

# INTERNATIONAL CLIMATE INITIATIVE

## Regional project

### Climate Protection through Forest Conservation in Pacific Island Countries

On behalf of



Federal Ministry for the  
Environment, Nature Conservation  
and Nuclear Safety

of the Federal Republic of Germany



## NAMAs and REDD+

### Country Study: Papua New Guinea



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October 2013

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## List of acronyms

BAU	Business as Usual
CDM	Clean Development Mechanism
CCDS	Climate-Compatible Development Strategy
CCDP	Climate-Compatible Development Policy
DNA	Designated National Authority
DSP	Development Strategic Plan
FAO	Food and Agriculture Organization
FCPF	Forest Carbon Partnership Facility
FRL	Forest Reference Level
GHG	Greenhouse Gas
GIZ	German Society for International Cooperation
IPCC	Intergovernmental Panel on Climate Change
JICA	Japan International Cooperation Agency
LEAF	Lowering Emissions in Asia's Forests
LLG	Local-Level Government
LULUCF	Land-Use, Land-Use Change and Forestry
MRV	Monitoring, Reporting and Verification
Mt	Million tonnes
MTDP	Medium Term Development Plan
MW	Megawatt
NAMA	Nationally Appropriate Mitigation Action
NEC	National Executive Council

NGO	Non-Governmental Organization
NCCP	National Climate Change Policy
OCCD	Office of Climate Change and Development
ODA	Overseas Development Assistance
PES	Payments for Ecosystem Services
PIC	Pacific Island country
PNG	Papua New Guinea
PNGDSP	Papua New Guinea Development Strategic Plan
PNGFA	PNG Forest Authority
PPL	PNG Power Ltd
REDD+	Reducing Emissions from Deforestation and forest Degradation, Plus conservation, carbon stock enhancement and sustainable forest management
REL	Reference Emissions Level
R-PIN	Readiness Project Identification Note
TWG	Technical Working Group
UNDP	United Nations Development Program
UNFCCC	United Nations Framework Convention on Climate Change
UN-REDD	United Nations Collaborative Programme on Reducing Emissions from Deforestation and Forest Degradation in Developing Countries

## 1. Introduction

Papua New Guinea (PNG) is a tropical Pacific Island Country located just north of Australia and east of Indonesia. PNG is the largest country in the Pacific both in terms of a population estimated at 7.1 million and landmass covering approximately 460,000 square kilometres. The population is dispersed widely across the country and has been growing at an average rate of 2.3% per year.

A large part of rural population relies for their livelihood on forest exploitation, fishing, hunting, and subsistence agriculture. Weak infrastructure, weak service delivery mechanisms, marketing difficulties and low civil society capacity reduce possibilities of alternative livelihoods and access to renewable energy schemes.

PNG's natural resources include gold, copper, silver, natural gas, timber, oil and gas, and fisheries. It's main industries include copra crushing, palm oil processing, plywood production, wood chip production; mining of gold, silver, and copper; oil and gas production and processing; construction, and tourism. PNG's economy is growing at a rate of 3 percent per year and is very likely to continue to do so, given the abundant natural resources and increasing direct foreign investment.

As a developing country, PNG has low greenhouse gas emissions from housing, transportation and industry. However, it is also a rainforest nation, where some 80% of the population live in rural areas and heavily depend for their livelihoods on the forests and on shifting cultivation that takes place on forest lands. Consequently, emissions from Land Use, Land-Use Change and Forestry (LULUCF) are relatively high. The deforestation rate is 120,000-200,000 hectares per annum.

PNG has been in the forefront of international debate to effect policy and measures to address climate change. In 2005, in recognition of its unique natural environment and strong reliance on its natural environment as the backbone of its economy, PNG proposed to the world that it could help save the climate system by protecting its forests, which were fast being depleted to grow its economy and sustain its people's livelihoods. PNG succeeded in having the REDD+<sup>1</sup> issue being embedded into the global climate change negotiations as a positive measure for reducing greenhouse gas emissions. In turn, REDD+ has been a dominant feature of domestic policy development.

## 2. Institutional Framework

The Office of Climate Change and Development (OCCD) is the coordinating entity for all climate change related policies and actions in PNG and the Designated National Authority under the United Nations Framework Convention on Climate Change (UNFCCC). The OCCD was established in September 2010. The OCCD reports through a Minister of Climate Change (who is also the Minister of Forestry) to the National Executive Council (NEC) of Ministers.

Figure 1 below provides details of the institutional framework. This shows that the policy and regulatory framework is underpinned by four key Technical Working Groups (TWGs) on REDD+, Low-Carbon Growth, Adaptation and National Consultation. The objective of the OCCD is "to provide a coordination mechanism at the national level for research, analysis and development of the policy and legislative framework for the management of climate change within the Government's National Strategy on Climate-Compatible Development". The TWGs provide technical input on policy matters and contribute ideas to the priority activities that will be run by each division. The TWGs include representatives of comprise of government ministries, NGOs, academics, the private sector, development partners, church groups and research institutions.

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<sup>1</sup> Reducing Emissions from Deforestation and forest Degradation, Plus conservation, carbon stock enhancement and sustainable forest management



