



Report and Recommendation of the President to the Board of Directors

Project Number: 46495-002
September 2015

Proposed Administration of Grant Papua New Guinea: Building Resilience to Climate Change in Papua New Guinea

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Asian Development Bank

CURRENCY EQUIVALENTS

(as of 20 March 2015)

Currency unit – kina (K)

K1.00 = \$

\$1.00 = K

ABBREVIATIONS

ABD	–	Asian Development Bank
LMMA	–	locally managed marine area
NGO	–	non-government organization
OCCD	–	Office of Climate Change and Development
PAM	–	Project Administration Manual
PISC	–	project implementation support consultants
PMU	–	Project Management Unit
PNG	–	Papua New Guinea
PPCL	–	PNG Ports Corporation Limited
PPCR	–	Pilot Program for Climate Resilience
SGF	–	small grants fund
SPCR	–	Strategic Program for Climate Resilience
SPS	–	Safeguard Policy Statement 2009 (of ADB)

NOTE

In this report, “\$” refers to US dollars

Vice-President	S. Groff, Vice President, Operations 2
Director General	X. Yao, Director General, Pacific Department (PARD)
Director	R. Guild, Director, Transport Energy and Natural Resources Division, (PATE), PARD
Team leader	M. Drilon, Senior Natural Resources Economist, PARD
Team members	<p>A. Batten, Country Economist, Papua New Guinea Resident Mission</p> <p>S. Bhattacharya, Senior Infrastructure ICT Specialist, PARD</p> <p>H. Everett, Senior Country Specialist, Pacific Liaison Coordination Office</p> <p>G. Ismakova, Principal Procurement Specialist, Operations Services and Financial Management Department</p> <p>E. Kup, Project Analyst, Papua New Guinea Resident Mission</p> <p>S. Lee, Principal Social Development Specialist, PARD</p> <p>C. Losenno, Senior Climate Change Specialist, Sustainable Development and Climate Change Department</p> <p>E. Rustamova, Operations Officer, Pacific Liaison and Coordination Office</p> <p>A. Salvador, Operations Officer, PARD</p> <p>N. Sapkota, Safeguards Specialist, PARD</p> <p>A. Syed, Counsel, Office of General Counsel</p> <p>H. Uusimaa, Climate Change Specialist, PARD</p> <p>J. Williams, Senior Environment Specialist, PARD</p>
Peer reviewer	M. Ahmed, Advisor Concurrent Technical Advisor (Rural Development and Food Security, RSDD-AR)

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I. THE PROPOSAL

1. I submit for your approval the following report and recommendation on proposed administration of a grant to be provided by the Strategic Climate Fund¹ (SCF) to Papua New Guinea (PNG) for the 'Building Resilience to Climate Change in PNG' project.²

2. The proposed project will implement PNG's Strategic Program for Climate Resilience (SPCR)³ aimed at achieving transformational change in addressing the current and future threats from climate change and related hazards. This will be achieved by mainstreaming climate resilience into development planning in vulnerable communities in 21 priority vulnerable islands/atolls in the provinces of Bougainville, East New Britain, Manus, Milne Bay, and Morobe, identified through a participatory process using SPCR-identified risk factors in four sectors: infrastructure, natural resources, health, and agriculture.⁴

II. THE PROJECT

A. Rationale

3. PNG is a low-income country of approximately 6.5 million people with high vulnerability to volcanic eruptions, earthquakes, tsunamis, cyclones, droughts, and other weather-induced extremes. Climate variability and change such as sea level rise and storm surges, droughts or floods, and temperature extremes will further exacerbate this vulnerability, damage assets and infrastructure, and deplete resources essential to support basic livelihoods. Key impediments facing PNG's current efforts to facilitate transformational change towards climate resilient development are (i) inadequate human, technical, and financial resources at national, provincial, district, community, and sector levels; (ii) limited knowledge for climate change risk management in key sectors including food security, health, and critical infrastructure; and (iii) poorly designed infrastructure that is vulnerable to climate change impacts.

4. A recent study indicated that climate change would result in losses of up to 15.2% of PNG GDP by 2100 (under a business as usual scenario), with agriculture being the most affected sector.⁵ Analyses indicate that the climate change will result in loss of coral reefs in the Pacific, with implications for recreational opportunities for tourism, coastal protection, habitat and nursery functions for commercial fisheries, and other goods and services of economic importance.⁶ Additionally, loss of wetlands and freshwater sources is expected due to seawater intrusion. Approximately 4,500 kilometers of the total 17,100 kilometers of shoreline are expected to be moderately to severely inundated, affecting up to 30% of PNG's population. Those most vulnerable to climate change are the 2,000 coastal villages with a combined population of around 800,000 residing in the small islands and atoll communities living in a wide variety of coastal habitats, including deltaic floodplains, estuaries, tidal flats, mangroves, beaches, bays, lagoons, sea grass beds, and coral reefs, practicing agriculture and fishing as the primary occupation and the main source of food. As a result food shortages are common in the island regions, poverty rates remain high and have actually increased during the period

¹ Under the Pilot Program for Climate Resilience financed by the Strategic Climate Fund.

² The Design and Monitoring Framework is in Appendix 1.

