Papua New Guinea and the Green Climate Fund

Country Programme

Climate Change and Development Authority















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Acronyms and Abbreviations

ADB	Asian Development Bank
ADF	Asian Development Fund
AE	Accredited Entity
AF	Adaptation Fund
AML/CTF	Anti-Money Laundering and Counter-Terrorist Financing
ATWG	Adaptation Technical Working Group
AusAID	Australian Agency for International Development (now known as Department of Foreign
	Affairs and Trade)
BCPNG	Business Council of Papua New Guinea
BoM	Bureau of Meteorology
BPNG	Bank of Papua New Guinea
BUR	Biennial Update Report
CCDA	Climate Change and Development Authority
CCMA	Climate Change Management Act
CCTWG	Climate Change Technical Working Group
CEPA	Conservation and Environment Protection Authority
CI	Conservation International
CIC	Coffee Industry Corporation
CIF	Climate Investment Funds
CSIRO	Commonwealth Scientific and Industrial Research Organisation
CSO	Civil Society Organisation
DAE	Direct Access Entity
DAL	Department of Agriculture and Livestock
DDA	District Development Authority
DFAT	Department of Foreign Affairs and Trade (Australia)
DLPP	Department of Lands and Physical Planning
DMPGM	Department of Mineral Policy and Geohazards Management
DNPM	Department of National Planning and Monitoring
DoF	Department of Finance
DoH	Department of Health
DoT	Department of Treasury
DoW	Department of Works and Implementation
DPE	Department of Petroleum and Energy
DPLGA	Department of Provincial and Local Government Affairs
DSIP	District Services Investment Programme
EE	Executing Entity
EEZ	Exclusive Economic Zone
EIB	European Investment Bank
ENSO	El Niño Southern Oscillation (ENSO)
ESS	Environment and Social Safeguards
EU	European Union

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FAO	Food and Agriculture Organization of the United Nations
FATF	Financial Action Taskforce
FCPF	Forest Carbon Partnership Facility
GCCA	Global Climate Change Alliance
GCF	Green Climate Fund
GEF	Global Environment Facility
GGGI	Global Green Growth Institute
GHG	Greenhouse Gas
GIZ	Deutsche Gesellschaft für Internationale Zusammenarbeit
GoPNG	Government of Papua New Guinea
HDI	Human Development Index
HIES	Household and Income Expenditure Survey
ICCAI	International Climate Change Adaptation Initiative
ICCC	Independent Consumer and Competition Commission
ICF	International Climate Fund
IFAD	International Fund for Agricultural Development
IFAD ASAP	International Fund for Agriculture Development Adaptation for Smallholder Agriculture
	Programme
IFCI	International Forest Carbon Initiative
IKI	German International Climate Initiative
INGO	International Non-Governmental Organisation
IOM	International Organization on Migration
IPCC	Intergovernmental Panel on Climate Change
IPP	Independent Power Producer
IPPU	Industrial Processes and Product Use
IUCN	International Union for the Conservation of Nature
JICA	Japan International Cooperation Agency
KDB	Korea Development Bank
KfW	Kreditanstalt für Wiederaufbau
KIK	Kokonas Indastri Koporesen
KOICA	Korea International Cooperation Agency
KRA	Key Result Area
kW	Kilowatt
LDCF	Least Developed Countries Fund
LLG	Local Level Government
LULUCF	Land Use, Land Use Change and Forestry
M&E	Monitoring and Evaluation
MCA	Multi-Criteria Analysis
MFAT	Ministry of Foreign Affairs and Trade
ML	Money Laundering
MP	Member of Parliament
MRA	Mineral Resources Authority
MRV	Monitoring, Evaluation and Verification

MTDP	Medium Term Development Plan
MW	Megawatt
NAMA	Nationally Appropriate Mitigation Action
NAP	National Adaptation Plan
NAP-GSP	National Adaptation Plan-Global Support Project
NARI	National Agricultural Research Institute
NCCDMP	National Climate Compatible Development Management Policy
NCDC	National Capital District Commission
NDA	National Designated Authority
NDC	Nationally Determined Contribution
NEC	National Executive Council
NFA	National Fisheries Authority
NGO	Non-Governmental Organisation
NICFI	Norway's International Climate and Forest Initiative
NMEF	National Monitoring and Evaluation Framework
NMSA	National Maritime Safety Authority
NMVOCs	Non-methane volatile organic compounds
NoL	No-Objection Letter
NSC	National Sectoral Consultation
NSDF	National Service Delivery Framework
NSO	National Statistical Office
NSP	NAMA Support Project
OCCD	Office of Climate Change and Development
OCCES	Office of Climate Change and Environmental Sustainability
ODA	Official Development Assistance
OLPLLG	Organic Law on Provincial and Local Level Governments
OPEC	Organization of the Petroleum Exporting Countries
PCCC	Provincial Climate Change Committee
PEFA	Public Expenditure & Financial Accountability
PFM	Public Financial Management Act
PFMA	Public Financial Management Act
PG	Provincial Government
PIC	Pacific Island Country
PIP	Public Investment Programme
PNG	Papua New Guinea
PNG DOT	Papua New Guinea Department of Transport & Infrastructure
PNGFA	Papua New Guinea Forest Authority
PNGNWS	Papua New Guinea National Weather Service
PNGTPA	Papua New Guinea Tourism Promotion Authority
PPF	Proposal Preparation Facility
PPL	Papua New Guinea Power Limited
PPP	Public-Private Partnership
PSIP	Provincial Services Investment Programme
REDD+	Reducing Emissions from Deforestation and Degradation, and foster conservation,
	sustainable management of forests, and enhancement of forest carbon stocks

SAP	Simplified Approval Process
SCCF	Special Climate Change Fund
SDG	Sustainable Development Goal
SME	Small and Medium Enterprises
SOE	State Owned Enterprise
SPC	Secretariat of the Pacific Community
SPCZ	South Pacific Convergence Zone
SPREP	Secretariat of the Pacific Regional Programme
TF	Terrorist Financing (TF)
TWC	Technical Working Committee
UNDP	United Nations Development Programme
UNEP	United Nations Environment Programme
UNFCCC	United Nations Framework on the Convention of Climate Change
UNREDD	United Nations Reducing Emissions from Deforestation and Forest Degradation
UPNG	University of Papua New Guinea
USAID	United States Agency for International Development
USP	University of the South Pacific
WASH	Water, Sanitation and Hygiene
WB	World Bank
WFP	World Food Programme
WMO	World Meteorological Organization
WWF	World Wildlife Fund

Foreword

This Country Programme was developed as a part of the Green Climate Fund (GCF) Readiness and Preparatory Support Programme. The development of the Country Programme over the past year has brought together national stakeholders through a series of comprehensive consultations.

This Country Programme presents a strategic framework for advancing action on addressing climate change. As one of the countries most vulnerable to climate change, Papua New Guinea is prioritising the strengthening of institutions and completion of regulatory policy and reforms to mobilise both international and domestic climate finance.

The development of this Country Programme demonstrates that Papua New Guinea's engagement with the Green Climate Fund is country-driven and aligned with our national planning frameworks and priorities, including the Medium Term Development Plan III (2018-2022), Nationally Determined Contribution (2015) and the National Climate Compatible Development Management Policy (2014). This Country Programme will also serve as a guideline for domestic, regional and international partners to prepare proposals that are harmonised with our national priorities and commitments.

The implementation of this Country Programme will require genuine and committed partnerships with the GCF, national stakeholders, Accredited Entities, and development partners. The Climate Change and Development Authority (CDDA), as the GCF National Designated Authority (NDA), and national government stakeholders will provide the oversight for the implementation of this Country Programme. This is a living document and it will be updated periodically in a consultative manner by CDDA to ensure progress is being tracked and any emerging and new priorities are reflected in the Country Programme.

I would like to acknowledge the support provided from the Global Green Growth Institute as the delivery partner of the GCF Readiness Support Programme, USAID Climate Ready as the support partner, and the GCF Secretariat for providing the Readiness and Preparatory Support funding to develop this Country Programme.

We hope that with this Country Programme, Papua New Guinea can accelerate climate action and contribute to the implementation of the Paris Climate Agreement.

Mr. Ruel Yamuna, LLB Managing Director, Climate Change and Development Authority

Executive Summary

The Green Climate Fund (GCF) is the world's largest dedicated fund helping developing countries reduce their greenhouse gas emissions and enhance their ability to respond to climate change. It was set up by the United Nations Framework Convention on Climate Change (UNFCCC) in 2010. The GCF has a crucial role in serving the Paris Agreement by supporting the goal of keeping average global temperature rise well below 2 degrees Celsius above pre-industrial levels and pursuing efforts to limit the increase to 1.5 degrees Celsius, recognising that this would substantially reduce the risks and impacts of climate change.

The purpose of the Country Programme, which was developed as part of the GCF Readiness and Preparatory Support Programme, is to engage and coordinate stakeholders in Papua New Guinea (PNG), including ministries, sub-national institutions, civil society, and the private sector in the design and prioritisation of GCF activities. The Country Programme puts forward prioritised programming areas, including priority mitigation/ adaptation investments, readiness actions, and provides a timeline for implementation.

The PNG Country Programme sets out country priorities in relation to the GCF, as well as the current pipeline of investment and readiness projects. These priorities have been selected based on alignment with the GCF's results areas and investment criteria. The Country Programme was developed by synthesising national climate change and development strategies and action plans, and by conducting intensive stakeholder engagement at the national and provincial level. The Country Programme is in alignment with the priorities, goals and targets outlined in the National Climate Compatible Development Management Policy (NCCDMP) (2014), Nationally Determined Contribution (NDC) (2015), Medium Term Development Plan III (2018–2022), and Vision 2050.

The Country Programme presents priority projects and programs that can support PNG's transition to a lowcarbon climate-resilient development pathway. The Country Programme includes a pipeline of projects and programs to be developed over 2020 to 2027. This pipeline includes proposals with a focus on renewable energy supply and access, energy efficiency, reducing emissions from deforestation and forest degradation, climate-resilient infrastructure development, reduction of climate change risk, development of climate-resilient agriculture, and building coastal resilience.

The Country Programme is a living strategy that will need to be periodically updated to reflect new developments, changing national circumstances, and lessons learnt from implementation. The Country Programme will be reviewed annually to assess factors such as relevance, effectiveness and impact. A comprehensive and systematic review should take place five-yearly to develop a new Country Programme for the next five-year period.

CHAPTER 1: Country Profile

1.1 National development circumstances and climate change response

1.1.1 Papua New Guinea (PNG) country profile

PNG is a part of the world's second-largest island landmass in the West Pacific.¹ With a total land area of 452,860 square kilometres,² the mainland comprises of the eastern half of the island of New Guinea³, together with the islands of New Britain, New Ireland, and the Autonomous Region of Bougainville, plus a further six hundred smaller islands and atolls which occupy over 800,000 square kilometres of ocean (as shown in Figure 1-1).⁴

Figure 11: Map of PNG



¹GoPNG. 2015. Papua New Guinea Intended Nationally Determined Contribution under the United Nations Framework Convention on Climate Change.

²Department of Foreign Affairs and Trade (DFAT). N.D. Papua New Guinea country brief. Retrieved from: <u>https://dfat.gov.au/geo/papua-new-guinea-country-brief.aspx;</u> Kuleshov, Y., Inape, K., Watkins, A., Bear-Crozier, A., Chua, Z.W., Xie, P., Kubota, T., Tashima, T., Stefanski, R., & Kurino, T. 2019. Climate Risk and Early Warning Systems (CREWS) for Papua New Guinea. Retrieved from: <u>https://www.intechopen.com/online-first/climate-risk-and-early-warning-systems-crews-for-papua-new-guinea.</u> ³GoPNG. 2014. UNFCCC PNG Second National Communication.

⁴World Bank. N.D. Papua New Guinea Overview. Retrieved from: <u>https://www.worldbank.org/en/country/png/overview; CCDA. 2018.</u> <u>Biennial Update Report.</u> Geomorphically diverse, the total land area encompasses 46.9 million hectares, 5,152 kilometres of which is coastline, and 40,000 square kilometres of which is coral reef.⁵ Tectonically, PNG is very active, given its placement between the Australian continental plate and the Pacific plate.⁶ Terrestrially, this gives rise to the mountainous regions on the mainland. Terrestrial ecosystems throughout the country are incredibly diverse and include extensive rainforest lowlands, grassland, savannahs, freshwater swamps, montane rainforest, alpine grassland as well as deltaic floodplains.⁷

Table 1-1: Country profile

Geographical location	South Pacific, Oceania
Land area	452,860 square kilometres
Capital	Port Moresby
Population	8.4 million (2018) ⁸
Official languages	Tok Pisin, English, Hiri Motu
Climate	Tropical
GHG emission profile	0.795 CO $_{\rm 2}$ per capita. From 0.08 in 1960 to 0.795 in 2014.°
Key emitting sectors	Extractive industries Energy Agriculture Waste
Climate hazards	Sea level rise (and salinity stresses), coastal erosion, drought, inland frost, higher temperatures, heatwaves, changes in mean annual and extreme rainfall, coastal and inland flooding, increased storminess and extreme winds, intensified tropical cyclones, landslides and soil erosion, marine heatwaves, and ocean chemistry changes.
Highly vulnerable sectors	Agriculture, water and sanitation, infrastructure, energy, and health.
National Designated Authority (NDA)	Climate Change and Development Authority (CCDA) under the Ministry of Environment, Conservation and Climate Change.

⁵lbid.

٥lbid.

⁷lbid.

⁸DFAT. 2019. Papua New Guinea Fact Sheet. Retrieved from: <u>https://dfat.gov.au/trade/resources/Documents/png.pdf</u> ⁹World Bank. 2019. Papua New Guinea Data. Retrieved from: <u>https://data.worldbank.org/indicator/EN.ATM.CO2E.</u> <u>PC?end=2014&locations=PG&start=1960&view=chart.</u>

Regional Direct Access Entities (DAEs)	Secretariat of the Pacific Regional Environment Programme (SPREP), Pacific Community (SPC)
International Accredited Entities (AE)	Asian Development Bank (ADB), CGIAR System Organization, Conservation International (CI), Environmental Investment Bank (EIB), Food and Agriculture Organization of the United Nations (FAO), Deutsche Gesellschaft für Internationale Zusammenarbeit (GIZ), International Finance Corporation (IFC), International Fund for Agricultural Development (IFAD), International Union for the Conservation of Nature (IUCN), Japan International Cooperation Agency (JICA), Korea Development Bank (KDB), Kreditanstalt für Wiederaufbau (KfW), Save the Children Australia, World Bank Group (WB), World Wildlife Fund (WWF), United Nations Development Programme (UNDP), United Nations Environment Programme (UNEP), World Food Programme (WFP).
Potential entities that could be nominated as DAEs	National Development Bank (NDB), Department of Treasury, Department of Finance (DoF), Department of National Planning and Monitoring (DNPM), Bank South Pacific (BSP), Kina Bank, MiBank, Centre for Excellence in Financial Inclusion (CEFI), Bank of Papua New Guinea (BPNG).

PNG's population is estimated at 8.4 million people as of 2017.¹⁰ The country's population has increased rapidly over the last ten years with a population growth rate of 3.1% since the 2000 Census.¹¹ Population density for the country sits at approximately 19 persons per square kilometre.¹² Accurate population statistics, however, have been historically difficult to ascertain due to census data only being collected in recent years.¹³ The Biennial Update Report (BUR) states that censuses have been undertaken in 1966, 1971, 1980, 1990, 2000 and 2011. The province of Morobe is the most populous with 9.3% of the total population residing there, followed by the Eastern Highlands and Southern Highlands.¹⁴

According to the Medium Term Development Plan (MTDP) III (2018–2022), PNG's population is young, with 40% being under the age of 15.¹⁵ The recent BUR states that approximately 88% of the population lives in rural areas with minimal essential services.¹⁶ The rural population is based on traditional village structures and is largely dependent on subsistence farming, which is supplemented by cash cropping.¹⁷ It is estimated that 97% of land is owned customarily, where local indigenous people have ownership. The remaining land is owned by the state.¹⁸

¹⁴lbid.

¹⁵MTDP III 2018 – 2022 Volume One.

¹⁶GGGI. 2019. Green Growth Potential Assessment. GGGI, 2019. Green Growth Potential Assessment. Papua New Guinea Country Report. July 2019. Retrieved from: <u>https://gggi.org/report/green-growth-potential-assessment-of-papua-new-guinea</u>; Kuleshov, Y., Inape, K., Watkins, A., Bear-Crozier, A., Chua, Z.W., Xie, P., Kubota, T., Tashima, T., Stefanski, R., & Kurino, T. 2019. Climate Risk and Early Warning Systems (CREWS) for Papua New Guinea. Retrieved from: <u>https://www.intechopen.com/online-first/climate-risk-and-early-warningsystems-crews-for-papua-new-guinea</u>.

¹⁷CCDA. 2018. Biennial Update Report.

¹⁰World Bank. 2019. Papua New Guinea Data. Retrieved from: <u>https://data.worldbank.org/indicator/SP.POP.</u> <u>TOTL?end=2017&locations=PG&start=1960&view=chart</u>

 ¹¹CCDA. 2018. Biennial Update Report; GoPNG. 2018. Medium Term Development Plan III 2018 – 2022 Volume One.
 ¹²Papua New Guinea National Statistics Office. 2011. National Population and Housing Census 2011. Port Moresby, PNG.
 ¹³CCDA. 2018. Biennial Update Report.

¹⁸lbid.

The population is spread over four regions, which contain 22 provinces, including the National Capital District (NCD):

Highlands Region: Chimbu, Eastern Highlands, Enga, Hela, Jiwaka, Southern Highlands, Western Highlands. Islands Region: Autonomous Region of Bougainville, East New Britain, Manus, New Ireland, West New Britain.

Momase Region: East Sepik, Madang, Morobe, Sanduan.

Southern Region: Central, Gulf, Milne Bay, Oro, Western.

PNG supports more than 800 different languages. These languages are spoken among a population which is divided into more than 10,000 ethnic clans.¹⁹ Cultural dynamics are complex, rooted deeply in ethnic and tribal identity, ancestral lands, and indigenous social institutions.²⁰

1.2 Key data on climate change

Large scale drivers of climate are explored within this sub-section, from 1.2.1 to 1.2.8. Impacts of these climate drivers and associated risks to lives and sustainable livelihoods are explored in Section 1.3. Consideration is provided at a country-wide level and also at a local/provincial level where major events or disasters have occurred. Data has been collated using the most up-to-date information as provided in the BUR, confirmed by the Government of Papua New Guinea (GoPNG) to contain their latest statistics.

The BUR includes recent climate-related data and is an update to the National Communication. Projections included within the BUR include: surface air temperature and sea-surface temperature are projected to continue to increase; annual and seasonal mean rainfall is projected to increase; intensity and frequency of days of extreme heat are projected to increase; intensity and frequency of days of extreme rainfall are projected to increase; ocean acidification is projected to continue; and mean sea-level rise is projected to continue.²¹

1.2.1 Climate and weather

In PNG, the main drivers in climate are the El Niño Southern Oscillation (ENSO), the Intertropical Convergence Zone²² and the South Pacific Convergence Zone (SPCZ)²³. The country's tropical climate is influenced due to its location in the Pacific Warm Pool, between the Tropic of Capricorn and the equator.²⁴

The weather is humid and warm throughout the year with a relative humidity range of 70% to 90%.²⁵ Seasons are distinct with a wet season from November/December to March/April, and a dry season from May/June to September/October.

²⁰Ibid; CCDA. 2018. Biennial Update Report; Kuleshov, Y., Inape, K., Watkins, A., Bear-Crozier, A., Chua, Z.W., Xie, P., Kubota, T., Tashima, T., Stefanski, R., & Kurino, T. 2019. Climate Risk and Early Warning Systems (CREWS) for Papua New Guinea. Retrieved from: <u>https://www.intechopen.com/online-first/climate-risk-and-early-warning-systems-crews-for-papua-new-guinea</u>.

²¹CCDA. 2018. Biennial Update Report.

