

**AIDE MEMOIRE OF THE
FIRST JOINT MISSION (ADB/WB/UNDP/AusAID) FOR THE
PAPUA NEW GUINEA COMPONENT OF THE PILOT PROGRAM FOR CLIMATE
RESILIENCE (PPCR)
10-14 May 2010**

A. Introduction

1. The Pilot Program for Climate Resilience (PPCR) is the only adaptation funding window of the Climate Investment Fund (CIF), established by the multilateral development banks (MDBs) to finance climate change support for developing member countries (DMCs). PPCR seeks to mainstream climate change adaptation¹ into national development planning through a long-term programmatic approach which, ideally, frames all donor climate change adaptation interventions. The Pacific region is one of two regional and nine country pilots. The PPCR is structured in two phases. Phase 1 will (i) prepare a detailed design for Phase 2 (investment phase) and (ii) undertake initial institutional strengthening and capacity building activities in preparation for Phase 2.

2. The Pacific PPCR has four components: country activities in three countries (Papua New Guinea [PNG], Tonga [TON] and Samoa [SAM]) and a region-wide component. The three countries were chosen, and accepted, to participate in the PPCR as pilot countries.² Under an agreed division of labor, ADB is leading in PNG and TON, while WB leads in SAM. The region-wide component is undertaken jointly, with ADB in the administrative lead. After the three countries' acceptance of the offer to participate in PPCR in September 2009, informal scoping missions were undertaken (November 2009–March 2010).

3. Following the scoping missions, a Joint Mission³ led by ADB and including WB/IFC, UNDP, and AusAID visited PNG from 10–14 May 2010. The Mission held discussions with relevant government offices, development partners (DPs), and NGOs (see **Appendix 1** List of Persons Met) to (i) take stock of current climate change adaptation activities in the country; (ii) assess opportunities for mainstreaming climate change adaptation in national planning/budgetary processes; and (iii) identify the scope, activities, and implementation arrangements for PPCR Phase 1.

4. This Aide Memoire summarizes the Mission's findings and recommendations, as well as the next steps for Government and ADB, leading to the completion of the design of PPCR Phase 1 and the submission of the Proposal to CIF. It was discussed with Acting Executive Director of the National Office of Climate Change and Development (OCCD) and Secretary for Environment and Conservation, Dr. Wari Iamo, and Assistant Secretary of the Department of National Planning and Monitoring (DNPM), Mr. Varigini Badira.

¹ Given the close synergies between climate change adaptation and disaster risk management, the former term is used broadly to include both.

² Papua New Guinea submitted its Acceptance of the Offer to Participate in PPCR to the CIF Administrative Unit in September 2009.

³ The Mission comprised Anne Withford, Governance Specialist and Pacific Climate Change Team Member, Pacific Department (PARD), ADB (Mission Leader); Mahfuz Ahmed, Principal Natural Resources Management Specialist and Head, Pacific Climate Change Team, PARD ADB; Charles Andrews, Country Director, ADB Papua New Guinea Resident Mission; Saia Faletau, WBG PNG office; Freddy Austli, Deputy Resident Representative, UNDP PNG office; Gwen Maru, Program Analyst (Head of Energy and Environment), UNDP PNG Office; Peta Mills, First Secretary (AusAID), Australian High Commission in PNG; and Robert Kay, ADB PPCR Consultant.

B. Mission Findings

1. Climate Resilience in PNG

5. Weather and climate-related disasters such as cyclones, landslides, flooding, droughts, and frost have severe adverse effects on the lives of people, and on the economy of PNG. Climate change is likely to exacerbate such event-driven hazards and may also introduce new hazards due to gradual shifts in climatic condition, leading to increased malaria penetration in the highlands, coastal and inland flooding, changed agricultural yields, damaged coral reefs and damage to infrastructure, such as roads, bridges, airports, ports, wharves. Whilst traditional coping strategies provide a measure of protection, coping capacities are being exceeded with increasing frequency. It is vital for PNG to sustain economic growth in the face of climate change impacts, and this will entail investments to increase climate resiliency across the sub-sectors that fuel economic growth and livelihoods.

6. The PNG Government requested PPCR integrate climate risk and resilience into national development planning through a well-defined programmatic approach that will encourage donor coordination under the PPCR umbrella. This approach will be country-determined and country-driven. Furthermore, the PPCR should build on, or harmonize with, existing government and donor adaptation initiatives.

7. The PNG Government also requested PPCR align climate resilience efforts with its Vision 2050, Development Strategic Plan 2010-2030, Mid-Term Development Plan 2011-2015 and *National Climate-Compatible Development Strategy*,⁴ the key national document dealing with climate change including REDD+, low carbon growth, and adaptation issues (**Appendix 2**).⁵ This document identified six climate-resilience risks threatening PNG. Three were prioritized and analyzed in detail—coastal flooding, inland flooding and malaria—based upon their historical impact in PNG, clear link to climate change and feasibility and data availability and analysis. Agricultural yields, data adequacy, early warning systems and coastal engineering, are also important related concerns and adaptation measures which were mentioned in Mission discussions (Summary of Mission Discussions at **Appendix 3**). The main institutional responsibility for climate resilience will rest with the newly established Office of Climate Change and Development (OCCD) that reports directly to the Prime Minister. Under this sits a National Climate Change Committee (NCCC) and three technical working groups, including one on Adaptation. Government-donor coordination is run through the National Climate Change Taskforce (NCCT), which is co-chaired by the Executive Director of OCCD and a DP (UK High Commissioner),

8. In the past, limited attention was given by Government to climate risk concerns in national and sector policy planning and budgetary processes or in the design of individual projects. However, since 2009, efforts have been taken to incorporate climate change considerations, primarily at the national strategic level, with the preparation of the *National Climate Compatible Development Strategy* and related strategies and the establishment of the OCCD coordination mechanism and technical working groups. Substantial progress has been made at the policy and strategy level, and a commitment has been given to fast-track pilot programs in the future. Nonetheless, the real task of implementing climate change adaptation at the operational level is yet to begin. Climate risk management is still to be integrated into policy,

⁴ See Appendix 2 for Executive Summary of the draft Climate-compatible Development Plan.

⁵ This Plan is currently in draft version, with finalization expected in September of this year. Inputs include related strategies, such as the draft Framework for the National Climate Change Strategy and Plan and draft National Climate Resilience Plan (March 2010).

planning, and budgetary processes. There is limited budget to meet even current priority development needs, let alone the cost of adaptation, limited understanding of climate risks, and a lack of technical capacity to integrate climate risk management into planning processes. There is also no evidence of any training at national, sectoral, or provincial/local levels to provide this capacity.

2. Stock-taking of Donor Activities

9. The main development partners on climate change adaptation, and their activities, are summarized below (see **Appendix 4**):

Australia: AusAID supports a number of regional and PNG-specific climate change projects. The International Climate Change Adaptation Initiative (ICCAI) delivered jointly by AusAid and the Australian Department of Climate Change and Energy Efficiency (DCCEE) focuses on: improved scientific information and understanding; strategic planning and vulnerability assessments; implementing, financing and coordinating adaptation measures; and multilateral support for climate change adaptation. As part of ICCAI Australia has provided USD 40 million to the PPCR. PNG also has access to funding and support through a number of regional programs including those recently announced such as the AUD12m Pacific Adaptation Strategy Assistance Program, the AUD2.7 million Community-based Adaptation Activity Grants, and the AUD 3 million Pacific Future Climate Leaders Program; ongoing programs such as the AUD32m South Pacific Sea Level and Climate Monitoring Project; and bilateral assistance for priority, practical adaptation programs.⁶ While AUD 25 million has been allocated for bilateral activities in the Pacific, an allocation to PNG or any activities have yet to be agreed with the Government of PNG. PNG has been an active participant in the ICCAI Pacific Climate Change Science Program designed to develop better understanding of how climate change will impact the region.