³ See http://www.climateinvestmentfunds.org/cif/sites/climateinvestmentfunds.org/files/Strategic_Program_for_Climate_Resilience_for_Papua_New_Guinea.pdf.

⁴ The 21 priority target islands are presented in the Project Administration Manual (accessible from the list of linked documents in Appendix 2).

⁵ ADB. 2014. *The Economics of Climate Change in the Pacific*. Manila.

⁶ See footnote 2.

2003-2008 from 37% to 54%.⁷ Given the declining productivity in agriculture on account of limited availability of arable land and unsustainable farming practices and overexploitation of the coastal and marine resources under constantly increasing population pressure, the added impact of climate induced storm surges and coastal flooding is likely to result in further resource degradation and declining yields. Climate change will also adversely impact the mangrove ecosystems, which are already being overexploited for a variety of products and services by the local communities, resulting in their further degradation. In these locations, climate change will also impact upon public health where there is limited improved water supplies (33% in 2011) and sanitation facilities (13% in 2011) especially infant mortality.⁸

5. Increased incidence of flooding will cause loss of and damage to coastal infrastructure, including ports and marine installations, making the provision of access to PNG's dispersed 600 islands a challenge.⁹ Coastal infrastructure, especially ports and wharves, are critical for inter-island transport but are not designed to withstand climate extremes. Climate resilient design of coastal infrastructure is necessary to facilitate inter-island transport for timely delivery of food and food products to the markets, and agricultural inputs to farming and fishery, especially when transporting perishable food products. Complementing improved transport infrastructure, efforts are also needed to preserve the perishable food products through either improved climate resilient storage facilities or by changing their perishable nature through processing using simple and low cost technologies, such as smoking and drying, to enhance their shelf life and increase their market value for better income.

6. There is therefore a clear need to (i) build institutional, technical and financial capacity to deal with climate change risks, and (ii) enhance resilience of island and atoll communities by increasing productivity of the natural resource base, increasing access to water supply and sanitation, improving food processing storage, and strengthening port infrastructure. Establishment of an enabling policy environment that extends to all sectors and ensures untrammled access to information and knowledge would be a prerequisite for success. Addressing these impediments will not only facilitate mainstreaming climate change in development but also ensure sustainable use of the country's natural resources and the long term economic development of the country.

1. Government Plans

7. The *Papua New Guinea Vision 2050* (Vision 2050)¹⁰ sets out the longer-term development strategy and framework. One of its seven strategic focus areas is "Environmental Sustainability and Climate Change."¹¹ PNG's *Development Strategic Plan (2010-2030)* includes climate change as a cross-cutting issue, with one of its goals being to "Adapt to the domestic impacts of climate change and contribute to global efforts to abate greenhouse gas emissions." The PNG *Medium Term Development Plan (2011-2015)*¹² focuses on "developing governance and institutional capacity together with essential infrastructure and policies ... to improve the quality of life." The Office of Climate Change and Development (OCCD) developed a *Climate Compatible Development Strategy*¹³ aimed at "shaping development to be more climate resilient" and setting up a sustainable climate change financing framework, both priorities under

⁷ Summary Poverty Reduction and Social Strategy in the linked documents accessible in Appendix 2

⁸ Sector Assessment in the linked documents accessible in Appendix 2 for details

⁹ Asian Development Bank. 2012. *PNG Critical Development Constraints Report*. Manila.

¹⁰ http://www.treasury.gov.pg/html/publications/files/pub_files/2011/2011.png.vision.2050.pdf

¹¹ Of the seven pillars under PNG's Vision 2050, the "Environmental Sustainability and Climate Change" has six objectives detailed on page 17 of PNG's SPCR.

¹² http://www.pacificdisaster.net/pdnadmin/data/original/PNG_2010_mediumterm_development.pdf

¹³ http://www.occd.gov.pg/images/stories/documents/PNG_Interim_Action_Plan.pdf

Vision 2050. The institutional framework is in place but under resourced, while human capacities in these institutions are constraining efforts to mitigate climate risk.

8. The challenges are exacerbated by limited understanding of climate risks at the district and community levels and a lack of technical capacity to integrate climate change risk management into planning processes for vulnerable communities and sectors. The SPCR can best help mainstream climate risk management into PNG's national climate resilient development program by providing support to address these priority areas.

2. ADB Strategic Priorities

9. ADB developed the Climate Change Implementation Plan¹⁴ for the Pacific in 2010. It identifies the strategic program for mainstreaming climate change considerations into country programming. ADB supported the piloting of practical adaptation measures in the Pacific, including pioneering initiatives aimed at building climate change risk management capacity at the community level. Both ADB's Pacific Approach 2010-2014,¹⁵ its Country Partnership and Strategy 2016-2020¹⁶ and Country Operations Business Plan 2016-2018¹⁷ emphasize the need for integration of climate change adaptation and disaster risk management to deal with climate-induced disasters. Climate change resilience and disaster risk reduction are being incorporated as an integral part of all ADB-supported initiatives in PNG. The proposed project has a multi-sectoral focus incorporating transport and public sector management (Country Partnership Strategy priority sectors) plus agriculture, natural resource management and rural development (water and sanitation) and information and communication technologies.

B. Impact and Outcome

10. The project impact is increased resilience to the impacts of climate variability and climate change. The outcome is "improved capacities of communities (in vulnerable atolls and islands), government agencies, and civil society to plan and respond to the impacts of climate change."