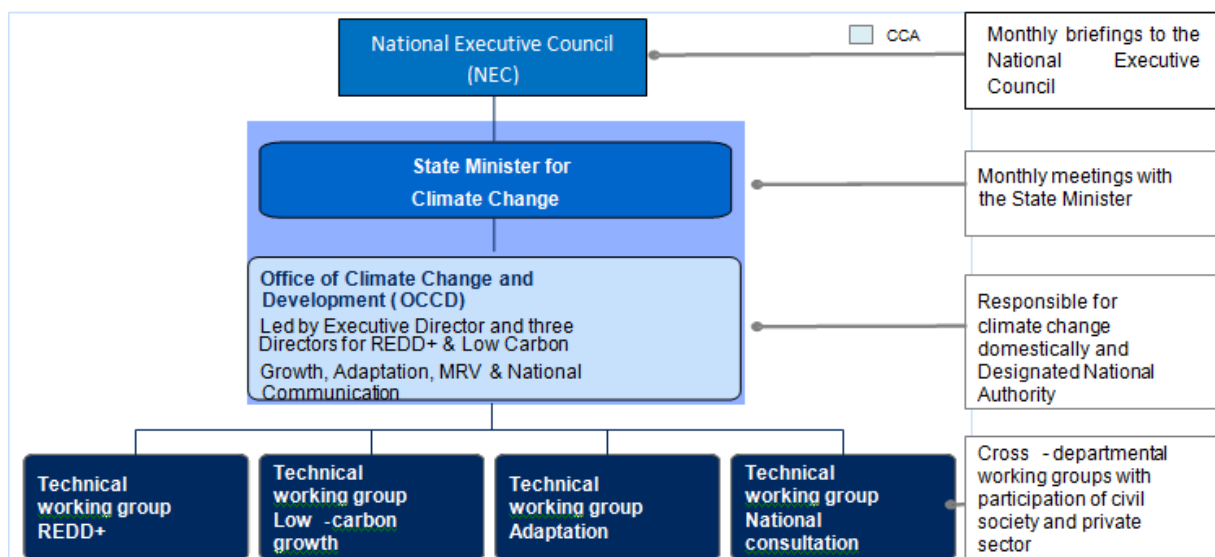


Figure 1: Institutional Framework for Climate Change in PNG

It is foreseen that the OCCD will be elevated to a Climate Change Authority, playing a commensurately higher leadership role with a greater budget and staff capacity, but this awaits the enactment of a new *National Climate Change Act* (CCA) that will be overseen by the Minister of Climate Change. In addition to the creating of the Authority, it is planned that the CCA will address a number of important policy matters, including:

- implementing a tax on carbon emissions with the intent of creating incentives for their reduction, while generating the requisite funds needed for the transition of the PNG economy to one dependent on low carbon emissions
- creating a special “Climate Change Fund” (or **Climate Compatible Development Fund**) having fiduciary regulations akin to the recently designated PNG Sovereign Wealth Fund. This Fund would also be the central national implementing entity for climate finance provided by international donors and support partners.

Given the centrality of the forest sector to PNG’s climate change policy, the other major government actor is the PNG Forest Authority (PNGFA). Its work programme sits under the *Forestry and Climate Change Framework for Action, 2009-2015* and represents the major implementation of REDD+ and PES activities in the forest sector to date.

Another key actor is PNG Power Ltd (PPL) which is a state owned enterprise and which accounts for 54 % of generation capacity and about 90%<sup>2</sup> of retail electricity sales (residential and general) in PNG’s power sector. It provides electricity to residential and commercial consumers within and around the Port Moresby area and 19 provincial capitals. The consumer base of PPL translates into less than 10 percent of the total population. However, as the government’s power company, PPL has the front line responsibility to help achieve the government’s goals for renewable energy and rural electrification (set out below in Table 1).

<sup>2</sup> % data calculated from the PNG country study data at <http://www.ee-pacific.net/index.php/database/country-information/papua-new-guinea#03> and from *PNG Power Sector Development Plan*

### 3 Policy Framework for NAMAs and REDD+

#### 3.1 Overarching Development Planning Context for Climate Change Policy

*Environmental Sustainability and Climate Change* is one of the seven key pillars of the Papua New Guinea **Vision 2050** which has the aim that “We will be a Smart, Wise, Fair and Happy Society by 2050”. Vision 2050 provides the overall strategic policy context for the ongoing development of PNG. Some notable statements relevant to the topic of this country study on NAMAs<sup>3</sup> and REDD+ are:

- (There is currently a) lack of meaningful participation of rural people in income-earning activities (and they aspire to do better)
- The challenge is, ‘How do we shift an economy that is currently dominated by the mining and energy sectors, to one that is dominated by agriculture, forestry, fisheries, eco-tourism and manufacturing, between 2010 and 2050?’
- Opportunities exist in food production for the domestic market, high value export crops, developing import-competing industries, plantations and forestry. Further conservation of our ancient forests, marine life and our flora and fauna are some of the many ways to grow our economy. Downstream agro-industries, small-scale and light manufacturing, eco-tourism, and the service industry, artisanal and small-scale economic activities in fishing, mining, and village-based forestry are also good prospects.
- Papua New Guinea’s forests play a significant role in the ecosystems and environmental functions that are beneficial to sustaining bio-functions. They also contribute to the local and global economies. Vision 2050 will work with forestry sector stakeholders, including the National Forest Authority, the logging industry, the international community, and the conservation sector in devising appropriate policies for the sustainable management of Papua New Guinea’s forest resources. This includes developing a policy framework for climate change mitigation and carbon trade.

The PNG **Medium Term Development Plan 2011-2015**, published by the Department of National Planning and Monitoring, is a “5-year rolling development plan providing a clear, accountable plan for investment”. It provides the near term priorities and focus for the government which are set out on a sector by sector basis. Environment and climate change are considered as cross-cutting sectors. Key medium term (2015) targets relevant to climate change mitigation are set out in Table 1 below.

Low carbon development and climate change policy in PNG is set out in the document **Climate Compatible Development Policy, 2013-2015**, (CCDP) published by the OCCD. International support mechanisms feature very prominently in this policy. (See further detail in Table 1 below).

The CCDP notes that emissions in PNG, while small now, are expected to increase 3-5 times over the next two decades, if they follow business-as-usual (BAU). This is shown in Figure 2 below. This also shows the extent to which the land use, land-use change and forestry sector dominates PNGs emissions, now and going forward.

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<sup>3</sup> Nationally appropriate mitigation actions