UNDP-GEF: UNDP/GEF has undertaken a number of projects in climate-change adaptation, including focused projects in PNG. These include support of the: Initial National Communication (INC) to the UNFCCC (2000); National Capacity Self Assessment (NCSA) and Technology Needs Assessment (TNA). UNDP-GEF is currently assisting with implementation of the enabling activities for the Second National Communication (SNC). The scope of the SNC will include vulnerability and adaptation assessments of key vulnerable sectors and regions in PNG in accordance with UNFCCC guidelines for the preparation of national communications.

European Union: The EU has supported climate change adaptation initiatives through broader rural economic development, specifically capacity building and technical support to the National Agricultural Research Institute (NARI) to support drought and climate change preparedness. The EU supports the regional Integrated Water Resource Management programme of which PNG is an active member.

ADB: The ADB has provided support for regional climate change projects through its Pacific Climate Change Program. These include: (i) conduct of

climate risk studies (including PNG) leading to the preparation of climate risk profiles which could serve as bases for climate change adaptation initiatives for various development sectors; (ii) mainstreaming of climate change adaptation and mitigation in the Country Partnership Strategy to ensure that climate change implications are incorporated in the economic development policies and planning processes; (iii) building the capacity of PDMCs, including PNG, to respond to climate change; and (iv) natural resource management projects, such as the Coral Triangle Initiative (CTI), which includes PNG among the five Pacific CTI countries. The ADB Pacific Work Program for 2010–2012 includes numerous proposed loan-financed projects that have climate adaptation features incorporated in their design, as well as technical assistance projects, which are aimed at either helping the Pacific Nations develop their capacity for adaptation or ensuring that climate adaptation is incorporated in the design of proposed investment projects.

WB: The World Bank supports a number of regional and PNG-specific climate change projects, including a PNG-specific activity under the GEF-funded Pacific Alliance for Sustainability and support for the PPCR. Two analytical policy papers, a Climate Change Stocktaking and a Climate Change Framework, have contributed to the development of the government's current Climate Compatible Development strategy. The regional "Reducing the Risk of Disasters and Climate Vulnerability in the Pacific Islands" project included a PNG Country Assessment. The World Bank is also a contributor to the CTI.

C. Mission Recommendations

1. PPCR Focus

10. Given the wide range of potential activities for the PPCR in PNG, the Mission and Government agreed on a *focused intervention* that would deliver "transformational" change through a successful pilot program, that could then be upscaled with additional CIF PPCR funding. Some factors informing the decision on focus were:

- (i) country needs and priorities;
- (ii) Phase 1 and 2 resource envelopes for PNG (since it is only one of four PPCR components, likely to be \$0.5-0.7 million for Phase 1 and \$12 million for Phase 2);
- (iii) CIF guidelines suggesting that PPCR complement existing/planned MDB investments and build on existing climate resilience donor initiatives; and
- (iv) consideration of what is the best added value of MDBs in climate risk and resilience mainstreaming, since they are the CIF-designated implementers of PPCR.

11. Based on these considerations, it was decided that the starting point for PPCR interventions would be the national climate change adaptation plan. PPCR would **focus on an "infrastructure plus" approach, namely building climate resilience of infrastructure and climate proofing of Government infrastructure development projects.** The potential impact of infrastructure development on environmental and social concerns is well-known, and related economic, social and health impacts including dengue and vector borne diseases health concerns and livelihoods impacts will be included as important considerations in PPCR infrastructure design and implementation. PPCR Phase 1 will broadly focus on:

- (i) building or enhancing institutional capacity for mainstreaming climate change resilience into 'whole-of-government' and sectoral legislation, policies, plans, and operational activities of selected ministries with responsibilities for provision of infrastructure. Policy changes will be based upon experience gained in the design and implementation of infrastructure projects;
 - a. for example, revision of the building code to incorporate substantial climate change impacts
 - b. for example, updating of climatic design parameters (wind speeds, rainfall intensity, storm search levels)

Sub-activities will be:

- (ii) undertaking additional vulnerability assessments in critical sectors and/or places which have not already been conducted and are necessary for implementation of infrastructure relevant adaptation measures;
- (iii) developing design and implementation plans for relevant measures that the government has analyzed and prioritized (e.g., inland and coastal flood protection);
- (iv) awareness raising and outreach on the impacts of climate change and importance of climate resilience planning responses; and
- (v) strengthening civil society and private sector engagement and gender considerations of climate change resilience building.

12. The potential impact of infrastructure development on environmental and social concerns is well-known, and impacts on livelihoods and health will be important considerations in PPCR design and implementation. **Appendix 5** outlines the alignment of PPCR infrastructure plus focus with PNG's National Climate-Compatible Development Strategy.

13. There are a number of potential infrastructure subsectors that could be addressed by the PPCR. The sector that fits best with the country's priorities and with the MDB pipeline and can used to demonstrate the potential to scale-up and demonstrate transformation is the transport sector. Key subsectors are:

- (i) Air transport: airport runways, terminals, and associated navigation aids;
- (ii) Road transport: road pavements, drainage systems, and bridges;
- (iii) Sea transport: wharves, ports, jetties, and cargo handling.

14. The PPCR team will identify projects in the subsectors through which climate resilience measures can be piloted. The learnings from these projects will be used as the basis for updating government regulations and update governing regulations.

15. Additionally, infrastructure measures relating to the PNG government's priority hazards should also be addressed. Priority measures include the following:

- (i) Coastal engineering; and
- (ii) Inland protection against flooding and landslides.

16. **Appendix 7** outlines major infrastructure donors ADB, WB and AusAID investments (2010-2012) that could be included in PPCR climate-proofing and other activities.

17. The PNG Government's *National Climate-Compatible Development Strategy* adopts a "climate hazards", rather than sectoral, approach that zeroes in on the impact on people of climate change impacts. The above sectoral approach translates into the following hazards-based categorization (see **Appendix 6** for more detail):

- (i) Coastal flooding and erosion hazards (from sea level rise, cyclone impacts, ocean acidification);
- (ii) River flooding and erosion hazards (from changes in the intensity and frequency of rainfall);
- (iii) Landslides (from changes in the intensity and frequency of rainfall).

2. Implementation Arrangements

18. **Government Implementing Agencies.** The OCCD will be responsible for overall coordination of PPCR implementation across Government, and for overall PPCR program monitoring and oversight. The PPCR working level focal points (DNPM and DEC) and Adaptation Technical Working Group (TWG) will work alongside OCCD. DNPM, as a central agency, will facilitate coordination with OCCD.

19. It is vital for PPCR success that political leadership on a whole-of-government cross sectoral climate change adaptation mainstreaming approach comes from the highest level of government, the Prime Minister's Office and Cabinet. It is also important that key infrastructure agencies are fully engaged in PPCR, being the frontline agencies in its implementation. Their meaningful engagement in PPCR will require a significant "mind shift" in considering climate change impacts. While PPCR efforts can help with awareness-raising and outreach, this shift will need to be internally-driven by the PNG Government. In addition to the Government arrangements, a partnership mechanism should be established, utilizing existing mechanisms, to ensure that non-State actors such as civil society and private sector fully participate in PPCR-decision making through the OCCD.