11. The project has three outputs: (i) climate change and vulnerability assessments carried out and adaptation plans developed for target communities, (ii) sustainable fishery eco-systems and food security investments piloted in nine vulnerable island and atoll communities, and (iii) enabling framework for climate resilient infrastructure established and communications network extended.

C. Outputs

12. **Output 1: Climate change and vulnerability assessments carried out and adaptation plans developed for target communities:** The project will, for the 21 identified vulnerable islands, (i) prepare local climate projections; (ii) undertake climate vulnerability assessments in consultation with local administrations and beneficiary communities, develop climate change vulnerability assessment and adaptation plans, emergency response strategies in the event of extreme climate events, and provide training in actions and procedures to be followed if such extreme climate events occur; (iii) install around 190 priority water supply/storage facilities and 100 ventilation-improved pit latrines identified during the vulnerability assessments near community facilities—schools, aid posts, and churches with their large collection areas and public access to improve village hygiene against water-borne

¹⁴ ADB. 2010. Addressing Climate Change in Asia and the Pacific: Priorities for Action. Manila.

¹⁵ <http://www.adb.org/sites/default/files/publication/27520/adb-pacific-approach-2010-2014.pdf>

¹⁶ <http://www.adb.org/sites/default/files/institutional-document/32264/files/cps-png-2016-2020.pdf>

¹⁷ <http://www.adb.org/sites/default/files/institutional-document/82613/cobp-png-2015-2017.pdf>

disease; (iv) assist communities to prepare climate adaptation subprojects for financing, and (v) incorporate the climate adaptation subprojects in local level government, district, and provincial development plans. Based on these plans, the project will support communities in preparing financing applications for identified climate adaptation subprojects to either the government's District Services Improvement Program¹⁸ or, where appropriate, a Small Grants Facility (SGF)¹⁹ to be established under the project. Subprojects will be developed in consultation with local communities estimated to cost between \$20,000-\$50,000²⁰ per subproject, approved by the Project Steering Committee subject to conformity with eligibility criteria,²¹ and administered by a suitably qualified financial administrator. The \$5 million allocated to the SGF under the project will be used to finance approved climate adaptation subprojects (requiring a 20% beneficiary in kind contribution) and financial administrator fees.

13. Output 2: Sustainable fishery eco-systems and food security investments piloted in nine vulnerable island and atoll communities: The project will assist local communities in nine pilot sites,²² to (i) demonstrate techniques used in the rehabilitation of protective coral reefs and degraded mangrove forests, including delineation and operation of locally managed marine areas (LMMAs) and the development and implementation of management plans, mapping, and environmental monitoring (including fish, coral, and seaweed species); (ii) pilot income-generating activities in the marine environment, including aquaculture of fish and crustaceans, and localized processing of marine products to extend their shelf life and improve food security; and (iii) pilot the stabilization of watershed catchment areas adopting a ridge-to-reef approach in island hinterlands through tree planting and other slope stabilization measures, as appropriate.

14. To further improve food security in the same nine vulnerable islands and strengthen trading links between the islands and mainland, the project will (i) assess the extent of food insecurity anticipated from climate change and variability; (ii) identify options and priorities to address food insecurity in consultation with local communities; (iii) demonstrate how to implement selected priority options;²³ and (iv) increase the production and distribution of planting material on selected agricultural stations.

15. Output 3: Enabling framework for climate resilient infrastructure established and communications network extended: The project will develop an enabling framework to mitigate the impacts of climate change on coastal infrastructure (ports, wharves, and jetties) by (i) developing policy documents;²⁴ (ii) upgrading engineering design standards; (iii) incorporating benefits from climate protection in feasibility studies; and (iv) recommending sustainable financing alternatives for operations and maintenance. Training will be provided to enhance the

¹⁸ The National Government allocated K10 million to each of the 89 districts in PNG to be spent on infrastructure and rehabilitation maintenance projects covering education, health law and justice, water supplies, agriculture, electrification, transport, and community infrastructure.

¹⁹ This Small Grants Facility will serve as a pilot for the Climate Change and Green Growth Trust Fund which the government intends to establish in due course.

²⁰ Individual subproject financing shall range from \$20,000 to \$30,000. However, a maximum amount of \$50,000 can be considered as long it can be justified, especially in areas where cost of construction material is high due to importation cost/logistics.

²¹ Eligibility criteria and the process for approval is in Annex 1 of the Project Administration Manual (accessible from the list of linked documents in Appendix 2).

²² Manus (Ponam, Andra and Ahus Islands); Milne Bay (Trobriand Islands: Kiriwina, Munuwata and Kaeleuna Islands); and East New Britain (Duke of York Islands: Mioko, Utuan and Kerawara Islands).

²³ Demonstrations will include production techniques, drought-tolerant planting material, water management, and rehabilitation of sago areas.

²⁴ These will include the strategic policies for operations and maintenance of port facilities and designs for climate proofing coastal assets, upgrading national, provincial and Coastal and Inland Fisheries Development Agency managed facilities and the extension of the infrastructure in support of the marine transport network in the islands.

capacity of national agencies,²⁵ PPCL, provincial administration, and Coastal and Inland Fisheries Development Agency personnel to incorporate climate change considerations into design, construction, operation, and maintenance of coastal infrastructure.

