The Asia-Pacific Forestry Skills and Capacity Building Program commenced in 2007 to assist countries in the Asia-Pacific region increase their forest management expertise and improve carbon sequestration performance of their forests. Phase II, for which PNG is a priority country, seeks to build regional capacity for delivering sustainable forest management in support of REDD+ efforts. Project activities will address the following objectives:
    - Improving capacity to provide support for sustainable forest management and improved forest governance, law enforcement and regulatory frameworks that assist efforts to REDD;
    - Building the institutional and technical capacity needed to deliver sustainable forest management that supports REDD;
    - Adaptive and effective program, partnership and knowledge management.

A project is currently under negotiation with GoPNG, through the PNGFA to support development of a forest management Decision Support System (DSS) to assist PNGFA with forest management and planning of operations in support of sustainable forest management.

5.2: Australia – PNG Kokoda Initiative

The Australian and PNG governments have signed a Joint Understanding to work together to protect the Kokoda Track and Owen Stanley Ranges and improve the lives of communities living along the Track corridor through the Kokoda Initiative. While the Kokoda Initiative is not a REDD+ initiative, it may explore opportunities for 'forest carbon' amongst other income generation and development activities that it will facilitate for the local landowners of the Kokoda Track and Brown River region. This will involve utilization of GIS and satellite imagery to assess and monitor forest carbon emissions and may therefore support activities aimed at developing an MRV system for REDD+ in PNG under the UN-REDD NP and other support programs. DEC is building capacity to support this activity.

5.3: European Union

The European Union (EU) is currently funding activities of UPNG aimed at supporting PNGFA in inventory techniques as well as upgrading the forest inventory mapping system. In addition, it is foreseen

that two REDD+ related projects are launched in 2011. One will contribute to remote sensing forest degradation. A second project will focus on improving the productivity and quality of teak plantations in PNG, thereby contributing to afforestation/reforestation efforts.

Moreover, the EU has also been initiating discussions with Papua New Guinea's stakeholders in view of informing of the possibility for implementing a Forest Law Enforcement, Governance and Trade (FLEGT) mechanism.

Finally, additional funds may further be allocated to the sector depending on identification processes to be carried out beyond 2013

5.4: Global Environment Facility (GEF) Support for Sustainable Forest Management

PNG is developing a Forest and Coastal Conservation and Natural Resource Management project with the assistance of UNDP, as an element of the GEF's Pacific Alliance for Sustainability, specifically under the Forestry and Terrestrial Protected Areas component. The objective of the project will be to develop and demonstrate resource management and conservation models for landholding communities that effectively incorporate community conservation areas. The key outcome will be the extent of high conservation value terrestrial and marine area which is brought under community-based conservation and protected areas at targeted sites. PNG has received an allocation under the GEF STAR program. It is envisaged that a portion of this allocation will be used to strengthen initiatives under the GEF-5. DEC has prepared Project Initiation Facility proposal.

GEF's support to PNG also includes a project on capacity building for sustainable land management which will be relevant for aims to strengthen human and institutional capacity at all levels to mainstream Sustainable Land Management. This will be achieved through improving the information basis of characterising the state of land degradation and its impact, raising awareness at various levels of government agencies, improving individual knowledge and skills, improving institutional structures and processes to maximise coordination, mainstream Sustainable Land Management into government's development planning processes, and incorporating the use of mainstreaming tools in decision making.

5.5: GIZ

Through the ICI project "Climate protection through forest conservation in Pacific Island Countries, GIZ supported the development of a Pacific Regional REDD+ Policy Framework. This Policy Framework is designed to provide policy options to guide REDD+ policy processes at a regional and national scale, and to provide a rationale for financial support for the better management and use of forest and tree resources. The National REDD+ Programme of PNG, with its encompassing activities will feed into this overall programme.

5.6: ITTO Project Proposal 'National Training Program to Promote the Adoption of Reduced Impact Logging (RIL) in Papua New Guinea'

The PNGFA and the Tropical Forest Foundation have submitted a project proposal to the International Tropical Timber Organization (ITTO) for a 2-year program aimed at developing the capacity to understand, implement and regulate the adoption of RIL practices at the government and concession level among the medium to large scale forest operations in PNG. The project seeks to achieve these objectives by establishing a comprehensive training program to be developed and implemented in three pilot forest concessions. The project will also provide refresher training for all field staff of the PNGFA, Field Services Directorate to strengthen their monitoring and reporting capabilities.

5.7: Japan International Cooperation Agency (JICA) and Government of Japan

With the support of a PGK 20 million (700 million yen) grant from the Japanese government, PNGFA is aiming to improve its forest monitoring and data management system using remote sensing and GIS/database capabilities. The grant comes under the forestry preservation program (FPP), and was signed by the Government of Japan and GoPNG on March 19, 2010. The main objectives of the project, which focuses on software and hardware equipment, but includes training of staff from all relevant collaborators are:

- Update the forest resource information of the country;

- Strengthen institutional and capacity building of the PNGFA and other collaborators in assessing changes in forest cover;
- Support PNG's capabilities to report its GHG emissions to UNFCCC.
- The funds will be used to procure equipment and soft (non-physical) components which may include:
- The Japanese Aerospace Exploration Agency (JAXA) remotely sensed data (ALOS Satellite Imagery) and other remote sensing data;
- ALOS Satellite Imagery
- Geographical Information System (GIS) related equipment, computer hardware, software/licensing & software upgrading;
- Ground truthing instruments; and
- Training in the use of GIS and Remote Sensing using satellite imagery;
- Training PNGFA staff on the Global Positioning System (GPS);
- Training in field data collection and data processing;
- Training of all related data management in database manner.

It is envisaged that as much as possible existing facilities (e.g. the UPNG Remote Sensing Centre) be strengthened and upgraded to build local capacities in GIS/Remote Sensing interpretation. In addition, JICA is providing capacity building for officers from the collaborating institutions, particularly PNGFA, FRI, UPNG, Unitech and OCCD, amongst others on Forest Resource Monitoring for Addressing Climate Change.

GoPNG and JICA also agreed to set up a Technical Cooperation Project from 25th March 2011 stationed in PNGFA aiming at enhancing capacity of relevant institutions in PNG for monitoring nation-wide forest resource including carbon. A full-time JICA technical adviser on forest management is attached from the outset of this project. This project will be implemented in close coordination and accordance with the grant mentioned above from the Government of Japan.

It is envisaged that the UN-REDD Programme components focusing on MRV and the JICA assistance will be closely coordinated through regular meetings and exchange to ensure efforts are complimentary to each other.

5.8: UN-REDD Programme

The objective of the UN-REDD Programme in PNG is to ensure that by 2013, PNG has an operational MRV system that enables the country's participation in international REDD+ systems to protect its environmental resources and contribute to the sustainable livelihood practices of rural communities. This objective will be achieved through the following outcomes: 1) Readiness management arrangements are in place; 2) National MRV system is developed; 3) Support is given to the establishment of RELs and RLs; 4) Monitoring of abatement concepts is supported; 5) Stakeholders are engaged in PNG's REDD+ readiness process. The UN-REDD Programme is primarily supporting activities outlined in Component 3 and 4 of This R-PP will further bridge capacity of provinces to bridge gaps with PNGFA.

The PNG National Programme of US$6,388,884 was approved by the Policy Board in November 2010 and transfers were made in June 2011. The Programme duration is 36 months. Reported disbursement as of 31 December 2011 was US$ 141,969. The PNG National Programme Inception Workshop was held in July 2011.

According to the UN-REDD Programme 2011 Annual Report, there have been significant delays in advancing national REDD readiness activities due to a number of factors, including the lack of in-country presence of two of the Participating UN Organizations, the lack of clarity on the mandates of OCCD apart from coordinating climate change initiatives, and external difficulties including political instability. In

addition, the national elections in 2012 made it difficult to take on policy issues. OCCD has been asked to reconsider its approach to stakeholder engagement to ensure that solid partnerships among government, development partners and civil society are in place and contribute to achieving strategic and sustainable results for REDD+ readiness.

6. Existing and Progressive Community-based REDD+ demonstration activities

Several NGOs have developed concepts that involve the use of REDD+ funds to promote sustainable livelihoods and forest conservation.

These projects currently focus mostly on forest conservation and environmental and biodiversity protection and can provide important lessons learned on community engagement, land tenure issues, and community project management in PNG, among many others. It is envisaged that the experiences and learning from these activities will be incorporated into the REDD+ readiness process and that the existing activities will be leveraged to test and refine concepts for REDD+, e.g., a benefit sharing mechanism. DEC and OCCD have already established links with many of these projects and in many cases, representatives of the implementing organisations are represented on the REDD+ Technical Working Group. A preliminary review included REDD+ initiatives in Manus Island, West New Britain, Sandaun and Madang provinces. Additional ongoing activities include, for example, NORAD's support to the Foundation for People and Community Development (FPCD) for REDD+ community-based initiatives, and the Eco-Forestry Forum's (EFF) REDD+ road show to raise community awareness. One road show consultation event was already held jointly between EFF and OCCD.

6.1: WCS Village REDD+ Project

The Wildlife Conservation Society, with support from AusAid and in cooperation with the OCCD, has launched a Village-REDD+ demonstration activity in Manus Province that will operate at two levels: technical activities at the sub-national level, and the organisation of social groups at the community level. The process will be managed by local people and their local level governments and is consistent with local, district and provincial development plans.

Village-REDD+ is an approach to forest management designed to operate at appropriate social scales – which in PNG are often smaller social groups such as clans – and bundling forest and associated carbon into administratively and economically viable units. At the village level, the process of bringing forests or carbon to these units and receiving benefits in return will be integrated into community development that strengthens Local Level Government (LLG) planning systems – or develop them where none exist – and features local Benefit Sharing Agreements that aim to deliver on local development plans.

Manus province, part of the Bismarck Archipelago, is named after the largest island in the group and is surrounded by many smaller islands and atolls, together called the Admiralty Islands. With a total land area of 2,100 km,^{2} Manus Province saw 45% of its accessible forests cleared or degraded from 1972-2002.

Demonstration of the Village-REDD+ concept will allow landowners to undertake small-scale low-impact activities (which may include REDD+ projects) over their customary land. Although the approach proposed was designed with a REDD+ mechanism in mind, it is equally applicable to general community development and alternative livelihoods.

A significant component of the Village-REDD+ demonstration activity is developing and strengthening social and environmental safeguards in the design and implementation of activities. Safeguards ensure that the rights of indigenous peoples and local communities are respected, and that significant social and environmental co-benefits are delivered. The development of REDD+ safeguards will include field-testing of free, prior, and informed consent (FPIC) and a benefits sharing and distribution system(BSDS), establishing an effective grievance and dispute resolution mechanism, developing a robust and credible measuring, reporting and verification (MRV) system, and linking these to an overall REDD+ implementation framework.

The WCS Village REDD demonstration activity responds to the need for data and on-the-ground learning to inform policy development on REDD+. By designing the proposed project to address a series of critical issues identified by government partners, the outcomes will potentially have a large impact of the development of PNG's REDD+ policy and legislative framework. The OCCD Technical Working Groups

(TWGs) including the REDD+ TWG, of which WCS is an active member, are the forum by which WCS will share it experiences and provide technical advice and assistance to OCCD for the development of the REDD+ policy and legislative framework. The proposed activities in this project are in line with needs expressed by OCCD for technical support, data or learning to inform policy development. It is consistent with the policy objectives outlined by the three major national agencies with responsibilities for climate change mitigation and REDD+ in PNG, including the OCCD, PNG Forest Authority (PNGFA) and the Department of Environment and Conservation (DEC).

The Manus Provincial Government and LLGs will be important partners in this project, as REDD+ activities will occur at this scale and require partnerships with local government and possibly the development of enabling legislation. In Manus Province, where the fieldwork for this project will occur, WCS has an MOU with the provincial administration to provide it with technical assistance and capacity building for environmental management, including technical support for climate change adaptation and mitigation initiatives (e.g. REDD+) and sea level rise.

7. Public-Private Partnerships to foster a strong REDD+ implementation environment

Although there are currently no national-level public private partnerships on REDD+ in PNG, the draft National Climate Change and Development Policy (NCCDP)envisions that the private sector will also play a major role in contributing towards climate compatibility for the country. Their partnership will be vital in terms of ensuring that any economic ventures are consistent with the aspirations of the NCCDP.