20. **MDB Arrangements for Phase 1.** The MDBs, with ADB in the lead, will continue to coordinate and engage with the PNG Government and stakeholders. It is proposed that the PPCR grant be managed by ADB as the Executing Agency (EA). Details will be elaborated in the Phase 1 Proposal.

21. **Appendix 6** outlines major infrastructure donor (ADB, WB and AusAID) investments (2010-2012) that could be included in PPCR climate-proofing.

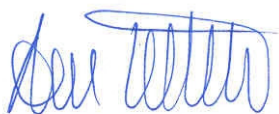
D. Next Steps

22. The Government and the Mission agreed on the following next steps:

Finalization of Aide Memoire following whole-of-government and stakeholder consultation	7 June 2010
Finalization of Phase 1 design	end June 2010
Mission to discuss Phase 1 Proposal	5-9 July 2010
Submission of Phase 1 Proposal to CIF	end August 2010 ⁷

⁷ Exact time will depend upon CIF's meeting schedule for approving country and regional pilots Phase 1 proposals. All four components of the PPCR Pacific pilot are to be submitted concurrently

23. The Mission wishes to express its appreciation to the Government, particularly OCCD, DNPM, DEC, and other stakeholders, for the assistance provided to the Mission. In accordance with CIF guidelines, a publicly available report of the Mission will be prepared and forwarded to CIF.



ANNE WITHEFORD
Mission Leader, ADB



SAIA FALETAU
WBG

Appendix 1: List of Persons met

Appendix 2: Executive Summary, National Climate-Compatible Development Strategy Executive Summary (Draft v2 March 2010) & Executive Summary, PNG National Adaptation Strategy (Draft v2 March 2010)

Appendix 3: Summary of mission discussions

Appendix 4: Stocktake of donor activities on climate change adaptation in PNG

Appendix 5: Alignment of PPCR with National Climate-Compatible Development Strategy

Appendix 6: Potential ADB, WB and AusAID investments (2010-2012) for climate proofing under PPCR

Appendix 7: Mapping of sectoral and "climate hazards" approach

Appendix 1: List of Persons met

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Appendix 2: Executive Summary, Climate-Compatible Development Plan Executive Summary (Draft v2 March 2010) & Executive Summary, PNG National Adaptation Strategy (Draft v2 March 2010)

Papua New Guinea is committed to developing a thriving economy, a fair and happy society and a sustainable environment, as set out in our Vision 2050. Achieving this vision means increasing per capita GDP by a factor of three by 2030, implying an annual GDP growth of approximately 7% per year, well beyond the historic rate of 3-4%. While this is an ambitious target, we can achieve this increase in economic growth through the development of traditional sectors like agriculture, mining and forestry and newer ones like natural gas, services and tourism. We can succeed in these sectors; we have the necessary natural resources and we are developing the human ones.

Papua New Guinea has taken a global lead in seeking to combat climate change, particularly by proposing measures to activate the carbon abatement opportunity offered by preserving tropical forests. Deforestation and forest degradation are major contributors to greenhouse gas emissions, through large-scale logging and the conversion of forests into agricultural use. These activities continue because the value of forests as carbon sinks and a source of livelihood have not been fully recognised by market mechanisms. Together with other rainforest nations, we are working to create a mechanism for Reducing Emissions from Deforestation and Degradation, enhancing carbon stocks and managing forests sustainably in developing countries (REDD+). REDD+ will enable developed countries to pay for the ecosystem services provided by Papua New Guinea and other developing countries. The Copenhagen Accord of December 2009 recognised the fundamental role of REDD+ in climate change mitigation and makes substantial funding available for the first time, starting with a commitment of USD 3.5 billion globally for the period 2010-12. In total, funding of USD 30 billion will be made available for the 3 year period to support the implementation of mitigation and adaptation actions in developing countries in line with their national development strategies. This recognition marks a broader shift in the terms of the climate change debate, in which there must be an alignment between climate change and economic development.

For our own part, we are committed to mitigating domestic greenhouse gas emissions. Vision 2050 envisages low-carbon economic development, with an aspirational goal of carbon neutrality by 2050. Preliminary analysis suggests that emissions could be reduced by up to 70% (compared with a Business As Usual growth scenario) by 2030, at an average estimated cost of approximately USD 4/t of carbon dioxide equivalent. This reduction can be achieved through large-scale abatement measures such as changing forestry practices, increasing agricultural yields and shifting to renewable power sources. Some of these measures will require significant investment in building infrastructure now to support a low-carbon growth path over the next 40 years. REDD+ mechanisms are expected to be an important source of the necessary funds, but in order to access these funds we will have to develop an effective and transparent institutional framework to manage them. We will also need to develop technical and managerial capacity for activities such as Monitoring, Reporting and Verification (MRV) of agreed emissions reductions. REDD+ is also expected to provide a significant boost to conservation, protected areas and biodiversity; specific policies for these areas will be developed by the Department of Environment and Conservation under its policy for Environmentally Sustainable Economic Growth (ESEG), which complements this strategy.

Besides mitigating greenhouse gas emissions, we need to shape our development to be more climate-resilient. Our people and economy are already vulnerable to climate-related

hazards. Even with global action on mitigation, climate change already in train will exacerbate some of these hazards, such as coastal and inland flooding. It will also introduce new hazards through gradual shifts in malaria prevalence and agricultural yields. Protecting our people and economy from these risks requires a thorough understanding of the nature and the size of the problem and the best ways to tackle it here in Papua New Guinea. Preliminary analysis suggests that the average cost of coastal flooding could increase from USD 20 m per year to USD 90-100 m by 2030 and the economic loss due to malaria from USD 130 m to USD 210-250 m per year. Cost-effective adaptation measures could avert 65-85% of these losses. International support will be required to carry out further analysis, build capacity, develop pilot programs and scale up the selected measures.

Climate-compatible development will require broad cooperation across all elements of Papua New Guinean society. We are preparing to reshape our national institutions so that we are able and ready to implement climate-compatible development. Beyond government, the refinement and successful implementation of the climate-compatible development strategy will require strong coordination and collaboration with private sectors and NGOs, as well as technical and financial support from the global community.

In the coming months and years, the government will move to implement climate-compatible development, starting with the following priority actions:

- Climate change mitigation, adaptation and low-carbon growth need to be incorporated into national development planning. Policies in other sectors will also have to be reviewed to ensure they are climate-compatible.
- Further research and analysis will be required in some areas, such as developing a comprehensive greenhouse gas inventory and enhancing our understanding of climate risks.
- Many aspects of climate-compatible development require existing institutions to develop new capacities and ways of working. International support will be necessary to help develop these capacities.
- A new institution will also have to be created to take charge of climate change policy at the heart of government in the post-Copenhagen reality, replacing the Office of Climate Change and Environmental Sustainability
- Arrangements will be needed for other aspects of climate-compatible development, such as REDD+. A high priority will be to develop Monitoring, Reporting and Verification (MRV) system, fund disbursement mechanism and benefit-sharing models that ensure benefits accrue equitably to resource owners.
- Pilot programs will be required to enhance the knowledge base, identify the most effective institutional arrangements, test the new policies and build capacity.