## BAU GHG emissions by sector

Mt of CO<sub>2</sub>e/year

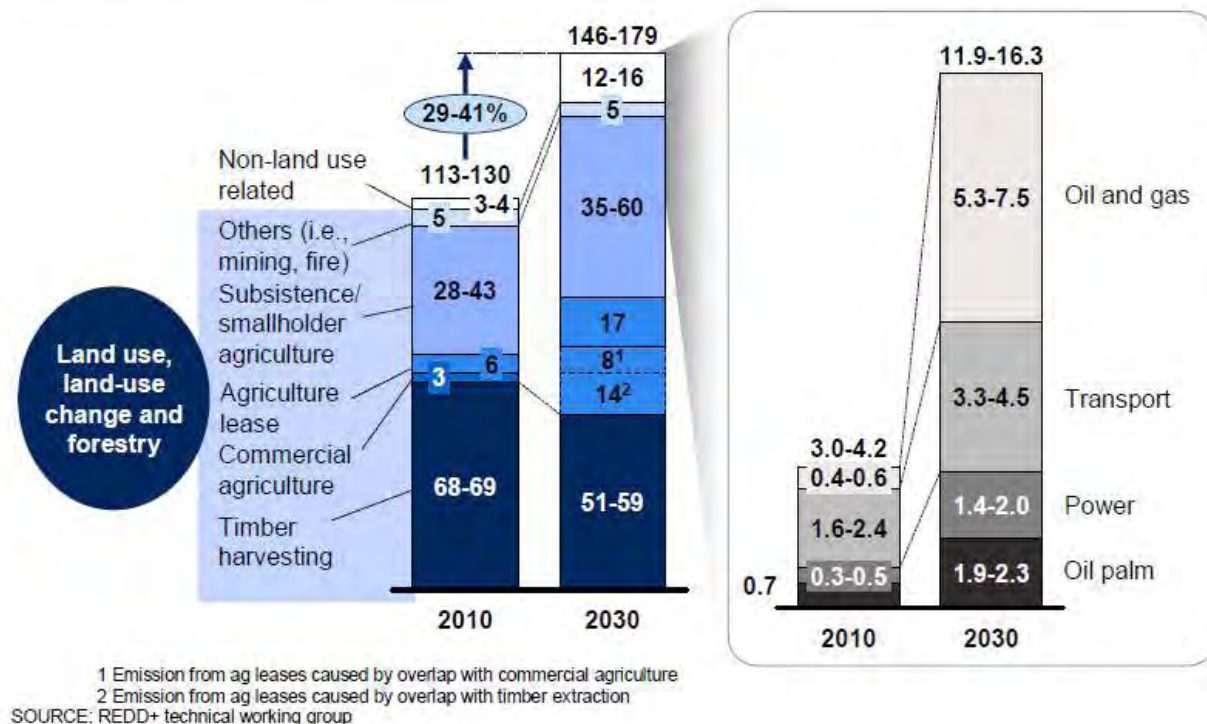


Figure 2: GHG Emissions in PNG, including projections to 2030 on a business-as-usual basis

This projected emissions growth is in stark contradiction to the targets in Vision 2050 and the PNG *Development Strategy Plan, 2010-2030* as set out in Table 1 below. It is in this light that the CCDP states that new legislation and regulatory impetus will be required that, inter alia, will

- drive incentive to venture into carbon offset schemes to innovatively reduce emissions through various abatement and sequestration activities
- ensure that effective land-use planning is essential to both build the climate change resilience in communities and to maximize payment for ecosystem service under various CDM, REDD+ and carbon offset schemes.

The CCDP also notes the importance of climate financing structures being able to deliver practical outcomes at the community level. It contemplates the consolidation of multiple sources of funding into a Climate Compatible Development Fund mechanism that emulates confidence, credibility, accountability, transparency and most importantly the ability to deliver tangible outcomes on the ground.

In addition to these existing planning documents, PNG is currently a participating country in the World Bank-led *Pilot Partnership for Climate Resilience*. It can be expected that strategy and planning documents will be forthcoming from this project that will also directly relate to climate change policy, and mitigation specifically (so NAMAs and REDD+).

### 3.2 Climate Change Policy for NAMAs and REDD+

The CCDP can be seen more in the light of a strategy document. A formal **National Climate Change Policy** (NCCP) is currently (September 2013) in the process of final agreement by stakeholder ministers and sign off by the NEC. This NCCP has been developed through a consultative process with stakeholder ministries and other state owned entity, regional government, non-government, community, civil society and private sector stakeholders.

This new NCCP is guided, in particular, by the documents described above – Vision 2050, the PNG Development Strategy Plan, 2010-2030, the Medium Term Development Plan, 2010-2015 and the Climate Compatible Development Policy, 2013-2015. Its key elements therefore address the points discussed above (and in Table 1 below) in respect of these documents. In addition, it notes that climate change should be mainstreamed into the policies and work programmes of core sector agencies. In this regard, key relevant sector policies include:

- National Forestry Policy
- National Transport Policy
- National Energy Policy
- National Weather Service
- National Infrastructure Policy
- National Health Policy
- National Sustainable Land Use Policy
- National Agriculture Policy
- Environment Policy
- Disaster Mitigation Policy and Disaster Risk Reduction and Disaster Management Framework for Action, 2005-2015
- National Fisheries Policy
- Energy Conservation Building Code
- National Disaster Risk Management Policy
- National Urbanization Policy

The NCCP will provide specific guidance to sector ministries in terms of policies and measures they should undertake.

Table 1: Summary of Key Policies on Climate Change Mitigation and REDD+ in Papua New Guinea

'Policy' / Plan	Scope / Objectives
Vision 2050	<p>Overarching long term development vision for PNG</p> <p>Climate change related goals (by 2050):</p> <ul style="list-style-type: none"> <li>- GHG emissions reduced by 90% cf 1990</li> <li>- 100% power generation by renewable energy resources</li> </ul>
<p>Medium Term Development Plan, 2011-2015 and Development Strategy Plan, 2010-2030</p>	<p>Overarching near term and longer term development plans for PNG</p> <p>Climate change related targets:</p> <ul style="list-style-type: none"> <li>- Access to electricity by households: 27% cf baseline of 12.4% by 2015 and 70 % by 2030</li> <li>- Reduce GHG emissions intensity of electricity generation by 25 percent by 2015 and 65% by 2030, with associated targets set out as increases in renewables cf baseline of: <ul style="list-style-type: none"> <li>o hydro: cf baseline of 215 MW, 430 MW by 2015 and 1020 MW by 2030</li> <li>o geothermal: cf baseline of 56 MW, 63 MW by 2015 and 350 MW by 2030</li> <li>o solar: cf baseline of 0 MW, 4 MW by 2015 and 25 MW by 2030</li> <li>o wind: cf baseline of 0 MW, 7 MW by 2015 and 40 MW by 2030</li> <li>o biomass: cf baseline of 0 MW, 14 MW by 2015 and 75 MW by 2030</li> <li>o biogas: cf baseline of 0 MW, 2 MW by 2015 and 10 MW by 2030</li> </ul> </li> <li>- Primary forest depletion rate per year: 2.4% cf baseline of 2.6% by 2015; by 2030 the prevention in the felling of virgin forests; logs to be provided by plantations and managed forests.</li> <li>- REDD+ and payment for ecosystems services (PES): Over 2011-2015 make landowners aware of the essence of conservation and sustainable development</li> <li>- Enhance management of land degraded by commercial extraction and minimise future land degradation: Over 2011-2015 develop guidelines for land degradation and rehabilitation, and screen and manage developments in environmentally sensitive areas</li> <li>- Over 2011-2015 develop sustainable land management policy</li> </ul>