²³UNFCCC PNG Second National Communication 2014.
 ²⁴CCDA, 2018. Biennial Update Report.
 ²⁵Ibid

¹⁹World Bank. N.D. Papua New Guinea Overview. Retrieved from: <u>https://www.worldbank.org/en/country/png/overview</u>

²²Ibid; Kuleshov, Y., Inape, K., Watkins, A., Bear-Crozier, A., Chua, Z.W., Xie, P., Kubota, T., Tashima, T., Stefanski, R., & Kurino, T. 2019. Climate Risk and Early Warning Systems (CREWS) for Papua New Guinea. Retrieved from: <u>https://www.intechopen.com/online-first/climate-risk-and-early-warning-systems-crews-for-papua-new-guinea</u>

Across the country, the mountain and inland regions average a daytime temperature of 26 degrees Celsius (°C). In the higher mountain regions, daytime temperatures average 18°C., while coastal plain regions experience an average daily temperature of 32°C.²⁶ Variation in annual average maximum temperature and average minimum temperature is minimal. Rainfall averages 250 to 350 millimetres per month.²⁷

PNG is considered highly vulnerable to the effects of climate change.²⁸ According to the United Nations University World Risk Report (2016), PNG is ranked as the 10th most vulnerable country in the world to the risks of climate change.²⁹ Addressing this high vulnerability to climate change involves a breadth of areas.³⁰ PNG has experienced a rise in both temperature and sea levels; an increase in both ocean acidification and rainfall. The frequency of cyclones and droughts has declined; however, their intensity has grown.³¹

1.2.2 Projected temperature changes

Temperatures in PNG have increased and are projected to rise with more hot days occurring into the future. Since 1980, annual maximum and minimum temperatures have increased consistent with global patterns – maximum temperatures have increased at a rate of 0.11°C per decade.³² By 2030, it is projected that temperature will continue to increase between $0.4 - 1^{\circ}C.^{33}$

1.2.3 Projected rainfall changes

PNG has a dry season from May to October and a wet season from November to April. Rainfall seasonality is rather weak aside for the region surrounding Port Moresby,³⁴ where about 78% of the yearly average rainfall comes in the wet season. Islands in the north of the country experience rainfall year-round due to the influence of the Intertropical Convergence Zone and the South Pacific Convergence Zone resulting in thunderstorm activity.³⁵ Prolonged rainfall associated with La Niña has led to flooding and landslides.³⁶

According to PNG's Second National Communication, rainfall has demonstrated no clear trend since 1950 in Port Moresby, however, a decrease in wet season rainfall in the northern area of the country has been identified.³⁷ Rainfall is projected to increase over the 21st century, with more extreme rainfall days projected.

²⁶lbid.

²⁷World Bank. N.D. World Bank Climate Change Knowledge Portal: Papua New Guinea.

²⁸Pacific Islands Forum Secretariat, DNPM, CCDA. 2019. Options for Strengthening Climate Finance Coordination and Accessibility in Papua New Guinea.

²⁹United Nations University. 2016. World Risk Report 2016. <u>http://weltrisikobericht.de/wp-content/uploads/2016/08/WorldRiskReport2016.</u> pdf

³⁰GGGI, 2019. Green Growth Potential Assessment. Papua New Guinea Country Report. July 2019. Retrieved from: <u>https://gggi.org/</u> report/green-growth-potential-assessment-of-papua-new-guinea/ ³¹Ibid

³²International Climate Change Adaptation Initiative. 2013. Pacific Climate Change Science Program. Current and Future Climate of Papua New Guinea. Retrieved from: <u>https://www.pacificclimatechangescience.org/wp-content/uploads/2013/06/14_PCCSP_PNG_8pp.</u>pdf.

³³lbid.

³⁴GoPNG. 2014. UNFCCC PNG Second National Communication.

³⁵Ibid.

³⁶lbid.

³⁷lbid.

1.2.4 Sea level rise

The sea level surrounding PNG has risen by approximately 7mm per year since 1993, which is higher than the global average of 2.8-3.6mm per year.³⁸ Projections anticipate a continued rise. Under a high emissions scenario, the sea is expected to rise between 4-15cm.³⁹ This will impact storm surges and flooding to coastal regions.

1.2.5 Coastal and inland flooding

Risk of coastal and inland flooding is ranked amongst the highest level of climate risks in PNG. Approximately 18% of the country's total landmass is experiencing flooding. In August 2017, flooding in the Morobe Province resulted in 150 homes being swept away by floodwaters in a single day and 500 people becoming displaced.⁴⁰

Coastal flooding is anticipated to increase, particularly in the northern areas. While inland flooding is projected to increase in wetlands and valleys in highlands and lowland areas.⁴¹

1.2.6 Ocean acidification

Data shows that ocean acidification around PNG has slowly been increasing since the 18th century, impacting the growth of corals and organisms that require carbonate minerals to develop.⁴² Under all three emissions scenarios, ocean acidification is projected to increase in the waters surrounding PNG. This will have a negative effect on coral reef ecosystem health.⁴³

1.2.7 Tropical cyclones

According to Australia's Commonwealth Scientific and Industrial Research Organisation (CSIRO) and the Australia Bureau of Meteorology (BoM),⁴⁴ there were 23 tropical cyclones between the years 1969 and 2010 that passed within 400 km of Port Moresby.⁴⁵ During this 41-year period, tropical cyclones occurred more often in the natural phase of the ENSO.⁴⁶ Projections show a trend of decreasing numbers of cyclones but an increase in intensity over this century.⁴⁷

⁴¹GoPNG. 2014. UNFCCC PNG Second National Communication.

⁴⁴CCDA. 2018. *Biennial Update Report*.

³⁸International Climate Change Adaptation Initiative 2013. Pacific Climate Change Science Program. Current and Future Climate of Papua New Guinea. <u>https://www.pacificclimatechangescience.org/wp-content/uploads/2013/06/14_PCCSP_PNG_8pp.pdf</u> ³⁹Ibid.

⁴⁰UNDP. 2018. National Adaptation Plan process in focus: Lessons from Papua New Guinea. Retrieved from: <u>https://www.undp.org/</u> <u>content/undp/en/home/librarypage/climate-and-disaster-resilience-/national-adaptation-plan-process-in-focus--lessons-from-</u> <u>Papua-New-Guinea.html</u>

 ⁴²International Climate Change Adaptation Initiative 2013. *Pacific Climate Change Science Program. Current and Future Climate of Papua New Guinea*. <u>https://www.pacificclimatechangescience.org/wp-content/uploads/2013/06/14_PCCSP_PNG_8pp.pdf</u>
 ⁴³International Climate Change Adaptation Initiative 2013. *Pacific Climate Change Science Program. Current and Future Climate of Papua New Guinea*. <u>https://www.pacificclimatechangescience.org/wp-content/uploads/2013/06/14_PCCSP_PNG_8pp.pdf</u>; GoPNG.
 2014. UNFCCC PNG Second National Communication.

⁴⁵International Climate Change Adaptation Initiative 2013. *Pacific Climate Change Science Program. Current and Future Climate of Papua New Guinea*. <u>https://www.pacificclimatechangescience.org/wp-content/uploads/2013/06/14_PCCSP_PNG_8pp.pdf</u>. ⁴⁶CCDA. 2018. *Biennial Update Report*.

⁴⁷International Climate Change Adaptation Initiative 2013. *Pacific Climate Change Science Program. Current and Future Climate of Papua New Guinea*. <u>https://www.pacificclimatechangescience.org/wp-content/uploads/2013/06/14_PCCSP_PNG_8pp.pdf.</u>

1.2.8 Climate projections

PNG's tropical climate is rapidly changing. According to observations collated in Port Moresby, steady warming averaging 0.1°C per decade is occurring.⁴⁸ Assuming a business as usual emissions scenario, temperature is further projected to increase over the coming decades, culminating in a 0.4–1°C rise by 2030.⁴⁹

Historical, country-wide data on precipitation levels is limited; however, what can be determined is a slight decrease in rainfall in areas other than Port Moresby (where it presently appears stable).⁵⁰ It is projected that more precipitation in PNG shall occur due to climate change, exacerbating extreme rainfall days which in turn contribute to an increase in inland flooding.

Table 1–2 provides a summary of climate projections for PNG over the course of the 21st Century. The information is drawn from *Climate Change in the Pacific: Scientific Assessment and New Research. Volume 2, Country Reports.*⁵¹

Climate variable	Projection	Confidence level
Surface air temperature	Projected to increase	Very high confidence
Sea surface temperature	Projected to increase	Very high confidence
Annual mean rainfall	Projected to increase	High confidence
Seasonal mean rainfall	Projected to increase	High confidence
Intensity and frequency of days of extreme heat	Projected to increase	Very high confidence
Intensity and frequency of days of extreme rainfall	Projected to increase	High confidence
Incidence of drought	Projected to decrease	Moderate confidence
Frequency of tropical cyclones	Projected to decrease	Moderate confidence
Ocean acidification	Projected to continue	Very high confidence
Mean sea-level rise	Projected to increase	Very high confidence

Table 1-2: Climate projections for PNG

⁴⁹lbid. ⁵⁰lbid.

⁴⁸Antea Group & UNDP. 2017. *Climate Risk, Vulnerability and Risk Assessment in the New Ireland Province in Papua New Guinea*. Retrieved from: <u>https://info.undp.org/docs/pdc/Documents/PNG/Report_Climate%20Risk%20Vulnerability%20Assessment_New%20</u> <u>Ireland.pdf</u>

⁵¹AusAID. 2011. International Climate Change Adaptation Initiative. Pacific Climate Change Science Program. *Climate Change in the Pacific: Scientific Assessment and New Research. Volume 2, Country Reports.* Retrieved from: <u>https://www.pacificclimatechangescience.org/wp-content/uploads/2013/09/Volume-2-country-reports.pdf</u>

1.3 Climate change vulnerabilities in PNG

PNG is vulnerable to the impacts of climate change, including floods, droughts and inland frosts, coastal erosion and inundation, soil salinisation, and coral reef degradation. Climate change is also exacerbating development challenges and social issues in PNG, particularly access to affordable and reliable services and poverty rates.

In 2018, PNG's HDI value was 0.543 – which put the country in the low human development category – and positioned it at 155 out of 189 countries and territories.⁵² There is limited data available on poverty in PNG, with the last Household and Income Expenditure Survey (HIES) conducted in 2009–2010. Using the national basic needs poverty line, it was estimated that approximately 40% of the population was poor at the time of the last HIES survey.⁵³

1.3.1 Rural vulnerabilities

Poverty is overwhelmingly concentrated in rural areas, and there are wide geographical disparities, with isolated small island populations being amongst the poorest. Subsistence and smallholder agricultural practices provide an income for over 80% of PNG's population, and climate change is already putting these livelihoods at risk.

The majority of PNG experiences flooding during the monsoon season. This impacts most rural livelihoods, which are highly reliant on agriculture. In rural coastal lowland areas, mangroves, estuaries and coral reefs are impacted as a result of the heavy silt and debris deposited from flood events. Rising sea levels are having an impact on agriculture grown on coral atolls, including swamp taro and coconut, where the freshwater lens is being intruded by saltwater resulting in a loss of production and having an impact on livelihoods.⁵⁴ In the mountainous rural areas of PNG, landslides frequently cause damage to vital infrastructure, homes and gardens, and upland forests.⁵⁵ PNG ranks 1st in global landslide hazard profiles, according to a World Bank Hotspot study.

The vulnerabilities faced by rural communities are a key driver for rural to urban migration within PNG. The drivers for migration include access to employment, access to education, access to health services, access to socio-cultural networks, access to financial services, access to telecommunications, and access to clean water, sanitation and electricity.⁵⁶

1.3.2 Urban vulnerabilities

Climate change exacerbates existing urban development challenges and vulnerabilities, such as poor health, inadequate housing and lack of access to infrastructure, basic services and social safety nets. Urban areas on the coast are under threat of storm surge and sea-level rise, and in PNG, cities are often located in hazard-prone areas in the coastal zone.⁵⁷

⁵²UNDP. 2019. *Papua New Guinea 2019 Human Development Report*.

⁵³World Bank. 2018. *Papua New Guinea poverty and equity brief*.

⁵⁴Bourke, RM. 2018. Impact of Climate Change on Agriculture in Papua New Guinea.

⁵⁵World Bank. 2020. Climate Change Knowledge Portal for Development Practitioners and Policy Makers.

⁵⁶Stevens, H. 2016. Urban Life, Internal Migration and Development: The Need to Re-Address Internal Migration as a Positive Nexus For Growth and Development in PNG.

⁵⁷UN-HABITAT. 2014. Climate Change Vulnerability Assessment: Port Moresby, Papua New Guinea.

PNG is experiencing, as with many countries around the world, an increase in rural to urban migration. Urban migrants are vulnerable, and often experience challenges that include difficulties finding adequate housing options, lack of reliable income, and youth unemployment.⁵⁸

1.4 Climate-induced migrants

Climate change will also likely affect patterns and rates of internal migration and urbanisation within PNG, particularly for communities residing in climate-vulnerable areas and reliant on natural resources for livelihoods and well-being. Key hotspots where rates of climate change-induced migration could be high include urban areas, outer islands and atolls, and coastal, delta and riverine communities, and communities prone to drought.⁵⁹

Both the Manam and the Carteret Islands in PNG have been impacted by environmental degradation and climate change hazards, which has resulted in the displacement of communities from these islands.⁶⁰

The resettlement of climate-induced migrants will also require access to land and resources, including the provision of sustainable livelihoods, housing, infrastructure and public services such as education and healthcare. A range of strategies and activities are also required to prepare for relocation, including comprehensive consultations with the climate-induced migrants and their host communities.⁶¹ The NCCDMP (2014) states that supporting the relocation of people should be considered, including through local level government planning and the construction of buildings and infrastructure.

1.5 Sectoral assessments

PNG is highly vulnerable to climate change as a result of its geographical and physical characteristics. Climate change will likely exacerbate event-driven hazards which include landslides, inland flooding, coastal flooding and droughts, causing severe damage to people's livelihoods and the economy.⁶²

1.5.1 Agriculture and food security

Subsistence and smallholder agricultural practices provide an income for over 80% of PNG's population.⁶³ Cocoa, palm oil, vegetables, rubber, coffee and betel nut are grown throughout the country, however, despite a large landmass, only around 30% of land is agriculturally viable due to mountain ranges and localised climatic conditions, including long dry seasons, heavy rainfall or excessive cloud cover.⁶⁴ This smallholder production of tree crops equates to 70% of the sub-sector's total output.⁶⁵ A traditional system of shifting cultivation is practised, where subsistence farmers and smallholders clear patches of forest in order to plant food gardens. This patch may be used for several crop cycles before being left to fallow to enable forest

⁵⁸Stevens, H. 2016. Urban Life, Internal Migration and Development: The Need to Re-Address Internal Migration as a Positive Nexus For Growth and Development in PNG.

⁵⁹Campbell, J., and Warrick, O. 2014. Climate Change and Migration Issues in the Pacific. United Nations.

⁶⁰Connell, J., and Lutkehaus, N. 2017. Environmental Refugees? A tale of two resettlement projects in coastal Papua New Guinea. ⁶¹International Organization for Migration (IOM). 2015. Assessing the Evidence: Migration, Environment and Climate Change in Papua New Guinea. Geneva, Switzerland.

⁶²GoPNG. 2014. UNFCCC PNG Second National Communication.

⁶³Babon, A. 2011. Snapshot of REDD+ in Papua New Guinea. CIFOR Info Brief. No. 40.

⁶⁴CCDA. 2018. Biennial Update Report.

⁶⁵lbid.

regeneration.⁶⁶ With the increasing rate of population growth, demand for garden produce has increased. This has resulted in increased net deforestation as a result of food garden expansion and intensification of smallholder agricultural practices.⁶⁷

In productive rural environments, an estimated 20% of people practice intensive commercial agriculture. Agricultural production is found to be further intensified where other livelihood options are constrained. To enable this intensification, land is continuously cultivated in conjunction with land improvement methods which include legume rotation, soil retention barriers, composting, mounding, drainage and tree fallowing.⁶⁸ This is achieved by extending the cropping period, shortening fallow periods and by choosing to cultivate crops that do not require additional inputs such as taro, sweet potato, cassava and banana trees.⁶⁹ There is a risk these practices may lead to soil degradation, in which case, farmers need assistance in diversifying their livelihoods. Agriculture at a commercial plantation scale has declined since the 1980s. This is due to a combination of fluctuating global prices and increasing labour and overhead cost.⁷⁰

From 1972-2002, commercial agriculture was not a major driver of deforestation.⁷¹ However, since 2002, commercial agriculture has expanded, particularly for palm oil plantations, which has increased rates of deforestation. At present, GoPNG is preparing for growth over the next two decades in its major agricultural exports, which include palm oil, cocoa, coffee and copra. Palm oil in itself is anticipated to grow by 5-6% per annum.⁷² Special agriculture and business leases (SABLs), over large areas increased up to the year 2011. It is estimated that SABL's account for 5.2 million hectares of land (approximately 11% of the country's land area).⁷³ Since 2013, however, almost no SABLs have been issued.

1.5.2 Energy and transport

As PNG's economy has developed, so too has its demand for energy, particularly electricity. Demand for electricity across the country has increased by 2.2% over the previous 10 years, with the trend projected to continue over the medium-term.⁷⁴

The total electricity output in 2015 was estimated at 4324 GWh, comprising of approximately 23% hydro-electric generation, 56% petroleum products, 11% natural gas, and 10% from geothermal sources.⁷⁵ An estimated half of PNG's supply is utilised by the private sector, primarily for extractive mining purposes.⁷⁶ There are currently eight power plants in the country and a further 58 substations. PNG Power Ltd is responsible for the operation of 30 electricity systems at a variety of sites across the country.⁷⁷

⁶⁶Babon, A. 2011. Snapshot of REDD+ in Papua New Guinea. CIFOR Info Brief. No. 40.

⁶⁷Shearman, P. L., Ash, J., Mackey, B., Bryan, J. E., and Lokes, B. 2009. Forest conversion and degradation in Papua New Guinea 1972–2002. Biotropica 41(3): 379–390.

⁶⁸CCDA. 2018. *Biennial Update Report*. ⁶⁹CCDA. 2018. *Biennial Update Report*.

⁷⁰lbid.

⁷¹Shearman, P. L., Ash, J., Mackey, B., Bryan, J. E., and Lokes, B. 2009. Forest conversion and degradation in Papua New Guinea 1972-2002. Biotropica 41(3): 379-390.

⁷²GoPNG. 2010. *Climate-compatible development for Papua New Guinea*. Second draft for Stakeholder Comment.

⁷³Leggett, M. 2011. *The Status of REDD+ in Papua New Guinea*. Retrieved from: <u>https://png-data.sprep.org/system/files/</u> StatusofREDDinPNG.pdf

⁷⁴lbid.

⁷⁵According to a statement in GGGI, 2019, pp. 29-30 (GGGI. 2019. *Green Growth Potential Assessment Papua New Guinea Country Report. * Retrieved from: <u>https://gggi.org/site/assets/uploads/2019/07/GGPA-PNG-Report_FINAL.pdf*)*</u> it should be noted that "these figures contain considerable uncertainty given the lack of data and inconsistency in available data. First, while generation capacity and sources of electricity generation should be compared for the same year, the small amount of generation capacity that has been added in PNG between 2013 and 2016 reduces the time gap as a source of error."

⁷⁷PNG Power Limited. 2017. *Information Handbook*. Retrieved from: <u>https://www.pngpower.com.pg/uploads/Information-Handbook-2017.pdf</u>

In 2014, PNG commenced its liquefied natural gas (LNG) project, which in 2015 provided 8,427 kiloton of oil equivalent (ktoe). However, the majority of this, and most crude oil produced domestically, is exported.⁷⁸ Supply is deemed critical by the government for achieving economic growth and development.⁷⁹

Transport PNG utilises three main modes of transport: road, air and water. Official statistics of methods of road transportation are lacking due to vehicle licensing responsibilities being fragmented countrywide. However, in 2010, it was estimated that there were 46,000 road transport vehicles in use.⁸⁰ Compared to other Pacific states, road vehicle use is much lower in PNG, with only an estimated one vehicle per 147 people.⁸¹ Passenger vehicles are estimated to account for 20% of road vehicles, government vehicles 15%, and private use vehicles 65%.⁸²

Air transport in PNG is provided across one international and twenty national airports, all operated by the National Airports Corporation. Currently, Port Moresby International Airport is the only airport to cater for international passenger services. There are a further six airports which operate as a part of mining and gas operations. Air Niugini is the prominent airline, with 259 planes connecting services across 11 domestic airports and internationally.⁸³

For maritime and inland water transport, PNG hosts 22 ports, all of which are operated by the country's Ports Corporation.⁸⁴ Private ports also exist, primarily to service industry including mining, logging and palm oil.