The NCCDP intends to recognize any public-private partnership in the following key areas;

- Climate Change investment in Finance and Technology transfer, Mitigation and Adaption
- Partial implementation measures to address key policy areas alongside other stakeholders where appropriate
- Capacity Building and Development
- Education and Awareness

Work plan

Presented below are the activities PNG will undertake under this component of the R-PP:

Activity 2c.1.Conduct capacity building

- Support for provincial government restructure
- Provincial capacity gap assessments
- Training session supporting scale-up of pilot projects

Activity 2c.2. Strategy and Policy development

- Implementation of FCCFA
- Review of National Agricultural Development Plan
- Updated CCDS

Activity 2c.3 Development of national REDD+ framework

- Benefit sharing and distribution system study

- Carbon rights study
- Review of activity and actor eligibility
- Funding mechanism
- National REDD+ registry
- Conduct a study on dispute resolution mechanism
- Integration of sub-national activities (jurisdictional and nested approaches)

Table 8. Summary of REDD-plus Implementation Framework Activities and Budget

Main Activity	Sub-Activity	Estimated Cost (in thousands)				
		2012	2013	2014	2015	Total
Capacity building	Support for provincial government restructure (Technical Resources)	$50	$50	$50	$50	**$200**
	Provincial capacity gap assessments	$50	$50	$50	$50	**$200**
Strategy and Policy development	Implementation of FCCFA	$50	$50	$50	$50	**$200**
	Review of National Agricultural Development Plan	$50	$70	$60	$50	**$230**
	Updated CCDS	$50	$50	$50	$50	**$200**
Development of national REDD+ framework	Benefit sharing and distribution system study	$50	$100	$100	$100	**$350**
	Carbon rights study	$50	$70	$70	$70	**$260**
	Funding mechanism	$50	$70	$100	$100	**$320**
	National REDD+ registry	$50	$50	$50	$50	**$200**
	Integration of sub-national activities (jurisdictional and nested approaches)	$50	$100	$100	$100	**$350**
	Conduct a study to inform the design of a dispute resolution mechanism	$50	$50	$50	$50	**$200**
Total		**$550**	**$710**	**$730**	**$720**	**$2710**
Government(Development Budget)		$550	$300	$300	$330	**$1480**

FCPF	**$0**	**$410**	**$430**	**$390**	**$1,230**
UN-REDD Programme (if applicable)	$0	$0	$0	$0	**$0**

2d. Social and Environmental Impacts during Readiness Preparation and REDD-plus Implementation

Addressing Social and Environmental Impacts in accordance to the country's National Circumstance

Papua New Guinea will utilize a Strategic Environmental and Social Assessment (SESA) as the basic approach to seek to ensure that environmental and social concerns are integrated into the national REDD+ strategy process and that the FCPF readiness activities comply with the Common Approach. Some of the main challenges in risk management for REDD+ activities include indigenous peoples' rights, land tenure, public participation, and the sharing of benefits, requiring policy discussions related to REDD+ deal with land administration, nationwide land use planning, forest management, extractive industries, and infrastructure, among other sectors. The SESA helps to ensure compliance with the applicable safeguards by integrating key environmental and social considerations relevant to REDD+, including all those covered by the applicable safeguards, at the earliest stage of decision making.

PNG will undertake an SESA as a distinct output to contribute to the development of a stand-alone Environmental Social Management Framework (ESMF). The ESMF will become an integral part of the REDD+ Readiness Preparation process.

The OCCD will provide recommendations for institutional arrangements and policy, legal and regulatory reform, if necessary, to adopt and implement a national safeguards system that will operationalize the Cancun safeguards in a nationally appropriate context. They national safeguards system will be harmonized with an ESMF and become part of the national REDD+ regulatory framework.

SESA activities conducted during the R-PP formulation phase

- Stakeholder analysis and mapping (Component 1b)
- REDD+ project guidelines and safeguard criteria have been developed by the REDD+ Technical Working Group and are currently being finalised based on stakeholder comments (see Appendices) They include social, environmental and fiduciary safeguards to ensure REDD+ falls into the broader development objectives of PNG and takes into account social and environmental benefits beyond GHG abatement, and particularly addressing the rights of resource owners.
- The OCCD is has drafted guidance for establishing Free Prior and Informed Consent (FPIC) for REDD+ project in PNG. The guidelines are undergoing consultation and will be aligned with the UN-REDD Programme Guidelines on FPIC. In Papua New Guinea, indigenous land groups and landowners should be afforded recognition, fair involvement in decision making and well informed consultation during initial awareness of project. FPIC is considered as an important aspect of development in Papua New Guinea, as it can have greater impact on the lives of many ordinary Papua New Guineans, more importantly those living in rural communities and villages throughout the country. Therefore the right to *free, prior and informed consent* requires governments and project proponents to ensure that REDD+ is implemented in a way that fully respects the right of affected communities.
- The OCCD is finalizing TORs for studies to propose mechanisms for the following components of a REDD+ regulatory framework:
    - Carbon rights
    - Benefit sharing and distribution mechanisms
    - Forest governance systems
    - Feedback and grievance mechanism study

- Land use and tenure arrangements for REDD+

Planned SESA activities during the R-PP implementation phase

- Establish outreach, communication and consultative mechanisms on REDD+ with relevant stakeholders through the ongoing climate change consultation process, to begin with the 5 official pilot provinces (Component 1c);
- Updated assessment of the key drivers of deforestation and forest degradation (Component 2a);
- ToR for the SESA that includes:
  - Institutional arrangements for coordinating SESA
  - WB safeguard policies triggered and the environmental and social studies or diagnostics carried out
  - Key environmental and social issues associated with the drivers of deforestation and causes of forest degradation
  - How the findings of studies and consultations fed into the selection and refinement of the REDD+ strategy options
  - Recommendations for addressing institutional, policy, legal/regulatory and capacity gaps for managing environmental and social priorities in REDD+ implementation
  - Consultations, public participation, disclosure of information, and grievance redress on environmental and social issues
  - Results of the assessment of environmental and social risks and potential impacts of REDD+ strategy options, with an eventual focus on the final REDD+ strategy
- Before finalization, the consulted PNG FPIC Guidelines will be trialed in a REDD+ pilot project to understand the process as well as to gain from lessons learned during implementation of the process.
- Preparation of TOR for development of an ESMF;
- Application of ESMF to R-PP activities;

Table 2d. Summary of Social and Environmental Impacts during Readiness Preparation and REDD-plus Implementation Activities and Budget

Main Activity	***Sub-Activity***	***Estimated Cost (in thousands)***				
		2012	***2013***	***2014***	***2015***	***Total***
SESA TOR	*Environmental and social impact assessments of drivers of deforestation*	*$*	*$50*	*$*	*$*	***$50***
	Institutional arrangements for coordinating SESA					
	New or existing policies, laws and regulations on safeguards for REDD+					

	Consultations	*$*	*$*	*$*	*$50*	***$50***
ESMF	*ToR*	*$*	*$50*	*$50*	*$50*	***$150***
	Consultations on ESMF	*$*	*$*	*$*	*$50*	***$50***
	Application of ESMF	*$*	*$*	*$50*	*$50*	***$100***
FPIC	*Consultations on FPIC Manual*	*$*	*$50*	*$50*	*$50*	***$150***
	Incorporate stakeholder feedback and finalize manual	*$*	*$50*	*$50*	*$50*	***$150***
	Trial FPIC guidelines in pilot project	*$*	*$50*	*$100*	*$100*	***$250***
Total		***$***	***$250***	***$300***	***$400***	***$950***
Government		*$*	*$*	*$*	*$*	***$***
FCPF		***$***	***$250***	***$300***	***$400***	***$950***
UN-REDD Programme (if applicable)		*$*	*$*	*$*	*$*	***$***
Other Development Partner 1 (name)		*$*	*$*	*$*	*$*	***$***
Other Development Partner 2 (name)		*$*	*$*	*$*	*$*	***$***
Other Development Partner 3 (name)		*$*	*$*	*$*	*$*	***$***

Component 3: Develop a National Forest Reference Emission Level and/or a Forest Reference Level

Background and objectives

The establishment of a national forest reference emission level (REL) or forest reference level (RL) is a necessary step in the implementation of REDD+ at the country level. A reference level represents the amount of future emissions and removals that can be expected from the land use and forestry sectors across the national territory in the absence of any REDD+ activities. In this regard, a reference level provides the benchmark against which national level REDD+ performance can be assessed and payments for performance determined.

The establishment of an REL/RL also represents a key input for the design of an overarching national REDD+ strategy. An REL/RL provides information on the future location and sources of emissions, thus facilitating the identification of priority REDD+ activities and locations. Knowing the likely amount of future emissions and/removals also provides a basis upon which national governments can set emission reduction targets.

To date, no clear guidance exists from the UNFCCC on how RELs/RLs should be developed. Decision 4/CP.15, however, makes it clear that developing countries should be responsible for developing their own REL/RL and that this should be based upon historical trends and adjusted according to national circumstances. Further guidance is likely to emerge from the UNFCCC on modalities and procedures for establishing RELs/RLs and how these will be reviewed; however this should not prevent countries from taking steps in the immediate term that will assist the development of a national REL/RL. The objective of this section is, therefore, to identify the step-wise approach PNG will take to develop its REL/RL

REL/RL development

Establishing a national REL/RL is comprised of three main steps:

1. Quantify emissions and removals from the five activities that form REDD+ for a defined historical reference period. This provides a first understanding of historical trends nationally but also across spatially explicit land-use types, geographical areas and land management categories;
2. Consider and define PNG's national circumstances that are most likely to affect future land use trends; and
3. Calculate GHG emissions and removals from a series of development pathway scenarios that incorporate the above national circumstances to varying degrees.

To achieve the first step it will be necessary to conduct satellite imagery analysis to classify land cover types and determine their rates of change over time. Additionally, carbon stock measurements in different land cover classes will need to be conducted in order to generate emission factors that quantify the amount of GHG emissions or removals between different land use change trajectories. In combination, these activity data and emission factors allow for the calculation of historical GHG emissions. At a later stage, it will be necessary for PNG to conduct monitoring, reporting and verification (MRV) of its REDD+ activities in order to demonstrate performance. In order to do so, much of the same data needed to develop the REL/RL will need to be collected. For the sake of comparability, it is therefore preferable that the type of data, data gathering methods and data processing techniques be as similar as possible for REL/RL establishment and future MRV.

Due to the need for data comparability, there are strong linkages between this component of the R-PP and component 4 where PNG's process to develop its MRV system is described. For example, capacity building on remote sensing interpretation techniques is likely to take place on historical satellite images that can in turn be used to develop activity data required for the REL/RL. Similarly, data collection on carbon stocks is of equal value for developing the REL/RL as it is for informing the MRV system. For this reason, the government agencies identified to conduct MRV in component 4a are likely to be the same

as those who develop the REL/RL. In this regard, the development of the REL/RL will be one step in the overall process of establishing PNG's national MRV system.

The purpose of identifying and defining national circumstances under step 2 is to provide justification for why past deforestation or other land use trends should not be considered as the basis of future trends of GHG emissions. These could include: geographical characteristics, national policies and strategies, socioeconomic factors, climatic factors, population growth, etc. The relevant importance of these factors is likely to have an influence on how forest and land resources are used in the future, meaning past trends are not always indicative of the future.

Once the most relevant national circumstances are identified it will be necessary to predict future change scenarios according to expected development and socio-economic pathways. This is both a technical and political exercise and will require additional stakeholders than those involved in developing activity data and emission factors. This could include actors such as the technical working groups under the OCCD, civil society and others.

At present, PNG has approved five REDD+ pilot activities to be implemented at the community level guided by the governing structures of both the national and provincial governments which are expected to feed lessons learned into the development of the national REDD+ framework. During the development of the national REL/RL it will therefore be necessary to determine how these sub-national activities will integrate into the national REL/RL. Adequate systems and procedures will need to be in place to reconcile the monitoring and performance of sub-national activities within national level monitoring, both to understand the contribution of sub-national activities to overall national performance, but also with regards to issues such as leakage.

Current data availability

PNG has a number of national spatial datasets including land-use, physical environment (e.g. soils, landform, climate etc), and forest types which have been developed over a 20-30 year period and could be used to provide guidance during the development and establishment of PNG's REL/ RL. While some high quality datasets exist, institutional arrangements to date have not been conducive to collaboratively holding and maintaining datasets. As part of the work to support the establishment of a MRV system for PNG, a comprehensive assessment of this available data will be undertaken, as explained in Section 4, and systems put in place to more freely share this data. However, when it comes to current and historical forest cover assessments and forest carbon stocks, there is generally a paucity of data in PNG. Improving these datasets is therefore a necessity during the development of the REL and national MRV framework.

Forest cover change assessments

Very few national level forest cover change assessments have been conducted to date. A study by Shearman et al. (2009) was the first time a historical forest cover change assessment for all of PNG was conducted. This assessment compared 1972 aerial photographs to LandSat, SPOT 4 and SPOT 5 satellite images of 2002 to gain an understanding of forest loss over a 30 year period. The results of this study suggested that 15% of PNG's forests were lost during this period and that a further 8.8% were degraded through logging. While another study (Filer et al. 2009) contests that these estimates are an overestimation, no other national level estimates exists at present. Nevertheless, the time period over which this assessment was made is dated and of little value when trying to predict future trends. More accurate estimates will need to be produced when developing the REL/RL by conducting national level wall-to-wall analyses over several time periods for approximately the past ten years.

At the sub-national level, additional analyses have been conducted by research units and those supported through other research grants and programmes, including the private sector and NGOs. This data is valuable in terms of understanding more localized trends and will be useful to support the development of the REL/RL.

The PNG Forest Research Institute (PNGFRI) has carried out similar activities in provinces, but focussed at the community level. This also allows the opportunity for collaboration amongst civil societies and community based organisation. Many communities in PNG who have been engaged in that manner have

also been provided the opportunity to be engaged in the monitoring, and management of forest including carbon assessment through ground-truthing training.

Carbon stock data

To date, data on biomass and carbon stocks in different forest types in PNG is limited. In most cases, research plots have been set up for a purpose different from setting up a multipurpose forest inventory and therefore the data collected is not always applicable. Despite the need for further work in this area, there is also a need to collect and coordinate the existing fragmented work that already exists for PNG. This is a key activity both for establishing the REL/RL but also to inform the national MRV system. First steps to achieve this will occur during the National Inventory workshop intended to be run at the end of 2012. Nonetheless, presented below are some of the existing examples of work done on biomass and carbon stocks to date.