The Copenhagen Accord recognizes that mitigation and adaptation to climate change are inseparable from economic development. Papua New Guinea welcomes this and is now taking steps to ensure climate-compatible development for its entire people.

Appendix 3: Summary of mission discussions

Meeting	Responses
<p>10th May Initial meeting initial meeting with Coordinators;</p> <ol style="list-style-type: none"> 1. Varigini Badira @ DNPM (Meeting and courtesy call with the Secretary Lelang) 2. Gunther Joku @ DEC 	<p>A three-pronged approach to Phase 1 activities was discussed:</p> <ol style="list-style-type: none"> 1. Mainstreaming of climate resilience in key agencies 2. Strengthening in civil society and private sector 3. Preparation of Phase 2 activities. <p>It was agreed that these three areas would provide a good focus for the PPCR. The third work stream of the OCCD is on adaptation.</p> <p>The ability to pick up the infrastructure and institutional strengthening pillar of the Climate Resilience Plan, plus some infrastructure-related projects under other pillars.</p> <p>One sensitive or “grey” area for government was engagement with CSOs –govt preferred PPCR to use the mandated govt-CSO interaction mechanism (public-private partnership or social development mechanism). Also need CSO to assist with harmonization – for example a tracking system for all CCA activities. The Social Development Programme (SDP) has projects that has government – helps also implement the MTDP (Medium Term Development Plan) 2010-2013 (currently in formulation) to factor in the PPCR and ensure that CCR is mainstreamed effectively into government policies, plans and programmes.</p> <p>It was discussed that country vulnerable sectors: [1. Coastal flooding 2. Inland flooding 3. malaria 4. Food security 5. Sea-level rise aka. Relocation]</p> <ul style="list-style-type: none"> - Protection of the coastline and pressure on relocation of communities. There are likely to be potential synergies with the PPCR addressing this issue because with the CTI project and its the sea-level rise and coastal vulnerability component. - Malaria progressing into the highlands will be a priority. There are active discussions with Department of Health leading with WHO and others. - Economic resilience – for example food security and livelihoods to assist with climate vulnerability and change. This is linked with regional transport, water infrastructure. - The importance of climate proofing climate key infrastructure, for example transport networks, was also outlined. (ADB pipeline and expertise was noted here) - The potential for projects that focus on seeking to look at the whole range of climate

	<p>change adaptation issues within specific geographic areas was discussed. For example, climate proofing the highlands highway could also address issues of malaria, livelihood development , economic resilience and so on.</p> <p>There is a strong desire to harness the work of development partners. For example, UNDP in a range of support activities, AusAID (through the ICCAI) and others.</p> <p>The timing of the Climate Compatible Development Strategy (CCCP) is planned for public release in July and is the key guidance document. The National Resilience Plan and the other documents (WB DEC doc) feed into this key document.</p> <p>A document for the Milne Bay CCA project summarizes lessons learned. However, there is not one document that summarizes lessons learned. But DNPM can share with us.</p>
<p>1. Gunther Joku, Director DEC 2. Gwen Sissiou, Deputy Secretary – DEC</p>	<p>A number of changes have been made in the administration of climate change issues in PNG. The formation of the OCCD is significant and also the PMO is more focused on post-Copenhagen agenda. It will take 2-3 months to finalise the setup of the OCCD – and this will be a small group, but with clear coordination across agencies. There is an emerging desire within Government to quickly establish demonstration projects to show results, especially to ensure mainstreaming within key sectors who will be responsible for project execution (even before strategies have been finalized ie. Before July)</p> <p>Another focus is to make clear across DNPM, OCCD and DEC where adaptation projects, funding and activities are taking place.</p> <p>On how priority areas were chosen, it's a function of bottom-up data availability and stage of development of proposal (v. practical) rather than a top-down strategic decision. The initial sectors of coastal flooding and malaria is also a factor of data availability to help demonstrate potential adaptation costs. Also because the Health Department has an existing malaria management programme and that coastal flooding is a critical current issue.</p> <p>Priority issues include:</p> <ul style="list-style-type: none"> - Coastal flooding - Malaria in the highlands - Sepik river flooding- undertook risk assessment of a Government station in order to develop methods for assessment - From the hazard identification process the need for early warning of coastal areas was identified.

	<p>There are activities that can be programmatic and activities by project – with the PPCR as a programmatic focus to ensure clear sectoral support. Phase 1 activities should allow for readiness and preparedness for Phase 2, including institutional and professional capacity building and strengthening.</p> <p>AusAID stressed that PPCR is important to achieve transformational change, because it is a larger quantum of funding. Also, AusAID’s bilateral programme, including bilateral components of the ICCAI should be harmonized with the PPCR.</p>
<p>10th May Government roundtable.</p> <p>DNPM, DEC, PM&NEC, Treasury, Finance, Transport, Office OF Rural Development, PNG Forestry Authority, Department OF Mineral Policy and Geohazard, National Weather Service, Department Of Energy And Petroleum, Department Of Agriculture And Livestock, National Port Authority, Community Development, Department Of Education, Department Of Health, National Disaster Center.</p>	<p>It was stressed that the considerable work undertaken to date in PNG on refining the institutional arrangements for addressing climate change issues. The new Office of Climate Change and Development will report through a new National Climate Change Committee to be chaired by Chief Secretary, including key CACC members (Treasury, DNPM) plus secretaries of DAL, DEC, CEOs of PNGFA, NARI, NFA.</p> <p>Importantly also that Government works closely with Development Partners through its regular Climate Change Taskforce meetings.</p> <p>The Government has been working on the Climate Compatible Development Plan (CCDP) to define government priorities and actions.</p> <p>(NOCC rep) The consultation process over the past 6 months to develop the CCDP has been very successful and has built confidence in the process in PNG. The time and energy invested in this process shows ‘the way to go’ with Phase 1 engagement actions.</p> <p>Existing GoPNG processes, such as the work of the technical working groups, are an important way to access sector knowledge and information.</p> <p>There is a risk of making the aims of the PPCR too broad and as a result it could not achieve outcomes.</p> <p>A key gap for the infrastructure providers is the basic gaps regarding the sensitivity of the current portfolio of infrastructure, and those that are planned in the pipeline. ‘We might be able to build a road with the current climate but not when things are changing’. There is scope to provide the climate change scenarios themselves, then the design criteria required by engineers and others involved in planning and delivering infrastructure. This work can be built</p>

	<p>ontop of work with hydro-met monitoring and also geophysical monitoring and assessment.</p> <p>A key gap is to provide useable information to decision makers & those also to support planning.</p> <p>National Agricultural Research Station working on food security issues.</p> <p>If we look at the resource envelope then we can focus on the country’s development goals and what are out focus areas and harmonize them to provide a high impact, including policy development.</p> <p>A list of pilot projects has been identified already by the Technical Working Groups together with initial costings.</p> <p>The National Weather Service is well established, but have gone from over 600 weather stations to about 5 – and this is a key gap. They have capability to work with NARI on agriculture & food security, and also a policy. For example, NARI are also working with development partners to assess cropping and food security risk.</p> <p>Institute of Medical Research is taking the lead in malaria research in PNG, including its focus on potential growth into the highlands. Also, there is risk with dengue, that could be investigated.</p> <p>We want to do some activities where we can see clear results early, while understanding that longer term issues can be further studied. Again, the Adaptation Technical Working Group.</p> <p>From the focus should be ensuring that the support is to help the people of PNG. It is clear that the river systems and the coast is changing and that problems with drought (predicted in 2012) and then heavy rain.</p> <p>Dept of Transport and Dept of Public Works did not think of CC considerations and there would need to be a process of education and awareness raising by the PPCR team and other stakeholders Mission agreed to meet with these departments separately in a follow-up meeting (Ports agency with the only infrastructure agency represented at the meeting).</p>
<p>11th May (Morning) Development Partners Development</p>	<p>The meeting was chaired by Mr Wariamo, Secretary of DEC and Acting Executive Director of OCCD.</p>