16. The project will extend the radio communications network to improve communications and early warning of natural disasters and extreme climate events by the installation of a very high frequency network linked to PNG's National Disaster Center. This will provide emergency and general communication services to the target islands and those within the signal coverage of the network. Equipment for five relay stations will be installed on existing towers, one in each province, together with receiving equipment and disaster warning sirens on the 21 vulnerable target islands complemented with operating and maintenance training of communities.

17. Subject to additional funding from the PPCR, a change in scope to Output 3 will be made to include the upgrading of Alotau Provincial Government Wharf in Milne Bay.²⁶ This will serve as a model for climate proofing similar, currently planned structures in PNG.

18. Implementation management and coordination will be provided through a Project Management Unit (PMU) to be established in OCCD and supported by PISCs recruited under the project. The PISC will provide training and support OCCD in the management of the project, particularly in procurement and financial management. The PMU will ensure adherence to Safeguard Policy Statement (2009)²⁷ and ADB's *Guidelines on the Use of Consultants* (2013, as amended from time to time),²⁸ together with timely progress and financial management reporting to ADB and the Government. Knowledge management will be a priority output as lessons from new approaches to climate adaptation measures are captured.

D. Investment and Financing Plans

19. The project is estimated to cost \$27.29 million (Table 1). Detailed cost estimates by expenditure category and financier are included in the Project Administration Manual (PAM).²⁹

Table 1: Summary Cost Estimates
(\$ million)

Item	Amount ^a
A. Base Cost^b	
1. Climate Change Vulnerability Assessment and Adaption Plans	10.15
2. Sustainable Fishery Eco-systems and Food Security	7.52
3. Climate Resilient Coastal Infrastructure and Early Warning Comms.	7.18
Subtotal (A)	24.85
B. Contingencies^c	2.44
Total (A+B)	27.29

^a Includes taxes and duties on all items estimated at \$1.57 million.

^b In late 2014 prices.

^c Physical contingencies computed at 10% for civil works, training, surveys, and studies; and 5% for consulting services. Price contingencies computed at 1.4% on foreign exchange costs and 3.6% on local currency costs;

²⁵ Additionally, Department of Finance and Treasury, DNPM, Department of Transport, and Office of Rural Development and Implementation.

²⁶ Estimated to cost \$5 million, including feasibility study and associated social and environmental safeguards due diligence.

²⁷ ADB's Safeguard Policy Statement, 2009. Manila.

²⁸ Available at: <http://www.adb.org/Documents/Guidelines/Procurement/Guidelines-Procurement.pdf>

²⁹ Project Administration Manual (accessible from the linked documents in Appendix 2).

includes provision for potential exchange rate fluctuation under the assumption of a purchasing power parity exchange rate.

Source: Asian Development Bank estimates.

20. The financing plan is in Table 2. The SCF-PPCR Grant is to be fully utilized for implementation of the project including allocations for consulting services, civil works, training, vehicles and equipment, and other management and operating expenses. The funds from SCF will be administered by ADB. The beneficiary contribution for subprojects financed from the SGF (20% in kind contribution) will promote ownership and sustainability. The Government will contribute an estimated \$2.04 million as counterpart funds for project implementation, comprising \$752,100 for PMU operations; \$323,200 for seconded government staff and taxes and duties on civil works, equipment, and vehicles; and national consultant fees estimated at \$966,000.

Table 2: Financing Plan

Source	Amount (\$ million)	Share of Total (%)
Strategic Climate Fund ^a (grant)	24.25	88.9
Beneficiaries	1.00	3.6
Government	2.04	7.5
Total	27.29	100.0

^a Under the Pilot Program for Climate Resilience financed by the Strategic Climate Fund and administered by the Asian Development Bank.

Source: Asian Development Bank Estimates

E. Implementation Arrangements

21. The Executing Agency will be OCCD³⁰ under the guidance of a Project Steering Committee that shall be co-chaired by a secretary-level officer or designated representative from the Department of National Planning and Monitoring and OCCD. The Steering Committee will be composed of representatives from the Department of Treasury, Department of Health, Coastal and Inland Fisheries Development Agency, National Disaster Centre, PPCL, National Agricultural Research Institute, and representatives from the five participating provinces, with ADB as an observer. The Steering Committee shall meet quarterly initially and then bi-annually once implementation stabilizes or as required to review project implementation performance and approve annual work plans and budgets. A PMU will be established in OCCD, headed by a full-time Project Director seconded from OCCD and who will be supported by a full-time National Project Coordinator and PISCs. The PISCs will provide technical support to the PMU as well as financial management, procurement and support for SGF related activities. The PMU will be the secretariat for the Project Steering Committee. Implementation arrangements are summarized in Table 3 below and are further detailed in the PAM.³¹

Table 3: Implementation Arrangements

Aspects	Arrangements
Implementation period	Six years
Estimated completion date	October 2021 – Grant closure April 2022

³⁰ On 25 May 2015 the PNG Cabinet endorsed the Climate Change Management Bill that authorizes OCCD as a formal institutional structure of PNG Government with the mandate to coordinate climate change consideration within line agencies identified to implement the project.