The PNG Forest Research Institute (FRI) maintains a set of permanent 1 hectare plots which were established under a research project titled “Intensification of Growth and Yield Studies of previously Logged-over Forests in Papua New Guinea”, 1992-1999, funded by the International Tropical Timber Organization (ITTO). The project resulted in the establishment and measurement of 72 Permanent Sample Plots (PSPs) in cutover natural forests throughout PNG. Since 1995, FRI has also expanded the PSP network by establishing and measuring more than 55 additional plots of which 9 are on un-cut natural forests.

From 2001 to 2005, the ACIAR project FST/1998/118 (Planning methods for sustainable management of timber stocks in Papua New Guinea) provided funds to support the re-measurement of these plots. During this time 32 PSPs were re-measured. The current ACIAR project FST/2004/061 is providing funding for ongoing maintenance and re-measurement of these plots as well as the management of the PSP database. As at July 2008, ACIAR project FST/2004/061 had funded the re-measurement of 30 PSP plots.

ITTO project consultants developed a PSP database computer program (Persyst) in the late 1990s, along with a forest growth model called PINFORM for lowland tropical forests in PNG using data from these PSPs. FRI national staff have managed PSP re-measurements over the last 15 years.

A recent study by Fox et al. 2010 that reviewed data from these sample plots is one of the few conducted to date to assess carbon stocks in different pools across different forest types. This study’s results, presented below in **Error! Reference source not found.**, provide an early indication of carbon tocks in different forest types in PNG.

Table 9. Estimates of the mean carbon stock in different forest types in Papua New Guinea. Quantities for all components are Mg C/ha (±SD).

	Secondary			Primary	
Forest C component	Lowland	Lower-montane	Mid-montane	Lowland	Lower-montane
AGLB $_{>10cm}$	66.3 (18.8)	58.8 (9.8)	61.3 (19.6)	106.3 (22.7)	141.1 (25.6)

AGLB $_{<10cm}$	6.7	5.8	6.1	5.1	7.1
Total AGLB	73.0	64.6	67.4	111.4	148.2
FL	0.7	1.5	1.5	2.6	5.6
CWD	16.6	14.7	15.3	10.3	14.1
Total NLD	17.3	16.2	16.8	12.9	19.7
Total AGB	90.2 (25.6)	80.9 (13.5)	84.3 (26.9)	120.8 (22.5)	167.9 (30.4)
Sample size	115	3	2	10	2

Source: Fox et al (2010)

In 2006-7 the European Commission's Joint Research Centre and the Max-Planck Institute for Biogeochemistry undertook a feasibility study on forest area change and carbon stock change assessment with the PNG FRI. The reports were made available to SBSTA26 and COP-13. At this stage, most of these institutions have not come forward to release relevant information until the development of the National Forest Inventory and the update of the National Forest Base Map, currently being progressed under the PNG Forest Authority with Technical Assistance from JICA.

Unpublished data on carbon stocks has also been collected by NGOs such as WCS and WWF who are currently working on pilot REDD+ activities throughout PNG. These studies have already been made available to the OCCD, but with the absence of the physical structure at present, the OCCD cannot reach an agreement through either an MOU or MOA with these institutions to keep this information.

National circumstances

Guidance from the UNFCCC has not yet emerged on what national circumstances countries will need to take into account when developing their REL/RL. Nevertheless, PNG has already identified some national circumstances that affect how it is likely to be impacted by climate change as well as its ability to address its own GHG emissions in the context of its national development goals. These national circumstances, outlined in PNG's Initial National Communication to the UNFCCC, include:

- Environmental: climate and weather, sea level rise, biodiversity
- Social: History, population and welfare, educations and training
- Economic: current GDP/capita and wealth distribution, economic growth targets, economic sectors (agriculture, forestry, fish resources, coastal resources, non-renewable resources, energy, tourism, transport)

For the purposes of developing the REL/RL, PNG will need to identify which of these factors are most relevant when predicting future trends in land and forest use.

Work plan

The activities required to develop PNG's national REL/RL are closely intertwined with those to establish the national MRV system. Currently, the majority of the UN-REDD's funding support to PNG is for the development of its national MRV system. Therefore, due to the overlapping nature of the MRV and REL/RL work, only a limited amount of funds are requested from the FCPF to support the REL/RL component.

Presented below are the REL/RL specific activities PNG has identified for the development of its national REL/REL:

Activity 3.1: Test and refine MRV methodology using available historical satellite imagery and emission data to develop a Business as Usual (BAU) scenario

As part of the capacity building during the establishment of the national MRV system, national and provincial technical operators will be trained in remote sensing and GIS techniques using historical

satellite images of PNG. The results of this interpretation work will be used to determine the historical rates of land use change in PNG (activity data). This activity data will be combined with the emission factors generated after the existing data on biomass and carbon stocks is compiled (see component 4). This will provide a first estimate of historical changes and emissions from which a BAU scenario can be developed

Activity 3.2 Review methodologies for establishing nationals REL/RLs

Little guidance currently exists on how to establish a national level REL/RL. Existing guidelines and methodologies, as well as lessons learned from other countries, will be reviewed to determine the best practice approaches PNG will take when developing its own REL/RL

Activity 3.3 Compile additional data to support development of the REL/RL

Additional data will need to be collected to refine the BAU developed under activity 1 above. This relates primarily to generating more accurate emission factors. For this, additional studies will be conducted, particularly on carbon stocks and the vulnerability of different forest types in the context of a changing environment

Activity 3.4 Review relevant national circumstances and collect data

An initial analysis of the most relevant national circumstances to consider during PNG's REL/RL development will need to be conducted and data collected. This is likely to include data on such things as the effects of customary land tenure and land reform efforts on REDD+ in PNG, including impacts of the National Land Development Plan, as well as the likely effects of economic and policy development efforts. Stakeholder consultations will be conducted to determine which national circumstances are most relevant.

Activity 3.5 Develop the national REL/RL

This will be both a technical and political process. Based on the findings of the BAU and the data collected on national circumstances, several future scenarios will be developed for which an REL/RL will be developed. These will subsequently be subject to stakeholder review to reach a consensus on the most appropriate scenarios for PNG.

Activity 3.6 Determine how to reconcile sub-national and national RELs/RLs

In the case where sub-national activities have developed their own baselines or REL/RLs it will be necessary to determine how to reconcile these with the national REL/RL developed under activity 5 above. This is necessary in order to reconcile future national and sub-national MRV efforts and reach an agreement on the level of performance for sub-national activities. In order to do so, studies will be conducted on how these two levels should be reconciled.

Table 3. Summary of Reference Level Activities and Budget

Main Activity	***Sub-Activity***	***Estimated Cost (in thousands)***				
		2012	***2013***	***2014***	***2015***	***Total***
Test and refine MRV methodology	*GIS/RS training for national staff conducted by the University of Papua New Guinea & PNG University of Technology*	*$*	*$*	*$100*	*$50*	***$150***
	Trainings for provincial resource people	*$*	*$*	*$50*	*$50*	***$100***
Review REL		*$*	*$*	*$100*	*$0*	***$100***

methodologies						
Conduct additional studies	*Research studies commissioned by academia on forest carbon stocks*	*$*	*$*	*$60*	*$50*	***$110***
	Studies conducted in pilot communities supported	*$*	*$*	*$30*	*$20*	***$50***
	Research to quantify soil carbon in various forest types	*$*	*$*	*$50*	*$50*	***$100***
	Vulnerability assessment studies for different forest types	*$*	*$*	*$50*	*$60*	***$110***
Review relevant national circumstances	*Conduct analysis on most relevant national circumstances and gather data*	*$*	*$*	*$50*	*$50*	***$100***
Develop REL/RL, including consultation of final results		*$*	*$*	*$50*	*$50*	***$100***
Linking sub-national REL/RL & MRV into National system	*Sub-national GHG emissions reductions measured & reported*	*$*	*$*	*$20*	*$40*	***$60***
	Sub-national leakage & local abatement costs addressed (research commissioned to inform REDD+ activities)	*$*	*$*	*$60*	*$80*	***$140***
Total		***$***	***$***	***$620***	***$500***	***$1,120***
Government		*$*	*$*	*$*	*$*	***$***
FCPF		***$***	***$***	***$620***	*$500*	***$1,120***
UN-REDD Programme (if applicable)		*$1,100*	*$1,100*	*$*	*$*	***$***
JICA		*$10*	*$*	*$*	*$*	
Other Development Partner 2 (name)		*$*	*$*	*$*	*$*	***$***
Other Development Partner 3 (name)		*$*	*$*	*$*	*$*	***$***

Component 4: Design Systems for National Forest Monitoring and Information on Safeguards

Background and objectives

Decisions 4/CP.15 and and the Decision on the Outcome of the work of the AWG/LCA of COP16 request that developing countries establish forest monitoring systems to monitor and report on their REDD+ related activities. In this regard, the development of an IPCC-compliant MRV system will be a key element to support REDD+ policies and measures and to assess PNG's REDD+ performance. Internationally, REDD+ is still under negotiation and accounting rules are still to be defined. Nonetheless, existing guidelines and reporting requirements for the LULUCF sector for Annex I Parties under UNFCCC are sufficient to inform the establishment of a PNG MRV system at this point. This approach is considered to be conservative as the MRV systems under the Convention are comprehensive and inclusive of all possible land use activities.

PNG aims to establish an MRV framework through a phased approach which will support a fully operational performance-based REDD+ mechanism within a relatively short time period of about three years. To achieve this, efforts are already being made, particularly by PNGFA and UPNG, to increase the capacity for remote sensing and MRV in PNG. These are supported by development partners, most notably the Government of Japan/JICA with its comprehensive support to PNGFA for hardware and software for remote sensing. Additionally, the majority of funds already made available to PNG through the UN-REDD program are being used to establish PNG's MRV system. For this reason, very limited funds are requested from the FCPF for the implementation of this portion of the R-PP.

The objective of this section is to detail the steps PNG will take to establish its MRV system based on four main pillars, as outlined below. The first three pillars outlined below are discussed within section 4a, while the fourth is discussed in section 4b.

1) A Satellite Land Monitoring System to assess activity data, forest area and forest area changes;
2) A multipurpose National Forest Carbon Inventory to assess carbon stocks and carbon stock changes (i.e. emission factors - EF);
3) A National GHG Inventory to estimate and report anthropogenic emissions by sources and removals by sinks.
4) A National REDD+ Information System to share information (domestically and internationally) on all forest and REDD+ related issues, to allow the participation of all relevant stakeholders and to ensure that the implementation of national REDD+ policies and measures, including safeguards, are results-based.

It should be noted, that the majority of the text for this section is taken from PNG's UN-REDD Program Document, approved in March 2011, which first outlined PNG's proposed MRV structure. This text has been updated where possible for this R-PP, based on progress made to date.

4a. National Forest Monitoring System

A. Objective

The objective of this component is to clearly outline key activity gaps and associated funding needed including other additional work needed to further enhance and support the efforts initiated under the UN-REDD Program in establishing an operational monitoring & MRV system for PNG.

B. PNG's MRV system

PNG is going to develop a MRV system by learning from other countries' experiences. The PNG system will combine lessons learned from already operational and successfully monitoring systems and build on the existing capabilities and resources in country with the objective to develop, shift and align resources to institutions with capacity to deliver, and to meet the quality in compliance with set or accepted methods and standards. Within the context of UN-REDD's funding support, the Food and Agriculture Organization (FAO) is currently the lead partner within PNG supporting the establishment of the national MRV system.

The roadmap for developing a MRV system in PNG would at all stages accompany and support REDD+ readiness efforts, as outlined in the CCDS and the Interim Action Plan. The REDD+ process would follow through 3 broad stages (see also **Error! Reference source not found.**):