<p>Partners Climate Change Taskforce meeting.</p>	<p>The meeting initiated with an updated from OCCD/DEC on the status of the OCCD and the action plan and way forward. The status of establishment of the OCCD was noted, with advertisements released yesterday. Mr Wariamo stressed that all issues related to climate change should be channeled through him. It was asked if the documents establishing OCCD could be made available in order to clarify the core mandate of the office. The OCCD is a transitional arrangement until such time as the legislative framework is established. The organization framework of the OCCD was discussed – and the additional secondees to ensure short-term action, including Project Managers specifically targeted to delivering Pilot Projects.</p> <p>The timeframe for finalisation of the CCDS was discussed. The next phase of work will focus on provincial/local consultation and to undertake pilot projects. This will be articulated in an Action Plan to be released within a week. The next version of the CCDA (Version 3) will be released in September.</p> <p>The pilot projects include those for: REDD+; low carbon growth and adaptation. Adaptation initiative are:</p> <ul style="list-style-type: none"> • Early warning system • Mangrove planting • Seawalls • Flood warning system • Lae flood protection <p>There was discussion that the long-term strategy (to 2050) and that the Medium Term Development Plan (MTDP) is currently under development and planned for 30 June. It was stressed that the MTDP is flagging significant budget allocation for infrastructure funding and as such there is a key opportunity to mainstream CC into the MTDP. GoPNG stressed that there is currently close alignment between the MTDP and the CCDS.</p> <p>At the next meeting in 2 weeks there will be an update on the Action Plan.</p> <p>ADB then provided a presentation on the background, status and expected outcomes of the PPCR.</p> <p>Discussion points included:</p> <ul style="list-style-type: none"> • The WB and AusAID are both big infrastructure donors. As a result, it will be important to ensure close harmonization. • There is a potential for confusion between the various programs and initiatives – and it is important to ask DPs to help drive a clear strategy forward and help pull GoPNG together. It will be important to promote a whole of government approach, including the important role of
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	<p>Department of Planning (for coordination) and a department with responsible for implementation (and getting their hands dirty).</p> <ul style="list-style-type: none"> • It was stressed that the spirit of the PPCR will be to work within existing institutional structures, while recognizing the importance of whole-of-government implementation. • GoPNG will be working together to bring together the National Climate Resilience Plan & the CPDS. • The timing of the PPCR is good because of the work done to date on strategy development and institutional arrangements. It was stressed that there will be challenges in working with the line agencies responsible for infrastructure provision. The sense of momentum and leadership from senior levels of government will be needed to ensure that there is a shift of mindset towards mainstreaming CC resilience. For example, shifting thinking from construction to whole-of-lifetime management. • The DPs could work together to develop a ‘road map’ that outlines the various work programs and funding windows to assist with funding opportunities for CC matters to help move forward in a coordinated fashion to build on mutual strengths. • There may be the potential for EU contribution to the regional component, if formulated effectively. • The response from the Cairns consultation regarding the regional component with a focus on support for CC financing. <p>There was active discussion regarding how best to inventory financial channels to match DP support with country priorities, stressing the importance of ensuring strategic coherence. The role of Planning will be particularly important in this respect, including enhancing the Development Assistance Database (DAC) to track projects.</p>
<i>Institution of Engineers</i>	
<i>SNC Coordinator and V&A Team</i>	
<p>12th May (DEC) Climate change Working Group Meetings (REDD+ and Low Carbon Growth working groups attended by Mahfuz Ahmed and Peta Mills) Adaptation Working Group (12th meeting) attended by Anne Witheford, Saia Faletau, Robert Kay and Peta Mills</p>	<p>The current status of the CCDS was discussed and the transition from the strategic phase to the implementation phase. There was discussion around the approach in the CCDS (hazard driven approach) that contrasts to the development partner/UNFCCC sectoral approach to the assessment of climate change impacts and adaptation assessment. It was discussed that there is scope to develop a ‘matrix’ of hazards by sector – to develop a programmatic approach or thematic approach for GoPNG.</p> <p>The pipeline for prospective proposal for World Bank & UNDP to seek \$8-9 from the Adaptation Fund. Work is still underway to detail the components of this work, although it is likely to include institutional strengthening given the strength of UNDP in PNG.</p>

	<p>A proposal with the Global Fund of \$21M for Malaria control is active. AusAID agricultural yield resilience with NARI (\$2M) is currently being considered as are applications from UPNG for a scholarship program.</p> <p>A presentation was given on the background, status and key issues of the PPCR. The presentation was well received by the Working Group members. This triggered a discussion around the importance of ensuring a having a good plan for implementing climate change adaptation actions.</p> <p>The Working Group highlighted the importance of coordinating across the sectors.</p>
<p>12th May Disaster Risk Management Unit and SOPAC/UNDP joint mission on Disaster Risk Reduction</p>	<p>The regional programme on DRR – A framework for Action 2005-2015 – is the regional implementation of the Huaygo framework. The regional facilities will support the development of National Action Plans. PNG has requested support to develop the Plan in PNG and approval from the National Disaster Committee. This will be coordinated through the National Disaster Center and a regional pilot will be undertaken.</p> <p>It would be a missed opportunity to look at risk in its entirety, including all gohazards and climate change to ensure that infrastructure has all such design parameters included.</p>
<p>13th May CSO Engagement</p>	<p>Using the CSO engagement framework will be important to use.</p> <p>Important to ensure that any infrastructure built can withstand climate impacts properly – both today and in the future.</p> <p>All project investments must be focused on ensuring the development of community capacity and coping mechanisms – for example building houses above what was traditional levels when the climate was stable. These can be joined with community-level capacity building initiatives through small grants (such as AusAID programme). In addition, the regional support centers from NARI to address community support for food security to build resilience – such as seed banks and technical support around drought impacts.</p> <p>Must ensure that community networks can supported.</p> <p>Mama Grau can work with community engagement around sustainable development, CARITAS involved with water supply, disaster management, sustainable development. WWF working on rehabilitation of coastlines – mangrove planting + livelihood programmes in Sipik river for community self-sustaining and also conservation strategy.</p> <p>Red Cross – range of support, including disaster management, community health support and building community resilience and ensuring local and traditional knowledge is integrated into government programmes. Currently an ongoing process of talking with communities on developing baselines</p> <p>CERD – local NGO focused on mining and oil & gas. Advocacy work on environment issues</p>