1.5.3 Health

Life expectancy has dramatically improved in PNG over the last half-century, from 45 years in 1975 to 62 years in 2016.⁸⁵ Other life indicators have also improved, with the maternal mortality rate and infant mortality improving. The mortality rate for children under the age of five improved from 147 per 1,000 live births in the 1970s to 50 in 2017, while infant mortality improved from 77 per 1,000 live births in the 1970s to 44 in 2016.⁸⁶

1.5.4 Water and sanitation

PNG's population are among those with the least access to safe water supply in the world. The GoPNG's Water, Sanitation and Hygiene (WASH) Policy 2015-2030 indicates that 89% of people in urban areas and 33% in rural areas have access to safe water, while 57% of urban dwellers and only 13% of the rural population have access to basic sanitation.⁸⁷

⁷⁸CCDA. 2018. *Biennial Update Report*.

⁷⁹lbid.

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⁸¹lbid. ⁸²lbid.

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⁸³lbid. ⁸⁴lbid.

⁸⁵GoPNG. 2018. *Medium Term Development Plan III 2018 – 2022 Volume One*.

⁸⁶GoPNG. 2018. *Medium Term Development Plan III 2018 – 2022 Volume One*.

⁸⁷DNPM. 2015. *Papua New Guinea Water, Sanitation and Hygiene (WaSH) Policy 2015-2030*.

1.5.5 Urban development

Urban growth has added pressure to the delivery of services and goods in growing urban areas. This has been experienced through stresses on public services,⁸⁸ such as waste management services and urban sanitation services, as well as through the inadequate provision of food, clean water and energy. This is of particular relevance in the major centres of Lae and Port Moresby where more than 40% of the population are living in squatter settlements.⁸⁹

1.5.6 Industry

PNG's formal sector is based on mining and petroleum, agriculture, forestry and fisheries.⁹⁰ Occupying a dominant position in PNG's economic and political landscape, the extractive industry sector is based around five main commodities: gold, copper, oil, gas, and nickel/cobalt.⁹¹ This has been further bolstered by the recent PNG LNG project. Despite the high revenues from the extractive industry, it is recognised that these benefits have not been translated into inclusive and equitable development for all Papua New Guineans.⁹² The impacts of the extractive mining industry have also resulted in very high environmental and socio-economic costs to communities situated in the vicinity of operations.⁹³ Environmental costs have been widespread, particularly to freshwater and coastal ecosystems due to the dumping of toxic wastes into streams, while landscapes and habitats become altered to accommodate the construction of the infrastructure required to support such large projects.⁹⁴

The oil palm industry has commenced its third decade of development and expansion in PNG. With an annual fertiliser use of 12,000 tonnes to offset soil deficiency, the oil palm industry is also having a negative effect on biodiversity, particularly through eutrophication impacting on aquatic ecosystems.⁹⁵

1.5.7 Forests

The island of New Guinea, of which its eastern half comprises PNG, is home to the world's third-largest rainforest after the Amazon Basin and Congo Basin.⁹⁶ Thirty-six million hectares of PNG's land area is covered by forest.⁹⁷ Total forest coverage equates to 77.8% of the total land area.⁹⁸ Acknowledged for their biological endemism and diversity, PNG's forests are presently relatively intact.⁹⁹ The country's lowland forests are noted as being some of the world's most ecologically distinct, while the montane forests are recognised as being of global significance given their levels of endemicity.¹⁰⁰

⁸⁸GoPNG. 2014. *Fifth National Report to the Convention on Biological Diversity.* Retrieved from: <u>https://www.sprep.org/attachments/</u> <u>VirLib/PNG/png-fifth-national-report-cbd-2014.pdf</u>

⁹⁶GoPNG. 2018. *Medium Term Development Plan III 2018 – 2022 Volume One*; GoPNG. 2017. *Papua New Guinea's National REDD+ Forest Reference Level. Submission for UNFCCC Technical Assessment in 2017.* Retrieved from: <u>https://redd.unfccc.int/files/png_frl_submission-15.01.2017.pdf</u>

⁹⁷CCDA. 2018. *Biennial Update Report*.

⁹⁸GoPNG, 2017. *Papua New Guinea's National REDD+ Forest Reference Level. Submission for UNFCCC Technical Assessment in 2017.* Retrieved from: <u>https://redd.unfccc.int/files/png_frl_submission-15.01.2017.pdf</u>
⁹⁰Ibid.

⁸⁹lbid.

⁹⁰lbid.

⁹¹lbid. ⁹²lbid.

⁹³GoPNG. 2014. *Fifth National Report to the Convention on Biological Diversity.* Retrieved from: <u>https://www.sprep.org/attachments/</u> <u>VirLib/PNG/png-fifth-national-report-cbd-2014.pdf</u>

⁹⁴lbid. ⁹⁵lbid.

¹⁰⁰GoPNG. 2017. *Papua New Guinea National REDD+ Strategy 2017 – 2027**;* CCDA. 2018. *Biennial Update Report*.

Fourteen forest types are recognised in PNG, 13 of these are natural vegetation, and one is a plantation.¹⁰¹ Three forest types – low altitude forest on plain and fans; low altitude forest on uplands; and lower montane forest – account for over 75% of the country's total forest.¹⁰² Swamp forest equates for 6.8% and mangroves for 0.8%,¹⁰³ while plantation forest accounts for only 0.1% of PNG's forest.¹⁰⁴

76% of the total forest in PNG is left undisturbed.¹⁰⁵ Where disturbance takes place, 11.9% is due to large-scale logging, 7.9% by small-scale temporary gardening, 3% by fire, 0.7% by 'other,' 0.2% by small-scale logging, and 0.1% by grazing.¹⁰⁶

1.5.8 Fisheries

PNG's Exclusive Economic Zone (EEZ) of over 3 million square kilometres, as well as its fisheries zone of approximately 2.4 million square kilometres, provide for an extensive fisheries sector.¹⁰⁷ The largest fisheries zone in the South Pacific,¹⁰⁸ the sector is able to reach broadly across deep-water fisheries, reef, coastal, aquaculture and inland river fisheries.¹⁰⁹

1.5.9 Biodiversity

PNG is home to a rich and biologically diverse abundance of species, with approximately 6% of the world's total biodiversity.¹¹⁰ Occupying less than 1% of the world's total landmass, PNG is considered one of the few remaining megadiverse countries on the planet.¹¹¹ PNG's National REDD+ Strategy identifies that the country's forests contain 298 species of mammal, 813 bird species, 335 species of reptile and 352 species of amphibian.¹¹² In addition, there are approximately 150,000 species of insects and 314 species of freshwater fish.¹¹³ It is estimated that one-third of species are endemic to PNG, while more than 70% are endemic to broader Papuasia.¹¹⁴

PNG's marine area, a part of the Coral Triangle, is known globally to have the highest level of marine biodiversity. ¹¹⁵ The Second National Communication stipulates that about 2,800 fish species (10% of the world's total) live on the country's 40,000 square kilometres of coral reef and their associated habitats.¹¹⁶ It is acknowledged that gaps remain in the scientific knowledge of the country's full biodiversity as large areas of PNG are yet to be surveyed.¹¹⁷

¹⁰⁸CCDA. 2018. *Biennial Update Report*.

¹⁰⁹GoPNG. 2014. *UNFCCC PNG Second National Communication*; CCDA. 2018. *Biennial Update Report*.

¹¹³GoPNG. 2014. *UNFCCC PNG Second National Communication*.

¹⁰¹lbid; GoPNG. 2017. *Papua New Guinea's National REDD+ Forest Reference Level. Submission for UNFCCC Technical Assessment in 2017.* Retrieved from: <u>https://redd.unfccc.int/files/png_frl_submission-15.01.2017.pdf</u>

¹⁰²Ibid.

¹⁰³Ibid.

¹⁰⁴lbid. ¹⁰⁵lbid.

¹⁰⁶Ibid.

¹⁰⁷GoPNG. 2014. *UNFCCC PNG Second National Communication*.

¹¹⁰GoPNG, 2014. *Fifth National Report to the Convention on Biological Diversity*. Retrieved from: <u>https://www.sprep.org/attachments/</u> <u>VirLib/PNG/png-fifth-national-report-cbd-2014.pdf</u>

¹¹¹CCDA. 2018. *Biennial Update Report*; GoPNG. 2018. *Medium Term Development Plan III 2018 – 2022 Volume One*; GoPNG. 2017. *Papua New Guinea National REDD+ Strategy 2017 – 2027*.

¹¹²CCDA. 2018. *Biennial Update Report*; GoPNG. 2017. *Papua New Guinea National REDD+ Strategy 2017 – 2027*.

¹¹⁴CCDA. 2018. *Biennial Update Report*.

¹¹⁵GoPNG. 2014. *UNFCCC PNG Second National Communication*.

¹¹⁶lbid. ¹¹⁷lbid.

1.5.10 Overview of climate change impact on sectors

As all economic and social sectors are likely to be adversely affected, climate change is a major impediment to the achievement of sustainable development in PNG, and the cost of implementing adaptation and mitigation measures will be disproportionately high relative to GDP.¹¹⁸ Table 1-3 identifies climate change impacts and potential responses by sector.

Table	1-3:	Climate	chanae	impacts	and	potential	responses	by sector ¹¹⁹
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Sector	Impacts	Potential response measures
Energy Sector	Drought (El Nino)	Renewable energy initiatives to prevent a repeat of the 2015 Yonki Dam hydropower plant and Sirinumu Dam water shortages, which in effect forced a switch to diesel power. ¹²⁰ Develop strategies to maintain energy during and after climate-related disasters, including coordination with appropriate state emergency management agencies.
Agriculture	Erratic rainfall	 Pro-active (pre-drought): Soil moisture preservation and reduction of evapotranspiration Create reserves of planting material Inland frost protection Plant in swamp and marsh areas Reactive (mid-drought): Storage and weevil control of tubers using proven effective indigenous methods Manage livestock during droughts Collect manures to use in gardens Water management (digging additional wells, protection from contamination, drip irrigation, reuse of water, rainwater harvesting, fire prevention) Ready access to sago; weevil management Post-drought: Use of early maturing varieties of crops (sweet potato and possibly maize and bean, which can make use of the extra available nitrogen in the soil after a drought).

¹¹⁸Climate Technology Centre & Network. 2006. *Pacific Adaptation to Climate Change: Papua New Guinea*. Retrieved from: <u>https://www.sprep.org/attachments/Climate Change/PACC Report of in-country consultations Papua New Guinea.pdf</u>
¹¹⁹Potential Response Measures include information as included in p. 59 of the Second National Communication. GoPNG. 2014. UNFCCC PNG Second National Communication.

¹²⁰Kuleshov, Y., Inape, K., Watkins, A., Bear-Crozier, A., Chua, Z.W., Xie, P., Kubota, T., Tashima, T., Stefanski, R., & Kurino, T. 2019. *Climate Risk and Early Warning Systems (CREWS) for Papua New Guinea*. Retrieved from: <u>https://www.intechopen.com/online-first/climate-risk-</u> and-early-warning-systems-crews-for-papua-new-guinea

Forestry and Land- Use	Drought Fire Deforestation	Strengthen protection of Intact Forest Landscapes, National Parks and Wildlife Management Areas Increase community participation in forest management (including pest control) Provide tangible returns through carbon mechanisms
Transport	High temperatures Severe storms and storm surges Flooding	Improved hazard predictions Improved adaptive planning Climate-proofing infrastructure
Waste	Contamination	Improved sector capacity regarding knowledge, training, research and response
Health	Malaria and vector-borne diseases	Insecticide-treated bed net distribution Artemisinin Based Therapy as first-line treatment Indoor Residual Spraying Malaria prevention for pregnant women Introduction of mosquito-larvae eating fish in fishponds Building wells and reducing mosquito breeding grounds Building additional healthcare centres Introduction of bio-pesticides (plants) Monitoring of mosquito resistance to treatment Planting of trees to create shade.
Urban development	Flooding Drought	Adaptation planning Adaptation response Adaptation awareness Climate-proofing infrastructure Integrate climate change scenarios into local, provincial and national hazards management efforts Increase funding for hazard mitigation planning, incorporating and addressing climate change-related scenarios and potential impacts
Water and sanitation	Inland flooding Coastal flooding Landslides Contaminated drinking water	Adopt a three-pronged approach across i) Provincial Towns ii) Rural District Towns, iii) Rural Communities Water and Sanitation Development Upgrade or develop sustainable, reliable and environmentally friendly water and sanitation services for population, industries and institutions in provincial towns Research and technology development as well as capacity building Develop strategies to maintain water, during and after climate-related disasters, including coordination with appropriate state emergency management agencies

Fisheries	Acidification Biodiversity loss Damage to coral reefs	Ecosystem approach with a focus on upstream control of human activities Creation (or enlargement) of marine reserves
Extractive	Economic impacts	Climate-proofed extraction sites
Biodiversity	Biodiversity loss	Coral reef restoration and preservation, requiring a cultural shift in fishing techniques Investment in infrastructure (sanitation and industrial wastewater management) Coastal site planning and management of mangroves, sand dunes and sandy beaches, where especially the protection of turtles and their eggs need community-based actions
Tourism/Cultural	Damage to coral reefs Biodiversity loss Deforestation	Coral reef restoration and preservation Strengthen protection of Intact Forest Landscapes, National Parks and Wildlife Management Areas

1.6 Economic overview

PNG's GDP is expected to grow by 3.7% in 2019 and 3.1% in 2020.¹²¹ Inflation is forecasted at 4.2% in 2019 and 2.7% in 2020, while per capita GDP growth is estimated at 0.6% in 2019.¹²² In 2018, the key economic sectors driving GDP growth were agriculture (22.1% of GDP), industry (42.9% of GDP), and the service sector (35% of GDP). ¹²³

PNG has experienced robust economic growth since the mid-2000s, peaking in 2014 with the beginning of exports from the liquified natural gas (LNG) Project.¹²⁴ This is in part due to expanded formal employment and increased revenue and government spending. Driving this period of economic growth was the high demand for PNG's exports, partnered with high international commodity prices.¹²⁵ With approximately 2 million people facing hardship, recent economic growth has not translated into sustained equitable gains for all Papua New Guineans.¹²⁶

With large mineral reserves, abundant forestry and fishery assets, agricultural land, and eco-tourism opportunities and its proximity to Asia, there are opportunities for further economic growth.¹²⁷ The economy is largely buoyed by the strength of two main sectors i) agriculture, forestry and fisheries; and ii) extractive industry (minerals and energy). The former is responsible for the majority of employment, while the latter is responsible for the majority of GDP output.¹²⁸

¹²¹Asian Development Bank. 2019. *Papua New Guinea and ADB*. <u>https://www.adb.org/countries/papua-new-guinea/economy</u>. ¹²²Ibid.

¹²³IMF. 2019. *World Economic Outlook Database*.

¹²⁴DFAT. 2019. *Papua New Guinea Fact Sheet*. Retrieved from: <u>https://dfat.gov.au/trade/resources/Documents/png.pdf</u> ¹²⁵Ibid.

¹²⁶Pacific Islands Forum. 2015. *Pacific Regional MDG Tracking Report*; DFAT. 2019. *Papua New Guinea Fact Sheet*. Retrieved from: <u>https://dfat.gov.au/trade/resources/Documents/png.pdf</u>

¹²⁷World Bank. N.D. *Papua New Guinea Overview*. Retrieved from: <u>https://www.worldbank.org/en/country/png/overview</u>. ¹²⁸Ibid.

The economy is presently dominated by a 'large labour-intensive agricultural sector and a capital-intensive and export-oriented mining and petroleum sector' (BUR 2019) which includes oil, natural gas, gold, silver and copper.¹²⁹ In the informal sector, the livelihoods of smallholders in rural areas are obtained through subsistence agriculture, namely growing vegetables, fruit, cocoa, sugar, copra, palm oil, betel nut, and rubber.¹³⁰ While extractive mining, petroleum, fisheries, forestry, cash-crop agriculture and manufacturing make up the formal sector.¹³¹

With PNG's dependence on agriculture and forestry, the economy is highly exposed to climate change. The risk of climate change impacting on economic development is also compounded by the vulnerability of critical infrastructure to climate impacts, including the water, sanitation, transportation, electricity, and health sectors¹³¹.

Out of 190 economies ranked for ease of doing business, PNG comes in at 108, according to World Bank data.¹³² PNG's ranking improved to its position of 108 in 2018 from 109 in 2017.

A 2018 review by BPNG and the International Finance Corporation (IFC) into the country's financial services identified challenges in accessing credit and financial products, especially for poorer families and women.¹³³ The report identified barriers such as lack of transparency of information on fees, rates and conditions, as well as gaps in financial consumer protection, resulting in unregulated lending to at-risk groups.¹³⁴ At present, approximately 37% of the population have a formal bank account. Table 1-4 sets out some of PNG's socio-economic statistics.

Indicator	2014	2015	2016	2017	2018
GDP (current US\$ billion)	US\$23,211	US\$21,723	US\$20,759	US\$22,278	US\$23,432
GDP, per capita (current US\$)	US\$2,921	US\$2,679	US\$2,509	US\$2,695	US\$2,730
GDP growth rate (%)	13.5%	9.5%	4.1%	3.5%	-0.8%
Population	7,946,731	8,107,775	8,271,760	8,438,029	8,606,316

Table 1-4: Basic socio-economic statistics of PNG 2014-2018135

¹²⁹CCDA. 2018. *Biennial Update Report*.

¹³GGGI, 2019. *Green Growth Potential Assessment. Papua New Guinea Country Report*. July 2019. Retrieved from: <u>https://gggi.org/</u> report/green-growth-potential-assessment-of-papua-new-guinea/.

¹³²World Bank. 2018. *Doing Business 2019: Training for Reform - Papua New Guinea*. Doing Business 2019. Washington, D.C.: World Bank Group. Retrieved from: <u>http://documents.worldbank.org/curated/en/561611541163590624/Doing-Business-2019-Training-for-Reform-Papua-New-Guinea</u>

¹³³Boeddu, G.I., Grady, R.C. 2018. *Papua New Guinea Financial Consumer Protection Diagnostic 2018 (English)*. Washington, D.C.: World Bank Group. Retrieved from: <u>http://documents.worldbank.org/curated/en/541911540390928999/Papua-New-Guinea-Financial-</u> <u>Consumer-Protection-Diagnostic-2018</u>

¹³⁴ Ibid.

¹³⁵Asian Development Bank. 2019. *Papua New Guinea and ADB*. <u>https://www.adb.org/countries/papua-new-guinea/economy;</u> World Bank. 2019. Papua New Guinea Data.

¹³⁰lbid.

1.7 Snapshot of national initiatives under the UNFCCC¹³⁶

PNG became a signatory to the UNFCCC in 1992, ratifying its commitment in 1993 to partner with the global community to address global warming and the adverse effects of climate change. The Kyoto Protocol was signed in 1997 and ratified in 2000, and in 2009 PNG supported the Copenhagen Accord by making a commitment to reducing its greenhouse gas (GHG) emissions by 50% by 2030 and by becoming carbon neutral by 2050.

Furthermore, PNG has been at the forefront of REDD+ negotiations globally since 2005 when PNG and Costa Rica introduced the concept of reduced emissions from deforestation to the UNFCCC.¹³⁷ GoPNG has supported international discussions on reducing emissions from deforestation and forest degradation, and the role of conservation, sustainable management of forests and enhancement of forest carbon stocks (REDD+) while building capacity and testing approaches to REDD+ domestically as part of a broader approach to climate change.