³¹ Project Administration Manual (accessible from the list of linked documents in Appendix 2).

Aspects	Arrangements		
Management			
(i) Project Steering Committee	Office of Climate Change and Development (co-chair) Department of National Planning and Monitoring (co-chair) Department of Treasury (member) Department of Health (member) Coastal and Inland Fisheries Development Agency, (member) National Disaster Center (member) PNG Ports Corporation Limited (member) National Agricultural Research Institute (member) Representatives from the five participating provinces (members)		
(ii) Executing Agency	Office of Climate Change and Development		
(iii) Key implementing agencies	Coastal and Inland Fisheries Development Agency National Agricultural Research Institute Office of Climate Change and Development PNG Ports Corporation Limited		
(iv) Implementation unit	Project Management Unit - Port Moresby, 14 staff - six administrative and eight technical		
Procurement			
	National competitive bidding for radio communications equipment	One contract	\$1.62 million
	Community Participation - water and sanitation installation	Multiple contracts for 21 target islands	\$2.38 million
	Shopping - rehabilitate, furnish and equip PMU, for PMU vehicle and for LMMA monitoring equipment	Four contracts	\$0.2 million
Consulting services			
	Project Implementation Support Consultants (QCBS 90:10)	247 person-months	\$3.26 million
	Enabling Framework Consultants (QCBS 90:10)	99 person months	\$2.10 million
	Project Implementation Consultant (ICS)	Six person months	\$0.26 million
	NGO Facilitation (QCBS 90:10)	Six contracts	\$2.15 million
	Project Baseline Study (CQS)	One contract	\$0.05 million
	Localized climate projections	Single source selection – one contract	\$0.05 million
	Annual Audit (LCS)	One contract initially	\$0.02 million
Retroactive financing and/or advance contracting	Retroactive financing has been approved for the recruitment of a project implementation specialist to assist the government in start-up procedures. The maximum amount of eligible expenditures up to the equivalent of 5% of the total ADB administered grant, incurred before grant effectiveness, but not earlier than 12 months before the signing of the Grant Agreement. Advance recruitment of the PISCs has been approved to facilitate timely mobilization.		
Disbursement ^a	The grant proceeds will be disbursed in accordance with ADB's <i>Loan Disbursement Handbook</i> (2015, as amended from time to time) and detailed arrangements agreed upon between the government and ADB.		

ADB = Asian Development Bank; CQS = consultant quality selection; ICS = individual consultant selection; LCS = least cost selection; LMMA = local managed marine area; NGO = nongovernment organization; QCBS = quality and cost based selection.

III. DUE DILIGENCE

A. Technical

22. Target island vulnerabilities were confirmed during project preparation using current socio-economic and climate data together with consultative meetings attended by national and provincial agencies, civil society and community representatives. Central to the individual island vulnerability assessment is the description (frequency and extent) of anticipated risks in target locations against which vulnerabilities will be assessed. Climate modeling has been undertaken in the Pacific by Australia's Commonwealth Scientific and Industrial Research Organization and provides a downscaling service using existing models. In order to secure the best estimates of anticipated climate change, the project will recruit the Commonwealth Scientific and Industrial Research Organization to provide local climate projections as a basis for vulnerability assessments. For the smaller-scale subprojects to be financed from the SGF comprising civil works, structures will be simple and within the capabilities of local contractors using revised design standards developed under the project.

B. Economic and Financial

23. Project benefits have been analyzed for specific interventions for each output. Benefits assessed under 'Building community capacity in addressing climate resilience' evaluate the reduced damage from extreme climate events, including damage to property and life. The water and sanitation initiative benefits were based on the reduced incidence of water-borne disease expressed in terms of increased working days (for the working aged population) made possible by the project. For fisheries ecosystems, the benefits analyzed consider the incremental value of a coral reef under 'with' and 'without project' scenarios to reflect the improved management regimes in pilot sites. For food security benefits, the incremental productivity in food-producing locations was estimated and adoption rates assumed to provide an overall benefit stream. The benefits from improved communication and early warning were estimated from reduced loss of lives valued at a derived value of statistical life. The analyses were carried out in accordance with ADB *Guidelines for the Economic Analysis of Projects* using component costs as appropriate to generate internal rates of return. The economic internal rate of return (EIRR) for the overall project is estimated at 12.6% and is relatively stable to analyzed risks. A 20% increase in costs reduces the EIRR to 9.9%. A 20% reduction in overall benefits reduces the EIRR to 9.3% and a delay of one year for project benefits results in an EIRR of 10.6%. The analysis incorporates quantifiable benefits that underestimate the anticipated economic benefits from the project.³²

24. For financial sustainability, in the case of SGF civil works, beneficiary communities will be responsible for maintenance of works requiring mostly labor inputs for routine maintenance whereas periodic maintenance will have to be financed through DSIP or other local available funding sources. In the case of communication equipment installed on existing towers, maintenance of equipment will be carried out by the tower owner as part of the installation agreement or as agreed with the National Disaster Center from central government budgetary allocations. Implementation support provided by facilitating NGOs can be replicated using budgetary resources if demonstrated to be cost effective and appropriate.

³² Economic Analysis (accessible from the list of linked documents in Appendix 2).