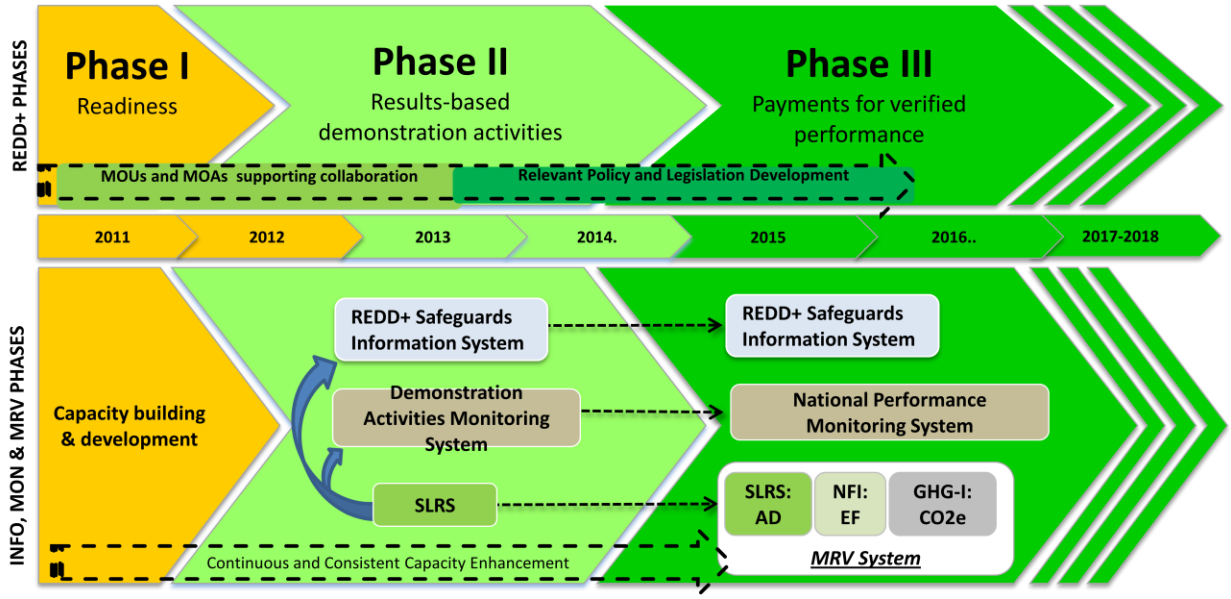
- **Phase 1 - Readiness**: This includes capacity development for the establishment and testing of the national MRV system. In this phase, PNG will assess its historical forest area and carbon stock changes. The requirements pertaining to country specific situations are likely to be generic and intended to be flexible to accommodate issues and events not anticipated for during the preliminary stakeholder engagement and design process. Much of this capacity building has already begun with the support of the UN-REDD program and development partners such as JICA. Additionally, MOUs and MOAs will be established between organizations and stakeholders, in the absence of policies and legislation, to provide a legitimate basis upon which to collaborate on the various MRV components. While the overall focus of this phase is on capacity building, capacities will continually be strengthened even in subsequent phases.
- **Phase 2 - Implementation supported by transitional funding:** This includes an operational National REDD+ Information System with intermediate operational functionality of the Satellite Land Monitoring System and National Forest Inventory (pre-sampling data for conservative estimates of EF). This phase is crucial to determine the initial success of the system's operation, as it requires a majority of all of the MRV components to be working in order to operationalise the system. This phase also assists government stakeholders involved in both REDD+ and the MRV process to further refine methodologies and guidelines as the system becomes operational and initial results are generated. It is also within this phase that the majority of work to develop the actual REL/RL will be conducted (see section 3).
- **Phase 3 - Payments for verified performance**: This includes a fully operational national MRV system and integration of REDD+ activities with other mitigation mechanisms under UNFCCC. This is the stage where the government and all its stakeholders, through the MRV system, are able to report credibly. Greater experience with the fully operational system will also allow the government to elevate its IPCC reporting tiers over time. This is a crucial move, which will assist in leveraging increased financial investments for ERs from both national and international stakeholders, including bilateral partners.

The MRV system will enable identification and tracking of actions and processes that are related to the five activities identified under REDD+ and implementation of the most recently adopted or encouraged IPCC methodological approaches. Even if the 2006 IPCC Guidelines are not yet adopted by the UNFCCC these will form the methodological base of the proposed national MRV system on GHG emission and removals since they are the most updated guidelines produced by the IPCC and are fully

consistent with the 2003 IPCC Good Practice Guidance for LULUCF, currently adopted for reporting GHG Inventories.

The MRV system will also be the tool that will support the National REDD+ Information System that PNG will establish in order to share information on the implementation of REDD+ safeguards..

Figure 12. Multiphase development of the PNG MRV system

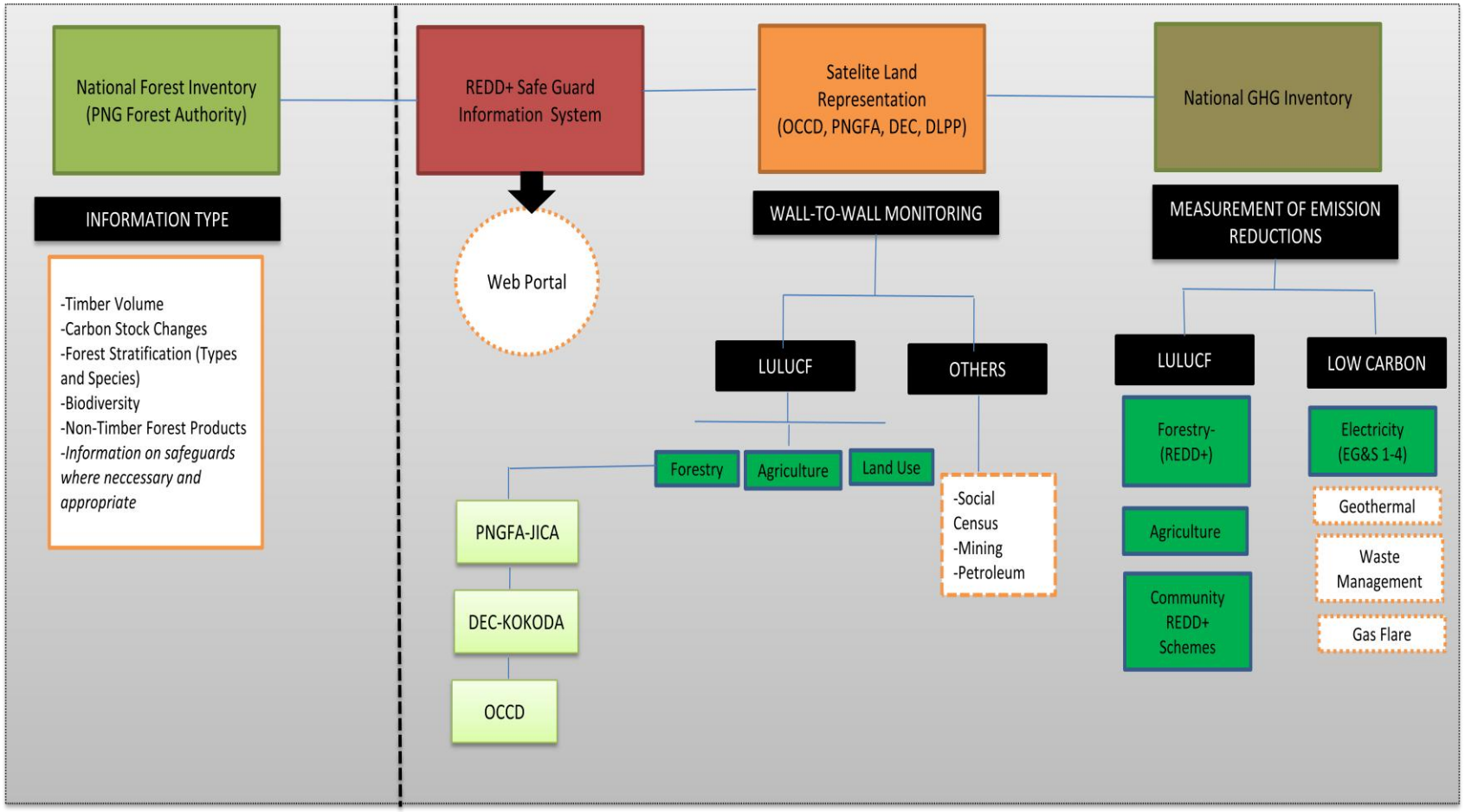


Source: J.Scriven and D.Mollicone, FAO (2011), RPanda (edited), Papua New Guinea , 2011

As mentioned previously, PNG's MRV system will be based on four pillars (see **Error! Reference ource not found.**). The first three pillars are discussed in section 4a while the final pillar is discussed within the context of component 4b.

1) A ***Satellite Land Monitoring System*** to assess activity data, forest area and forest area changes;
2) A multipurpose ***National Forest Carbon Inventory*** to assess carbon stocks and carbon stock changes (i.e. emission factors - EF);
3) A ***National GHG Inventory*** to estimate and report anthropogenic emissions by sources and removals by sinks.
4) A ***National REDD+ Information System*** to share information (domestically and internationally) on all forest and REDD+ related issues, to allow the participation of all relevant stakeholders and to ensure that the implementation of national REDD+ policies and measures, including safeguards, are results-base

Figure 13. The four basic PNG MRV elements



Source: OCCD 2011

The Satellite Land Monitoring System

To assess activity data, a Satellite Land Monitoring System (SLMS) will be set up in PNG, along with the capacity to operate it. The system will leverage existing capacities within GoPNG and UPNG. It will be developed as a whole-of-government system with support from different development partners, notably JICA's technical assistance to PNGFA and the UN-REDD National Programme. The SLMS will:

- **Detect land use changes** (changes among different land uses categories) and forest canopy changes in forest land remaining forest land;
- **Be operational**, i.e. it will allow full territory coverage by high resolution satellite data with a seasonal temporal frequency of a minimum of 2 Landsat class data per area unit per year;
- **Allow for frequent monitoring**, i.e. it will enable the monitoring of forest disturbance processes in frequent intervals through medium resolution satellite data, complemented by more detailed imaging for high-risk areas, with the ultimate intention of developing IPCC tier 3 capability;
- **Monitor in accordance with the forest definition** that PNG will adopt under REDD+, and parts of which have already been developed as part of the consultation under the FCCFA.

Each unplanned change of land cover detected by the SLMS will then need to be controlled on the ground in order to assess changes and identify causes and actors. Furthermore, GoPNG will need to design a framework for remedial actions through PNGFA and other authorities for cases when undesired changes in land cover are detected, and will guide in the implementation of those actions. Enforcement mechanisms will require considerable attention to be effective.

An ambitious, illustrative output of the SLMS in terms of reporting requirements is shown in **Error! eference source not found.** below. The final matrix or matrices will be determined during the full design of the MRV system and will build on existing approaches in PNG. These matrices, however, could include:

- An annual land use change matrix, for reporting on land use changes processes
- An annual conversion matrix, for reporting on changes in land practices between each land use sub-categories.

Figure 14. Example of a possible PNG land use change matrix and practices conversion matrix

ILLUSTRATIVE

Initial / Final	FL Alpine	FL Upper montane	FL Mid montane	FL Lower montane	FL Lowland	Grass Land	Beach forest	Crop Land	Wet Land	Settlement Land	Other Land	Final Area (T1)
FL Alpine	51					15						66
FL Upper montane		60										60
FL Mid montane	25		50			35		13				123
FL Lower montane				26								26
FL Lowland					20	15						35
Grass Land						10						10
Beach forest						2	10					12
Crop Land								29				29
Wet Land									0			0
Settlement Land								5		15		20
Other Land											5	5
Initial Area (T0)	76	60	70	26	20	89	10	47	0	15	5	460
Net change (Δ = T0-T1)	15	0	-53	0	-15	79	-2	18	0	-5	0	0

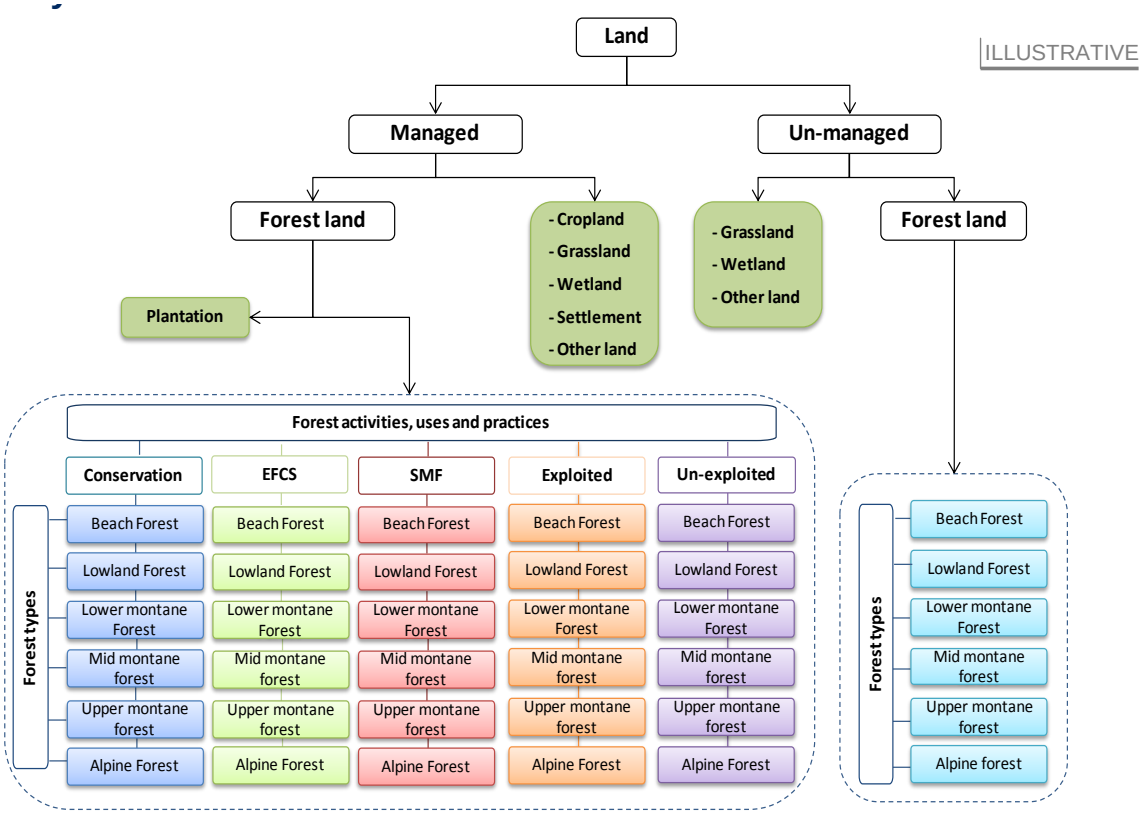
Initial / Final	Degraded Burning	SMF	Conservation	Exploited	Unexploited	Final Area
Degraded Burning	4					4
SMF		5	6			11
Conservation			0	4		4
Exploited				1		1
Unexploited					12	12
Initial Area	4	5	6	5	12	47
Net Change	0	-6	2	1	0	0

Source: PNG UN-REDD NP, 2010

As the forest area of a country is not homogeneous in terms of species composition, management practices, (e.g. unexploited, under sustainable management, conservation, etc.) and ongoing and future drivers of carbon stock changes (e.g. drivers of deforestation), PNG will develop a stratification of its forest land area in order to identify and track different portions of land with different biophysical properties and subject to different policies, measures and activities. Within a single stratum, different activities and institutional arrangements related to forest carbon stocks management will be identified, producing a further, more detailed sub-stratification. An example of such a system is shown in Figure 14 above

For each different stratum and/or sub-stratum technical and methodological arrangements aimed at achieving the highest quality estimates in a cost-effective manner will be implemented; at this scope all on-going local monitoring activities will be taken into account or directly included in the GHG inventory system while the national monitoring activities verify the local estimates.