1.7.1 Nationally Determined Contribution (NDC)

PNG was one of the first countries in the world to produce its NDC. It was submitted to the UNFCCC in December 2015. The key priorities identified in the NDC are:

- 100% renewables by 2030
- Improvements in energy efficiency
- · Action to reduce emissions where possible in the transport and forestry sectors

Table 1-5: Summary of PNG's NDC initiatives

Summary of NDC initiatives

Adaptation:

- 1. Coastal flooding and sea-level rise
- 2. Inland flooding
- 3. Food insecurity caused by crop failures due to droughts and inland frosts
- 4. Cities and climate change
- 5. Climate-induced migration
- 6. Damage to coral reefs
- 7. Malaria and vector-borne diseases
- 8. Water and sanitation
- 9. Landslides

Mitigation:

- 1. Electricity supply
- 2. Energy efficiency
- 3. Transport
- 4. Forestry

¹³⁶There is no Technology Needs Assessment available for Papua New Guinea.

¹³⁷The concept of REDD+ has evolved over the decade since its introduction to the UNFCCC from a focus on only deforestation to a broader focus to include deforestation, forest degradation and the role of conservation, sustainable management of forests and enhancement of forest carbon stocks in developing countries.

The NDC details how PNG will commit itself to reducing its GHG emissions and identify, plan and report on key mitigation priority areas. The NDC focuses on the forestry and energy sectors, and has a target for 100% renewable energy generation by 2030.¹³⁸

The NDC outlines the following mitigation options, as shown in Table 1-5:

- Increased energy efficiency, including through the adoption of energy-efficient vehicles
- Reduction of emissions in the oil and gas sector
- Implementation of REDD+ activities under the UNFCCC
- Conservation, sustainable management of forest
- Enhancement of carbon stocks¹³⁹

The commitments under the NDC align with PNG's domestic mitigation policies outlined within the NCCDMP:

- Carbon Neutrality by 2050
- Land Use and Forestry Sector Emissions Abatement
- Green Economic Growth¹⁴⁰

At present, there is significant diversity in national strategies and actions for reducing emissions in each sector, with notable gaps between proposed climate targets, national and sector targets, as well as baseline information on existing progress towards targets.

In addition, while improving significantly over time, specific data related to the status of GHG emissions is also limited with many sectors (other than energy and forestry) having extremely limited information.

Within this context, the development of robust projections for future emissions or emissions reductions is currently not feasible. This limits the potential for providing a robust business case to central government agencies with regard to raising ambition for emission reductions and investing in a low-emission development pathway. It also means PNG is not well placed to showcase its efforts on the international stage. Project-based action within the renewables and forestry sectors (under REDD+) have, however, made some progress and can be utilised as a baseline for further development if consolidated within the context of the NDC revision process. These central targets are built on and have guided specific sector targets related to energy development and the roll-out of access to energy.

PNG is currently preparing a work plan for a revision of the NDC during 2020. Led by CCDA, and working in collaboration with stakeholders, the NDC Workplan shall seek high-level government endorsement of the revised NDC.

1.7.2 National Adaptation Plan (NAP)

PNG's signing of the Paris Agreement, complemented by the creation of both the Climate Change Management Act (CCMA) (2015) and the Paris Agreement Implementation Act, have propelled country-wide adaptation planning.

¹⁴⁰CCDA. 2018. Biennial Update Report.

¹³⁸CCDA. 2018. Biennial Update Report.

¹³⁹Ibid. Note: These actions are conditional to financial and technical assistance.

CCDA has the responsibility for determining adaptation and mitigation measures in PNG, which includes leading the development of the NAP. In undertaking this process, the CCDA created an Adaptation Technical Working Group (ATWG) in 2015¹⁴¹ with the role of advising and reviewing climate change adaption projects. The ATWG consists of selected government departments, representatives from Provincial Governments (PGs) and Local-Level Governments (LLGs), the private sector and civil society organisations (CSOs).¹⁴² The NAP process will enhance country-led planning and preparedness for climate change adaptation.

An overview of the progress PNG has made in developing the NAP is shown in Table 1-6.

Table 1-6: NAP timeline¹⁴³

Date	Process
March 2017	United States Agency for International Development (USAID) Climate Ready Project supports a rapid baseline assessment to outline PNG's capacity needs for readiness for climate finance, climate project/program preparation and polices, as well as the legal frameworks needed to support adaptation planning.
June–July 2017	Desktop review of existing documentation, policies and strategy, National Adaptation Plan-Global Support Project (NAP-GSP) supports a stocktaking activity to prepare for national adaptation planning.
August 2017	Stakeholder consultation complemented by a 2-day training workshop in Port Moresby. USAID's Climate Ready Project contributes to the consultation and designs programming activities for NAP implementation support for 2018.
August 2017 to September 2019	Supported by UNDP, CCDA prepares a NAP proposal for financing by the GCF under its Readiness and Preparatory Support option.
November 2019	GCF approves the proposal and support activities to commence.

The NAP proposal includes three main outcomes:

- Outcome 1: The coordination mechanism for multi-sectoral adaptation planning and implementation at different levels is strengthened
- Outcome 2: Climate change risks are integrated into key national and sectoral policies and NAP is formulated
- Outcome 3: Financing framework for climate change adaptation action for medium-to long-term is established

¹⁴¹UNDP. 2015. National Adaptation Plan progress in focus: Lessons from Papua New Guinea. Retrieved from: <u>https://www.undp.org/</u> <u>content/dam/undp/library/Climate%20and%20Disaster%20Resilience/Climate%20Change/Papua_New Guinea_NAP_country_briefing.</u> pdf

¹⁴¹UNDP. 2018. National Adaptation Plan process in focus: Lessons from Papua New Guinea. Retrieved from: <u>https://www.undp.org/</u> content/undp/en/home/librarypage/climate-and-disaster-resilience-/national-adaptation-plan-process-in-focus--lessons-from-Papua-New-Guinea.html

¹⁴³Based on information collated from: UNDP. 2018. National Adaptation Plan process in focus: Lessons from Papua New Guinea. Retrieved from: <u>https://www.undp.org/content/undp/en/home/librarypage/climate-and-disaster-resilience-/national-adaptation-plan-process-in-focus--lessons-from-Papua-New-Guinea.html</u>

Priorities identified in the NAP stakeholder process include:

- Strengthening climate information systems
- Development of monitoring and evaluation (M&E) systems to track the effectiveness of adaptation actions and budget allocations
- Financing strategy for NAP implementation

The following nine key adaptation priorities are listed in the NAP proposal, and also in Section 74 of the CCMA (2015): 1) Coastal flooding and sea-level rise, 2) Inland flooding, 3) Food insecurity caused by crop failures due to droughts and inland frosts, 4) Cities and climate change, 5) Climate change migration, 6) Damage to coral reefs, 7) Malaria and vector-borne diseases, 8) Water and sanitation, 9) Landslides.¹⁴⁴

1.7.3 Climate Change Management Act (CCMA) (2015)

The Paris Agreement sets the stage for action with a series of obligations regarding mitigation and adaptation, and the recent Katowice climate package provided governance tools for the implementation of climate mitigation and adaptation actions across countries.

PNG has adopted provisions of the Paris Agreement through the CCMA (2015) and the *United Nations Paris* Agreement Implementation Act (2016).¹⁴⁵ The CCMA (2015) is currently under review. The outcome of this review will be a revised CCMA, which will enable strengthened management and coordination of climate change finance.

1.7.4 Nationally Appropriate Mitigation Actions (NAMA)

Prior to the establishment of the NAMA Facility in 2012, PNG was one of the first countries to submit a 'Preliminary and Conditional Inscription of Nationally Appropriate Mitigation Actions and Adaptations Investments' to the UNFCCC in 2010. Through this inscription, PNG summarises that, subject to conditions, the government sought to:

- Increase GDP per capita more than three-fold by 2030
- Decrease GHG emissions by at least 50% before 2030, while becoming carbon neutral by 2050
- Increase adaptation investments per annum by US\$80-90 million to reduce anticipated losses due to the impact of climate change by US\$230-250 million

GoPNG plans to review its NAMA and adaptation investment inscription goals through the NDC Implementation Roadmap, which is currently under development. PNG views the NAMA as an implementation modality to help achieve the country's mitigation objectives outlined in the NDC. As a requirement of the NAMA Facility that entities refer specifically to the country's NDC context, PNG plans to submit its first NAMA Support Project (NSP) Outline to the NAMA Facility's 7th Call for Submissions in March 2020. PNG plans to outline its intent to mitigate greenhouse gas emissions in a manner commensurate with country capacity and in line with national development goals including the Medium Term Development Plan (MTDP) III.

¹⁴⁴UNDP. 2018. National Adaptation Plan process in focus: Lessons from Papua New Guinea. Retrieved from: <u>https://www.undp.org/content/undp/en/home/librarypage/climate-and-disaster-resilience-/national-adaptation-plan-process-in-focus--lessons-from-Papua-New-Guinea.html</u>; These nine priorities also align with PNG's NDC (2015) and both the Initial (2010) and Second National Communication to the UNFCCC (2014).
¹⁴⁵CCDA. 2018. Biennial Update Report.

1.7.5 Biennial Update Report (BUR)

PNG's first BUR was released in April 2019. The BUR provides an overview of the country's' national circumstances relevant to climate change, and summarises emissions by source and the removal of carbon sinks for the years from 2000 through to 2015.¹⁴⁶ The BUR lays out the latest knowledge for activities relating to mitigation action; identifies known gaps and constraints; acknowledges support so far received for climate change activities, as well as identifies the anticipated financial, technical and capacity needs.¹⁴⁷ The BUR further summarises a description of the climate action support that is required, relevant institutional arrangements, and PNG's measurement, reporting and verification (MRV) measures.¹⁴⁸ The BUR includes recent climate-related data and is an update to the National Communication.

The BUR states total GHG emissions in 2015 were 15,193 Gigagram (Gg) CO_2 eq with Land Use, Land Use Change and Forestry (LULUCF), and 13,477 Gg CO_2 eq without LULUCF. For the year 2000, emissions were reported as -14,179 Gg CO_2 eq with LULUCF and 7,475 Gg CO_2 eq without LULUCF¹⁴⁹, an 80% increase of emissions without LULUCF since 2015. Effectively, PNG went from a net sink in 2000 to a net source in 2015.¹⁵⁰ Table 1–7 summarises PNG's emissions by sector.

Sector	GHG emissions
Energy	Emissions from the Energy Sector amounted to 11,806.28 Gg CO $_2$ -eq in 2015—an increase of 5,532.37 Gg CO $_2$ -eq when compared to 2000. ¹⁵¹
Industrial Process and Product Use (IPPU)	Emissions from the Industrial Process and Product Use amounted to 35.29 Gg CO $_2^-$ eq in 2015, an increase of 1.38 Gg CO $_2^-$ eq when compared to 2000.152
Agriculture	Emissions from the Agriculture Sector amounted to 796 Gg CO ₂ -eq in 2015, an increase of 114 Gg CO ₂ -eq (16.72%) when compared with the year 2000. ¹⁵³
Forestry and Land-Use	Forestry is both a 'source and a sink'. The net removals from the LULUCF Sector amounted to 1,716.46 Gg CO_2 -eq in 2015 compared to 21,635.94 Gg CO_2 -eq in 2000 which is a total decrease of removals amounting to 19,919.48 Gg CO_2 -eq. ¹⁵⁴
Waste	Emissions from the Waste Sector amounted to 872.5 Gg CO $_2$ -eq in 2015, an increase of 354 Gg CO $_2$ -eq when compared to 2000.155
Total	The total net greenhouse gas emissions in 2015 amounted to 15,193 Gg CO_2 -eq compared to the emissions in 2000 which were -14,179 Gg CO_2 -eq.

Table 1-7: PNG's emissions by sector

GHG emissions trends from 2000-2015 and removals by sector are detailed in Table 1-8.

¹⁴⁶Ibid.
 ¹⁴⁷Ibid.
 ¹⁴⁸Ibid.
 ¹⁴⁹Ibid.
 ¹⁵⁰Ibid.
 ¹⁵¹Ibid.
 ¹⁵²Ibid.
 ¹⁵³Ibid.
 ¹⁵⁴Ibid.
 ¹⁵⁵Ibid.

	unit	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009
Energy	Gg CO _{2 eq}	6, 536	6,536	6,342	6,631	6,603	,6826	6,984	6,185	6,385	6,367
IPPU	Gg CO _{2 eq}	1	1	1	2	3	3	3	3	3	3
Agriculture	Gg CO _{2 eq}	682	681	676	698	764	695	725	733	744	796
LULUCF	Gg CO _{2 eq}	-21, 654	-21,508	-13,064	-16,382	-10,583	-18,015	-12,538	-99,84	-8,518	-4,633
Waste	Gg CO _{2 eq}	518	539	560	586	609	630	653	676	701	724
Total with LULUCF	Gg CO _{2 eq}	-14, 179	-13,751	-5,485	-5,766	-2,604	-,9862	-4,173	-2,386	-686	3,256
Total without LULUCF	Gg CO _{2 eq}	7, 475	7,757	75,779	7,916	7,979	8,154	8,365	7,958	7,833	7,890

Table 1-8: Trend of GHG emissions and removals from 2000-2015¹⁵⁶

	unit	2010	2011	2012	2013	2014	2015
Energy	Gg CO _{2 eq}	5,701	5,837	5,929	6,296	7,507	11,806
IPPU	Gg CO _{2 eq}	3	3	3	2	2	2
Agriculture	Gg CO _{2 eq}	788	788	791	812	787	796
LULUCF	Gg CO _{2 eq}	-255	2,117	-2,398	3,898	817	1,716
Waste	Gg CO _{2 eq}	748	772	798	822	847	872
Total with LULUCF	Gg CO _{2 eq}	6,984	9,499	5,124	11,830	9,961	15,193
Total without LULUCF	Gg CO _{2 eq}	7,239	7,382	7,521	7,932	9,143	13,477

1.7.6 National Communication to the UNFCCC

The National Communication (NC) report, which is submitted at four-year intervals, as required under the UNFCCC,¹⁵⁷ summarises and interprets climate data collected from a number of development sectors.

PNG produced its Second National Communication in April 2014 and submitted it to the UNFCCC in December 2015.¹⁵⁸ In accordance with all Non-Annex I Parties, PNG reports on greenhouse gas emissions from carbon dioxide, methane, nitrous oxide and precursor gases; provides information on programmes that contain measures that would facilitate climate change adaptation; and provides information that would contribute to systematic observation and research, actions relating to climate change education and capacity building.¹⁵⁹

¹⁵⁸GoPNG. 2014. UNFCCC PNG Second National Communication.

¹⁵⁹UNFCCC. 2009. UNFCCC Resource Guide: For Preparing the National Communications Of Non-Annex I Parties. Retrieved from: <u>https://unfccc.int/resource/docs/publications/09_resource_guide1.pdf</u>

In collating and interpreting data for the greenhouse gas inventory (GHGI), information was collected from the energy, industrial processes, agriculture, land-use change and forestry, and waste sectors. The GHG inventory for the Second National Communication was collated from 12 provinces and is summarised as follows:

Energy: Included emissions from fossil fuel combustion and liquified natural gas. These two forms accounted for 80% of carbon dioxide emissions for the Energy Sector.¹⁶⁰ Total GHG emissions from energy combustion equated to approximately 2,436 Gg CO₂ equivalent.¹⁶¹

Industry: Included emissions from cement production, metal production, paper production, food and drink production, limestone and dolomite. Total GHG emissions from industry equalled approximately 615 Gg CO_2 equivalent, mostly as non-methane volatile organic compounds (NMVOCs), however, it is estimated that data collated equated to only 50% of total data.¹⁶²

Agriculture: Included emissions from domestic livestock, sugar cane burning, and emissions and leaching from agricultural soils. Total GHG emissions from agriculture equated to approximately 2,045 Gg CO_2 equivalent, 90% of which results from the burning of agriculture residues and savannahs.¹⁶³

LULUCF: Included emissions and removals from forest plantations, non-forest trees, logging, fuelwood consumption, and other wood use indicated a significant carbon sink. Total GHG emissions from land-use change and forestry equated to approximately 13 Tg CO_2 equivalent, while removals equated to approximately 192 Tg. It is important to note, however, that the Intergovernmental Panel on Climate Change (IPCC) categories do not recognise all of PNG's national forest categories – such as Upper and Lower Montane Forests.¹⁶⁴

Waste: Included methane emissions from solid waste disposal sites equating to 2.9 Gg; and commercial wastewater and sludge equating to 6.47 Gg. Data was, however, limited, as wastewater management is in its infancy in PNG and no formal waste management systems exist.¹⁶⁵

The Second National Communication outlines actions for promoting renewable energy transition through hydro, wind, solar and biofuel.¹⁶⁶ It also outlines actions for reducing agriculture and forestry emissions through implementing existing REDD+ mechanisms. The Second National Communication aligns with PNG's national development priorities, as identified in the MTDP III and Vision 2050. The Third National Communication is currently under development.

1.8 National policies and strategies of PNG

Section 1.8 summarises the key national policies and strategies of PNG. Further details of PNG's development, economic and environmental policies and strategies (including the National REDD+ Strategy) are provided in Annex I. GCF investments must align with these national strategies, policies, frameworks and priorities.

¹⁶⁰GoPNG. 2014. UNFCCC PNG Second National Communication.

¹⁶GoPNG. 2014. UNFCCC PNG Second National Communication. Based on 2000 data available

- ¹⁶²Ibid.
- ¹⁶³ Ibid.
- ¹⁶⁴Ibid.

166 GoPNG. 2015. PNG's Intended Nationally Determined Contributions to the United Nations Framework Convention on Climate Change.

¹⁶⁵Ibid.
1.8.1 Papua New Guinea Vision 2050

PNG's Vision 2050, a long-term policy, was launched in October of 2009. Vision 2050 articulated a national vision for sustainable development which aimed at ensuring the engagement of the country's' local communities. ¹⁶⁷ The Vision includes 'Environment Sustainability and Climate Change' as one of the seven pillars for socioeconomic growth.¹⁶⁸

Vision 2050 is underpinned by seven strategic focus areas, referred to as 'pillars':

- 1. Human Capital Development, Gender, Youth and People Empowerment
- 2. Wealth Creation
- 3. Institutional Development and Service Delivery
- 4. Security and International Relations
- 5. Environmental Sustainability and Climate Change
- 6. Spiritual, Cultural and Community Development
- 7. Responsible Sustainable Development
- 8. Strategic Planning, Integration and Control

PNG set out forward-looking targets for reductions in emissions through Vision 2050. The subsequent Development Strategic Plan (DSP 2010-2030) focuses less on emissions reductions and more on action within key sectors, specifically with an emphasis on the energy sector moving towards deploying more renewable sources.

1.8.2 Papua New Guinea Development Strategic Plan 2010-2030

The approach undertaken for Vision 2050 was subsequently utilised in developing PNG's Development Strategic Plan 2010-2030 (PNGDSP) which outlined frameworks, targets and strategies over five-year intervals. The PNGDSP aims to have 70% of PNG's population with access to improved services by 2030.

1.8.3 Medium Term Development Plan (MTDP) III (2018-2022)

The MTDP is responsible for implementing the frameworks, targets and strategies identified within the PNGDSP. The MTDP III (2018-2022), now in its third iteration, fine-tuned development priorities with an increased emphasis on sustainability and responsible approaches regarding development, as well as taking steps to address climate change and making a concerted effort toward sustainable resource management.¹⁶⁹ MTDP III, moreover, states that the energy sector should shift to renewable energy sources, and suggests PNG should reduce emissions to 12 MtCO₂e per annum by 2022 (an indicative reduction of 2mtCO₂e based on MDTP data).

¹⁶⁸CCDA. 2018. Biennial Update Report.

¹⁶⁷GoPNG. 2017. Papua New Guinea National REDD+ Strategy 2017 – 2027.

¹⁶⁹GoPNG. 2017. Papua New Guinea National REDD+ Strategy 2017 – 2027.

The purpose of the MTDP III is to provide direction to all levels of government, the private sector, development partners and stakeholders in identifying priority areas for sector investment through the following eight Key Result Areas (KRAs):

- 1. Increased Revenue and Wealth Creation
- 2. Quality Infrastructure
- 3. Sustainable Social Development
- 4. Improved Law, Justice and National Security
- 5. Improved Service Delivery
- 6. Improved Governance
- 7. Responsible Sustainable Development
- 8. Sustainable Development

Each KRA contains twenty-five goals which focus on addressing the five development results identified under the Alotau Accord II. Achieving the MTDP III KRA goals and targets would place PNG on a pathway to achieving the Vision 2050 Goal and becoming an Upper-Middle Income Country by 2022.