	<ul style="list-style-type: none"> <li>- Increase area of plantation forests: cf baseline of 62,000 hectares, 80,000 hectares by 2015, growing to 150,000 hectares by 2025</li> <li>- Over 2011-2015, develop 7 REDD+ projects and 2 CDM pilot projects, growing to 12 REDD+ projects and 5 CDM projects in each of the following 5 year periods to 2030</li> <li>- Over 2011-2015, establish community-based mangrove planting of 10,000 seedlings per year to prevent coastal flooding/erosion, growing to 50,000 seedlings per year by 2030</li> </ul>
Climate Compatible Development Policy, 2013-2015	<p>Overarching climate compatible development strategy</p> <p>Key objectives related to mitigation (and the first two objectives) are:</p> <ol style="list-style-type: none"> <li>1. Increase the amount of investment in carbon offsetting, carbon reduction and storage activities and systems in line with existing mechanisms such as the Clean Development Mechanism, Carbon Capture and Storage systems and REDD+ systems to foster an enabling environment to increase the diffusion rate of green technology and for adaptive measures to be mainstreamed;</li> <li>2. Develop compliance, quality control and assurance, and monitoring system for Carbon Emission Profiling and Carbon Capture and Storage systems coupled with a credible, reliable robust information system to strengthen data acquisition and information dissemination to report on climate change adaptation and to market key mitigation initiatives.</li> </ol>

## 4 Current Status of NAMAs and REDD+ in Papua New Guinea

### 4.1 Mitigation generally, and NAMAs

To date, there has not been any specific attention paid to NAMAs in PNG. This is the usual situation in Pacific Island countries (PICs), given governments' focus of their limited capacities on climate change is on adaptation. It is expected that this situation with PICs will change in the coming year(s) now that there is an active work programme on NAMAs by the Secretariat of the Pacific Regional Environment Programme (SPREP), the key regional support agency. Earlier in 2013 SPREP published the **Pacific NAMA Guidelines**<sup>4</sup> and it is expected that they will be providing resources to PICs to help them with preparing NAMA proposals for registering in the UNFCCC NAMA Registry.

While NAMAs are therefore a new topic for PNG, climate mitigation is not. In addition to its internationally leading efforts on REDD+, PNG is the leading PIC in terms of uptake of the Clean Development Mechanism (CDM). Table 2 below provides a list of PNG's CDM projects.

Table 2: PNG's Registered CDM projects

Project Name, registration date, and mitigation outcomes	Project Type
<b>Lihir Geothermal Power Project</b> 29 May 2006 279 ktCO <sub>2</sub> eq per annum	Geothermal power project
<b>Warastone POME methane capture project</b> 9 August 2011 47 ktCO <sub>2</sub> eq per annum	Methane recovery from palm oil processing plant's wastewater treatment
<b>Kumbango POME methane capture project</b> 15 September 2011 63 ktCO <sub>2</sub> eq per annum	Methane recovery from palm oil processing plant's wastewater treatment plus electricity generation for self use, mini-grid and grid connection
<b>Mosa POME methane capture project</b> 20 September 2011 63 ktCO <sub>2</sub> eq per annum	Methane recovery from palm oil processing plant's wastewater treatment plus electricity generation for grid connection
<b>Numundo POME methane capture project</b> 14 November 2011 54 ktCO <sub>2</sub> eq per annum	Methane recovery from palm oil processing plant's wastewater treatment plus electricity generation for self use and grid connection
<b>Kapiura POME methane capture project</b> 5 June 2012 64 ktCO <sub>2</sub> eq per annum	Methane recovery from palm oil processing plant's wastewater treatment plus electricity generation for self use and grid connection
<b>Sangara POME Methane Avoidance project</b> 18 September 2012 59 ktCO <sub>2</sub> eq per annum	Methane recovery from palm oil processing plant's wastewater treatment plus electricity generation for self use and grid connection
<b>Programme of Activities (PoA) for Sustainable Renewable Energy Power Generation in PNG</b> 23 November 2012 up to 16 ktCO <sub>2</sub> eq per annum per CPA	Small scale renewable energy generation for self use, mini-grid and grid connection
<b>Hagita POME Methane Avoidance project</b> 26 December 2012 45 ktCO <sub>2</sub> eq per annum	Methane recovery from palm oil processing plant's wastewater treatment plus electricity generation for self use and grid connection

*Source: UNFCCC CDM website*

It can be seen from Table 2 that the majority of CDM projects have been connected to capturing methane from wastewater treatment facilities in palm oil processing plants. In most cases this methane has been used for electricity generated for self use and grid connection, including in two cases for mini-grids.

<sup>4</sup> Available for download at <http://www.sprep.org/library-information-resource-center/publications>



The other notable case is that of the ‘Programme of Activities (PoA) for Sustainable Renewable Energy Power Generation registered by PNG Power Ltd (PPL). This initiative is connected to PPL’s plans for rural electrification and, as set out in the PoA’s design document, envisages:

To assist development of small-scale renewable energy power plants (including wind/solar/hydro/geothermal/tidal/wave/renewable biomass/biomass gasification) across PNG. Each small-scale CDM Program Activity (CPA) under this PoA will comprise one or more such renewable energy power plants (with similar technology) and will have a combined installed capacity of no more than 15 MWe - the threshold for small-scale CDM projects. The PoA is a voluntary action being coordinated and managed by PPL. PPL will also work closely with other developers of the renewable energy power plants, including wind (on shore/off shore), solar (PV/Thermal), hydro, geothermal, tidal, wave, renewable biomass and biomass gasification, and other organizations active in the renewable energy sector in PNG to facilitate the development of new renewable energy power plants and the expansion of renewable energy power plants or retrofit of power plants or replacement of power plant and their inclusion in this PoA.

It should be noted that, unlike the methane CDM projects, this PoA initiative is not associated with specific and identified proposed projects; rather it contemplates the idea of there being small scale renewable energy projects done by PPL and others in PNG, and establishes a framework for these to potentially receive credits under the CDM.

The above list of CDM projects should not be taken as the extent of activities being undertaken in PNG that have GHG mitigation outcomes. Activities in the land-use and forestry sectors to one side, there are other efforts being taken under the ‘banners’ of renewable energy, energy efficiency and waste management that can be seen as climate change mitigation. Some examples are:

- Western Power Ltd has a program of rural electrification in the Western Province of PNG that has included some installations of small scale renewables technologies, and contemplates more.
- PNG is one of the countries participating in the Asian Development Bank-led *Promoting Energy Efficiency in the Pacific* technical assistance initiative. While this is still in an assessment phase, in time there will be funds available for a rollout program of energy efficiency measures.