Figure 15. Potential land use classification/stratification system for PNG's national territory



Source: PNG UN-REDD NP, 2010

National Forest Carbon Inventory

For the assessment of the forest emission factors, the preparation of a multipurpose national forest inventory is necessary. The main objective for PNG will be the establishment of a country-specific emission factors database reflecting the different forest types in order to support an assessment of carbon stock changes at tier 2 of IPCC guidelines for phase 2 and tier 3 for phase 3 of REDD+.

PNG's national carbon forest inventory will build on existing research results which have provided indications on PNG's forests (e.g., permanent sampling plots network, ITTO 1992 or ACIAR project FST98-118, Planning methods for sustainable management of timber stocks in Papua New Guinea). As in many cases, existing research and sampling plots had a different focus from the objectives outlined here, these efforts need to be assessed and complemented to meet the requirements of the multipurpose national carbon forest inventory. Significant amounts of capacity building support and training are therefore required for the relevant institutions, particularly FRI but also other GoPNG and non-governmental organisations (e.g., WWF, WCS) that are already doing work on related topics.

The inventory will have two phases: i) pre-sampling, and ii) final sampling. It will be based on the principle of optimum allocation of resources. During pre-sampling, preliminary statistics of different forest strata will be assessed. These preliminary statistics will be used to define the final sampling strategy but also to produce conservative estimates of emission factors which will support the implementation of REDD+'s phase 2 (i.e. tier-2 reporting). One of the main objectives of the national forest inventory will be to assess, with high accuracy, all the forest-related emission factors. Previous analysis on the already existing field forest data indicates that most probably, the number of field plots that it will be necessary to collect is between 1,000 and 2,000. The exact number will be defined during the pre-sampling phase.

GHG estimates of a National GHG Inventory

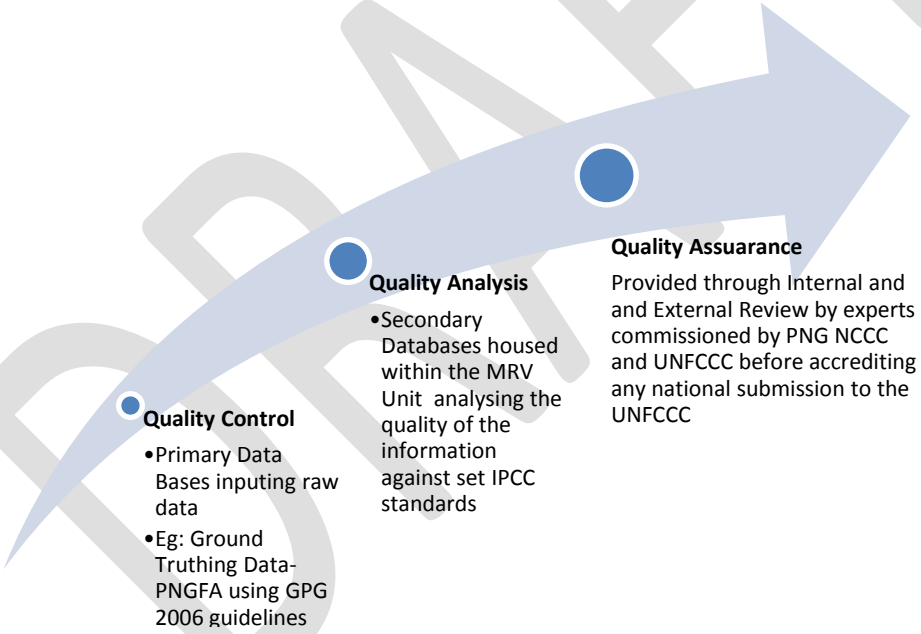
In order to assess estimates of GHG emissions and removals, countries have to compile a national GHG inventory which is then reported to the UNFCCC Secretariat. In PNG, this function is assumed by the OCCD. PNG's national GHG inventory will be constructed following the methodologies developed by the IPCC in its 2006 Guidelines. The initial objective will be to report GHG estimates at Tier 2 in two to three years, but the GHG inventory unit will aim at reaching Tier 3 around 2020.

In order to ensure the transparency of the entire MRV process, all data PNG will use in its national system will be publicly available through a web-based portal. The land data from the SLMS will be distributed through a WEB-GIS system.

Quality Control, Quality Analysis and Quality Assurance

A key function of the office responsible for compiling the national GHG inventory is quality assurance and quality control (QA\QC) of data and methods. The OCCD will therefore work as the national entity in charge of verifying data provided by the other two MRV components: the SLMS and the NFI. These functions will be carried out following IPCC guidelines on quality control (QC) and quality assurance (QA). Provided below in **Error! Reference source not found.** is a diagrammatic representation of the rocess the OCCD will take to perform quality control, quality and quality assurance of all data submitted to the OCCD

Figure 16. of Quality Control, Quality Analysis, and Quality Assurance



Source: OCCD 2011

Quality Control – Is meant to be a process established from the very beginning, as a check and balance mechanism. This must not be confined to raw data generation, but also on the methodology used to generate raw data, and the process through which such methodology is applied. This must be embedded into the Monitoring requirements of how raw data is collected and stored, so as to minimize errors. The same process must be used in the processing of raw data within the Primary Inventories. Considering the PNG national circumstances, it may also include ensuring that the equipments and software used are credible enough to generate the results needed.

Quality Analysis – Is supposed to be an activity embedded into the role of the technical operators of the National system. They must have the capacity to analyze incoming information into the system, to ensure that the information is credible. Again, this must not be confined to data only but even the process through data is generated and reported. This may include, analyzing consistency in the use of consistent data platforms, similar methodologies, competent software, etc. This should also be a process where issues of consistency, comparability and transparency must also be checked. This process must be established in consideration of the capacity and capability of the Internal Validation partners, and the type of resources they have, as they will be working alongside the UNFCCC experts to validate the final information. This process is very important in order to prepare the final information that will be made available for internal and external verifications.

Quality Assurance – Is supposed to be the final validating process by the internal and external partners engaged and commissioned by both the NCCC and UNFCCC. They will analyze the information provided against a set of guidelines, and provide final accreditation in either disputing or accepting the information. The final country expectation is for internal and external assurance that the information is ready to be presented to the UNFCCC, investors and donor partners.

Institutional and governance arrangements

It is important to identify and develop an institutional structure that will be responsible to set up a National System.[59] The elements of the MRV system outlined above will form part of the National System that a country will establish in accordance with the LCA/Cancun Decision on REDD+. In the case of PNG, a number of institutions and GoPNG departments are today involved in activities related to the functions of a MRV system for LULUCF, e.g.

- **OCCD** is mandated by the NEC to develop and coordinate the national MRV system;
- **PNGFA** as responsible agency for the management of PNG's forests is overseeing the monitoring and surveillance of forest areas; **FRI** is the forestry research arm of PNGFA and operates a network of permanent sampling plots.
- **DAL** is the central coordinating body for the agriculture sector including the planning and promotion of agricultural development and productive employment generation in the sector which may involve conversion of primary and secondary forest.
- **DEC** is tasked with the administration and implementation of the Environment Act 2000 to ensure good environmental protection and management and wise management of PNG's natural resources.
- **DLPP** is responsible for managing the alienated and customary land in PNG, including support for land use plans at the GoPNG, province and district levels.
- The **National Mapping Bureau** is responsible for providing Papua New Guinea, specifically also GoPNG, with mapping products and services.
- The **UPNG** Remote Sensing Unit is currently operating PNG's most advanced GIS system and supporting GoPNG in many of the tasks outlined above.

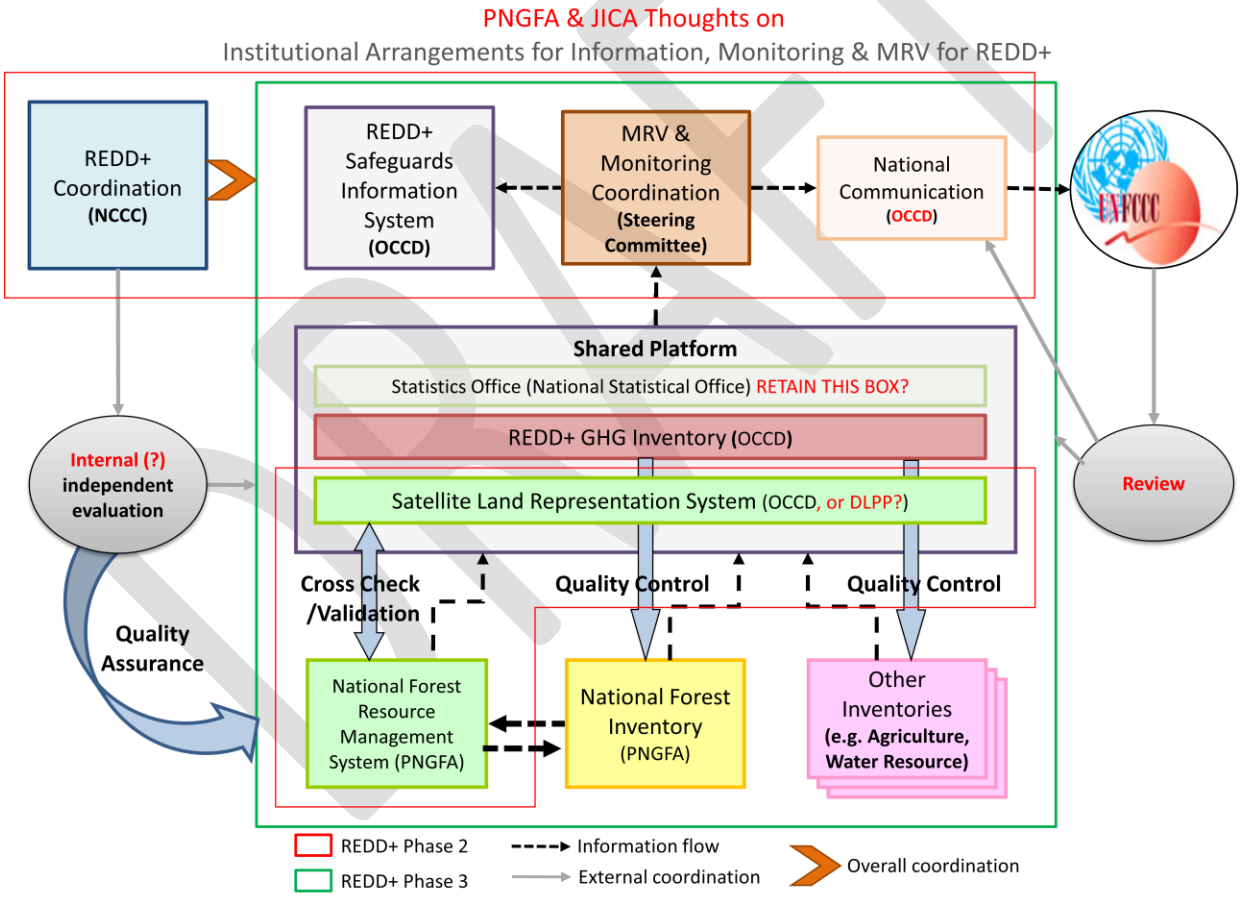
[59] The concept of National systems is explained in paragraph 9 of the Annex to Decision 19/CMP.1.: "National systems should be designed and operated to enable Parties included in Annex I to consistently estimate anthropogenic emissions by all sources and removals by all sinks of all GHGs, as covered by the Revised 1996 IPCC Guidelines for National Greenhouse Gas Inventories and IPCC good practice guidance, in accordance with relevant decisions of the COP and/or COP/MOP." REDD-plus is a mechanism envisaged to require the full participation of national institutions in Non-Annex I Parties to the financial mechanism under the Convention (e.g. like Annex I countries under the Kyoto Protocol). Thus, it is expected that countries participating in REDD-PLUS will be required to set up such National systems.

- The **Papua New Guinea University of Technology** (UNITECH) is mandated to build capacity in lands, surveying and forestry, involving research and training on GIS, remote sensing and biomass.

Accordingly, the institutional set up and organizational responsibilities will have to be clearly identified in order to clarify which institution is responsible for different aspects of the coordination of administrative and technical arrangements, the overall quality of reported estimates and the fulfilment of procedural requirements of REDD+. Strong coordination mechanisms will be required to ensure interaction between all stakeholders at a national and local level.

PNG proposes a two stage approach when establishing its national MRV institutional framework. During a first stage (i.e. phases 1 and 2 of REDD+ implementation), the institutional set up will be based on existing national capacities and capabilities (see**Error! Reference source not found.** below). This tructure provides for the basic components of the MRV system to be established, however, the number of organizations participating in this system is limited. Nevertheless, all organizations involved will ensure the participation of local communities, NGOs, various agencies at national and international level and the private sector.