The implementation of sub-national level initiatives is crucial for achieving the goals of MTDP III and its KRAs. Provinces are key players in the ownership, implementation and subsequent outcomes of projects. To monitor progress on projects and capital investments, sub-national governments are required to submit periodic performance reviews and reports on their identified MTDP III priorities.¹⁷¹

The MTDP reaches beyond outlining key targets and indicators by also identifying priorities and programs to enable the successful implementation of the Plan.¹⁷² GCF investments must align with the priorities identified in MTDP III 2018-2022. There is a notable gap, however, in climate change-related priorities identified thus far across the KRAs in the country's MTDP. The MTDP IIII includes adaptation and mitigation measures and has a focus on addressing potential climate impacts on the country's economic development.

Moreover, the MTDP III (2018) is directly linked to an investment plan, which is different from the approach taken by previous MTDP's.¹⁷³ The MTDP III is linked to the National Budget through an Annual Budget Framework Paper. PNG's National Planning Framework (NPF), National Service Delivery Framework (NSDF), and National Monitoring and Evaluation Framework (NMEF) were established under the Planning and Monitoring Responsibility Act 2016. It is this Act that mandates the MTDP as the national development planning framework for PNG.¹⁷⁴ Opportunities on how GCF resources could contribute to the priorities of the MTDP III are outlined in Section 3.

The MTDP III identifies that approximately 80 million Papua New Guinea Kina (PGK) will be needed for action on climate change priorities and a further PGK 175 million required for disaster risk management over the five-year

¹⁷¹Ibid.

¹⁷²Pacific Islands Forum Secretariat, DNPM, CCDA. 2019. Options for Strengthening Climate Finance Coordination and Accessibility in Papua New Guinea.

¹⁷³Ibid.

¹⁷⁴GoPNG. 2018. Medium Term Development Plan III 2018 – 2022 Volume One.

period between 2018 and 2022.¹⁷⁵ This illustrates the financial resources that will be required by PNG in order to respond to climate change impacts. ¹⁷⁶

1.8.4 National Climate Compatible Development Management Policy (NCCDMP)

The Office of Climate Change and Environmental Sustainability (OCCES) was abolished by Cabinet in 2009 and was replaced by the Office of Climate Change and Development (OCCD). GoPNG established the OCCD in 2010 and the NCCDMP in 2014.¹⁷⁷ The CCMA (2015) was endorsed in 2015, and the OCCD formally became an authority (CCDA) in 2016.¹⁷⁸

1.8.5 National Service Delivery Framework

The NSDF sets out the minimum levels of services that GoPNG will provide at each service delivery centre. This is inclusive of regional, provincial, local government, ward zones and ward headquarters. The NSDF endorses the existing frameworks and policies which advocate the Frontline Service Delivery – People First or People Centric Approach through service delivery charters, service delivery partnership agreements and service delivery function determination.¹⁷⁹ The National Planning Framework is outlined in Figure 1-2.

Figure 1-2: National Planning Framework



National Planning Framework

¹⁷⁵Pacific Islands Forum Secretariat, DNPM, CCDA. 2019. Options for Strengthening Climate Finance Coordination and Accessibility in Papua New Guinea.

¹⁷⁷CCDA. 2018. Biennial Update Report.

¹⁷⁸CCDA. N.D. CCDA Profile. Retrieved from: <u>http://www.ccda.gov.pg/about.html</u>

¹⁷⁹GoPNG. 2018. Medium Term Development Plan III 2018 – 2022 Volume One.

¹⁷⁶Ibid.

1.8.6 Alotau Accord II

The Alotau Accord II is a political, strategic plan to guide the government through the five-year term of the new Parliament.

The Alotau Accord priorities are:

- 1. Increase Revenue
- 2. Increase Exports
- 3. Reduce Imports
- 4. Create Wealth
- 5. Delivery Quality Services

1.8.7 National Strategy for Responsible Sustainable Development (StaRS)

In 2012, the National Strategy on Responsible Sustainable Development (StaRS) was developed.¹⁸⁰ StaRS is considered a policy shift in long-term planning and provides a framework for the government to:

- 1. Establish a responsible sustainable development paradigm
- 2. Attain middle-income country status by 2030
- 3. Become one of the top 50 countries on the Human Development Index by 2050¹⁸¹

Consistent with the UN Sustainable Development Goals (SDGs) agenda, StaRS takes a green growth economic approach to promoting a sustainable economy.¹⁸²

1.8.8 Low-carbon climate-resilient development priorities

StaRS and the MTDP have mainstreamed green growth into long-term planning, which provided the impetus for the adoption of the following policy and legislative frameworks (these are summarised in Annex I):¹⁸³

- Conservation and Environment Protection Authority Act
- Protected Areas Policy
- CCMA (2015)
- Paris Agreement Implementation Act (2016)
- National REDD Strategy
- UNFCCC BUR

¹⁸⁰GoPNG. 2017. Papua New Guinea National REDD+ Strategy 2017 – 2027.
 ¹⁸¹CCDA. 2018. Biennial Update Report.

¹⁸²GoPNG, 2018. Medium Term Development Plan III 2018 – 2022 Volume One. ¹⁸³GoPNG, 2017. Papua New Guinea National REDD+ Strategy 2017 – 2027. GoPNG works with a broad range of stakeholders to implement resilient development priorities through:

- Vision 2050 Pillar 5: Environment Sustainability and Climate Change
- PGDSP 2010-2030 Pillar 6.7: Climate Change Under Cross-cutting Policies
- MTDP III 2018-2022 KRA 7: Responsible Sustainable Development, Goal 7.2: Adapt to the domestic impacts of climate change and contribute to global efforts to abate GHG emissions
- Revised Development Cooperation Policy 2018-2011 Section 7.4: Climate Change and Disasters
- StaRS
- Provincial/District Development Plans¹⁸⁴

1.8.9 REDD+ Strategy

The National REDD+ Strategy was endorsed by the GoPNG in May 2017 and provides a framework of actions to be carried out by government, communities and the private sector to help manage the country's forests while also helping to develop rural economies. It targets improvements in legislation and capacity across government sectors including climate change, environment, forestry, and lands as well as partnerships with the private sector to help strengthen economic activities and increase opportunities for rural communities. As part of this, the Strategy will support improvements in the management of timber concessions, increase areas of plantations, encourage downstream timber processing as well as strengthen land-use and development planning.

1.8.10 Clean energy policies and strategies

The MTDP III recognises the importance of reliable, renewable, and affordable energy; and the role that energy plays in powering PNG's economic development. Clean and reliable energy sources are sought after in order to enable acceleration in this area.

GoPNG has a target of 70% electricity access for households and businesses by 2030 within the PNGDSP, and a target for 100% renewable energy generation by 2030 in the NDC (2015).¹⁸⁵

Achieving these targets will require utilising the country's clean energy generation opportunities, including through harnessing hydro, solar, wind, biomass and geothermal power resources, and reducing the county's reliance on diesel power generation.

¹⁸⁴Pacific Islands Forum Secretariat, DNPM, CCDA. 2019. Options for Strengthening Climate Finance Coordination and Accessibility in Papua New Guinea.

¹⁸⁵GoPNG, 2015. Papua New Guinea Intended Nationally Determined Contribution under the United Nations Framework Convention on Climate Change.

1.8.11 Gender policy

The National Council of Women, operational under the Department of Community Development and Religion, aligns its National Policy for Women and Gender Equality¹⁸⁶ with the policies, legislations, and projects and programs of the MTDP III, Vision 2050 and StaRS.¹⁸⁷ The Policy seeks positive direction in advancing gender mainstreaming and equality in PNG.¹⁸⁸ Women are underrepresented in climate change, sustainability and natural resource leadership positions. Natural resource use remains a gendered practice as women are often culturally restricted from land tenure with ownership based on social and cultural gender bias.¹⁸⁹

As GCF Funding Proposals require robust gender and social inclusion analysis, assessment and action planning, ensuing PNG has the capacity to secure gendering mainstreaming, ownership and transformation change in climate change initiatives is paramount.

1.9 National and sub-national planning processes

Different levels of government undertake development planning in PNG. Various sector agencies at the national level take the lead in planning and guiding respective sector development and growth.¹⁹⁰ Plans at the sub-national level are required to align with the national plans. Sub-national plans are then represented at PGs and LLGs. As outlined in the MTDP III (2018-2022), planning at the sub-national levels of government is mandatory. This was established following the passing of the Organic Law on Provincial and Local Level Governments (OLPLLG) in 1985.¹⁹¹

The Planning and Monitoring Responsibility Act 2016¹⁹² initiated the creation of the NSDF in order to guide service delivery.¹⁹³ A spatial planning approach is used to deliver these services to different areas of the country. This is based on environmental, social, and economic conditions, as well as population size. The NSDF implements the MTDP through the programmes, projects and service delivery plans which are detailed by provincial and LLGs. This falls under the mandate of Section 38 of the Local Level Government Administration Act 1997 and Section 16 of the OLPLLG.¹⁹⁴

1.10 Overview of climate finance in PNG

Climate finance refers to financing channelled by national, regional, and international entities for climate change mitigation and adaptation. For PNG, climate finance is crucial and will support the implementation of the current MTDP III, to which this Country Programme is aligned.

¹⁸⁶Department of Community Development and Religion. 2011. National Policy for Women and Gender Equality 2011–2015. Retrieved from: <u>http://www.dfcd.gov.pg/images/pdf_files/National-Policy-for-Women--Gender-Equality.pdf</u>

¹⁸⁷Department of Community Development and Religion. N.D. Government Policies. Retrieved from: <u>http://www.dfcd.gov.pg/index.php/</u><u>acts-legislations/youth-act</u>.

¹⁸⁸Department of Community Development and Religion. 2011. National Policy for Women and Gender Equality 2011-2015. Retrieved from: <u>http://www.dfcd.gov.pg/images/pdf_files/National-Policy-for-Women--Gender-Equality.pdf</u>

¹⁸⁹UNDP 2016. Situation Analysis and Recommendations for Improving Gender Inclusiveness and Participation in Papua New Guinea's National REDD+ Strategy and Policies. Retrieved from: <u>https://www.undp.org/content/dam/papua_new_guinea/FCPF/ROAR%20</u> <u>REports/Gender%20assessment%20report.pdf.</u>

¹⁹⁰GoPNG. 2018. Medium Term Development Plan III 2018 – 2022 Volume One. ¹⁹¹Ibid.

¹⁹²Papua New Guinea Planning and Monitoring Responsibility Act (2016).

¹⁹³GoPNG, 2018. Medium Term Development Plan III 2018 – 2022 Volume One. ¹⁹⁴Ibid.

Over the past nine years, Pacific Island Countries (PICs) have to date been allocated a total of US\$1.111 billion in international climate finance.¹⁹⁵ Of this total, 48% (US\$538.56 million) came from bilateral sources and 52% (US\$572.94 million) came from multilateral sources.¹⁹⁶ The majority of multilateral funding came from the GCF with US\$359 million for project funding allocated across eleven PICs and US\$5.5 million allocated for readiness support in ten PICs. The remaining funds came from the Adaptation Fund (AF), Global Environment Facility (GEF) – Least Developed Countries Fund (LDCF), Special Climate Change Fund (SCCF) and GEF Trust Fund, and the Climate Investment Funds (CIFs). Most of these funds were allocated as grants and focused largely on adaptation measures. To date, the largest recipients of multilateral climate finance within the Pacific have been Samoa, Solomon Islands, Vanuatu, and PNG.¹⁹⁷

At present, PNG is implementing a GCF readiness grant worth US\$677,427 with the Global Green Growth Institute (GGGI) until June 2020. In addition, AEs are developing GCF Concept Notes and Funding Proposals – these are listed in Section 4 of this Country Programme.

PNG has also accessed climate finance funding from other multilateral climate funds including:

- AF (US\$6.53 million grant since 2011)
- Climate Investment Funds (US\$6.53 million grant since 2013)
- GEF (US\$314.73 million for 50 projects since 1991)
- Global Climate Change Alliance (GCCA) worth (€5.8 million for REDD)
- Forest Carbon Partnership Facility (FCPF) (US\$3.6 million)
- United Nations Reducing Emissions from Deforestation and Forest Degradation (UNREDD) (worth US\$6.5 million)
- IFAD Adaptation for Smallholder Agriculture Programme (IFAD ASAP) (US\$55 million)
- Organization of the Petroleum Exporting Countries (OPEC) Fund for International Development (US\$24.7 million for five projects)
- Asian Development Fund (ADF) (US\$34.5 million)¹⁹⁸

PNG also has bilateral arrangements for climate finance with the Australian Department of Foreign Affairs and Trade (DFAT), the New Zealand Ministry of Foreign Affairs and Trade (MFAT), the European Union (EU), USAID, Japan International Cooperation Agency (JICA), China, the German International Climate Initiative (IKI), the United Kingdom International Climate Fund (ICF), the German Ministry for Economic Cooperation and Development (BMZ), the Deutsche Gesellschaft für Internationale Zusammenarbeit (GIZ), the International Climate (ICCAI), Norway's International Climate Forest Initiative (NICFI), FAO, Korea International Cooperation Agency (KOICA), and the Australian International Forest Carbon Initiative (IFCI).¹⁹⁹

¹⁹⁸Ibid.

¹⁹⁹lbid.

¹⁹⁵Data drawn from PIFS and UNDP led national climate finance assessments in ten FICs: Stockholm Environment Institute Report in 2017, Lowy Institute Report 2018, Climate Funds Update 2018, Green Climate Fund, Adaptation Fund, Global Environment Facility, Climate Investment Fund; Pacific Islands Forum Secretariat, DNPM, CCDA. 2019. Options for Strengthening Climate Finance Coordination and Accessibility in Papua New Guinea.

^{1%}Australian Department of Foreign Affairs and Trade, European Union's Global Climate Change Alliance, German International Climate Initiative, United Kingdom's International Climate Fund, German Ministry for Economic Cooperation and Development, Deutsche Gesellschaft für Internationale Zusammenarbeit GmbH, Australia's International Climate Change Adaptation Initiative, Climate and Development Knowledge Network supported by United Kingdom and the Dutch Government, Japan International Cooperation Agency, French Agence Française de Development, USAID, New Zealand Ministry of Foreign Affairs and Trade, Norway International Climate Forest Initiative, India, United Arab Emirates, China, ROC/Taiwan.

¹⁹⁷Pacific Islands Forum Secretariat, DNPM, CCDA. 2019. Options for Strengthening Climate Finance Coordination and Accessibility in Papua New Guinea.

1.10.1 Options for Strengthening Climate Finance Coordination and Accessibility in PNG

The Options for Strengthening Climate Finance Coordination and Accessibility in Papua New Guinea Paper, jointly prepared by CCDA, DNPM and PIFS and published in February 2019, focused on strengthening climate change finance coordination and information sharing at the national level.²⁰⁰

This assessment noted that climate financing should be applied in an incremental investment manner, enabling climate-proofing and/or retrofitting of the country's national sustainable development priorities, while also leveraging PNG's capital investment programmes, through the Public Investment Program (PIP).

A key message of this paper was to encourage national ownership and inclusive participation of key stakeholders (CSOs, private sector, training institutions, and donors/development partners) to enable an effective and coordinated response to climate change – Section 2 of this Country Programme incorporates these lessons.²⁰¹

This paper also identified a number of other challenges pertaining to the management and coordination of climate change finance in PNG, including:

- Lack of a systematic or coordinated approach to access international climate change funding.
- Lack of information sharing on funding opportunities between technical and central government agencies, and between government agencies and relevant stakeholders.
- Limited understanding of climate finance and processes by central government agencies.
- Development partners providing climate change financing in a manner that circumvents the government appraisal and budget planning processes.
- Limited technical capacity in CCDA to meaningfully engage and manoeuvre the reporting requirements of different global climate funds.
- Difficulties in operationalising the CCMA (2015) and ensuring coherence with the Planning Act (2014), and the Public Finances (Management) Act (1995) (PFMA).²⁰²

As a result of the Options Paper, CCDA has initiated a number of actions over the past year to address and ameliorate these challenges. The issues that were identified in the Options Paper included the need for a climate finance coordination mechanism and suggestions of revenue generation options.

The actions taken by GoPNG over the past year in response to the Options Paper recommendations have included the reconstitution of the CCDA Board, review of the CCMA, and the development of a revenue generation options paper. Further, a determination of fees and charges for CCDA (carbon levies, nitrogen synthetic fertilizer, and green fees) has been issued by the Minister for Finance in the National Gazette, May 2020. This has facilitated the operationalisation of the CCMA (2015) and improved coherence between the Act and the PFMA 2015.

²⁰⁰Ibid. The Options Paper stipulates that opportunities and lessons learnt may be replicated to disaster risk financing and at both a sub-national and community.

²⁰¹Pacific Islands Forum Secretariat, DNPM, CCDA. 2019. Options for Strengthening Climate Finance Coordination and Accessibility in Papua New Guinea.

Further institutional strengthening measures that have been implemented recently include the development of the GCF no-objection procedure; building stakeholder understanding of national climate finance processes through a series of consultations held throughout 2019 and 2020; and the use of GCF readiness finance to build technical capacity, particularly in CCDA.

1.10.2 Private sector financing through carbon trading

The Carbon Market Roundtable discussed the challenges and opportunities to leverage private sector resources through the Paris Agreement, including i) Article 6.2 on bilateral and voluntary agreements to trade carbon units; ii) Act 6.4 on Sustainable Development Mechanism (SDM) to replace the Clean Development Mechanism (CDM); and iii) Act 6.8 on the development of a framework for cooperation between PNG and other countries to reduce emissions outside market mechanisms, such as development aid.

1.10.3 Annual Development Programme

In accordance with the process set by DNPM, line agencies are requested to submit project proposals by respective agencies to DNPM in January of the financial year. The projects submitted must be in line to the MTDP III Volume Two Implementation and Investment Plan of each sector and respond to sector plans and provincial plans.²⁰³ For example, projects relating to energy must be submitted by the Department of Petroleum and Energy (DPE), and projects relating to forestry must be submitted by the Papua New Guinea Forest Authority (PNGFA). CCDA will submit projects relating to policies and legislations and GHG emission inventory, as CCDA is not an implementing agency but responsible for coordinating the climate change agenda. Climate finance can be utilised as a source of revenue to address the financing gap of the MTDP III. The MTDP III currently has a resource gap of about PNG Kina 11.2 billion.

1.10.4 Public Investment Programme

Projects can only get support for co-financing if they are aligned to the PIP Guidelines 2017, which are administered by DNPM. At present, the majority of the GCF projects under development are not in harmony with the PIP Guidelines, and therefore face challenges in receiving co-financing commitments from the government.²⁰⁴

²⁰⁴Pacific Islands Forum Secretariat, DNPM, CCDA. 2019. Options for Strengthening Climate Finance Coordination and Accessibility in Papua New Guinea.

²⁰³GoPNG. 2018. Medium Term Development Plan III 2018 – 2022 Volume One.

http://www.planning.gov.pg/images/dnpm/pdf/latest_pub/MTDP%20III%20Book%202_Final%20Proof(Web)_compressed.pdf

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1.11.1 Lessons learned, success factors, gaps and opportunities

The barriers, gaps, opportunities, potential interventions and the potential proposals for scaling up climate solutions in PNG are summarised below in Table 1-9.