	<p>and livelihood.</p> <p>Climate change is an extra burden on them. It is coming at times and in ways that they weren't expecting. A lot more research needs to be done to look at exactly how to support communities. For examples, in flood plains investigating community impacts from flooding (like village location) and how can food be better secured and how can malaria impacts be managed.</p> <p>TNC are doing work on protected area management and also an integrated way of looking at high conservation value areas – such as Marine Protected Areas (MPAs).</p> <p>CSOs – GoPNG recognizes various offices. There are also high turnover with NGOs and also working with externally qualified people from overseas who can work on a volunteer basis. Government have limited capacity and through an integrated strategy for delivering climate change resilience.</p> <p>Each sector has a working relationship with the GoPNG agencies it works with. These relationships are often very positive. Also the PNG research institutes are linked with to help with outreach.</p> <p>Critical to ensure that we can establish a good mechanism for engaging with the CSOs through GoPNG.</p>
<p>13th May Meeting with Core PPRC team to review the findings of the consultation and the way-forward</p>	<p>The summary of the Mission was discussed, together with the contents of the draft Aide Memoire – including its focus on the 'infrastructure +' concept. It was agreed that this was the best way to provide focus and building on agency capacity, lessons learned and the competitive strengths of the development partners.</p> <p>GoPNG thanked the Joint Mission for its input during the week. We have had a look at the Aide Memoire and there are areas where we can ensure that the PPCR feeds into the CCDS. It will be important to ensure that there is real action on adaptation on the ground.</p> <p>GoPNG believes that there is close coordination between key agencies and that the PPCR can strengthen this.</p> <p>GoPNG needs to ensure very clear steps to move forward and that the infrastructure focus will be important for the people of PNG. This will also help with the engagement with transport and public works agencies to support them. A success story will be ensuring that there are climate proofed infrastructure built.</p> <p>The alignment of the potential infrastructure pipeline will be consistent with national development objectives.</p> <p>The challenge of providing a clear inventory of current and pipeline projects and the important role of Planning.</p> <p>GoPNG asked for a paragraph to explain the regional component.</p> <p>There may be opportunities to divide the work for the 'softer' component of the projects could</p>

	<p>be moved to the regional component, allowing the PPCR in PNG to focus on 'hard' infrastructure. The timeline for next steps was discussed and agreed in principle. The meeting discussed the</p>
	<p>Hans Sarua Deputy Secretary, Technical Services, Department of Works</p> <p>Looking at revamping design standards</p>
<p>13th May Department of Transport</p>	<p>Important that climate change needs to take a lead in the Pacific region on this issue. The meeting is timely because the Department is developing a long strategy – National Transport Strategy (2011-2030) & supported by 5 year rolling plans (medium term transport plans 2011-2015). This aligns with Planning in that accords with national development planning. In consultation with sector agencies in developing the Strategy, climate change was raised as an issue.</p> <ul style="list-style-type: none"> • Department of Works • Civil Aviation Authority – currently being broken into three sectors National airports corporation, safety and navigation • PNG Ports • National Maritime Safety Authority • National Weather Service • National Road Safety Council <p>Transport is wanting to tie in the Strategy with national climate change initiatives – including the CCDS. Good engagement with wanting to factor in climate change factors into design parameters. There was extensive discussion around the practical inclusion of CC factors into engineering design for adaptation.</p> <p>National Transport Development Plan had a sectoral priority plan – now there is a Transport Infrastructure Priorities project. Key early priority is on repair and maintenance of existing transport network – from a social and economic perspective. This is because if access is cut this causes significant disruption. A methodology for prioritization for investments is currently being developed and so the sector priorities is not yet available.</p>

	<p>The National Roads Authority only for repair and maintenance when they are handed over from the Works Department. Only about 7% have been handed over.</p> <p>Email inst eng guideline</p>
<p>13th May Public Works</p>	<p>Institution of Engineers conference was held in 2009 on the potential impacts of climate change on engineering design.</p> <p>Also the department of very supportive of the concept for climate proofing in its design work. There will be a field conference planned at the end of June. The subject of CC can be brought forward at that meeting.</p> <p>Queensland Main Roads design standards & have had previous cooperation with them. Scope for working with them to look at both gradual climate change and the point of disaster failures – especially for bridges. The capacity constraints around engineering staff, are important. The PPCR if it can bring in additional expertise will be very welcome.</p> <p>The PPCR is very timely to help Works with this important issue of CC.</p> <p>The newly formed South Pacific Association of Engineers is also significant. It's first meeting was in February 2010 and climate change was raised as a key issue.</p>
<p>14th May Private sector engagement Institution of Engineers</p>	<p>The Institution is very much aware of CC and had a conference. The event highlighted the immediate need to look at design standards – adapted ANZ standards from 20 years ago – but haven't kept up to date. A dialogue has been started with the National Standards Institute to be able to look at these standards to update to international best practices. This has been positive, following 5-6 meetings and a framework for moving forward has been put in place.</p> <p>Financial constraints for manpower has been an issue. It has also been highlighted that standards are complied, with the main constraint being funding.</p> <p>Professional Engineers Registration Board established under the Act, includes both those with engineering qualifications (680) and those working on projects – such as technicians and also managers (same as QLD with mandatory registration – approx 1,200). Third category of membership is the institution itself.</p>
<p>14th May Additional CSO Engagement meeting Department of Community Development, Planning & UNDP</p>	<p>CSOs are critical for community engagement.</p> <p>Preparation Phase important to develop a profile of CSO capability, capacity and their programmes in PNG related to climate resilience and disaster response. To capture good data for this, it would be good to have a training programme on this. Perhaps develop a toolkit to ensure that a toolkit to help coordinate NGO activities. This will involve close coordination with</p>

Partners with Melanesians – working with education, conservation and development activities. Also have large conservation projects – for over 25 years – including community rehabilitation projects and energy efficiency.

Eco Forestry Forum is the umbrella organization for forest conservation. It has a desk assigned specifically on climate change (3 staff). Focus on REDD + awareness and education. There have been awareness raising matters.

Well developed processes established for CSO engagement with communities within the sector.

Planning has a policy document for GoPNG engagement with CSOs. This is a policy document, but not yet in implementation. Have had workshops with CSOs to design the ToT.

The Eco Forestry Forum is currently running a road show on post-climate change & they have a strong network. Make sure that the PPCR Phase I has clear tangible outcomes, to tap into existing CSO projects and engagement.

There will be need to be clear coordination with CTI and other ecosystem-based exercises. Because many environmental impacts are from

Community Development will write to Planning to put forward coordination mechanism on CSO engagement.

The concept is to design a planning workshop during June to design the PPCR project proposal.

It will be important for ensuring that there are clear scientific scenarios to make sure that this information is distributed to CSOs. There is scope for good engagement through Phase I activities.

Will be important to engage the Provincial Planners for Phase I activities. Perhaps through a specific workshop. They will have a good picture of regional infrastructure.

Appendix 4: Stocktake of donor activities on climate change adaptation in PNG

The key conclusion of the stocktake of climate resilience activities in PNG is that there has recently been a hiatus in the implementation of resilience building measures pending the outcomes of institutional and policy reforms. There have recently been a number of key documents that make recommendations on improvements to institutional arrangements, associated capacity building, awareness raising and knowledge management are currently being finalized by GoPNG. For example:

- Climate Compatible Development for Papua New Guinea (Draft March, 2010 – endorsed in Principle by the National Executive Council on 20/3/2010)
- Framework for the National Climate Change Strategy and Action Plan (Draft March, 2010)
- National Climate Resilience Plan (Draft March, 2010)
- National Climate Change Policy (NCCP) framework (Draft, March 2010)

In particular, engagement with GoPNG stakeholders during the Joint Mission confirmed the primacy of the Climate Compatible Development Strategy (CCDS) for Papua New Guinea as the key strategic document outlining the overall framework and approach for the development of resilience building measures, strategies and plans. GoPNG stressed during the Joint Mission that the all activities across the Government with respect to climate change should accord with the objectives and approaches outlined in the CCDS – which in turn should align with the Governments overarching development planning documents. In particular, the Vision 2050, the Long-Term Development Strategy, and Medium Term Development Plans. The Vision 2050 document, given its long time horizon, is includes a number of key strategic directions for Climate Change and Environmental Sustainability. An important component of the Vision 2050 document is the definition of a number of climate change adaptation objectives, priority activities, key outcomes, key performance indicators and means of verification.