Figure 17. Potential Stage 1 Institutional set up for PNG's MRV system



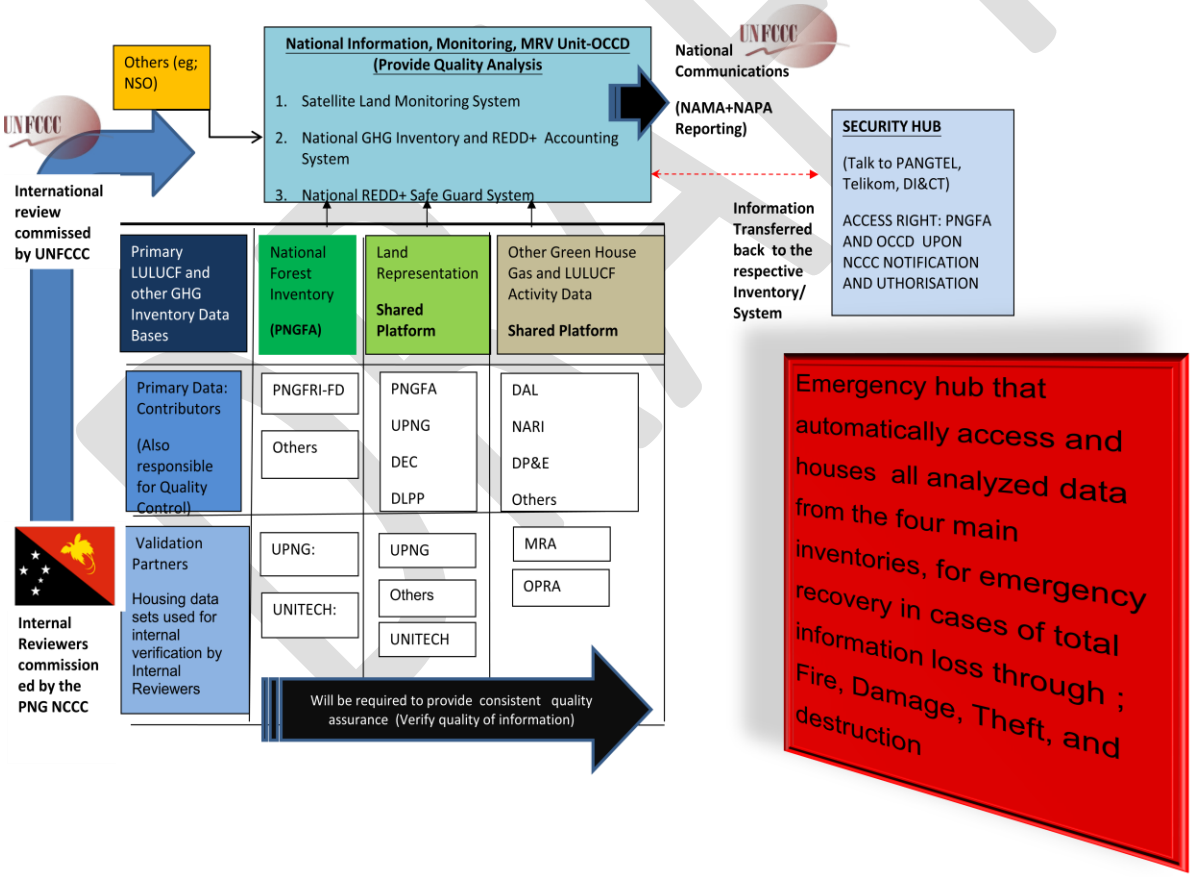
Source: PNGFA & JICA 2011

- The **Office of Climate Change and Development** is responsible for the development and coordination of the administrative and technical aspects of the MRV system, hosts the national GHG inventory and National REDD+ Information System, and reports net GHG emissions to external parties, e.g., National Communications to the UNFCCC;

- The **PNG FA** operates the National Forest Inventory;
- The **Department of Lands and Physical Planning under the PNG FA and the OCCD**, as well as other relevant departments manage the Satellite Land Monitoring System;
- The **National Climate Change Committee** acts as auditor and reviewer to the National GHG Inventory and commissions regular independent in-country audits to verify the transparency, accuracy, consistency, comparability and completeness of the submitted data; and
- Other government agencies, for e.g. Dept of Agriculture and Livestock will also be required to provide information necessary to gain a full understanding of sources of emissions from the land-use sector.

During a second stage (phase 3 of REDD+ implementation), while the main components of the MRV system remain the same, the institutional set up will include a greater number of organizations, thus increasing the quantity and overall quality of data flow (see **Error! Reference source not found.**). dditionally, a security hub will be added to the overall MRV structure due to past problems in the past with risks such as fire, theft, damage or unforeseen disasters that have caused datasets to be lost. The security hub intends to house the same data used by the OCCD's MRV unit as a safety measure against these potential risks.

Figure 18. Potential Stage 2 Institutional set up for PNG's MRV system



Source: OCCD 2011

Work plan

The core of the current UN-REDD support is focused on the establishment of an MRV system, meaning some activities have already begun under this component. The system is being built upon existing components for MRV in country and developing and strengthening capabilities in a whole-of-government approach. It is being designed in such a way that sustainability, including continuous refinement of the system of regular training of operators is institutionalised and ensured beyond the UN-REDD NP's support. Support under the UN-REDD Programme is complementing the activities funded by other donors, particularly the assistance provided by the Government of Japan as outlined above, and is drawing on additional resources for support and capacity building This includes, for example, the existing support for GHG inventory work in PNG through the Second National Communication and potential training on GHG inventory methodologies for the land-use sectors through efforts led by the US Environmental Protection Agency.

Provided below are the full suite of activities currently planned to establish PNG's fully functioning MRV system, followed by a diagrammatic representation of the timeline for these activities (see **Error! eference source not found.**):

Activity 4a.1 Set up the Satellite Land Monitoring System

- Take stock of existing domestic data sources and capabilities; assess possible international sources for remote sensing data
- Establish an operational wall-to-wall system based on satellite remote sensing data
- Design a methodological approach to support the implementation of REDD+ at the sub-national level

Activity 4a.2 Development of a multipurpose national forest carbon inventory

- Develop measurement protocols and sampling design for a national forest carbon survey, building on the existing permanent sampling plot system. System design is driven by UNFCCC reporting requirement.
- Assess institutional capacity needs
- Develop capacity building methodology, materials and 'train trainers'
- Provide training in forest inventory methodology, including community based monitoring approaches
- Conduct a national forest carbon inventory

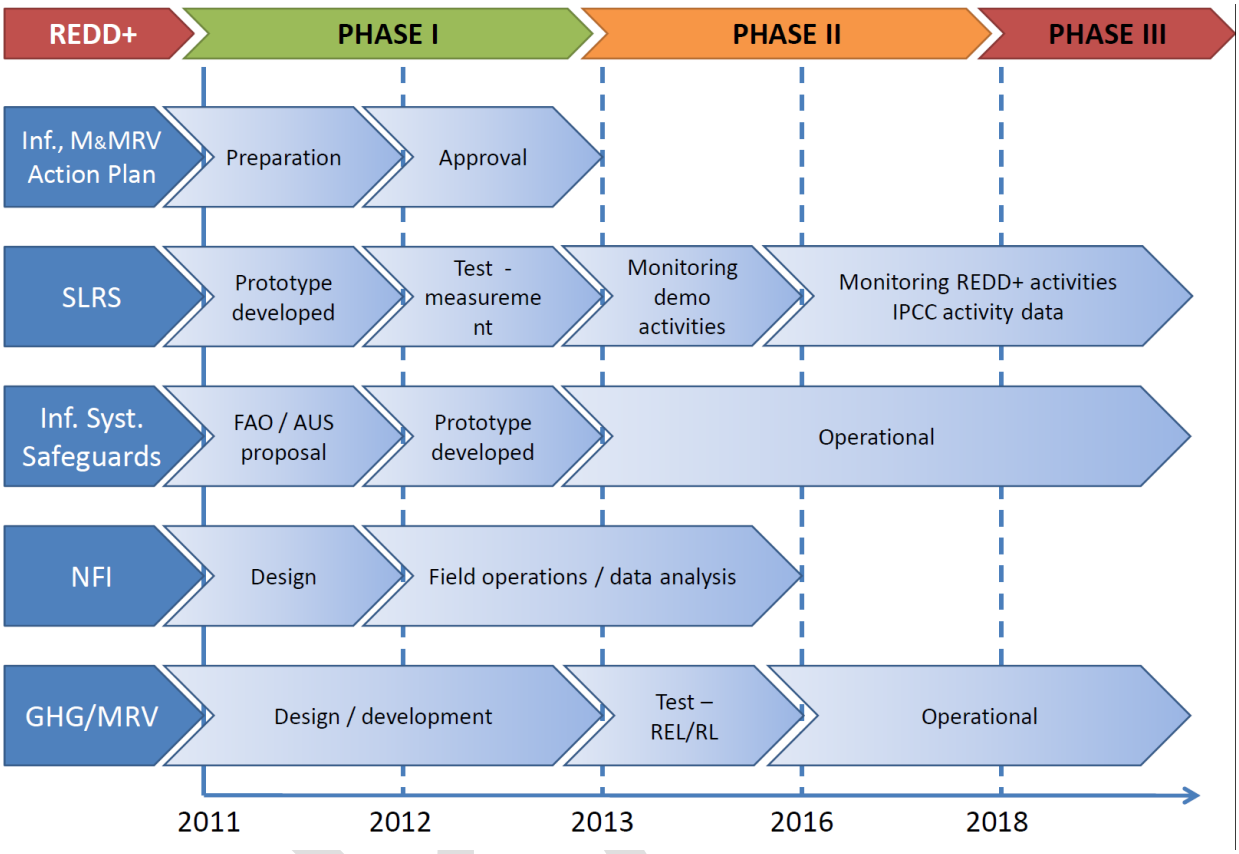
Activity 4a.3 Establish a National GHG Inventory for REDD+

- Conduct an institutional capacity gap-assessment
- Develop capacity building methodology, materials and 'train the trainers'
- Provide training on how to conduct an IPCC GHG inventory

Activity 4a.4 Provide technical advice, capacity building and implementation support

- Technical advice and capacity building to carry out the activities above, also including a transparent mechanism for quality assurance and control of the MRV system and the data generated;
- Institutional support to GoPNG partners and stakeholders of the MRV system to enhance domestic capabilities related to an MRV system and the reporting of net GHG emissions; specifically support to the OCCD through the secondment of a 'technical assistant' to the OCCD Director MRV & National Communication who would provide content, meeting management and process management support to the Director and act as coach.

Figure 19. Specific activity development for each phase



Source: PNG OCCD 2011

4b. Designing an Information System for Multiple Benefits, Other Impacts, Governance, and Safeguards

Background

Implementation of REDD+ strategies are expected to have numerous positive benefits beyond contributing to a reduction in global GHG emissions. This includes environmental benefits such as the ongoing provision of clean water, protection of habitat for wildlife, reduction of soil loss and overall more resilient forests. From a social point of view, benefits include a more abundant supply of NTFPs and more sustainable supply of timber, among others. It is also possible, however, that certain REDD+ strategies result in negative impacts for individuals or groups of people. For example, limiting agricultural encroachment or timber extraction could result in the loss of livelihoods for certain groups. Similarly, if REDD+ strategies are not designed carefully, they could also result in the loss of biodiversity when drivers of deforestation are displaced into areas with high biodiversity values.

This section describes the development of a National REDD+ Information System to monitor and report on the implementation of REDD+ safeguards which will be built off of the findings and progress made under the SESA process described in Section 2d.

Existing National Data Gathering Systems

A large number of past and present NGO and government led projects exist in PNG in the areas of environmental stewardship, biodiversity conservation, community development and rural development. Over time, protocols, procedures and methods have been developed to monitor and evaluate the success of these initiatives, many of which are have direct relevance to monitoring the impacts and successes of REDD+ implementation. It is based upon these monitoring approaches that PNG's National REDD+ Information System will initially be established.

For example, organizations such as WCS and the Nature Conservancy have a longstanding presence in PNG operating projects aimed primarily at protecting biodiversity in large landscapes of PNG such as in Manus and Madang. These projects have included in-depth assessments of both biodiversity indicators and broader ecosystem services. Additionally, a focus of these projects has been on assisting community livelihoods meaning approaches to monitor the socio-economic condition and benefits for rural communities are integrated have also been integrated into the project design.

The national government also undertakes periodic population and poverty assessments to understand the socio-economic situation throughout the national territory. These include national surveys such as the population and household census. Through these, experience has already been gained on collecting relevant data on indicators such as income, household, dependents, etc. Again, these types of surveys will be useful when determining the impacts of REDD+ interventions on the socio-economic situation of local communities.

Monitoring Indicators for the National REDD+ Information System

At present, PNG has not determined what indicators it will monitor under its National REDD+ Information System. These will largely be informed by the outcomes of the SESA process undertaken under Component 2b. Additionally, the outcomes of ongoing studies on subjects such as a Benefit Sharing Distribution System, carbon rights and FPIC as well as lessons learned from their implementation by pilot projects will inform what needs to be monitored. OCCD has been tasked with gathering information from these field based experiences and will incorporate them into national level policies while also refining national level monitoring protocols.