## 4.2 REDD+

While PNG has been a leader in the international discussions on REDD+, domestically things have progressed slowly. There have been a series of challenges (institutional and capacity-related) and mis-steps. These are canvassed in considerable detail in country case study reviews published in 2012 by the Institute of Global Environmental Affairs (IGES) and for the *Lowering Emissions in Asia’s Forest* (LEAF) project. The *UN-REDD PNG National Programme Document* also provides a detailed background. (See ‘Further Readings’ section). Readers seeking the detail of this history are referred to these documents.

There are four main actors/groups involved domestically in moving REDD+ forward. The first is the OCCD which has a REDD+ team. The second is the PNGFA which is the main policy and operational government department for forests/forestry and also has an active REDD+ programme. The third are the NGOs active in REDD+, Payments for Ecosystem Services (PES) and, more broadly, sustainable land and forest management, including community forest management. The fourth is the international donor community that actively supports the initiatives and activities of the government departments and NGOs. Table 3 below provides a summary of the present (at September 2013) initiatives and activities in the REDD+ and PES space in PNG.

Table 3: REDD+ and PES initiatives and activities in PNG

Initiative/Activity	Main Actors	Description and current status
REDD+ Strategy/Policy	Dept of National Planning and Monitoring OCCD PNGFA Academia NGOs (WWF, Eco Forestry Forum)	REDD+ features prominently in the new PNG Climate Change Policy (awaiting approval by NEC). This is based on the <i>Climate Compatible Development Policy</i> (strategy) prepared by the OCCD. REDD+ policy objectives are included in the PNG <i>Medium Term Development Plan, 2011-2015</i> In addition PNGFA have an operational <i>Forestry and Climate Change Framework for Action, 2009-2015</i> .
Readiness activities under UN-REDD	UN-REDD/UNDP PNGFA OCCD	The PNG UNREDD programme is funded at the level of USD 6.4 million over the 3 year period 2011-2013. This is now expected to be extended until 2015 (and with an increased budget). The agreed focus of the programme is largely on MRV and awareness raising. Key deliverables thus far are: <ul style="list-style-type: none"> <li>– REDD+ Awareness Raising at the national level through stakeholder workshops</li> <li>– Development of REDD+ Training Manual</li> <li>– Development of National FPIC Guidelines</li> <li>– Development of an appropriate National Safeguard System</li> <li>– Development of PNG's National Forest Monitoring System Action Plan</li> <li>– Support to the National Forest Inventory (NFI)</li> </ul>
Readiness activities under WB Forest Carbon Partnership Facility (FCPF)	World Bank FCPF OCCD PNGFA	PNG submitted its Readiness Preparation Proposal for USD 3.8 million funding support under the World Bank FCPF in Feb 2013. The key elements of work intended to be covered under this funding are: <ul style="list-style-type: none"> <li>– Develop a REDD+ Strategy</li> <li>– Develop a National Forest Reference Emissions Level and/or a National Forest Level</li> <li>– Design systems for national forest monitoring and information on safeguards</li> <li>– Design a program Monitoring and Evaluation Framework</li> </ul>
Readiness activities supported by other donors:		
JICA – Forestry Preservation Program	JICA UN-REDD PNGFA	In coordination with the UN-REDD program JICA is working closely with PNGFA on developing capacity for MRV, in particular by providing hardware and software for remote sensing.
AusAID – Australia Forest Carbon Partnership	AusAID PNGFA NGOs	AusAID is providing assistance to the Government for a national carbon measuring system, and has given small grants to NGOs to develop REDD+ concepts (i.e. WCS, TNC, Live and Learn) in rural areas.
European Union	EU UPNG PNGFA	The EU is currently funding activities of UPNG aimed at supporting PNGFA in inventory techniques as well as upgrading the forest inventory mapping system. They have also supported work and stakeholder consultations on REDD+ and a possible Forest Law Enforcement, Governance and Trade (FLEGT) mechanism.
GIZ – Climate Protection through Forest Conservation in Pacific Island countries	GIZ PNGFA	GIZ's contribution to REDD+ has been on a region-wide basis, in particular through their support of a Regional REDD+ Framework including undertaking studies and hosting regional stakeholder workshops. In addition, in PNG they have supported a PNGFA Pilot Project at



	Milne Bay.
Community level pilot programmes and projects	
By PNGFA	PNGFA does work in four 'demonstration' provinces – Milne Bay, East and West Sepik, Eastern Highlands, and West New Britain. They have one 'pilot' project in April Salomei, East Sepik Province, within the April Salomei Forest Management Area.
By private actors	<p>1. April Salomei Sustainable Forestry Project – through the Rainforest Management Alliance, formerly Earthsky.</p> <p>2. Kamula Doso Improved Forest Management Carbon Project – through Tumu Timbers and Nupan Trading Ltd.</p>
By NGOs	<p>There are a considerable number of NGOs working in forest conservation in PNG that therefore have an interest in REDD+ and PES and the applicability of such support mechanisms to their projects, including for community forest management. These include:</p> <ul style="list-style-type: none"> <li>– World Wide Fund for Nature (WWF)</li> <li>– The Nature Conservancy (TNC)</li> <li>– The Wildlife Conservation Society (WCS)</li> <li>– PNG Mama Graun</li> <li>– Conservation International (CI)</li> <li>– Tenkile Conservation Alliance (TCA)</li> <li>– Partners with Melanesia (PWM)</li> <li>– FORCERT</li> <li>– Foundation for People and Community Development (FPCD)</li> </ul> <p>More details on the work of these NGOs can be found in Appendix A in the LEAF country study for PNG (see 'Further Readings' section).</p>

## 5 Comparative Discussion on NAMAs and REDD+

In general terms NAMAs and REDD+ can be seen as distinctly different modalities for the support of mitigation in developing countries. Five particular differences stand out:

- i. **Sectoral coverage:** REDD+ is focused principally on carbon stored in woody biomass, above and below ground, including in soils in forested areas. NAMAs has no specific sectoral constraints, coming as it does from the words “nationally appropriate mitigation actions”. Any boundaries that are drawn around the sectoral coverage of NAMAs are therefore at the choice of governments.
- ii. **Nature of financial support:** REDD+, as it has mostly been described and discussed, is seen in the nature of a “payment for performance” with respect to some defined baseline or reference level. This is akin to the nature of the CDM. While it is not necessarily an “offsets mechanism” in that it could just happen through the payment of funds based on certified performance, it frequently has been cast in a carbon trading sense with the connotation of the creation of tradable credits. In particular, at the current time when most REDD+ projects that are receiving payments are functioning in the voluntary carbon market, this is exactly the nature of the mechanism.