Table 1-9: Barriers, gaps, opportunities, potential interventions for scaling up climate solutions in PNG

Potential interventions	adiness finance will be used to develop adaptation- ed policies through the implementation of the: ancing an Enhanced NAP Plan Process in PNG - The has recently approved approximately US\$18 million ne development of the PNG NAP, which will commence ementation in 2020 with UNDP as the delivery partner". dection 4.6, readiness finance is also requested for try programming and identifying opportunities to ogthen the engagement of the private sector. • GCF project finance to mainstream climate change alicies; design, develop and reform policies; and ement, enforce and monitor policies. Proposals in this rity Programme with a strong policy focus are: Proposal roposal 2.2, Proposal 2.4, Proposal 2.5, and Proposal 3.3.	adiness Proposal: Establishment of REDD+ registry and ing mechanism in PNG. veloping a conducive regulatory environment to raise tet finance, including through overcoming market ers. angthening energy efficiency, including reviewing of the ling code and development of minimum standards. Aelopment of regulations to remove cost/regulatory ens for remote early warning systems. posals with a strong regulatory focus are Proposal 2.4, osal 2.5 and Proposal 3.3.
Opportunities	 Use GCF Readiness to update outdated policies, Recacording to the priorities of the Climate Finance relation Roadmap. Use GCF project finance to design, develop and GCF reform policies. Opportunity to translate policies into tangible imple actions with strong MRV systems. Use GCF or the court of the Climate finance of the court of the strong MRV systems. Use GCF of the Climate finance of the Climate finance of the court of the strong MRV systems. Use GCF of the Climate finance of the Climate	 Use regulatory levers to achieve adaptation and Recomplication outcomes. Create investor confidence. Compliment top-down regulatory reform with a prive bottom-up private-sector approach. Develop land use plans and map out customary build build boundaries and areas. Develop land use plans. Develop land use plans and map out customary build build boundaries and areas. Develop land use plans and map out customary build build boundaries and areas.
Gaps	 Some existing policies require reform and updating. Lack of alignment between the implementation of development and climate policies. Limited resources and capacity to convert good policy into tangible and pragmatic actions on the ground. M&E of development and climate policies remains a challenge. 	 Lack of resources and capacity to formulate coherent and transparent regulations and standards. Uneven playing field for investors to build investor confidence. Limited or non-existent enforcement. Lack of resources and capacity to enforce regulations and standards. Lack of clear land-use plans and mapping of customary land boundary for land conflict resolution.
Barriers	Policy barriers	Regulatory barriers

Institutional barriers	 Gaps stem from the lack of sufficient capacity (both in quantity and in quality) at all levels of government, in research, and with the relevant stakeholders. Lack of coordination on climate change action and financing. High institutional memory loss in GoPNG and CSOs due to high staff turnover, transfer and promotion of staff. Lack of absorptive capacity and systems to retain and deliver sustainable and long- term impact. No DAE(s) for PNG to access funds directly with the GCF. 	 Clarify the roles and responsibilities of stakeholders, and establish an effective cross-sectoral coordination mechanism. Capacity strengthening, not only in terms of knowledge, but also instrumentation for research, monitoring and reporting on climate change, is also required. The need to accredit a DAE for PNG. Complimenting top-down with bottom-up approach in integrated project design and meaningful engagement with CSOs/NGOs. 	 The establishment of the no-objection procedure and the National Climate Change Board will strengthen coordination and management of climate finance. Access to international climate funds is crucial to achieving progress. This will be achieved by enhancing PNG's ability to seek accreditation and direct access to the GCF. GCF readiness will be used to strengthen institutions, including through supporting PNG to achieve GCF direct access. GCF project finance could also be used to overcome institutional barriers. The following proposals in this Country Programme have a particular focus on institutional strengthening, including building the capacity of key national stakeholders: Proposal 3.1, Proposal 2.1, Proposal 2.3, Proposal 2.4, Proposal 3.1, Proposal 3.2.
Technical barriers	 Limited climate change or climate- related project planning and project management experience across sectors. Lack of capacity to undertake required technical assessments, and monitor project implementation. Limited understanding of how to design high quality and competitive proposals for climate funds. 	 Conduct project preparation and project management training on how to design high-quality concept notes that achieve transformation change and have a clear exit strategy. Proposals should ensure that there are internal local development plans for training local staff members to improve technical capacity. Adoption of new technologies that enable work in remote locations. 	 Strengthening the capacity of the local partners to effectively participate in GCF activities from the development of Concept Notes to project/program implementation. Engage local partners as Executing Entities for GCF projects. Readiness finance will be used to conduct training and capacity building for national stakeholders, including the development of the PNG GCF Project Development Manual. GCF project finance could be used for overcoming technical barriers, such as guidelines for developing climate-resilient infrastructure.

Knowledge and information barriers	 Limited or no baseline data. Available data is inaccurate, scattered and inaccessible. Limited resources and capacity to collect, analyse, manage, monitor and utilise reliable and accurate baseline climatic and project data to make evidence-based investment decisions and solutions. Limited use of traditional knowledge to promote and scale-up climate solutions. 	 Undertake data collection to build an understanding of the baseline. Development of measurable indicators of relevance, and statistics for priority sectors. Completion of training and capacity building activities to strengthen data collection and information management. Promotion of traditional knowledge. 	 Capturing and promoting traditional knowledge for adaptation. GCF readiness assistance could be used to strengthen data collection and overcome information gaps in priority climate change sectors. GCF project finance could be used for overcoming knowledge and information barriers, including strengthening the capacity of national stakeholders to collect and manage data. Proposal 1.3 and Proposal 2.4 have a focus on overcoming knowledge and information barriers.
Financial barriers	 Insufficient access to climate resources; climate finance flows at present do not meet current or future needs. ODA is being relabelled as climate finance, but in some cases is neither new nor additional. Climate finance is considered as 'other' sources of financing and is not significant or priority financing. Lack of access to competitive financial products and services (start loan, matching rebate, partial loan guarantee). As PNG is a developing country, the ability to provide co-finance is highly constrained and fiscal space is limited. 	 Access to international funds is crucial to achieving progress. Establish national processes to raise co-financing from development partners, private sector and domestic public sources. Continuing to strengthen public financial management (PFM), including the monitoring and tracking of climate-related expenditures in the national budget system. Strengthen the policy and regulatory environment to attract private finance. Training for banks and private sector actors to understand the risk/return profile in climate change adaptation and mitigation projects and programs. 	 The no-objection procedure outlines a process for raising and securing co-financing from development partners and domestic public sources. Readiness support will be used for developing the GCF project pipeline, which will result in bankable projects and strengthened access to climate finance. Readiness support could also be used to address financial barriers, strengthen country systems to access climate finance, and improve donor confidence in PNG systems, and fast-track development goals.

Business and market barriers	 Policy and regulatory barriers that affect the 'ease of doing business', such as the tax regime and contract enforcement. Lack of financing available for business to invest in green activities. Limited relationships between the public and private sectors. Limited business experience and entrepreneurial skills to convert development and climate challenges into inclusive business opportunities. Small and scattered market, limiting economies of scale. 	 Undertake policy and regulatory reform to strengthen the enabling environment. Increase access to financing which allows private sector players to invest in low-carbon climate- resilient solutions, rather than business as usual. Leverage private sector resources to partake and invest in gender-responsive adaptation and mitigation projects. Strengthen the private sector's understanding of climate finance and government processes. Improve the relationship between the public sector and private sector in GCF processes. 	 Readiness support will be used for undertaking private sector mapping and conducting analysis on engaging the private sector climate action. GCF project finance could also be used to overcome business and market barriers. A number of proposals in the business and market barriers. A number of proposals in the country Programme pipeline focus on the private sector and enhancing the enabling environment for business activity - including Proposal 2.1, Proposal 2.2, Proposal 2.4, Proposal 2.5, Proposal 2.1, and Proposal 3.3.
Social barriers	 Perception of top-down supply push interventions that do not meet the need of the nation or community. Lack of local participation in the design and innovation of the solutions. Promotion of solutions that do not cater to the needs of the end-users. 	 Develop gender-responsive and inclusive adaptation and mitigation solutions through inclusive and fully participatory approaches. Ensure strong participation of all members of the community, including women, youth and disadvantaged groups in climate finance projects to ensure that partners are trained, empowered, rewarded and incentivised to undertake climate action 	 For all proposals, women, elderly and youths must not be seen as 'mere beneficiaries', but that their full participation and engagement as empowered and trained actors that are deemed as critical to the success of the project. Project developers must meaningfully engage with civil society stakeholders to ensure the voice of the most vulnerable is included from the outset of program design through to implementation and in program M&E Traditional values surrounding land, indigenous knowledge and other cultural factors should form the basis of GCF programme design, even for projects that require new and innovative technologies.
Cultural barriers	 Lack of understanding of cultural and traditional practices that hinders the uptake of interventions provided. 	 Assess, record and catalogue traditional and cultural best practices that could be used as climate solutions. 	 Promote traditional approaches for building climate resilience – i.e. the use of traditional housing that could withstand cyclones and other natural disasters. Incorporate traditional approaches in GCF projects where possible, as these have demonstrated benefits and are cost-effective.

CHAPTER 2 Contributions and roles of key stakeholders

The design, implementation and monitoring of this Country Programme requires collaborative and consultative engagement with all key stakeholders that is open, fair, transparent and inclusive. As this is a whole of government process, the Country Programme has been developed in a consultative and inclusive manner, incorporating the priorities of all key stakeholders from across PNG.

Also, as this Country Programme is a living document, stakeholder engagement is an ongoing process that will take place throughout the implementation of GCF projects and programs.

This section provides an overview of the contribution and roles and responsibilities of stakeholders that will drive forward climate action. This includes Members of Parliament (MP), central government agencies, line ministries, provincial, district, local-level governments and wards, NGOs and CSOs, AEs, development partners, the private sector, and universities and research institutes.

In addition, this Country Programme builds on, and is aligned to, the assessment undertaken by the Options for Strengthening Climate Finance Coordination and Accessibility in Papua New Guinea Paper, jointly prepared by CCDA, DNPM and PIFS.²⁰⁵ The development of the Options Paper in 2018–2019 involved comprehensive consultations with national stakeholders in PNG.

2.1 Contribution of stakeholders

The development of the Country Programme followed an inclusive approach allowing all key stakeholder groups, which are outlined in this section, to actively engage with CCDA, the GCF NDA, in developing project ideas and submitting those for potential inclusion into the pipeline of GCF projects and programs.

²⁰⁵Pacific Islands Forum Secretariat, DNPM, CCDA. 2019. Options for Strengthening Climate Finance Coordination and Accessibility in Papua New Guinea.

A range of mechanisms has been used to ensure that stakeholders have been engaged in Country Programme development. As a part of the ongoing GCF Readiness Support project, GGGI, as the delivery partner, in partnership with USAID Climate Ready, supported the government in establishing an effective coordination mechanism, strategic frameworks, building relevant capacity in government partners and in achieving higher quality, more innovative climate change proposals.²⁰⁶

Consultations were held at the sectoral, regional and national levels to ensure that key stakeholders contributed to Country Programme development. The consultations held as a part of the Country Programme development are described in Table 2-1.

2.1.1 Regional consultations

A series of four, three-day consultations were held across four regions of PNG, incorporating 22 provinces. The regional consultations took place from May-June 2019, and were supported by GGGI, USAID Climate Ready and UNDP.

UNDP provided support at the regional consultations to facilitate the input of regional feedback on the CCMA (2015). This feedback will result in the strengthening of the CCMA (2015) and will ensure that regional perspectives are integrated into the updated CCMA (2015).

The regional consultations strengthened the role of CCDA as the NDA to the GCF and improved the NDA's coordinating and convening capacity. The consultations also focused on streamlining the NDA's functions and governance at a subnational level by focusing on strengthening the role of Provincial Climate Change Committees (PCCC).²⁰⁷

Key deliverables for each of four, three-day regional consultations included:

- Awareness of GCF processes and procedures
- Roles and responsibilities of the NDA
- Consultations on provincial priorities for the GCF PNG Country Programme
- Engagement with respective PCCC members on roles and functions
- Mapping of key private sector and State Owned Enterprises (SOEs) with the potential to engage in climate change
- CCMA (2015) review consultation

The regional consultations adhered to the GCF requirement that a Country Programme should identify the country's key climate change priorities based on a consultation process that is open, fair, transparent and inclusive. This has resulted in the identification of potential transformative projects and programs that could be translated into fundable projects for the GCF. The regional consultations are described in further detail in Annex III.

²⁰⁶CCDA, GGGI, USAID 2018. Regional Workshops on Green Climate Fund in Papua New Guinea in Partnership with the Climate Change Development Authority Concept Note.

²⁰⁷Ibid. The Provincial Climate Change Committees are the GCF contact at the local level for the GCF No Objection Procedure.

2.1.2 Interim Climate Change Technical Working Group (CCTWG) Planning Meeting

To assist with the development of the Country Programme, the DNPM initiated the creation of the interim CCTWG. The key central government agencies and development partners that were invited to be members of the CCTWG and tasked with the development of the PNG GCF Country Programme included: i) Government agencies: DNPM, DoT, DoF, DPLGA, CCDA; ii) Development partners: GGGI – delivery partner of the GCF Readiness Support project and GCF Country Programme lead partner and USAID Climate Ready – supporting partner; and, iii) Local agencies: Tanorama – consulting firm to the GCF Readiness Support project and lead firm for organising and delivery of the National Sectoral Consultation (NSC).

In this planning meeting of the CCTWG, held in August 2019, stakeholders contributed to the design and development of the Country Programme by:

- Updating the CCTWG on the Country Programme joint work plan.
- Presenting a Priority Identification Summary stemming from the Regional Consultations.
- Consulting and providing training on the Multi-Criteria Analysis (MCA) Methodology developed for prioritising the Country Programme priorities identified within the regional consultations and by the CCTWG.²⁰⁸
- Selecting and reviewing the criteria, sub-criteria definitions and sub-criteria weightings for each subcriterion for all six GCF Investment Criteria.
- Finalising the program agenda for the October 2019 NSC.

Further detailed information on the CCTWG Planning Meeting for NSC can be found in Annex V.

2.1.3 National Sectoral Consultation (NSC)

The three-day NSC, held in October 2019, brought together representatives from key national sectors. CCDA, as the NDA, recognises that under PNG's planning and budgeting system, key agencies at both national and sectoral levels need to coordinate action and link their programming to complement climate change activities.

Furthermore, CCDA encourages linkages to sub-national levels and across the private sector, civil society and communities, in order for any action to be effective. This consultation also provided an opportunity to discuss the status of the establishment of GCF in PNG and to gauge stakeholder feedback to improving the establishment effort.

²⁰⁸The MCA Methodology is a tool developed in consultation with GoPNG to screen potential GCF proposals.

2.1.4 Private Sector Forum and consultations

The private sector has an important role in contributing to the development of the Country Programme. Private sector entities have been consulted throughout the development of Country Programme, including in the Private Sector Forum and via bilateral consultations.

In the Private Sector Forum, which was held in March 2020, private sector organisations were presented the pipeline of the Country Programme, and feedback was elicited. Following the Private Sector Forum, bilateral consultations were held with private sector organisations to seek feedback on the project pipeline.

2.1.5 Bilateral consultations

The Readiness Support team and the NDA undertook bilateral meetings to supplement consultations and ensure the engagement process was open, fair, transparent and inclusive.

This included meetings on the pipeline of GCF projects and programs with sectoral line ministries and AEs active in the country. These meetings were used to strengthen and refine proposal ideas (including, where possible, costing proposals), and to secure the preliminary endorsement from sectoral line ministries and other key stakeholders.

2.1.6 Country Programme and No-Objection Procedure Webinar

This webinar brought together stakeholders in PNG, the Pacific region, and globally. Input was solicited from stakeholders to strengthen the PNG GCF Country Programme and provide an overview of the No-Objection Procedure. The Webinar gave stakeholders the opportunity to interactively provide feedback and verify the pipeline of GCF projects and programs.

Table 2-1: Summary of stakeholder consultations

Consultation	Date	Stakeholders consulted	Stakeholder contribution
GCF Highlands Regional Workshop	21–23 May 2019	 CCDA (GCF NDA) PG agencies National government agencies Development partners NGOs/CSOs 	 Climate change status in the province determined, and GCF introduced to key provincial stakeholders. Identification of adaptation and mitigation project ideas for the Highlands region.
GCF Momase Regional Workshop	29-31 May 2019	 CCDA (GCF NDA) PG agencies Development partners NGOs/CSOs 	 Climate change status in the province determined, and GCF introduced to key provincial stake-holders. Identification of adaptation and mitigation project ideas for the Momase region.
GCF New Guinea Islands Regional Workshop	11-13 June 2019	 CCDA (GCF NDA) PG agencies National government agencies Development partners NGOs/CSOs 	 Climate change status in the province determined, and GCF introduced to key provincial stake-holders. Identification of adaptation and mitigation project ideas for the New Guinea Islands region.

GCF Southern Regional Workshop	10-12 July 2019		CCDA (GCF NDA) PG agencies National government agencies Development partners	•	Climate change status in the province determined, and GCF introduced to key provincial stake- holders. Identification of adaptation and mitigation project ideas for the Southern region.
CCTWG Planning Meeting	August 2019	•	CCDA (GCF NDA) National government agencies Development partners	•	Updating the CCTWG on the Country Programme joint work plan. Developing MCA for prioritising GCF investments.
National Sectoral Consulta- tion (NSC)	21-23 October 2019	• • •	CCDA (GCF NDA) PG agencies National government agencies Sectoral ministries Development partners		Providing feedback on GCF projects prioritised in the regional workshops. Developing prioritised projects in project ideas. Building stakeholder awareness of GCF processes and operations. Building stakeholder understanding of CCDA, and its role as the NDA.
GCF Readiness and Pre- paratory Support Consul- tation	15 January 2020		CCDA (GCF NDA) National government agencies Sectoral ministries Development partners NGOs/CSOs		Progress made in developing the GCF Country Programme was presented. Progress made in finalising GCF procedures presented – includ- ing the procedure for issuing the No-Objection Letter (NoL). Work plan for developing and finalising GCF procedures agreed upon.
NDA Retreat	3 February 2020	•	CCDA (GCF NDA) Development partners	•	CCDA (NDA) provided feedback on the draft of the Country Pro- gramme. Work plan for finalising the Country Programme was agreed upon.
Private Sector Forum	18 March 2020	• • •	CCDA (GCF NDA) Government agencies Private sector actors Development partners	•	Presentation of the Country Pro- gramme pipeline of investment opportunities. Private sector provided feedback on the pipeline.
Bilateral Consultations	March-May 2020	•	Eight sectoral ministries Private sector actors Development partners (including AEs)	•	Stakeholders provided feedback and input on the pipeline of invest- ment opportunities. Resulted in revision to, and ad- dition of, projects included in the pipeline.
National Validation Work- shop	17 May 2020	• • •	National government partners Sectoral ministries Private sector actors AEs Development partners NGOs	•	The finalised priority project pipe- line was presented to stakeholders. Stakeholders provided feedback on the prioritised projects.

2.2 Roles of stakeholders

Clarifying the roles and responsibilities of government agencies, private sector, NGOs, research and training institutes, and development partners in climate finance is crucial for effective coordination of climate finance in PNG.²⁰⁹

2.2.1 National government agencies and sectoral line ministries

PNG's national government agencies and line ministries have an important role to play in designing, implementing, coordinating and monitoring of adaptation and mitigation projects in PNG. To ensure implementation of the Country Programme, the GoPNG must have the capacity to plan for, access, deliver, monitor and report on climate finance that aligns with national priorities and policy.

GoPNG is responsible for the administration and planning of climate change and disaster risk management activities. GoPNG has nominated CCDA as the GCF NDA, and has enacted the CCMA (2015) as the country's overarching climate change legislation.

National government agencies have the responsibility for developing national plans and strategies, including Vision 2050 and the MTDP III, and allocates resources for the implementation of these plans and strategies with its annual national budget. It also engages in global and regional negotiations on climate change, and coordinates and manages the assistance provided by donors and development partners on climate change and disaster risk reduction efforts.

The institutional arrangements for implementing the Country Programme are aligned with the MTDP III. The NDA, in conjunction with the DNPM (as the leading agency for the MTDP), are the responsible agencies for managing the M&E of the Country Programme. DNPM, as the lead agency for the MTDP, will be responsible for keeping the national priorities updated, which in turn will inform GCF project design and development.

The specific roles and responsibilities, and contribution of line ministries and government agencies engaged in GCF results areas are outlined below.

²⁰⁹Pacific Islands Forum Secretariat, DNPM, CCDA. 2019. Options for Strengthening Climate Finance Coordination and Accessibility in Papua New Guinea.