C. Governance

25. **Financial Management.** ADB's Country Portfolio Review (2014) concluded that ongoing challenges are (i) late submission of audited project financial statements by executing agencies, (ii) lengthy government procurement process, (iii) limited capacity of executing agencies to manage social and environmental safeguards, and (iv) limited capacity of executing agencies to monitor performance against sector results. It also recognizes the significant challenges associated with governance issues that continue to cause delays in project implementation, particularly in the area of recruitment and procurement. The government agrees that, in view of the potential governance issues, a separate PMU should be established that will subsequently become an operational unit of OCCD to manage future climate change projects. A financial management assessment has been carried out for OCCD.³³

26. **Small Grant Facility.** The SGF will be disbursed through an independent financial administrator with the necessary fiduciary controls to ensure funds are applied for their intended purpose under the scrutiny of an independent monitoring mechanism to guard against misappropriation.

27. **Anticorruption.** ADB's Anticorruption Policy (1998, as amended to date) was explained to and discussed with the government and OCCD. The specific policy requirements and supplementary measures are described in the PAM.

D. Poverty and Social

28. Poverty and hardship are primarily defined by isolation, lack of access to quality essential services and lack of income-generating opportunities. The small isolated island populations are among the poorest in PNG. More than 85% of the country's population relies on subsistence or semi-subsistence agriculture and fishing for their livelihoods, supplemented with wild food gathered from forests and shorelines. Climate change is already impacting these livelihood activities. Opportunities to earn cash income in coastal areas are constrained by a declining resource base, and a lack of transport infrastructure limiting market accessibility, while cash income is increasingly required to meet basic needs and to ensure year-round food security. The project will have a positive impact on social capital and livelihoods in the target islands by encouraging cooperation, strengthening social cohesion, and building resilience to threats from climate change.³⁴

29. No land acquisition is needed during implementation as communication equipment will be located on existing towers and resettlement requirements relating to subprojects will render them ineligible for SGF financing. Community participation is a feature of the design that will include women in community decision-making processes. Project interventions will be identified by target communities involving representation from the socio-economic spectrum following the vulnerability and food security assessment. A Gender Action Plan³⁵ has been prepared to support women's participation in decision making for climate change-related resource allocation and community-based project investments.

30. Approximately 13,000 inhabitants of the 21 vulnerable islands will directly benefit from the project while nationwide benefits will accrue from increased capacity to manage climate change risks, establishment of early warning systems, access to finance by communities, and

³³ Financial Management Assessment (accessible from the list of supplementary document in Appendix 2).

³⁴ Summary Poverty Review and Social Strategy (accessible from the list of linked documents in Appendix 2).

³⁵ Gender Action Plan (accessible from the list of linked documents in Appendix 2).

development of national databases and knowledge management systems. Preparation of vulnerability maps and adaptation plans will help improve awareness and build capacity to address risks of climate change impacts and disasters among target communities. This will help avoid loss of life, assets, and livelihoods. Employment will be created during project works and maintenance (especially for unemployed youth, who can be trained in construction of protective island infrastructure, such as coastal stabilization). Improved community health will result from water and sanitation activities, reducing health risks associated with climate change including increasing water and vector-borne diseases (malaria, cholera, dysentery, diarrhea, and typhoid).

E. Safeguards

31. **Environment.** The project is categorized as B for environmental impact. Impacts may occur during the installation of water supply and latrine facilities, together with subproject investments identified during vulnerability assessments such as coastal stabilization. The environmental impact from these activities can be addressed by following the Environmental Assessment and Review Framework.³⁶ The PISC environmental specialist will ensure environmental management plans are adhered to, particularly the SGF initiatives, and will be responsible for ensuring the Environmental Assessment and Review Framework is applied in assessing proposed subprojects.

32. **Involuntary Resettlement.** The project is categorized as C for involuntary resettlement. The project is not expected to require land acquisition or resettlement. The majority of project activities under Outputs 1 and 2, such as water tanks and latrines, will be at a household or community level: communication equipment will be installed on existing towers. The identification of subprojects will involve an exhaustive community consultation process; each community will identify its own priorities for adaptation activities and only some community-driven activities may require small-scale construction works. If a candidate subproject requires involuntary land acquisition, then the subproject will not be financed under the project. If subprojects require additional land that communities are willing to provide voluntarily in consideration of project benefits, the land use rights for respective subproject will be arranged through a voluntary land-use agreement or negotiated settlement. A framework has been prepared describing procedures for the same.³⁷

33. **Indigenous Peoples.** The project is categorized as C for indigenous peoples. The project is not expected to affect any vulnerable group of indigenous peoples as defined under ADB's SPS. Project beneficiaries are part of mainstream Melanesian society and their institutions are not separate from mainstream society. They are not discriminated against (either in practice or law) based on ethnicity and are not vulnerable because they are the dominant groups locally and the main beneficiaries in the project context. The subprojects will benefit local communities, without any disproportionate risks against particular groups, and they will be implemented in a participatory manner.

F. Risks and Mitigating Measures

34. Major risks and mitigating measures are summarized in Table 4 and described in detail in the risk assessment and risk management plan.³⁸

³⁶ Environmental Assessment and Review Framework (accessible from the list of linked documents in Appendix 2).

³⁷ A Voluntary Land-use - Negotiated Settlement Framework (accessible from the linked documents in Appendix 2).