NAMAs, in contrast, is very different. Financial support will be provided, potentially within a package of support also involving capacity building and technology, based on a reasonable expectation of mitigation outcomes of a proposed discrete programme of action. This action could be initiated by a new policy or represent specific investments. NAMAs generally has an ex-ante (versus ex post or payment-for-performance) nature. However, it is also likely that NAMA finance will be staged in some manner, so the support partner can be assured that the actions they have supported are happening and are having the general (or specific) outcomes expected.

- iii. **MRV:** REDD+ is a very carbon centric mechanism. Given its payment-for-performance nature and the potential for it to be an offset mechanism, there is a great emphasis on the accuracy of the quantity of carbon involved. This is the prime commodity. The concept of additionality is important, i.e. that this carbon outcome would not just have happened anyway, irrespective of the payment.

In contrast, as currently conceived, NAMAs is not about offsets or carbon trading, so the atmosphere is not put at risk if the measurement of carbon outcomes is imprecise. This is a fundamental difference which provides for a much more flexible and less stringent approach to the MRV of NAMAs. The critical issue will be tailoring an MRV approach for a given NAMA that satisfies both the host country and the support partner(s).

- iv. **Treatment of related issues, risks and ‘co-benefits’:** With REDD+ (as with the CDM) most of the debate about related issues has been of the nature of managing the risks that the application of a carbon-dominated payment-for-performance focused mechanism can introduce, at both national and community levels. Hence the focus on ensuring consistency with countries’ sustainable development priorities and considering “safeguards”. Where activities can be shown to have positive co-benefits, this often is just reflected in an elevated price for carbon, as occurs in the voluntary market. Again this points to the carbon-centric nature of the mechanism when it operates in a carbon trading mode.

In contrast, because NAMAs is not carbon-centric, the financial value of a support package can look at many beneficial elements and outcomes. It can potentially be the case that ‘carbon’ really is just a co-benefit; the prime benefits may be associated with other sustainable development attributes, especially when these are considered at the community level. Support partners will likely be the same

type of partners that are already supporting countries' efforts to meet MDG and sustainable development objectives. Carbon, or more precisely greenhouse gas, outcomes just provide an additional value stream that can heighten the possibilities to get things done at larger scale and more quickly.

- v. **Institutional implications:** It is the carbon-centric, payment-for-performance nature of REDD+ that drives the complexity and cost of all the necessary “readiness” steps that must be undertaken before the support for the actual actions begins. Readiness is costly and time consuming and institutional-capacity intensive, and for some countries a huge barrier for undertaking mitigation action in the forests/LULUCF sector at all. NAMAs, while starting behind the REDD+ modality, has the potential to deliver action on the ground much more quickly.

One key issue, however, is the means to engage the private sector. Concepts about how to do this are better advanced in REDD+ debates (e.g. the nested projects approach), albeit are not without controversy and challenge. Conversely, it is only recently that climate finance experts have taken up the topic of what are the best methods to transfer publicly provided NAMA finance through governments to actions on the ground involving private sector players. In particular, a key issue is how to get finance provided to government on very favourable terms through to the private sector with similarly low cost of capital and long tenure, so that the green alternatives are affordable. So this remains a challenge. But it is a similar challenge as how to disburse REDD+ finance provided to host country governments. It is likely that some of the solutions will be common to REDD+ and NAMAs.

This above discussion is not intended to suggest that the NAMAs support modality could be a better modality than REDD+ for the forests/LULUCF sector. First, this would be an unhelpful distraction given the levels of investment of effort in financial and human capacity that have occurred in REDD+ programmes and the momentum that is occurring because of this. Second, currently the levels of support being offered for NAMAs by international support partners is uncertain. It is early days. Third, the current attention on NAMAs is in sectors other than the forests/LULUCF sector. Fourth, and finally, the scale and nature of the challenge to reduce emissions from deforestation and forest degradation is unparalleled in other sectors. REDD+ is the outcome of an intensive and long process of thinking by a global community of experts focused on the challenges in this sector.

The key issue, and the one canvassed in the main Climate Focus study (of which this country case study is a part – see ‘Further Readings’) is how can this ‘new kid on the block’ support modality NAMAs positively contribute to mitigation activities in developing countries, and complement REDD+ in countries where this is relevant. Ideally NAMAs can also contribute to, and add to, the successes that can be achieved through the REDD+ support modality at the community level.

In the light of these general ‘big picture’ issues, Table 4 considers some specific aspects of the NAMAs c.f. REDD+ comparison in the specific circumstances of PNG. Following this, in Section 6, specific insights and concluding comments seek to crystallise how PNG might take forward the introduction of the NAMAs support modality in ways that maximises positive synergies with REDD+.

Table 4: Commonalities and differences of NAMAs and REDD+ support modalities in PNG

	NAMA	REDD+
<b>Narrative</b>	Generally speaking, PNG is starting with a 'blank page' when it comes to considering NAMAs, albeit PNG has some experience to draw on from its involvement in the CDM, including the PoA by PNG Power Ltd. On REDD+ a number of "readiness" processes are well advanced, although the major work is still ahead.	
<b>Status of Implementation</b>	Yet to start.	<p><b>National Level:</b> PNG has begun a significant UN-REDD funded process and is expecting this to be complemented by World Bank FCPF funding.</p> <p><b>Sub-national level:</b> A number of pilot projects have begun the work to engage with local landowner and community groups and begin the necessary underpinning readiness tasks associated with reference levels, MRV, safeguards and possible benefit sharing modalities. In addition some NGO-led project level activities are underway connecting to voluntary carbon and PES markets.</p>
<b>Strategy development</b>	Yet to start.	<p>REDD+ plays a major role in the national process that has led to a PNG Climate Compatible Development Strategy, and elements of this strategy that have been taken up in the PNG Medium Term Development Plan.</p> <p>But a detailed REDD+ Strategy is still to be developed as part of the work to be funded by the WB FCPF and UN-REDD support processes.</p>
<b>Scope</b>	Undefined, but can be expected to focus, in particular, on renewable energy and energy efficiency challenges, given the long term objectives of carbon neutrality and 100% renewable energy.	Broad, given the extent of emissions from the forests/LULUCF sector and the wide geographic coverage in PNG where these arise.
<b>Scale</b>	Undefined, but see point above about the ambitious long term goals. Also the PNG development plans to 2015 and to 2030 have ambitious milestone targets.	Large, given the magnitude of emissions from the forests/LULUCF in PNG
<b>Reference Levels / Baselines</b>	Generally undefined, but some McKinsey cost curve analysis performed in the earlier stages of the development of the Climate Compatible Development Strategy. BAU projections from this analysis are still being used in current planning and policy documents.	Yet to be defined, as part of the work to be funded by the WB FCPF and UN-REDD support processes.
<b>MRV</b>	Undefined. Will need to be an integral part of any work on NAMAs. Potential	Efforts underway as part of the work being funded by the UN-REDD and JICA