2.2.1.1 Climate Change Development Authority (CCDA)

GoPNG has nominated CCDA as the GCF NDA. Established by the CCMA (2015), CCDA is a key government agency acting as a focal coordinator of adaptation and mitigation activities in the country. CCDA in its capacity as the GCF NDA has key roles and contributions, which are outlined below and in Figure 2 1, for approving GCF projects, engaging stakeholders, and ensuring GCF finance is used to achieve national climate change and development priorities.

The Managing Director, CCDA/Head of the NDA is the authorised signatory for the NoL. Upon proposal appraisal through the application of the review process in consultation with TWC members, the Managing Director, CCDA/Head of the NDA will be responsible for making the final decision to issue a GCF NoL and/or make a submission to the NEC via the Minister for Environment, Conservation and Climate Change for further deliberation if deemed necessary.

Technical Working Committees (TWCs) form a core part of CCDA's governance structure. The TWCs have different thematic focuses, and will play a vital role in ensuring that GCF proposals received by the NDA undergo an inclusive consultative process and ensure that key technical advice is considered for appraisal and recommendations to the NDA where required. TWC's are comprised of members constituting key sectoral agencies from the public and private sector, including development partners, NGO's CSO's and Women Representatives.



Figure 2-1: Roles and responsibilities of the GCF National Designated Authority (NDA)²¹⁰

²¹⁰Source: GCF Secretariat.

The National Climate Change Board is another key feature of CCDA's governance structure. The Board shall meet as often as the business of CCDA requires, and at such times and places as the Board determines, or as the Chairman, or in his absence, the Deputy Chairman directs.

CCDA is currently implementing PNG's first GCF Readiness Programme with support from GGGI as its Readiness Delivery Partner. The programme aims to enhance country ownership and access to the GCF and strengthen the institutional capacity of NDA to effectively engage with the GCF.

The roles and potential contribution of CCDA for implementing this Country Programme are as follows:

- As the GCF NDA, CCDA will lead the implementation of this Country Programme.
- Act as the government's focal point for communication with the GCF Secretariat, GCF Board and AEs.
- Provide strategic oversight to align GCF activities with national priorities, which are set by Vision 2050, MTDP III and other relevant policies and plans, through the development of the Country Programme.
- Identify, prioritise and select GCF activities that contribute to national priorities and align to GCF investment criteria.
- Oversee and facilitate the development of Concept Notes and Funding Proposals.
- Review Concept Notes and Funding Proposals that are consistent with development and climate priorities, and national laws through the implementation of the no-objection procedure.
- Provide the NoL to AEs for approving funding proposals based on the recommendation of responsible institutions.
- Accountability for implementing the Country Programme and its M&E framework.
- Convene and coordinate key national stakeholders on GCF processes, including national government agencies, local governments, private sector, civil society and communities, and development partners.
- Engage with national stakeholders, including through national consultations, raising awareness on GCF processes, and documenting lessons learnt.
- Facilitate the accreditation process for national institutions and provide a "Nomination Letter" to prospective public, private and CSO entities for their application through GCF's fit-for-purpose accreditation approach.
- Provide leadership on the deployment of readiness and preparatory funding, which includes GCF readiness support to strengthen the NDA and implementing agencies, and preparation of plans, including the NAP and Country Programme, and Project Preparation Facility (PPF) activities.

In addition to its roles and contribution as the GCF NDA, CCDA is also mandated to:

- Promote and manage climate compatible development through climate change mitigation and adaptation activities.
- Administer financing from national and international sources to assist in the development of climate adaptation and mitigation programs in PNG.
- Act as the focal point for the UNFCCC and Adaptation Fund.

CCDA is also currently undertaking several initiatives to support further coordination and action on climate change. Building on these efforts to progress coordination provides an opportunity of CCDA to clearly define its role, coordinate action on climate change across industry sectors and help to raise ambition and deliver results domestically.

2.2.1.2 National Government Agencies

A number of central government agencies play key roles in developing and implementing climate change activities, policies and planning frameworks. The roles and contribution of key central government agencies in relation to GCF activities are outlined in Table 2-2.

Table 2-2: PO	tential contrik	oution of c	central gove	ernment agencies

Entity name	Potential contribution
Department of Prime Minister and National Executive Council	 Appraise GCF Funding Proposals. Develop policy, strategy and legislation pertaining to climate change and disaster risk reduction.
Department of National Planning and Monitoring (DNPM)	 Appraise GCF Funding Proposals. Approve co-finance for GCF projects from the national budget and/or development partners and donors. Manage the coordination of foreign aid projects to ensure there are synergies with GCF financed activities. Strengthen the enabling environment for adaptation and mitigation activities and ensure that climate change is mainstreamed into national plans and priorities. Prioritise climate action through high-level plans and strategies, which will help create a conducive environment for the downstream development of sectoral and provincial policies that further contribute to adaptation and mitigation objectives.
Department of Treasury (DoT)	 Develop and coordinate the annual national budget and allocate national resources towards climate change activities. Approve government co-finance for GCF projects from the national budget. Provide approval for GCF loan-financed projects and programs.
Department of Finance (DoF)	 Approve government co-finance for GCF projects from the national budget. Provide approval for GCF loan-financed projects and programs. Provide approval for GCF projects and programs implemented by multilateral banks (ADB, WB). Potential role for monitoring and tracking of climate-related expenditures in the national budget system.
Department of Provincial and Local Government Affairs (DPLGA)	 Statutory responsibility for all matters relating to local government. This includes coordinating action between central government and provincial and local governments, facilitating budget transfers, and supporting development assistance at the local government level. The National Disaster Centre is also under the DPLGA and is responsible for the development and maintenance of measures to reduce risk to communities and manage the consequences of disasters in PNG. The National Disaster Centre will be a key stakeholder in reducing the risk of climate hazards on communities, through, for example, developing and implementing GCF projects on early warning systems.

Bank of Papua New Guinea (BPNG)	 Serve as the central bank and regulates local banks and other financial institutions. Provide technical advice and financial and economic data to inform GCF project design.
National Development Bank (NDB)	 Government-owned financial institution that frequently manages concessional loan facilities. Potential to act as a DAE or Executing Entity (EE). Provide technical advice and data to inform project design.

2.2.2 Sectoral line ministries

Sectoral line ministries relevant to the eight GCF Result Areas need to engage with the NDA and relevant national stakeholders to access GCF finance. An overview of relevant sectoral line ministries and their roles and contribution are provided in Table 2-3.

Table 2-3: Potential contribution of sectoral line minist	ries
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Sectoral line ministries	Potential contribution
Conservation and Environment Protection Authority (CEPA)	 Suggest GCF project ideas to the NDA as project proponents. Support AEs with developing GCF Concept Notes and Funding
Department of Agriculture and Livestock (DAL)	 Proposals. Support the implementation of GCF projects and programs as project proponents and EEs.
Department of Commerce and Industry (DCI)	 Oversee implementation of GCF funded projects and programs in their respective sector to ensure a paradigm shift in climate
Department of Health (DoH)	 Build on past low-carbon climate-resilient initiatives within their sectors and identify opportunities for synergies with CCE-funding.
Department of Petroleum and Energy (DPE)	 activities (especially for co-financing). Lead the development of implementation plans and policies
Department of Transport & Infrastructure (PNG DoT)	in their respective sectors that contribute to climate change adaptation and mitigation.
Department of Lands and Physical Planning (DLPP)	 Support engagement of stakeholders within their sectors.
Department of Works and Implementation (DoW)	
National Capital District Commission (NCDC)	
National Fisheries Authority (NFA)	
National Maritime Safety Authority (NMSA)	
PNG Forest Authority (PNGFA)	
Papua New Guinea Tourist Promotion Authority (PNGTA)	

2.2.2.1 Conservation and Environment Protection Authority (CEPA)

CEPA is CCDA's sister authority. The responsibility of CEPA is to ensure natural and physical resources are managed to sustain environmental quality and human well-being. CEPA has a broad range of responsibilities, which includes biodiversity protection policy development, management of water resources, and hydrological investigation, data collection and analysis.

CEPA administers a broad range of climate change projects, including management of protected areas, development of an environmental data portal, and reducing emissions in the solid waste management sector. CEPA could provide support for the development and implementation of GCF projects and programs related to reducing flood risk (including through developing early warning systems) and building resilient ecosystems (including ecosystem-based adaptation initiatives).

2.2.2.2 Department of Agriculture and Livestock (DAL)

DAL is responsible for all matters concerning the agriculture sector in PNG. Its roles include:

- · Contributing strategic leadership and direction to the sector.
- · Coordinating and monitoring national agricultural development programs.
- Providing advice that leads to an environment that facilitates investment and supports new initiatives.
- · Facilitating and supporting effective partnerships between stakeholders.
- Enhancing systems and delivery mechanisms for capacity building (extension, training, and information).

DAL also oversees various commodity boards and agencies for coffee, cocoa, coconut, oil palm, tea, rubber, spice, and fresh produce, most of which are major exports and serve as a source of income for smallholder farmers.

Given that 85% of PNG's population depend on the agriculture sector for their livelihoods, and the sector is one of the most vulnerable to climate change, DAL is a key entity to engage for adaptation projects. Current efforts are mostly directed to research and development of flood-tolerant and drought-resistant crops, but there is much room for improvement – particularly with respect to instituting a systemic, coordinated approach (e.g. through sectoral policies), designing projects that are aligned with priorities of sources of climate finance, and having a robust M&E process.

2.2.2.3 Department of Petroleum and Energy (DPE)

DPE is a key institution in the energy sector. It is responsible for developing and implementing strategies, policies, and plans as well as technical regulation of power companies. DPE's National Energy Policy for 2018-2028 aims to develop a modern, renewable-energy based system through a combination of financial incentives, net metering tariffs, and an Electrification Trust Fund for rural electrification.

DPE therefore could be a major contributor in identifying, designing, and supporting climate change mitigation projects. Their knowledge of the sector, as well as their relationship with other energy sector institutions – such as PNG Power Limited (PPL) – would be an invaluable resource in scaling GCF's activities in the country.

2.2.2.4 Department of Transport & Infrastructure (PNG DoT)

PNG DOT is responsible for transport infrastructure policy and planning and is the lead agency in the formulation of policies and planning of transport infrastructure projects.

Climate change represents a risk to communities and the sustainability of transport infrastructure, including roads, bridges, ports and airports across the country. GCF finance could be used to climate-proof this infrastructure, which would have the co-benefits of improving economic connectivity and strengthening poverty reduction efforts. GCF finance could also be used for deploying and scaling low-carbon transport initiatives, including electric vehicles for freight transport and electric buses for urban transport systems.

2.2.3 Sub-national institutions, local government and municipalities

The engagement of PGs, District Development Authorities (DDAs), and LLGs is vital for ensuring that GCF finance contributes to climate-resilient and low-carbon development at the local level.

There are 22 PGs in PNG: 20 in the provinces and one each for the Autonomous Region of Bougainville and the National Capital District. Each province is comprised of two or more districts, which are divided into LLG areas. The LLGs are further subdivided into wards with each ward having up to a few thousand individuals. A single LLG typically oversees several wards. There are currently 318 urban and rural LLGs in the country comprising of 6112 wards with each ward represented by a Ward Councillor and each LLG represented by a LLG President. The LLG President works closely with the DDA of which the DDA Board is chaired by the local MP. The DDA Board through its 'joint district and budget priority planning committee' allocates District Services Improvement Programme (DSIP) funding to planned activities prescribed under the five-year District Development Plan that aligns with the MTDP.

For GCF activities at the ward and LLG level, DDAs can work closely with the PCCC in the respective province in sourcing projects to be co-financed through the DSIP and Provincial Services Investment Programme (PSIP) at the sub-national level. The DDA can also seek support grants/funding from the PIP administered at the DNPM. The DSIP is considered a 'discretionary fund' and for the most part is controlled by the local MP

The legal basis and division of powers are provided for in the Organic Law on Provincial and Local-level Governments (2014) and the District Development Authority Act (2014). PGs and LLGs are responsible for formulating development plans (five-year Provincial Development Plans and five-year District Development Plans) and delivering various services such as health, education, and infrastructure. The potential contribution of sub-national institutions is outlined in Table 2-4.

Table 2 4: Potential contribution of sub-national institutions

Entity name	Potential contribution
Provincial Government (PG)	 As project proponents and EEs, PGs can submit project ideas to the NDA (via the Provincial Executive Council and PCCC), support Concept Note and Funding Proposal formulation, and play a key role in project/program implementation. PGs also play important roles in implementing and engaging with other stakeholders (especially communities) on climate change and disaster risk reduction activities. Lead the mainstreaming of climate change into provincial development plans and provincial budgets. Build awareness and capacity of local government officials on climate change issues.
Provincial Climate Change Committee (PCCC)	 Serve as the main mechanism for the NDA to engage stakeholders in the provinces and sub-national levels. Function as the main sub-national channel to mainstream and formally incorporate adaptation and mitigation activities into provincial, district, and local development plans. Support GCF processes, including the GCF no-objection procedure, as the first entity to screen projects at concept stages.
District Development Authority (DDA)	 As project proponents, submit project ideas to the PCCC (for consideration), and support Concept Note and Funding Proposal formulation, and play a key role in implementation. Provide co-finance for GCF projects and programs. Support community engagement in the development of project ideas, Concept Notes and Funding Proposals, and implementation of GCF projects and programs.
Local Level Government (LLG)	 As project proponents, LLGs (via the LLG Ward Councillor) can submit project ideas to the DDA for consideration. Support Concept Note and Funding Proposal formulation and play a key role in project and program implementation. Support community engagement (among landowners, community leaders, and church leaders) in the development of project ideas, Concept Notes and Funding Proposals, and implementation of GCF projects and programs.

2.2.3.1 Provincial Government (PG)

PGs are key stakeholders that need to be engaged in the development and implementation of projects and programs. While sub-national governments have the prime mandate and key role in the financing and delivery of many key services in PNG, most PGs are severely underfunded.

PGs have responsibilities in developing and maintaining infrastructure, including transport, government buildings, school and health infrastructure, and also installing and maintaining power to provincial headquarters and district administrations. PGs also have responsibilities for planning at the local level, and these plans need to be aligned with national planning frameworks.

While PGs lack capacity and financial resources for implementing climate change initiatives; there are large differences in fiscal capacity across provinces, as some provinces also have high access to resource royalties.²¹¹ There have also been PCCCs established to act as the interface between national government and subnational governments and stakeholders in the provinces on climate change matters, although these require increased resourcing to function appropriately.

2.2.3.2 District Development Authorities (DDAs)

DDAs are chaired by the local MP, who provides oversight on all development planning and projects at the district level. In line with this, the DDA is required to submit a five-year District Development Plan.

DDAs could support the development of Concept Notes and Funding Proposals for their regions and use the DSIP for co-financing purposes. GCF finance could be used for supporting service delivery and low-carbon climate-resilient infrastructure development in districts.

²¹¹Asian Development Bank. 2016. Wok Bung Wantain: Using subnational government partnerships to improve infrastructure implementation in Papua New Guinea. Retrieved from: <u>https://www.adb.org/sites/default/files/publication/180869/wok-bung-wantaim.pdf</u>

2.2.3.3 Local Level Governments (LLGs)

LLGs are key stakeholders that need to be engaged in the development and implementation of projects and programs.

LLGs rely heavily on national government for funding their recurrent and development budgets, with only a few urban LLGs collecting fees and rates. LLGs are involved in the development of roads and parks, refuse collection and disposal, health and environmental protection, and economic promotion and tourism; they are also responsible for water supply and sewerage where not provided by PG or Eda Ranu, a water utility.²¹²

2.2.4 Private sector

The GCF is committed to unleash the potential of the private sector for scaling up adaptation and mitigation activities and achieving innovative outcomes. There are opportunities for the private sector in PNG to deliver mitigation and adaptation outcomes through developing sustainable and climate-resilient businesses, investing in green technologies, and providing co-financing for GCF project and program implementation. Private sector entities can also act as AEs and support the implementation of GCF activities as EEs.

Private sector investment can be catalysed through public-private partnerships (PPPs). PPPs could provide opportunities for private sector actors to supply, operate and maintain low-emission climate-resilient infrastructure, including water and electricity generation infrastructure. There are also opportunities for large multinational companies in the extractive sector to build climate-resilient infrastructure, such as electricity generation, particularly in communities affected by mining operations.

There is also a need to leverage private sector resources to partake and invest in gender-responsive adaptation and mitigation projects through inclusive value chain and market-based approaches so that value chain actors (including women, youth and disadvantaged groups and micro, small and medium enterprises) could be trained, empowered, rewarded and incentivised to protect and improve their productive assets (land, soil, water, forest, rivers, marine), whilst generating ecosystem services for the local community and reducing local pollution and carbon emissions

While there are climate change opportunities present for the private sector, there are also key challenges in PNG that constrain levels of green investment. These include the land tenure system, law and order, political instability, inadequate infrastructure, and low awareness of climate change opportunities. The enabling environment can be improved by strengthening regulations, legislation, and institutional capacity. One avenue for strengthening regulatory frameworks is the CCMA (2015), which provides a legal basis for developing regulations specifically targeted to mitigation and adaptation activities – the CCMA (2015) is currently being updated. Most businesses are unaware of these legal and regulatory developments, and NDA and other government agencies will need to engage the private sector in climate change response strategies and build awareness among the private sector on the benefits of regulatory reform.²¹³ Moreover, private sector stakeholders lack information on climate finance funding opportunities and how to access funds. This Country Programme and other GCF readiness activities, including the development of the no-objection procedure, will help to strengthen the understanding of the GCF and other climate funds.

National private sector entities can also be accredited to the GCF. Potential private sector entities that could

²¹²Commonwealth Local Government Forum. 2018. The Local Government System in Papua New Guinea. Retrieved from:_

http://www.clgf.org.uk/default/assets/File/Country_profiles/Papua_New_Guinea.pdf

²¹³GGGI. 2019. CCDA Capacity Needs Assessment Towards GCF Requirements and Private Sector Assessment to Develop Climate Change Projects.

be accredited to the GCF in PNG include domestic banks, which could also provide co-financing for GCF projects and programs. Domestic entities applying for accreditation under the direct access modality are eligible to receive GCF readiness support for completing accreditation applications, which would help the entities to identify their institutional gaps and implement action plans in order to meet GCF accreditation standards. In the absence of national accredited private sector entities, national private sector entities could partner with international private sector entities accredited to the GCF to develop Funding Proposals to access GCF's Private Sector Facility.

GCF financed private sector initiatives in PNG could also build on past initiatives that have resulted in successful outcomes, such as the initiatives on "Lighting Papua New Guinea" for renewable energy and the "Productive Partnerships in Agriculture Project" for agriculture, which generated some capable renewable energy developers and agribusinesses familiar with the requirements for achieving climate change and sustainable development outcomes.

Another good entry point to the private sector is the Business Council of Papua New Guinea (BCPNG), the body which represents PNG's private sector and business leaders. BCPNG would be a good contact point for raising awareness, facilitating consultations and building engagement with the private sector on GCF activities.

To better understand the potential contributions of the private sector, the completion of a detailed private sector analysis and mapping is planned. This will build an understanding of current activities and identify potential opportunities for how GCF finance could scale up mitigation and adaptation activities in the private sector. This is planned to be conducted in 2021-2022, and GCF readiness resources will be requested for conducting this analysis.

Broadly, private sector entities could have the following contribution and roles:

- The private sector can play key roles in proposal development and implementation as AEs, project proponents, and EEs.
- Propagating transformational change in the economy by adopting new business models and driving green growth.
- Providing financial resources and operational expertise as project proponents (e.g. through PPPs).
- The private sector will be engaged through participation in GCF processes and committees, and consultations.

The potential contribution and roles of the different private sector entities are listed below in Table 2-5.