³⁸ Risk Assessment and Risk Management Plan (accessible from the list of linked documents in Appendix 2).

Table 4: Summary of Risks and Mitigating Measures

Risks	Mitigating Measures
Design complexity (involving multiple line agencies) requires interagency cooperation and has the potential to slow implementation progress. The participation of facilitating NGOs introduces a further risk that adds another tier to the implementation structure.	Quarterly meetings of the national steering committee have been included - at least until implementation is running smoothly. Provincial advisory committees are proposed to enhance cooperation at the lower levels of government and to coordinate agency inputs from the provincial and district authorities.
The technical and management skills of staff from OCCD and other implementing agencies may prove inadequate, which would adversely affect implementation performance.	Consultants will be recruited to provide training and support OCCD in its management of the project particularly in areas concerning procurement and financial management.
Multiple packaging in procurement may result in delays.	Procurement specialist to be recruited in PISC contract to provide training to PMU appointees.
Weak financial management capacities and experience within executing agency	Financial management specialist to be recruited under PISC contract to establish systems and procedures and provide training.

IV. ASSURANCES AND CONDITIONS

35. Conditions for the establishment of the imprest account requires the government (i) to have appointed a full time financial management officer to the PMU located within OCCD, and (ii) the PISC financial management specialists (international and national) will have been mobilized.

36. The Government has assured ADB that implementation of the project shall conform to all applicable ADB policies, including those concerning anticorruption measures, safeguards, gender, procurement, consulting services, and disbursement as described in detail in the project administration manual and grant documents. The Government has agreed with ADB on certain covenants for the project, which are set forth in the grant agreement.

V. RECOMMENDATION

37. I am satisfied that the proposed grant would comply with the Articles of Agreement of ADB and recommend that the Board approve the administration by ADB of the grant not exceeding the equivalent of \$24.25 million to Papua New Guinea for the Building Resilience to Climate Change in Papua New Guinea to be provided by the Strategic Climate Fund.

xx September 2015

Takehiko Nakao
President

DESIGN AND MONITORING FRAMEWORK

Impacts the Project:

The project is aligned with PNG's Medium Term Development Plan (2011-15)¹ that focuses on 'developing governance and institutional capacity together with essential infrastructure and policies ... to improve the quality of life,' and OCCD's Climate Compatible Development Strategy aimed at 'shaping development to be more climate resilient' and setting up a sustainable climate change financing framework.²

In this context, the project impact is increased resilience to the impacts of climate variability and climate change.³

Project Results Chain	Performance Indicators with Targets and Baselines	Data Sources and Reporting	Risks
Outcome Improved capacities of communities (in vulnerable atolls and islands), government agencies, and civil society to plan and respond to the impacts of climate change.	By 2021 a. Gender responsive CCVAPs prepared under the project used in formulating LGL, district and provincial development plans for CC adaptation.	a. KAP surveys of planning staff at respective levels compared to baseline.	Resources under the SGF will not be applied to the intended purpose. Capacity building proposed in the design will not be extended to all intended beneficiaries/recipients.
	b. Fish populations increased by 20% in target LMMA and food insecurity reduced by 20% from baseline figures. c. Pilot marine ecosystem and food security approaches developed under the project applied in locations outside the immediate project area.	b. LMMA monitoring reports. c. CIFDA annual work plans and budget requests: DAL annual work plans and budget requests.	
	d. Upgraded engineering design standards for coastal structures used in port, wharf and jetty design.	d. KAP surveys of design engineers (both government and private) c.f. baseline.	
	e. Early warning messages broadcast and emergency responses coordinated increased from 0 to 10 and 100 per year respectively in the coverage area by 2021.	e. National Disaster Centre annual reports.	
	Outputs 1. Climate change and vulnerability assessments carried out and adaptation plans developed for target communities.	By 2021 1a. Twenty one vulnerable island communities with CCVAP, climate resilient development plans incorporated into LLG, district and provincial plans.	
1b. Gender responsive disaster response strategies developed in	1b. NDC disaster reports.		

¹ http://www.pacificdisaster.net/pdnadmin/data/original/PNG_2010_mediumterm_development.pdf

² http://www.occd.gov.pg/images/stories/documents/PNG_Interim_Action_Plan.pdf

³ Defined by the project.