	for boundary and double counting/crediting issues to arise with NAMAs operating in communities with REDD+ programmes/projects (see discussion in Section 6).	support processes.
<b>Safeguards</b>	Not as relevant to the sectors likely to be the focus of NAMAs but may have some relevance in any land-use sector NAMAs.	Efforts planned as part of the work to be funded by the WB FCPF support process.
<b>Leakage</b>	Not as relevant to the sectors likely to be the focus of NAMAs but may have some relevance in any land-use sector NAMAs.	Efforts planned as part of the work to be funded by the WB FCPF and UN-REDD support processes.
<b>Permanence/reversals</b>	Not as relevant to the sectors likely to be the focus of NAMAs but may have some relevance in any land-use sector NAMAs.	Efforts planned as part of the work to be funded by the WB FCPF and UN-REDD support processes.
<b>Additionality</b>	Not a concept applicable to NAMAs as this is not an offset/trading type support modality	Efforts planned as part of the work to be funded by the WB FCPF and UN-REDD support processes.
<b>Registry/ carbon accounting &amp; crediting</b>	Not a concept applicable to NAMAs as this is not an offset/trading type support modality. However there is an international UNFCCC NAMA Registry – but here the term registry is not used in a carbon accounting sense.	Efforts planned as part of the work to be funded by the WB FCPF and UN-REDD support processes.
<b>Finance</b>		
<b>Market &amp; credit generation issues</b>	Not a concept applicable to NAMAs as this is not an offset/trading type support modality	Policy work to be included in the development of a PNG REDD+ Strategy to be funded by the WB FCPF support process.
<b>Funding sources</b>	Likely to be from existing international donors (bilateral financial institutions and development assistance partners, and multilateral agencies/development banks) plus new NAMA support facilities and partners sourced through registering PNG NAMAs on the UNFCCC NAMA Registry.	For Readiness: Existing funding by UN-REDD, JICA, EU, AusAID. Expected funding by WB FCPF. For future 'Payments for Performance': Undefined at this stage Also some Voluntary Carbon and PES market activity happening in individual NGO-led local projects

## 6 Concluding comments and insights

### 6.1 On overarching policy context

A striking feature of PNG's domestic policy is the extent to which REDD+ and other international support mechanisms such as the CDM and PES feature so prominently in the headline objectives of the major development planning documents. This positioning is controversial in some quarters as expectations have been raised to very high levels right down to landowners and community groups. Yet PNG's ability to deliver (in scale or in time) on these financial expectations will be very tied to the support coming from these specific international mechanisms. Given the long and difficult history of the international debate in the UNFCCC about climate finance, the potential of unfulfilled expectations by international actors seems to present a considerable risk to domestic policy implementation.

### 6.2 A way forward on NAMAs in PNG

An important characteristic of NAMAs is their potential application in multiple sectors. To date the focus of PNG's domestic climate change has been REDD+, so connected to the forests/LULUCF sector. This has been complemented with individual CDM initiatives by New Britain Palm Oil and PNG Power Ltd. By PNG proactively taking up the idea of NAMAs, it will be possible to engage a broader balance of government, business, NGO and community interests in the progressing of climate change mitigation action. It is also the case that through the NAMAs mechanism it may be possible for PNG to more quickly get some 'runs on the board' for both pilot scale activities and then for larger roll out programmes. It is clear that the REDD+ process still has much readiness work to be completed before it can begin to deliver any support at scale.

To be proactive, OCCD could begin a specific NAMA element to its work and devote human capacity and budget resources to this. This could be a new element or sit comfortably under the Low Carbon Growth stream. It would also link closely with the National Consultation stream. A national stakeholders process on NAMAs could kickstart PNG's NAMA efforts. The term stakeholders here is intended in a very inclusive sense, so national and regional government bodies, business, NGOs and communities. The objective of such a process would be to launch domestic efforts wherein groups develop and eventually present ideas for NAMA programmes, including pilot projects. These proposals would eventually be evaluated by a transparent process managed by OCCD, e.g. involving an expert panel, and in time a set of PNG NAMA proposals could be registered on the UNFCCC NAMA Registry. It is noteworthy that a national process such as this is currently being undertaken in Indonesia.

In marketing this idea, i.e. to address a challenge OCCD may face to make NAMAs seem relevant to this broad 'church' of stakeholders, OCCD should stress the concept that NAMAs can bring a new support modality to help address existing key development, or environment, or community priorities – the key issue being to find a climate mitigation connection. International experience shows there are many actions that can be taken in the energy, waste and sanitation, and agriculture sectors that can have mitigation outcomes. Recent thinking is also showing up ideas in the area of biodiversity conservation (e.g. use of invasive species for bioenergy). There is every reason to believe that a diverse set of possible NAMA ideas can emerge from such a national process in PNG.

### 6.3 Linkages and potential positive synergies between NAMAs and REDD+ in PNG

Three distinctly different cases can be envisaged when thinking about the nature of NAMAs and REDD+:

1. The nature of the NAMA programme has no obvious linkage with the forests/LULUCF sector. It could, for example, be a programme of investment in energy efficiency technologies and practices in buildings, or of capturing methane leaking from landfills to generate electricity or process heat. In this case the linkages between NAMAs and REDD+ are likely to just be seen in the overarching

climate change/development policy processes and institutions. The synergy here can be that, by now having a greater balance of sectoral coverage, REDD+ does not stand so alone and it can be better supported because the institutional processes upon which it also relies have more authority, capacity and budget.

A key issue here is the matter of the proposed PNG *Climate Compatible Development Fund*. Arguably it is more likely for this fund to be created, funded by the PNG government and international support partners, and begin to effectively disburse funds to activities on the ground if the fund is to serve activities in multiple sectors through some transparent and equitable mechanism. A key characteristic of initiatives in the energy sector is that many projects can provide some form of economic return on investment (e.g. from energy savings or sales of energy), so it is feasible that they can pay back to the Fund giving it a “revolving” nature. The *Energy Efficiency Promotion Fund* in Thailand includes in its operation an example of this concept.