The National REDD+ Information System

As part of its broader MRV system, PNG will establish a National REDD+ Information System to provide information (domestically and internationally) on how the safeguards referred to in Annex I of the Cancun decision on Outcome of AWK/LCA are being addressed and respected throughout the implementation of

all the REDD+ activities. This information system will be PNG's central access point for information related to forests and REDD+. It will also be the key element to allow the participation of all relevant stakeholders and to ensure that the implementation of national REDD+ policies and measures, including safeguards, are results-based. To ensure that the system operates in a transparent way and that the type of information shared through the system is clearly defined, a legal act to empower the REDD+ Information System to collect and publish data should be considered, including aspects such as freedom of information and other supporting mechanisms.

The information on some REDD+ safeguards (for e.g., transparent and effective national forest governance structures; respect for the knowledge and rights of indigenous peoples and forest resource owners; and actions that complement or are consistent with the objectives of national forest programs and relevant international conventions and agreements) will be provided through an effective and transparent access to government acts and decisions, as well as through independent reports and analyses realized by NGOs and independent organizations. It will also include PNG's REDD+ project guidelines that provide environmental, social and fiduciary safeguards and information on how those are applied in the evaluation of demonstration activities.

The REDD+ Information system will also be integrated with some components of the National MRV System as some of the REDD+ safeguards (e.g., actions to address the risks of reversals; actions to reduce displacement of emissions, and the conservation of the natural forest) will require monitoring activities in order to provide information on their implementation, while at the same time protecting the rights of affected stakeholders, including local communities. The emphasis on participatory approaches for forest management will greatly contribute to this effort. In that respect the REDD+ information system will publish reports of forest assessments by local communities and on the integration of their plans with the national REDD+ policies and measures.

To address the safeguards on "the full and effective participation of relevant stakeholders, in particular, indigenous peoples and local communities" the information system will be an open access database with a web-portal interface to facilitate the access to the information. The system will also include a web-GIS interface which will allow the sharing of geo-spatial data among relevant stakeholders and facilitate the development of a fully transparent REDD+ process. One potential solution for the WEB-GIS interface could be an advanced version of the TERRAMAZON system developed by INPE (Brazilian Space Agency). The system would be based on open-source software (e.g., PostgreSQL and Google Android applications).

Work plan

Outlined below are the activities PNG will undertake to establish its National REDD+ Information System:

Activity 4b.1 Develop the National REDD+ Information System

- Establishment of a national REDD+ information system the scope and structure of which will be defined through a consultative process (e.g., through stakeholder workshops) and which will be based as much as possible on existing sources of information; this activity will include:
    - Development of a national database;
    - Development of a WEB-GIS interface to make available the information system via internet;
    - Capacity building, including training of PNG operators.
    - Determining the system function and design, including:
        - Development of monitoring and reporting system that includes:
            - Indicators for processes and outcomes in REDD+ implementation
            - Monitoring methodologies for collecting information on indicators

- Reporting frameworks to address different stakeholder information needs
- A grievance mechanism that is best practice in safeguards systems and allows stakeholders affected by REDD+ to receive feedback on the implementation of safeguards (Component 1a)
- Institutional arrangements for effective design, implementation, and monitoring and reporting on safeguards for REDD+

- Strategic assessments on existing safeguards and design of new policies, laws and regulations for REDD+ multiple benefits based on PNG's REDD+ project guidelines and international best practice inputs, including the UN-REDD Programme Social and Environmental Principles and Criteria (SEPC), REDD+SES, and UN-REDD Participatory Governance Assessment (PGA).
- Field test safeguards.

Table 4a&b. Summary of Monitoring Activities and Budget

Main Activity	*Sub-Activity*	*Estimated Cost (in thousands)*				
		2012	*2013*	*2014*	*2015*	*Total*
Set up the Satellite Land Monitoring System	*Take stock of existing data*	*$*	*$*	*$20*	*$20*	***$40***
	Develop SLMS	*$*	*$*	*$20*	*$20*	***$40***
	Develop methodological approach for integrating sub-national activities	*$*	*$50*	*$50*	*$50*	***$150***
Develop a multipurpose national forest carbon inventory	*Develop measurement protocols and sampling design for a national forest carbon survey*	*$*	*$50*	*$50*	*$50*	***$150***
	Assess institutional capacity needs	*$*	*$50*	*$50*	*$50*	***$150***
	Develop capacity building methodology, materials and 'train trainers'	*$*	*$50*	*$50*	*$50*	***$150***
	Provide training in forest inventory methodology	*$*	*$50*	*$50*	*$10*	***$110***
	Develop (conduct a national? Pre-sampling and full sampling?) forest carbon inventory	*$*	*$50*	*$50*	*$50*	***$150***
	Participatory carbon measurement & monitoring training conducted for communities in pilot	*$*	*$50*	*$50*	*$50*	***$150***

	areas					
Establish a National GHG Inventory for REDD+	*Conduct an institutional capacity gap-assessment*	*$*	*$20*	*$20*	*$20*	***$60***
	Develop capacity building methodology, materials and 'train the trainers'	*$*	*$20*	*$20*	*$20*	***$60***
	Provide training on how to conduct an IPCC GHG inventory	*$*	*$50*	*$50*	*$50*	***$150***
Provide technical advice, capacity building and implementation support		*$*	*$50*	*$50*	*$50*	***$150***
Support set-up of PNG's national REDD+ Information System	*Develop other land use change base maps*	*$*	*$100*	*$100*	*$100*	*$* ***300***
	Monitoring methodologies, national data base and centralized information system developed	*$*	*$20*	*$10*	*$10*	***$40***
	Data quality & control system established	*$*	*$20*	*$10*	*$10*	***$40***
	Safeguard indicators developed & monitored	*$*	*$50*	*$40*	*$40*	***$130***
	Reporting frameworks developed					
Develop and implement REDD+ safeguards	*Support sub-national activities field-test safeguards*	*$*	*$50*	*$80*	*$60*	***$190***
	REDD+ environmental & social safeguards identified and developed	*$*	*$30*	*$60*	*$50*	***$140***
	Institutional arrangements for the design, implementation of policies, laws, and regulations on safeguards					
Monitor & evaluate REDD+ safeguards	*Anti-corruption measures applied*	*$*	*$20*	*$50*	*$50*	***$120***
	Total	***$0***	***$780***	***$880***	***$810***	***$2,470***

Government	*$*	*$*	*$*	*$*	***$***
FCPF	***$***	***$780***	***$880***	***$810***	***$2,470***
UN-REDD Programme (if applicable)	*$*	*$*	*$*	*$*	***$***
Other Development Partner 1 (name)	*$*	*$*	*$*	*$*	***$***
Other Development Partner 2 (name)	*$*	*$*	*$*	*$*	***$***
Other Development Partner 3 (name)	*$*	*$*	*$*	*$*	***$***

Component 5: Schedule and Budget

Table 10. Schedule and Budget

Main Activity	***Sub-Activity***	***Estimated Cost (in thousands)***				
		2012	***2013***	***2014***	***2015***	***Total***
Component 1: Organize and consult	*1a. National readiness management arrangements*	*$*	*$75*	*$150*	*$175*	***$400***
	1b. Information sharing and early dialogue	*$*	*$40*	*$40*	*$40*	***$80***
	1c. Consultation and participation process	*$*	*$100*	*$275*	*$225*	***$600***
Component 2: Prepare the REDD+ strategy	*2a. Assessment of land-use, forest law, policy & governance*	*$*	*$60*	*$400*	*$410*	***$870***
	2b. REDD+ strategy options	*$*	*$400*	*$420*	*$380*	***$1,230***
	2c. REDD+ implementation framework	*$*	*$410*	*$430*	*$390*	***$1,230***
	2d. Social & environmental impacts	*$*	*$250*	*$300*	*$400*	***$950***
Component 3: Develop national REL/RL		*$*	***$***	***$620***	*$**500***	***$1,120***
Component 4: Design a monitoring system	*4a. National forest monitoring system*	*$*	*$*	*$*	*$*	***$***
	4b. Monitoring multiple benefits, other impacts and governance	*$*	***$780***	***$880***	***$810***	***$2,470***
Component 5: Schedule & budget		*$*	*$*	*$*	*$*	***$***
Component 6: Monitoring & evaluation		*$*	*$*	*$*	*$*	***$***
Total		***$***	***$2,115***	***$3,515***	***$3,330***	***$8,960***
Government		*$*	*$*	*$*	*$*	***$***
FCPF		***$***	***$2,115***	***$3,515***	***$3,330***	***$8,960***

UN-REDD Programme	*$*	*$*	*$*	*$*	***$***
Other Development Partner 1 (name)	*$*	*$*	*$*	*$*	***$***
Other Development Partner 2 (name)	*$*	*$*	*$*	*$*	***$***
Other Development Partner 3 (name)	*$*	*$*	*$*	*$*	***$***

Component 6: Design a Program Monitoring and Evaluation Framework

Standard 6 the R-PP text needs to meet for this component:
Design a Program Monitoring and Evaluation Framework

The R-PP adequately describes the indicators that will be used to monitor program performance of the Readiness process and R-PP activities, and to identify in a timely manner any shortfalls in performance timing or quality. The R-PP demonstrates that the framework will assist in transparent management of financial and other resources, to meet the activity schedule.

An existing Programme M&E framework and risk management framework were designed as part of the formulation of PNG's R-PP and are presented below in Table 15 and Table 16. Funds for monitoring Programme M&E are therefore provided by ???under its role as Programme Assurance or by the individual Components (1-4). No separate budget is therefore allocated for M&E here. This will be revised later if additional funds are required at a later date to develop additional M&E components.

Table 11. Summary of Program M&E Activities and Budget

Main Activity	***Sub-Activity***	***Estimated Cost (in thousands)***				
		2011	***2012***	***2013***	***2014***	***Total***
		$	*$*	*$*	*$*	***$***
		$	*$*	*$*	*$*	***$***
		$	*$*	*$*	*$*	***$***
		$	*$*	*$*	*$*	***$***
		$	*$*	*$*	*$*	***$***
		$	*$*	*$*	*$*	***$***
Total		***$***	***$***	***$***	***$***	***$***
Government		*$*	*$*	*$*	*$*	***$***
FCPF		***$***	***$***	***$***	***$***	***$***
UN-REDD Programme (if applicable)		*$*	*$*	*$*	*$*	***$***
Other Development Partner 1 (name)		*$*	*$*	*$*	*$*	***$***
Other Development Partner 2 (name)		*$*	*$*	*$*	*$*	***$***
Other Development Partner 3 (name)		*$*	*$*	*$*	*$*	***$***

Table 12.UN-REDD National Programme Monitoring Framework

Expected Results (Outcomes & outputs)	Indicators (with baselines & indicative timeframe)	Means of verification	Collection methods (with indicative time frame & frequency)	Responsibilities	Risks & assumptions
Outcome 1. Readiness Management Arrangements in Place					
1.1 Management arrangements between GoPNG and stakeholders strengthened	• Baseline: GoPNG liaises with donors through FCC; REDD+ NGO workshop and whole-of-government workshop conducted in 2010 • By 12/2011, all donor support on climate change is effectively coordinated and aligned along GoPNG priorities • By 12/2013, at least 1 REDD+ NGO workshop and 1 whole-of-government workshop have been held annually to progress REDD+ readiness	• Technical Working Group minutes • FCC meeting minutes • Workshop minutes/ reports	• Collection of minutes and reports	• NP manager	• Technical Working Groups and FCC are key for a for convening GoPNG and stakeholders
1.2 National Programme Implementation strengthened	• Ongoing during NP implementation: Project documents (work plans, budgets, reports, TORs etc.) are produced on time	• PEB minutes • Programme/Project Progress Reports	• Collection of minutes and reports	• PEB	• NP effectively contributes to REDD+ readiness in PNG

Expected Results (Outcomes & outputs)	Indicators (with baselines & indicative timeframe)	Means of verification	Collection methods (with indicative time frame & frequency)	Responsibilities	Risks & assumptions
Outcome 2. National MRV system developed					
2.1 National REDD+ Information System developed	• Baseline: No centralized source for information on REDD+ or safeguards • By 12/2011, information on REDD+ and safeguards is available to all stakeholders through a web-based interface and an annual report • By 06/2012, safeguards have been tested in the field	• REDD+ Information System website • Annual REDD+ reports • Reports and minutes from field visits	• Review of website • Collection of reports	• NP manager	• Limited capacity of GoPNG to coordinate and operate a full REDD+ information system. • No international best practice available
2.2 Satellite Land Monitoring Systems set up	• Baseline: Fragmented use of GIS systems in GoPNG departments, often relying on outdated data • By 12/2011, methodological approach, technical system and institutional responsibilities specified • By 12/2013, SLMS provides annual GIS data sets used for MRV and across GoPNG	• Reports and guideline documents • SFLMS data	• Collection of reports and documents • Assessment of GIS data	• NP manager	• Limited technical and operational capacity of PNGFA and OCCD coordinate and operate a full MRV system.

2.3 Multipurpose national forest carbon inventory developed	• Baseline: FIMS, FIPS and Persyst in use by PNGFA with limited data on carbon • By 12/2011, measurement protocols and sampling design for forest carbon survey defined • By 12/2013, GoPNG has capacity to regularly undertake forest carbon monitoring and reporting	• Reports, protocols and guidelines • Inventory data	• Collection of reports and documents • Independent data review	• NP manager	• Limited technical and operational capacity of PNGFA and OCCD coordinate and operate a full MRV system.
2.4 National GHG Inventory for REDD+ established	• Baseline: Preparation of SNC underway with support from UNDP • By 12/2012, first REDD+ related GHG inventory completed based on PNG's MRV system • By 12/2013, PNG has institutional capacity to regularly report GHG emissions from REDD+-related activities	• GHG inventory reports and data • Record of institutional arrangements	•	• NP manager	• Limited technical and operational capacity of PNGFA and OCCD coordinate and operate a full MRV system.
2.5 Technical advice, capacity building and implementation support provided	• Baseline: limited and fragmented capacity for elements of a MRV system in GoPNG and non-government stakeholders • By 12/2011, capacity gap assessment and capacity building plan for MRV elements in place • By 12/2013, GoPNG and stakeholders have capacity to independently operate PNG's MRV system	• Training reports • Workshop agenda and minutes • Capacity increased	• Collection of reports • Capacity assessments	• NP manager	• Limited technical and operational capacity of PNGFA and OCCD coordinate and operate a full MRV system.