Consequently, there have been a range of adaptation and resilience building initiatives undertaken prior to the recent hiatus, together with a limited number of initiatives within specific sectors (such as agriculture), capacity building and regional scientific assessments summarized below.

Australia: The International Climate Change Adaptation Initiative (ICCAI) delivered jointly by AusAid and the Australian Department of Climate Change and Energy Efficiency (DCCEE) focuses on: improved scientific information and understanding; strategic planning and vulnerability assessments; implementing, financing and coordinating adaptation measures; and multilateral support for climate change adaptation. As part of ICCAI Australia has provided \$40M to the PPCR, and plans specific bilateral support to PNG to assist in climate change adaptation efforts according to country needs. In addition, PNG has been an active participant in the ICCAI Pacific Climate Change Science Program (PCCSP) designed to develop better understanding of how climate change will impact the region. In particular, the PCCSP will produce updated, high resolution, regional climate change scenarios in mid-late 2011. These will be a significant improvement on current predictions of climate change in PNG. There is a planned education and outreach component for these new scenarios. There is significant scope for PPCR Phase I activities to harmonize the PCCSP to assist with the detailed feasibility assessment of climate proofing activities. Other components of the ICCAI, such as the Pacific Leaders Programme and also a planned vulnerability assessment programme are likely also to be of relevance to PPCR Phase I activities.

UNDP-GEF: UNDP/GEF has undertaken a number of projects in climate-change adaptation focuses projects in PNG. These include support of the: Initial National Communication (INC) to the UNFCCC (2000); National Capacity Self Assessment (NCSA) (2010) and Technology Needs Assessment (TNA). UNDP-GEF is currently assisting with implementation of the enabling activities for the Second National Communication (SNC). The scope of the SNC will include vulnerability and adaptation assessments of key vulnerable sectors and regions in PNG in accordance with UNFCCC guidelines for the preparation of national communications.

The recently completed NCSA includes a number of specific Capacity Outputs specifically targeting climate change adaptation, namely:

- Capacity of government, NGOs, private sector and communities plan and undertake V&A assessments enhanced.
- Government, institutions, NGOs, private sector and communities' implementation of adaptation options determined through V&A assessments enhanced.
- Capacity for systematic observation improved compared to 2009 levels.
- Enabling environment established and climate change mainstreamed into national, provincial, sector and institutional plans, strategies, policies and programmes.

Each of the above Capacity Outputs contain specific proposed actions, lead agencies and potential implementation partners.

UNDP-SOPAC. On 12 May 2010 the National Disaster Committee endorsed a comprehensive DRM Mainstreaming Programme with support from the Pacific Islands Applied Geoscience Commission (SOPAC) and the United Nations Development Programme. The Programme will be coordinated by the National Disaster Centre (NDC) and will lead to the implementation of DRM initiatives at the national level and a Provincial level DRM action plan that is consistent with the Pacific Disaster Risk Reduction and Disaster Management Framework for Action 2005 – 2015 (Madang Framework) and other linked regional policy instruments.

The focal areas of the Programme are:

- DRM High-level Advocacy
- Mainstreaming DRM into National and Sectoral Plans
- Strengthen DRM Governance Arrangements
- Strengthen the Capacity of DRM Technical Agencies
- Capacity for DRM at the Provincial Level
- Risk Information for Development Decision-making

To facilitate financing for the implementation of activities under each Focal Area in the programme SOPAC and UNDP will mobilise support available to it through a regional facility for DRM mainstreaming under its control viz the ACP-EU Natural Disaster Facility, as well as the Bureau for Crisis Prevention and Recovery.

The PPCR will ensure there is close coordination between the DRM Mainstreaming Programme during PPCR Phase I activities and the planned activities for the implementation of DRM mainstreaming measures. This will ensure that an ‘all hazards and risks’ approach is taken to the both PPCR and DRM mainstreaming activities that allows for clear harmonization between the two streams of activities.

European Union: The EU has supported climate change adaptation initiatives through on its focal areas in PNG of support to rural economic development including capacity building and technical support to the National Agricultural Research Institute (NARI) to support drought and climate change preparedness. The EU supports the regional Integrated Water Resource Management programme of which PNG is an active member.

ADB: The ADB has provided support for regional climate change projects through its Pacific Climate Change Program. These include (i) conduct of climate risk studies (including PNG) leading to the preparation of climate risk profiles which could serve as bases for climate change adaptation initiatives for various development sectors; (ii) mainstreaming of climate change adaptation and mitigation in the Country Partnership Strategy to ensure that climate change implications are incorporated in the economic development policies and planning processes; and (iii) incorporation of climate change adaptation in infrastructure processes, such as the Highland Region Road Improvement Program in PNG (see annex 7), and (iv) natural resource management projects, such as the Coral Triangle Initiative (CTI), outlined below.

Coral Triangle Initiative, Phase II. This regional policy and advisory technical assistance is a response to the requests made by the five CTI-Pacific countries (PNG, Solomon Islands, Timor-Leste, Fiji, and Vanuatu) for technical and financial support in their coastal resource management and climate change adaptation efforts. It will assist the Pacific CTI countries in realizing the objectives of the CTI regional and national plans of action, which address interrelated issues facing the future of coral reefs, fisheries, and food security – priority development issues that have increasingly threatened a significant proportion of coastal communities. It will support the introduction of more effective management of coastal and marine resources, especially those associated with coral ecosystems, to build their resilience in a period of increased threats arising from climate change impacts. The initiative will help delay the expected decline in ecosystem productivity due to these stressors through more effective management that addresses land and water interactions and the management of threats to coastal habitats arising from local human activities. Through maintaining productivity over a longer time frame, local community well-being will be ensured, especially their access to food sources and the protection afforded to coastal communities by coral reefs and associated habitats. Furthermore, by reducing local ecosystem threats, the impact of climate change will be delayed, providing more time for adaptation and for global response to climate change.

In addition, the regional Strengthening the ADB Capacity of Pacific Developing Member Countries (PDMCs) to Respond to Climate Change, Phase I aims to improve the ability and resilience of the PDMCs to prepare for, and respond to, the challenges posed by climate change impacts through the implementation of priority adaptation and mitigation measures. The RETA has three main outputs:

- Establishment of a Pacific Climate Change Program (PCCP) that will assist PDMCs in improving their resilience to climate change impacts through mainstreaming of adaptation in their policies, plans, programs, and projects and strengthen their systems and capabilities to foster the adaptation process,

including information and decision support tools, and access to affordable financing of climate-proofed development initiatives;

- Strengthening of institutional capacity of five selected PDMCs in the preparation of climate change adaptation plans and climate-oriented environmental assessments, development of an information system for multisector climate change vulnerability and adaptation (V&A) assessment, mainstreaming of climate risk management and adaptation policies and measures, and design of pilot adaptation projects in priority sectors based on prior V&A assessment and geographic information system (GIS) mapping; and

WB: The World Bank supports a number of regional and PNG-specific climate change projects, including support for the PPCR. The regional Risk of Disasters and Climate Vulnerability in the Pacific Islands project included a PNG Risk Assessment. The World Bank is also a contributor to the CTI.