2. There are close links between the NAMAs and REDD+ activities, e.g. the NAMAs are related to land-use. Figure 2 below (from the main Climate Focus study) shows the notion of NAMAs and REDD+ activities co-existing in a landscape. In addition to the general link issues discussed in 1., it can be seen that there could positive synergies through such an integration, including the support that comes through each modality. There can also potentially be some area of potential conflict, e.g. around boundaries and double counting/crediting. These are taken up below.



Figure 3: Potential to integrate REDD+ and NAMAs within a landscape

3. Activities overlap in a way that it is not viable to easily separate them out into REDD+ (with all its requisite ‘rule book’ requirements) and non-REDD+ (so NAMA) elements. One obvious example of this would be integrated programmes in rural communities that combine sustainable land management and sustainable community energy activities, especially where these energy elements include bioenergy systems. If the energy systems are supplying, for example, biogas for households’ cooking and lighting and perhaps electricity generation for other community electricity needs and for sale to a grid, one obvious result is that households no longer need firewood from local forests for cooking. Moreover, there is an increase in economic activity associated with this community energy provision, addressing to some extent the “alternative livelihoods” aspects of typical REDD+ projects. There could also be a local afforestation programme to grow wood for a biomass gasification plant



producing electricity.

Such an integrated project can therefore have both direct and indirect positive outcomes for the carbon stocks of the local area. But it would be difficult to disentangle such an integrated project into what are deemed to be the REDD+ and NAMA elements.

It should be noted that initiatives such as described above can be found in countries in SE Asia, albeit not necessarily with the exact package of elements described. Also, arguably this packaging of elements can be highly viable in PNG and connect strongly with one of its key development priorities, namely the ambitious rural electrification goals that have been set by the government. Such targets might better be expressed as for “affordable community energy, including electricity” as it is clear from the above examples that what has perhaps been seen as potential electricity demands (cooking and lighting) can in fact be served by biogas.<sup>5</sup> In many rural areas of PNG it can be expected that there will be a high ‘green waste’ resource supply for biogas programmes at the community level – such as grasses, vines, river weeds, foliage drop and crop residues.<sup>6</sup> Food waste is another resource. Biogas systems can also be designed to handle household sanitation wastes (and livestock wastes if these are collectible). There are already some pilot projects of this type in the Western Province undertaken through the PNGSDP and Ok Tedi Mines community programmes.

Importantly, it can be expected that this third type of integrated systems approach to community sustainable development has high relevance in PNG and can better be packaged as a NAMA programme than attempting to separate it into REDD+ and NAMA elements. An interesting issue arises with respect to this type of system and the CDM PoA that PNG Power Ltd has registered. The renewable energy elements might feasibly be seen as potentially receiving support under this CDM mechanism. However, this brings increased transaction costs in order to meet the CDM requirements, including to meet its MRV rules. Given the currently very low international value of CDM credits that would emerge from such an approach, it may make little sense to introduce this complexity into taking a NAMA approach. Moreover, if support is available through a NAMA to get the job done, such projects would not meet the CDM’s additionality principle.

In sum, given the discussion above across these three cases, it can be seen that there are multiple beneficial synergies that can be achieved through PNG actively pursuing both REDD+ and NAMA programmes.

## **6.4 Potential conflicts between NAMAs and REDD+**

As noted above in case 2. Where you have REDD+ and NAMAs occurring in close proximity, e.g. in the case of land-use NAMAs in a region where a REDD+ project (or programme) is active, it will be important to separate the carbon outcomes and identify these in a robust and transparent manner. If this is not done it is inevitably that this will give rise to challenges about double counting and double payment, which could seriously undermine the credibility of both sides of the supported mitigation activity.

Of course this separation may not be easy to do, and this may introduce limitations to such an integrated landscape approach where REDD+ and NAMAs coexist happily. The likelihood of this difficulty in case

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<sup>5</sup> Moreover, rural electrification per se does not ensure that electricity is affordable to communities for such household energy needs as cooking, lighting and refrigeration (for example tariffs by Western Power of 1 kina per kilowatthour).

<sup>6</sup> This was also a finding in a recent study done for FAO in Samoa that looked at the role of biodigesters in the agriculture and food use/waste sectors. (See “Further Readings”)



3. is why it is suggested that integrated community sustainable development systems involving land use, forests and energy elements, are probably best thought of as potential NAMAs, not NAMAs and REDD+.

Another higher level type potential conflict has been raised in international literature (and in the main Climate Focus study). This is that new attention paid to NAMAs may come at the expense of proper attention being paid to REDD+ – that government processes and donors may take their eye off the REDD+ ball, as it were. This is of course possible and would be problematic. However, in the case of PNG, as discussed above there is the potential that a broadened attention to mitigation, including the role of NAMAs, can have the effect of improving the ‘political’ environment within which REDD+ currently sits in PNG affairs.

## Appendix: Source Literature and Further Readings

The primary government resource documents that have informed this study are:

- Papua New Guinea Vision 2050
- The PNG Development Strategic Plan, 2010-2030, Department of National Planning
- The PNG Medium Term Development Plan 2011-2015, Department of National Planning
- Climate Compatible Development Policy, 2013-2015, OCCD, 2013
- (Draft) National Climate Change Policy, OCCD, 2013
- PNG Power Sector Development Plan, ADB and Dept of Petroleum and Energy, 2009
- Forestry and Climate Change Framework for Action, 2009-2015, PNGFA, 2009

In addition, there are a number of other key resource documents referred to in the study:

- Pacific NAMA Guidelines, SPREP, 2013
- Papua New Guinea National REDD+ Readiness and Activities - State of Play March 2012, IGES
- The Status of REDD+ in PNG, LEAF, 2012
- UN-REDD PNG Joint Programme Document, OCCD (with UNDP, FAO, UNEP), 2011
- PNG Readiness Preparation Proposal (to FCPF), OCCD, 2013
- Feasibility Study For The Production Of Biogas And Organic Fertiliser In The Agriculture And Food Management Sectors In Samoa, FAO Samoa, 2013

Readers may also be interested in the following:

- NAMAs and REDD+, Relationship and Issues for Consideration, Climate Focus, Sep 2013 and its country case studies on
  - Indonesia
  - Philippines
  - LAO PDR
  - Vietnam