Expected Results (Outcomes & outputs)	Indicators (with baselines & indicative timeframe)	Means of verification	Collection methods (with indicative time frame & frequency)	Responsibilities	Risks & assumptions
Outcome 3. Establishment of REL/RL supported					
3.1 Historical drivers of deforestation assessed	• Baseline: preliminary assessment of drivers of deforestation and GHG emissions • By 12/2012, data to develop REL/RL compiled and clear guidance on methodology for REL/RL developed	• Guidance documents • Data sets	• Collection and review of data and reports	• NP manager	• REL/RL methodologies not yet agreed under UNFCCC
3.2 National circumstances assessed	• Baseline: existing land tenure and macro-/socio-economic research & studies with limited assessment of impacts on REDD+ and emissions • By 12/2012, national circumstances and their impact on GHG emissions and REDD+ assessed	• Assessment reports	• Collection and review of reports	• NP manager	• REL/RL methodologies not yet agreed under UNFCCC
Outcome 4. Monitoring of abatement concepts supported					
4.1 Capacity for monitoring and implementation of priority abatement levers developed	• Baseline: priority abatement levers identified; only limited experience in implementation • By 12/2013, monitoring and implementation concepts for key abatement levers have been refined	• Reports, briefings • CCDS	• Collection and review of reports	• NP manager	• CCDS outlines priority abatement actions for PNG

Expected Results (Outcomes & outputs)	Indicators (with baselines & indicative timeframe)	Means of verification	Collection methods (with indicative time frame & frequency)	Responsibilities	Risks & assumptions
Outcome 5. Stakeholders engaged in PNG's REDD+ readiness process					
5.1 Framework for stakeholder engagement processes in place	• Baseline: consultation work plan for 2011; 4 provinces consulted in 2010 • By 12/2011, consultation plan and stakeholder engagement guidelines in place • By 12/2011, 8 additional provinces consulted and consultation process independently reviewed	• Comprehensive consultation plan and stakeholder engagement documents • Stakeholder Consultation Workshop Reports • Consultation review/monitoring report	• Collection of documents and reports	• NP manager	• Limited understanding of REDD+ and how it could work in the PNG context as well as the complexity surrounding landowner issue may slow progress and create tensions amongst differing beneficiaries.

Table 13. Risk log developed under the UN-REDD Programme for PNG

RISK TYPE	RISKS (threats & opportunities)	Risk impact score[60]	Risk probability score[32]	Proposed Action
Social	1. Tribal community systems and land-owner rights are highly complex & unpredictable and may be counterproductive to the development of ground truthing elements for the MRV system, to transparent and equitable ways of benefit/revenue sharing, as well as to effective community-based forest conservation programs.	4	5	- Establish clear framework and comprehensive consultation plan for effective community outreach and awareness building - Ensure sufficient resources for landowner information and consultation (and compensation, where applicable) in all activities of the NP at the local level (e.g., ground truthing/biomass measurements) - Establish simple and transparent dispute resolution mechanism for NP implementation, building on existing recourse mechanisms in PNG (to be replaced by a comprehensive REDD+ dispute resolution mechanism, once developed as part of PNG's overall REDD+ readiness efforts)
	2. Target communities' extreme poverty, low education levels, and being unacquainted with external aid programs may lead to large REDD+ start-up problems and delays, as well as introduce vulnerability to non-equitable practices.	5	4	Same as above: put adequate GoPNG and NP resources into community organization, outreach and development.
	3. Unknown procedures, methodologies and decision mechanism to establish and communicate REDD+ project carbon values may weaken fair distribution of payments and other benefits (sub-national and project REDD+ accounting).	4	2	As part of the multipurpose national forest carbon inventory, develop standardized carbon estimate methodologies and procedures that can be utilised in REDD+ projects
Financial	1. High overhead costs for national REDD+ management and MRV may excessively reduce cash benefits to carbon sellers landowners.	3	4	Ensure PNG MRV system is developed cost-efficiently with a view towards balancing ongoing operating cost against expected REDD+ payments

[60] 1 very low; 2 low; 3 medium; 4 high; 5 very high

RISK TYPE	RISKS (threats & opportunities)	Risk impact score	Risk probability score	Proposed Action
Operational	1. Weak information supply and low level of REDD+ awareness may lead to wrong expectations, loss of stakeholders' trust and wrong REDD approaches (PNG REDD+ programs runs ahead of basic awareness requirement levels)	4	4	- Sustain and expand national REDD+ consultation and communications campaign, involving education, training and social marketing approaches (2011-2013), based on comprehensive consultation plan - Work closely with NGOs and CBOs who work with landowners to ensure that (i) landowners are properly informed and that (ii) landowners are receiving consistent messages
	2. Lack of PNG forest scientific capacity to provide applied research to REDD+, particularly MRV	3	4	- Strengthen FRI through partnerships on REDD+ research; - Strengthen UPNG and UNITECH and other research capacity to support operation and continuous enhancement of the MRV system
	3. Private sector moves quickly into voluntary market arrangements, VCS undermines development of national baseline approach	3	4	Continue engagement with private sector on planned investments/engagement, in line with national consultation and stakeholder engagement plan
	4. Plant taxonomic skills FRI to be utilized for REDD+ forest monitoring program (opportunity)	3	3	Fully involve FRI staff in proposed National Multi-purpose Forest Inventory program
Organizational	1. Weak local government governance systems & capacity, and little decentralized program experience will prevent proper operation of MRV system	4	5	- Provide adequate capacity building and training at sub-national level to ensure sufficient capacity for ground truthing
	2. The OCCD is not adequately receptive to broad-based support arrangements and working with a range of sector agencies and non-governmental organizations, which may prevent enhanced forest governance and community development systems.	4	2	- Link all aspects of support with the operations of the OCCD, clearly identify how broad-based support assists OCCD - Integrate NP into work of Technical Working Groups managed by the OCCD.

RISK TYPE	RISKS (threats & opportunities)	Risk impact score	Risk probability score	Proposed Action
	3. Donor assistance is mobilised too slowly to meaningfully contribute to UNFCCC negotiations, and momentum on National REDD+ Program planning dialogue is lost	3	4	- Ensure NP fund management arrangements allow for timely program implementation - Organise continuous development partner engagement and coordination through donor in-country offices, supported by joint donor missions
Political	1. Need for policy harmonization as well as political will to review e.g. 'high impact projects', expiring Forest Management Agreement areas and to cancel ongoing logging concessions/agricultural leases may reduce prospect for REDD+ projects.	5	4	- National consultation plan to include component on engagement of politicians and decision makers. - Whole-of-government approach to be strengthened through inclusive management arrangements for NP
	2. Need to acknowledge the authority of PNGFA on forest matters in any national REDD+ program	4	3	OCCD to establish partnership with PNGFA
	3. Political change means OCCD is disbanded	4	3	- Ensure support broad based and shared among a range of relevant institutions (e.g. DEC, PNGFA, NGOs where appropriate, UPNG), including strong link of programme to multi-stakeholder working groups - Leverage and strengthen existing capacities in institutions that have existing infrastructure/ technologies (e.g., FRI, PNGFA, DEC)
	4. OCCD continues to exist but institutional architecture is further amended in near term	2	3	- Ensure support broad based and shared among a range of relevant institutions (e.g. DEC, PNGFA, NGOs where appropriate, UPNG), including strong link of programme to multi-stakeholder working groups - Leverage and strengthen existing capacities in institutions that have existing infrastructure/ technologies (e.g., FRI, PNGFA, DEC)
	5. Other government departments resist cooperation with OCCD	5	3	- Encourage whole-of-government approach through inclusive management arrangements for NP and involvement of technical working groups

RISK TYPE	RISKS (threats & opportunities)	Risk impact score	Risk probability score	Proposed Action
Regulatory	1. PNG policy direction, in particular on carbon accounting, does not meet international standards	4	2	- Focus on areas of agreement, engage where possible on carbon accounting - Build trust through ongoing engagement and preparedness to support existing efforts
	2. Unclear carbon accounting rules encourage overestimates at the project level to generate excess REDD+ credits	3	3	- Develop clear and transparent carbon accounting rules for sub-national (demonstration) activities
Strategic	1. PNG REDD+ program has yet to specify steps towards maximizing biodiversity conservation benefits and as such may miss its Environmentally Sustainable Economic Growth target: "reduce biodiversity loss, by 2010, a significant reduction in the rate of loss".	3	3	- Incorporate biodiversity data and targets in planned development of REDD+ information system and safeguards
	2. Development of REL/RL is captured to artificially inflate the baseline in order to create excess credits	4	2	- Ensure transparent assessment of historical drivers of deforestation and national circumstances that can be independently reviewed - Rely on emerging SBSTA guidance on establishing baselines, with third party verification of nominated baseline, once established
	3. Climate change sector is so highly politicized that robust policy dialogue is meaningless	3	2	Continued engagement with non-Government sector, and broadly at the officials level across government through NP management arrangements and engagement of technical working groups and NCCC
	4. Donor assistance is not coordinated	3	1	- Continual donor engagement, support for OCCD to convene a donor partner's forum - Sharing of key documentation among donors - Regular dialogue both in-country and in international fora on progress on donor support programs in PNG

Suggested Annexes for the R-PP (Optional)

Guidelines:

- ***If you decide to annex draft input to Terms of Reference, plans, or other material important to describe how the R-PP would be organized or its studies performed, please include additional information in the annexes below;***
- ***Delete any annex that is not used, but please maintain the numbering of the annexes (i.e., use the number for each Annex as shown below, even if you only have only a few annexes; do not renumber them);***
- ***Update the Table of Contents to reflect only the annexes you include before finalizing the document.***

Annex 1a: National Readiness Management Arrangements

Please present your early ideas and/or draft input to ToR.

.NCCC Institutional Composition

REDD+ TWG composition

Membership to the REDD+ TWG will include representatives from the Government agencies listed below:

1. PNG Forest Authority (PNGFA)
2. Department of Agriculture and Livestock (DAL)
3. Department of Lands and Physical Planning (DLPP)
4. Department of Environment and Conservation (DEC)
5. Department of Commerce and Trade
6. Department of Finance
7. Department of Foreign Affairs and Trade
8. Department of Justice and Attorney General
9. Department of Treasury
10. Department of National Planning and Monitoring (DNPM)
11. Forest Research Institute (FRI)
12. Internal Revenue Commission
13. Investment Promotion Authority (IPA)
14. Mineral Resource Authority
15. National Agricultural Research Institute (NARI)
16. National Research Institute (NRI)

17. Office of Climate Change and Development (OCCD)
18. Office of Prime Minister & NEC
19. University of Papua New Guinea (UPNG)
20. University of Technology (Unitech)
21. PNG Fisheries Authority

The following stakeholders (Development Partners, NGOs and Private Sectors) are also members of the REDD+ TWG:

1. Australia Agency for International Development (AusAID)
2. Binatang Research Centre
3. Cloudy Bay PNG
4. Conservation International
5. EMTV
6. European Union (EU)
7. Forest Management & Product Certification Service (FORCET)
8. Forest Industries Association
9. German GTZ
10. Institute of National Affairs (INA)
11. Japan International Cooperation Agency (JICA)
12. Live and Learn
13. Mama Graun Trust Fund
14. National Broadcasting Commission
15. The National Newspaper

MRV TWG composition

Forestry Sub-working Group composition

Agriculture Sub-working Group composition

Annex 1b: Information Sharing and Early Dialogue with Key Stakeholder Groups

Please present any relevant additional material not included in the body of the R-PP (component 1b).

Annex 1c: Consultation and Participation Process

Please present any relevant additional material not included in the body of the R-PP (component 1c).

Annex 2a: Assessment of Land Use, Land Use Change Drivers, Forest Law, Policy and Governance

Please present any relevant additional material not included in the body of the R-PP (component 2a).

Annex 2b: REDD-plus Strategy Options

Please present the early ideas and/or draft input to ToR for work to be carried out. Please also present the strategy options themselves if they are available.

Annex 2c: REDD-plus Implementation Framework

Please present the early ideas or draft input to ToR for work to be carried out. If you decided to merge Components 2b and 2c, you may also wish to merge Annexes 2b and 2c.

Annex 2d: Social and Environmental Impactduring Readiness Preparation and REDD-plus Implementation

Please present the early ideas or draft input to ToR for work to be carried out.

Annex 3: Develop a National Forest Reference Emission Level and/or a Forest Reference Level

Please present the early ideas or draft input to ToR for work to be carried out.

Annex 4: Design Systems for National Forest Monitoring and Information on Safeguards

Please present the early ideas or draft input to ToR for work to be carried out.

Annex 5: Schedule and Budget

Please present any additional details of your proposed Schedule and Budget.

Annex 6: Design a Program Monitoring and Evaluation Framework

Please present any additional details of your proposed Monitoring and Evaluation.