Additional Regional Adaptation Projects Implemented in PNG

PACC. The Pacific Adaptation to Climate Change (PACC) Project is Special Climate Change Fund (SCCF) full-sized project implemented regionally in 12 countries: Government of the Cook Islands, Federated States of Micronesia, Fiji, Nauru, Niue, Papua New Guinea, Samoa, Solomon Islands, Tonga, Tuvalu and Vanuatu, Marshall Islands, Palau. The project is coordinated regionally by UNDP and SPREP. PACC focuses on national and local activities that will reduce risks to the sustainability of national and sectoral development initiatives arising from climate change. The project implements a framework of action that fuses the top-down (mainstreaming) and bottom-up approaches to climate change vulnerability assessments and action. Each PACC country chose priority adaptation areas, according to its national needs. Food production and food security was selected as a priority sector for adaptation intervention in Papua New Guinea under the PACC project. Under this theme, an adaptation project entitled “Piloting climate change adaptation in food production and food security in Central Province, Papua New Guinea” was proposed. This project would focus on enhancing, and where necessary, developing adaptation measures (hard and soft solutions) in a pilot site in the Central Province which is often affected drought on annual basis.

There are also regional metrological and oceanographic monitoring project that provide vital underpinning data to help track and monitor climate changes in PNG, for example the South Pacific Sea Level and Climate Monitoring Project.

Appendix 5: Alignment of PPCR with National Climate-Compatible Development Plan

Proposed PPCR Phase I Activities	Alignment with Climate Compatible Development Strategy (section numbers in parentheses)
<p>Enhance institutional capacity for mainstreaming climate change resilience into whole-of-government and sectoral legislation, policies, plans and operational activities of a few selected key ministries and agencies to be identified, including budgetary processes. Implementation of this will be supported by investments in evidence-based decision-making, including further analysis of climate change impacts. Part of this will include enhancing the flow of targeted, decision-relevant climate change information generated by scientific assessments.</p>	<ul style="list-style-type: none"> • The government recognizes that the policy frameworks, institutional structures and capacity for implementing climate-compatible development measures ... are currently insufficient (5a). • Many aspects of climate-compatible development require existing institutions to develop new capacities and ways of working (5a). • Further research and analysis will be required on issues where scientific understanding is limited (5a). • Effective action on climate change will depend on broad understanding and buy-in across the government and among our people (5a).
<p>Strengthen civil society and private sector engagement and gender considerations of climate change resilience building.</p>	<ul style="list-style-type: none"> • Climate-compatible development will require broad cooperation across all elements of Papua New Guinean society ... the refinement and successful implementation of the climate-compatible development strategy will require strong coordination and collaboration with private sectors and NGOs (Executive Summary).
<p>Prepare a detailed design for PPCR Phase 2 (investment phase), called Strategic Program for Climate Resilience (SPCR), and related outreach.</p>	<ul style="list-style-type: none"> • Design must be compatible with national development planning including Vision 2050, the Long-Term Development Strategy, and Medium Term Development Plans. This will require close engagement with key departments and development partners (5a).

Appendix 6: Mapping of sectoral and "climate hazards" approach

Direct Connection	
Indirect Connection	
Weak Connection	

Climate Change Hazards	CCDS Hazards Identified	Air Transport	Sea transport	Road Transport
Sea-level rise Storm surge Changes in wave climates	Coastal flooding	Runway inundation	Direct impacts on wharves, jetties and navigation aids	Road inundation
Seasonal rainfall changes Extreme rainfall events	Inland flooding	Runway drainage	Wharf and port drainage	Road drainage and bridge damage
Landslides	Landslides	Risk to airports		Risk to roads and bridges
Mean temperature increase	Malaria	Runway pavement construction	Wharf and port construction	Road pavement construction
Drought Extreme rainfall	Agricultural yield loss	Provision of food aid	Provision of food aid Access to alternative livelihoods	Provision of food aid Access to alternative livelihoods
Sea-level rise Ocean acidification Increased land sediment runoff Changes in wave climates Changes in cyclone frequency and intensity	Coral reef decay		Increased wave energy at the coast decays infrastructure	Increased wave energy at the coast decays infrastructure

Appendix 7: Potential ADB, WB and AusAID investments (2010-2012) for climate proofing under PPCR

ADB

Year	Project Name and Indicative Project Scope	Transport Subsector	Project Cost (US\$ million)
2011	Community Water Transport Project (Supplementary)/ Phase II Design and construction and/or rehabilitation of municipal piers/wharves; improvement of port facilities and services; provision of community water transport facilities (e.g., motorized boats); capacity building in O&M	Water transport	15.00
2011	Highlands Region Road Improvement Investment Program (2nd tranche) Design, construction/ rehabilitation/ improve-ment, and operation of the Highlands Region road network, including rehabilitation of roads, O&M, and capacity building of agencies	Road Transport	100.00
2012	Civil Aviation Development Investment Program (2nd tranche) Design of airports and ancillary facilities including aviation control tower, runways, communication facilities; modernization of airport services; and capacity building in O&M	Air transport	120.00
2012	Sea Transport Development Investment Program Design and construction and/or rehabilitation of municipal piers/wharves; improvement of port facilities and services; provision of modern seaborne fleet; capacity building in sea transport O&M	Water transport	75.00
	Total		310.00

World Bank

Year	Project Name and Indicative Project Scope	Transport Subsector	Project Cost (US\$ million)*
2008	Smallholder Agricultural Development Project (Road Reconstruction and Maintenance Arrangements Sub-component) Reconstruction, regular and non-regular maintenance of the oil palm smallholder access road network and design of a mechanism for sustainable funding of road maintenance.(Oro and West New Britain provinces)	Agriculture; Road transport	27.50

2010	Productive Partnerships Agriculture Project (Market Access Component) Rehabilitation of existing transport links (generally short – maximum length 5km - feeder roads and access tracks/footpaths, but could include wharves or jetties) that provide access between smallholders in both the coffee and cocoa sectors, and marketing or processing points (located on a trafficable route), and for which a sustainable maintenance regime can be introduced (or strengthened) during the project.	Agriculture; Road Transport	25.00
2011	Transport Sector Project Pending detailed design. Will likely continue from Road Maintenance and Reconstruction Project (RMRP) with focus on roads, but could include transport links.	Road transport	25.00
	Total		77.5.00

**World Bank funding only, not inclusive of government and other counterpart funding.*

AusAID

Australia supports one major transport infrastructure program in PNG – the Transport Sector Support Program (TSSP). TSSP strengthens GoPNG capacity in the transport sector and provides funding to PNG Government agencies to finance prioritised asset maintenance based on jointly determined work plans.

TSSP aims, by 2015, to have all 16 National Transport Development Plan priority national roads in good condition, to have 22 regional airports meeting safety certification standards, and to reduce cargo ship turnaround times at Port Moresby and Lae ports from 3 days to 2 days.

Overall expenditure is K130 million for 2009/10. Australia is committed to continue support for the transport infrastructure sector in PNG in the future, but actual expenditure will depend on the level of commitment from GoPNG.