Project Results Chain	Performance Indicators with Targets and Baselines	Data Sources and Reporting	Risks
	21 vulnerable island communities.		Motivation of provincial staff is low because resources are channeled through NGOs.
	1c. 50% reduction in the incidence of water borne and water related diseases in target communities.	1c. Gender disaggregated DOH database reports.	
	1d. Provincial (50) and NGO (50) staff (30% being women) trained in adaptation to climate change.	1d. PMR and training evaluation reports.	
2. Sustainable fishery eco-systems and food security investments piloted in nine vulnerable island and atoll communities.	By 2021		Capacities of villagers to participate in marketing and food processing initiatives.
	2a. Nine LMMAs established, registered and operational with approved management plans being implemented.	2a. PMR	
	2b. Adaptation measures against climate change in home gardens demonstrated in nine target communities.	2b. PMR	
	2c. Nine mangrove forest rehabilitation demonstrated.	2c. PMR	
	2d. Three watershed rehabilitation demonstrated in communities adjoining target vulnerable islands.	2d. PMR	
	2e. Food processing and preservation initiatives piloted in nine island communities (50% women).	2e. PMR	
3. Enabling framework for climate resilient infrastructure established and communications network extended.	By 2021		Tower owners will not allow the project to access the towers for installation of equipment. Counterpart funding will not be allocated to allow the PMU to operate efficiently.
	3a. Building codes and design standards upgraded to incorporate climate change considerations.	3a. Confirmation by professional institution.	
	3b. Climate risk management policy developed and adopted by PPCL.	3b. National policy statement prepared.	
	3c. PPCL, national and provincial staff (30% being women) trained in the incorporation of risks from climate change in coastal port/jetty operations.	3c. PMR and training evaluation reports.	
	3d. By 2018, five VHF repeater stations established on existing towers and receiving substations established in 21 target islands.	3d. PMR	
	3e. By 2016, PMU established, staffed and equipped and monitoring systems developed.	3e. PMR	
	3f. By 2016, project activities and performance posted on project website.	3f. Website inspection.	

<p>Key Activities with Milestones</p> <p>1.- Climate change vulnerability assessments carried out and adaptation plans developed for target communities.</p> <p>1.1- Prepare localized projections of climate change in 21 target islands by Q2 2016. 1.2- Undertake CCVAP mapping in 21 vulnerable islands by Q3 2016. 1.3- Develop CCVAP for endorsement of the community and integration into the district development plans by Q1 in 2017 1.4- Establish SGF to finance investments identified during CCVAP by Q3 2016. 1.5- Supply and install 200 water supply and 100 sanitation facilities in target islands by Q4 2017. 1.6- Develop emergency response strategies and train inhabitants of target islands by Q4 2017.</p>
<p>2.- Sustainable fishery ecosystems and food security investments piloted in nine vulnerable island and atoll communities.</p> <p>2.1- Sustain the integrity of fishery ecosystems by piloting a ridge to reef approach in target communities by Q4 2019. 2.2- Pilot food security initiatives (production, processing and storage) in target locations by Q4 2019. 2.3- Provide NGO support to facilitate delivery of fisheries ecosystems and food security initiatives and build capacities of communities and provincial/district staff by Q1 2016.</p>
<p>3.- Enabling framework for climate resilient infrastructure established and communications network extended.</p> <p>3.1- Support policy dialogue for the design and maintenance of port infrastructure by end 2018. 3.2- Revise appropriate engineering standards to accommodate the impact of climate change in infrastructure design by end 2017. 3.3- Build capacities of national and provincial port and wharf design specialists to incorporate economic returns achieved from incorporating climate resilience in feasibility studies by end 2019. 3.4- Develop options for the sustainable financing of port rehabilitation and upgrading taking into account climate change by end 2018. 3.5- Expand communications network in five provinces through radio repeater stations and island receivers by Q4 2017. 3.6- Train OCCD staff in procurement, financial management, and implementation coordination, among others. 3.7- Maintain the project performance and management systems designed by the PISC throughout implementation.</p>
<p>Project Management Activities</p> <p>Establish PMU, appoint incremental staff, second Govt. employees to the PMU by end 2015. Train OCCD staff in procurement, financial management, and implementation coordination, among others. Recruit implementation support consultants by Q1 2016. Establish project performance and financial management systems for project and SGF by Q2 2016. Complete monthly, quarterly and annual progress and financial reporting to the Government and ADB - ongoing. Participate in Mid Term by end 2018 and Project Completion Reviews by end 2021.</p>
<p>Inputs</p> <p>CIF-PPCR Grant: \$24.25 million</p> <p>Government: \$2.04 million</p> <p>Beneficiaries: \$1.00 million</p>
<p>Assumptions for Partner Financing</p> <p>Not Applicable</p> <p>ADB = Asian Development bank; CIF = Climate Investment Fund, CCVAP = Climate Change Vulnerability Adaptation Plans; CIFDA = Coastal and Inland Fisheries Development Agency; DAL = Department of Agriculture and Livestock; DOH = Department of Health; KAP = knowledge attitude and practice; LLG = local level government; LMMA = local marine management association; NDC = National Disaster Center; NGO = non-government organization; OCCD = Office of Climate Change and Development; PISC = Project Implementation Support Consultant; PMR = project monitoring reports, PMU = Project Management Unit; PPCL = PNG Ports Corporation Ltd.; PPCR = Pilot Program for Climate Resilience; SGF = Small Grants Facility; VHF = very high frequency. Source: Asian Development Bank.</p>

LIST OF LINKED DOCUMENTS

<http://www.adb.org/Documents/RRPs/?id=XXXXX-XX-3>

1. Grant Agreement
2. Sector Assessment (Summary): Multi-sector
3. Project Administration Manual
4. Contribution to the ADB Results Framework
5. Development Coordination
6. Economic Analysis
7. Country Economic Indicators
8. Summary Poverty Reduction and Social Strategy
9. Gender Action Plan
10. Environmental Assessment and Review Framework
11. Voluntary Land Use / Negotiated Settlement Framework
12. Risk Assessment and Risk Management Plan

Supplementary Documents

13. Financial Management Assessment of the Office of Climate Change and Development
14. Detailed Economic Analysis