Table 2-5: Potential contribution of the private sector

Entity name	Potential contribution
Domestic private sector entities (e.g. Origin Energy PNG, Express Freight Management, Innovative Agro Industry, and New Guinea Highlands Coffee)	 Domestic private sector entities could be involved as EEs. They could also be project beneficiaries, and use GCF finance to adopt manufacturing processes that reduce GHG emissions (e.g. better energy efficiency), invest in low emission transportation such as electric vehicles for intra-city freight, and increase the household penetration of solar PV as an alternative to diesel generators.
Small and Medium Enterprises (SMEs)	 SMEs could be involved as GCF executing entities. For example, they could deploy solar technology to rural communities and improve the adaptive capacity of smallholder farmers through a combination of trainings on and provision of tools for climate- smart agriculture.
Domestic banks (e.g. Bank South Pacific, Kina Bank and MiBank)	 Potentially serve as a GCF DAE. Provide co-finance for economically feasible adaptation and mitigation projects. Provide concessional loan financing to households and businesses for climate change activities (e.g. solar PV and solar water pumping).
Business Council of PNG (BCPNG)	 Support engagement of PNG's private sector on GCF and climate change matters. Build awareness of climate change opportunities, including access to GCF finance. Support private sector engagement with government on improving the enabling environment, including planning, policy design and regulatory reform.
International private sector actors (e.g. Ok Tedi Mining Ltd and Barrick Niugini Ltd)	 Multinational companies could finance and construct climate- resilient infrastructure for towns affected by mining operations. Extractive industries could also scale-up and co-finance renewable energy generation investments.

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2.2.5 Non-Governmental Organisations (NGOs) and Civil Society Organisations (CSOs)

NGOs and CSOs in PNG are at the frontline of working on mitigating and adapting to climate change, and have driven poverty reduction and resilience building initiatives across the country. They provide substantial support, particularly in rural areas that are less covered by government service programmes, and a substantial portion of development assistance is disbursed through these organisations. There are also international NGOs (INGOs) operating throughout PNG, especially in the provinces, including World Vision, Save the Children, Red Cross, CARE International, Oxfam, and WWF.

There is a high need for coordination of efforts in order to minimise overlaps, enable knowledge sharing, and active engagement of CSOs and NGOs with the NDA. Moreover, CSO engagement is also a priority to ensure that marginalised and vulnerable groups are included in GCF programming. The roles and potential contribution of CSOs are as follows:

- INGOs could act as AEs, and local CSOs and NGOs with capacity could potentially become accredited to the GCF.
- NGOs and CSOs, which are not accredited to the GCF, can be directly engaged in the development and implementation of GCF activities as project proponents and EEs in line with their competence and capabilities.
- NGOs and CSOs must ensure that vulnerable communities are consulted in GCF project development, and that GCF finance is utilised to achieve gender-sensitive and inclusive outcomes.
- NGOs and CSOs can also have other roles and responsibilities, including the provision of data on households, sharing lessons learnt on best practices in particular communities, and supporting and empowering communities.
- NGOs and CSOs will be engaged through processes and committees, and consultations.

2.2.6 Community organisations and project beneficiaries

PNG's diverse communities are important stakeholders in climate change and disaster risk reduction efforts. With their traditional knowledge, governance systems, understanding of their contexts, communities have key roles in the development and implementation of GCF projects and plans. Community members must also be allowed to incorporate their needs and aspirations into GCF proposals, through community engagement workshops and representation in institutions such as PCCCs.

Moreover, the intended beneficiaries in PNG, especially vulnerable populations, groups, and individuals (including women, children, and people with disabilities), local communities, indigenous peoples, and other specialised groups of people and individuals that are affected or potentially affected by GCF-financed activities, will be given due consideration and enabled to participate in decision making on GCF projects and programs.²¹⁴

²¹⁴GCF, 2018. Environmental and social management system: environmental and social policy. GCF/B.19/06.

2.2.7 Donors and development partners

Donors and development partners, including bilateral and multilateral donors, development banks, and international organisations, have key roles in providing support for GCF project and programme design and implementation; co-financing of GCF investments; providing readiness support, such as capacity building and institutional strengthening; assisting with regulatory reform and policy design; and improving coordination and specialisation of climate change activities. Donors and development partners should develop and implement GCF projects and programs in line with PNG's national priorities and government procedures, including the GCF no-objection procedure.

GoPNG has accessed climate finance from a range of multilateral sources over the past decade, including the AF, GEF, and the CIFs. Opportunities should be identified for using these funds as sources of co-finance for GCF projects, and GCF finance should also build upon and scale up past initiatives implemented by climate funds. Moreover, the processes used for accessing GCF finance should also be aligned and integrated with the procedures for accessing other climate funds where possible to minimise transaction and administrative costs – this could be achieved by developing a national coordination mechanism for climate finance.

The specific roles and potential contribution of development partners in GCF activities are outlined below.

- Development partners can provide support on GCF Concept Note and Funding Proposal development, including as AEs.
- Development partners can implement GCF projects and programs, as AEs and EEs.
- Development partners can align their programming with GCF funded activities, including the Country Programme pipeline.
- Development partners can provide co-finance for GCF projects and programs.
- They can support regional coordination and scale up proven climate solutions from other Pacific Island Countries and SIDS.
- They can provide technical assistance to the NDA for capacity building, support accreditation of DAEs, including through the readiness and preparatory support.
- They can support the accreditation of national entities, including through providing support to strengthen project management capabilities and complete the GCF accreditation application.

2.2.8 Accredited Entities (AEs)

AEs are key actors which have specialised capacities and have gone through a process of accreditation to access GCF resources. AEs are responsible for developing GCF Concept Notes and Funding Proposals and managing the implementation of GCF financed projects and programs. AEs can be public, private, national, sub-national, non-governmental, regional or international entities.

As PNG does not have any national DAEs that have gone through GCF accreditation, GCF finance must be accessed via regional and international entities. Currently, there are both regional DAEs (including SPREP and SPC), and international AEs operating in PNG.

When selecting AEs for proposal development and project and program implementation, the following criteria should be taken into consideration: i) the entity's track record on delivering projects in PNG; ii) the entity's comparative advantage in the proposal sector(s); iii) the capacity of the entity; and, iv) entity's level of accreditation for project size, fiduciary standards, and environmental and social risk. The selection of AEs should also be consultative and be led by the NDA and project proponents.

Utilising AEs that have a strong track record and are currently operating in PNG will help to ensure that GCF projects and programs are well designed and contribute to national development and climate change priorities. Table 2-6 shows the accredited entities that are active in PNG and could lead GCF project and program design and implementation.

Table 2-6:	Potential	contribution	of Accredited	Entities (AEs)
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Entity name	Potential contribution					
Asian Development Bank (ADB)	International Accredited Entities (AEs):					
CGIAR System Organization	 Develop and submit Concept Notes and Funding Proposals for projects and programs. 					
Conservation International (CI)	 Identify and engage project proponents and national stakeholders in project design. 					
European Investment Bank (EIB)	 Provide technical advice based on prior experience and an in- depth understanding of local context. 					
Food and Agriculture Organization of the United Nations (FAO)	 Oversee the implementation and management of projects/ programs. 					
Deutsche Gesellschaft für Internationale Zusammenarbeit	 Structure regional/sub-regional investments that can include PNG. 					
(GIZ)	Conduct M&E of GCF Concept Notes and Funding Proposals.					
International Finance Corporation (IFC)	 Deploy a range of financial instruments (grants, concessional loans, equity and guarantees). 					
International Fund for Agricultural Development (IFAD)	 Provide co-financing for GCF project and program implementation. 					
International Union for Conservation of Nature (IUCN)	Mobilise and manage GCF finances on behalf of the country.					
Japan International Cooperation	Mobilise private sector capital.					
Korog Dovolopment Rank (KDR)	Direct Access Entities (DAEs):					
	Once PNG has achieved direct access through the accreditation					
Kreditanstalt für Wiederaufbau (KfW)	of national entities, the development and implementation of proposals could be led by DAEs. It will be important to ensure that PNG's DAEs have support from the GCE and development					
Pacific Community (SPC) – Regional DAE	partners for project preparation and implementation as required. It is recommended that DAEs projects and programs are aligned with PNG's climate change priorities					
Save the Children Australia	 When accredited DAEs should be engaged in GCE projects that 					
Secretariat of the Pacific Regional Environment Programme (SPREP) - – Regional DAE	 are aligned to their particular comparative advantages and expertise. PNG can also access finance through regional DAEs (SPPER and all the second secon					
World Bank Group (WB)	SPC).					
World Wildlife Fund (WWF)						
United Nations Development Programme (UNDP)						
United Nations Environment						

Programme (UNEP)

2.2.9 Academic and research institutions

PNG has four public universities, two private universities, and seven tertiary institutions that offer courses in technical and vocational education. Universities in PNG are engaged in climate change-related training and research, including the development of renewable energy technologies, building skills in the public and private sector for responding to climate change.

There are research institutes that are engaged in awareness raising, and influencing of policy to improve climate change outcomes. Research institutes can publish papers on best practices for undertaking climate change action in PNG, hold conferences and workshops, educate communities, and support the collection of information and data.

Universities and research institutes in PNG are also involved in a series of joint initiatives with the private sector and development partners, including the National Agriculture Research Institute-Digicel partnership in ICT for improved climate change awareness.

Table 2-7: Potential contribution of academic and research institutes	Table 2-7:	Potential	contribution	of	academic and	l research	institutes
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Entity name	Potential contribution
Academic Institutions (including University of Papua New Guinea, Papua New Guinea University of Technology, University of Goroka, University of Natural Resources and Environment)	 Contribute to research and development on climate change adaptation and mitigation responses, and exchange and disseminate knowledge through publications, national dialogues and public forums.
Research Institutions (including Papua New Guinea National Research Institute, National Agriculture Research Institute, and Institute of National Affairs)	

2.3 Stakeholder coordination

With the increase in climate finance from the GCF and other sources, strong coordination with development partners and financiers and internally between government agencies is crucial. Achieving strong coordination will result in a proactive, inclusive and cross-sectoral approach to climate change and climate finance, and connect the role of technical agencies with the central agencies that oversee national planning and budgeting processes.²¹⁵

The engagement of stakeholders in GCF project and program design and implementation requires effective coordination institutions, processes and mechanisms. GoPNG has established the National Climate Change Board and TWCs to coordinate and engage national stakeholders in GCF proposal development, appraisal and approval; climate finance coordination; and assisting with mainstreaming climate change into national planning and budgetary processes.

Lastly, CCDA in its capacity as the NDA plans to initiate frequent dialogue with key GCF stakeholders. The NDA plans to achieve stakeholder engagement through regular workshops with stakeholders, publishing a newsletter to disseminate relevant information, and providing updated information via the CCDA website on the status of GCF projects/programs, national procedures, and GCF developments.

²¹⁵Pacific Islands Forum Secretariat, DNPM, CCDA. 2019. Options for Strengthening Climate Finance Coordination and Accessibility in Papua New Guinea.

CHAPTER 3 Identification of GCF priorities for PNG

This section provides an overview of the process used in 2019–2020 to identify GCF priority projects for inclusion in the Country Programme project pipeline. The first phase involved assessing the baseline of climate change projects in PNG. The second phase focused on the identification and prioritisation of GCF projects from a series of regional consultations held in 2019. In the third phase, the identified projects were strengthened, reviewed and verified, which resulted in the finalised project pipeline presented in Section 4 of this Country Programme.²¹⁶

3.1 Phase One: Baseline of climate change projects in PNG

PNG has received technical and/or financial support from several donors and development partners. Table 3 -1 identifies and summarises PNG's climate change programs and the support provided. Phase One should be carried out on a five-yearly basis, in alignment with the MTDP process.

 216 For subsequent annual updates of this Country Programme, the update should primarily follow the consultation processes outlined in Phase 3 of Section 3 – this is described in further detail below and in Section 5.

Table 3-1: Existing cl	imate change programmes in PNG
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Fund source	Project title	Duration	Cost	Development Partner	Implementing agency	Location
			Adaption			
AF	Enhancing adaptive capacity of communities to climate change- related floods in the North Coast and Islands Region of PNG	2012-2017	US\$6.5m	UNDP	National Statistical Office (NSO), PNG National Disaster Centre, Provincial administrations	North Coast and Islands Region
ADB	Strategic Program for Climate Resilience (SPCR) - Building Resilience to Climate Change (BRCC) in PNG	2015-2021	US\$25m	ADB	PNG Ports, CFDA, National Agricultural Research Institute (NARI), DAL	Country- wide
Australian Government	Pacific-Australia Climate Change Science and Adaptation Planning Program	Ended June 2013	N/A	AusAID, CSIRO, BOM	PNGNWS, CCDA	Country- wide
Australian Government	Climate Resilient Green Growth Project	2018-2022	US\$4.4m	Australian Government (PNG-Aus Partnership), GGGI	CCDA	Country- wide (with a focus on New Ireland, Milne Bay and Enga)
EU	Migration, Environment and Climate Change: Evidence for Policy	2014-2016	EUR2.4m	IOM	Foreign Affairs, NDC, UPNG	Country- wide
GCF	NAP	2020	US\$1.8m	UNDP	CCDA	Country- wide
German Government, EU	Solar Farm and Integrated Water Supply for Rural Communities in PNG	2016-2018	EUR1m	EU-GIZ	DPE, Central Prov. LLG, PNG Power, Water PNG	Rigo District, Kalo, Airiauka, Keapera & Imuagoro
GIZ German Government	Coping with Climate Change in the Pacific Islands Region	2009-2013	EUR4.2m	GIZ/SPC	CCDA, NARI, DAL	Country- wide
RIMES	WMO-EWS	ТВС	US\$1.9m	WMO	PNGNWS, CCDA	Country- wide
UN Habitat	Cities and Climate Change Initiative	2012-2014	US\$1m	UN Habitat	UPNG, NCDC & Office of Urbanization	Port Moresby
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UNDP	Capacitated, Holistic, and United Response to Climate Change Hazards (CHURCH)	2015-2017	N/A	UNDP	N/A	Country- wide
USAID	Coastal Community Adaptation Program	2013-2017	US\$1.4m	USAID, Development Alternatives Inc. (DAI), University of the South Pacific (USP) & Kramer Ausenco Papua New Guinea Ltd.	PA (CP & NIP)	Country- wide
USAID	Climate Ready	2017-2021	US\$23.9m	USAID-AECOM	CCDA, CEPA	Country- wide
USAID	Mangrove Rehabilitation for Sustainably- Managed, Healthy Forests	2012-2015 (5-year project)	US\$7m	USAID	IUCN, TNC UPNG & 5 Provincial Administrations	Manus, West New Britain, New Ireland, Central Province & National Capital District
USAID, AusAID, GEF	Coral Triangle Initiative	2010-2015	US\$11m	USAID	CEPA, NFA, CCDA, (Various Departments)	Country- wide
WB	Building a More Disaster and Climate Resilient Transport Sector	2011-2015	N/A	N/A	N/A	Country- wide
WB and Japanese Government	Global Fund for Disaster Risk Reduction (GFDRR)	2012-2015	US\$2.6m	WB	NARI, DAL, CCDA & DoW	Country- wide
		RED	D+ and Mitiga	tion		
Australian Government	Pacific Appliance Labelling and Standards	2017-2018	N/A	SPC	CCDA	Country- wide
GEF	Facilitating Renewable Energy & Energy Efficiency Applications for Greenhouse Gas Emission Reduction (FREAGER)	2017-2021	US\$3.1m	UNDP	CCDA, PPL, EHP PG, ESP PG	Country- wide
Italy Government (Italy-PNG MoU)	REDD+ Programme	2017-2019	EUR400,000	CfRN	CCDA	Country- wide
KOICA	Capacity Building Project	ТВС	ТВС	GGGI, PIDS, KOICA	CCDA, Central Province	KOICA

World Bank	FCPF Project	2015-2017	US\$3.5m	FCPF, UNDP	CCDA, PNGFA, CEPA, DAL, DLPP, DNPM	Country- wide		
World Bank	FCPF Project 2	2018-2020	US\$5m	FCPF, UNDP	CCDA, PNGFA, CEPA, DAL, DLPP, DNPM	Country- wide		
UN-REDD	PNG UN-REDD Programme	2011-2017	US\$6.4m	UNDP, UNEP, FAO	CCDA, PNGFA	Country- wide		
Monitoring, Review and Verification								
GEF	Strengthening capacity in the agriculture and land-use sectors for enhanced transparency in implementation and monitoring of NDC under the Paris Agreement in PNG	2018-2021	US\$1m	FAO	CCDA, PNGFA and DAL	Country- wide		
GEF	Preparation of the First BUR and Third National Communication under the UNFCCC	2014-2020	US\$832,000	UNEP	CCDA, NSO, PNGNWS, CEPA, PNGFA, DNPM, DAL, DPE, PNG DoT, DLPP	Country- wide		
GEF	PNG: Preparation of Intended NDC to the UNFCCC	2017-2021	US\$210,000	UNEP	CCDA, PNGFA, DAL, CEPA, Water PNG, NCDC, PPL, DPE	Country- wide		
JICA	Project for enhancing capacity to develop a sustainable GHG inventory system for PNG	2017-2021	N/A	JICA	CCDA, PNGFA, DAL, CEPA, Water PNG, NCDC, PPL, DPE	Country- wide		

3.2 Phase Two: Process undertaken for determining priorities

3.2.1 Consultation process

As outlined in Section 2, the development of the Country Programme was a country-driven, inclusive process. A key outcome of the stakeholder consultations was the identification of GCF priority project ideas.

The priority project ideas were identified in the following consultations and workshops:

1. Regional Consultations in the Highlands Region, Momase Region, Islands Region and Southern Region, which were held in May-June 2019. The regional consultations are described in further detail in Annex III.

- 2. CCTWG Planning Meeting for the NSC, held in August 2019. This included an introduction to the MCA Methodology.²¹⁷
- 3. NSC, held in October 2019.

The process undertaken for determining priorities is described in the next page and in Figure 3-1. In the regional consultations, participants were asked to identify key climate risks and the priorities for their region. A summary of the priorities from the regional workshops is presented in Table 3-2. Region-specific climate priorities are included in Annex IV.

Following the regional consultations, the list of priority project ideas was analysed and presented to the CCTWG planning meeting in August 2019. The purpose of this presentation was to identify the priorities for climate action that were a result of the group activities undertaken at the regional consultations.

In the NSC, which was held in October 2019, specific funding opportunities that should be pursued under the GCF were assessed. In this consultation, the MCA Methodology Tool was used to elicit and prioritise project ideas that could be financed by the GCF (see Annex VII and Annex VIII for details of the consultation). This was achieved by providing the participants with a list of the potential projects drawn from the four regional workshops. The full list of project ideas provided to the participants is provided in Table 3–3 (mitigation), Table 3–4 (adaptation), and Table 3–5 (cross-cutting). The prioritised list of project ideas is provided in Table 3–6.

Phase Two, the undertaking of detailed regional consultations and national prioritisation of project ideas, should be carried out on a five-yearly basis, in alignment with the MTDP process.

²¹⁷The MCA Methodology is a tool developed in consultation with the GoPNG to screen potential GCF proposals.

aria Criteria	 Size of beneficiary group(s) and mitigation potential (GHG saving/ avoidance) 	2. Sustainability (Policy, institutional, technical, financial, business, social)	3. Institutional absorptive capacity	4. Scalability and replicability	5. Degree of Innovation	6. Monitoring and Evaluation	7. National and sectoral policy aligment	8. National and Sectoral regulatory compliance	9. Synergies with other initiatives	10. Political risks	11. Potential environmental risks	12. SDG (Environment, Economic, Social, Co-benefits)	vients 13. Social and cultural acceptability	14. Types (vulnerable, youth, big agribusiness vs. smallholders) of beneficiary	15. Gender responsiveness	d 16. Upfront investment cost of the technologies	17. Implementing, operational and maintenance cost	18. Ease of implementation	ved or duplicative of other on-going projects or ed concept notes; vith national development and climate priorities; he national priorities with a focus of adaptation coastal protection, water management, climate ulture) and the appropriate action in the field of	e of a wide range of financial instruments CF supports (readiness, preparatory or funding/ on support);	cover a wide range of partners (minority, youth, ed groups); and y, competitive, fundable, and transformative.
GCF Investment crit	1. Impact potential	2. Paradigm shift					3. Country ownershi					4. SDG	5. Needs of the recip			6. Cost efficiency an effectiveness			 Not ill-concei other submitt Well aligned v Reflective of t (Sea level rise resilient agrici mitiaation; 	 Representativ (grant) and G implementation 	 Inclusive and disadvantage Of high qualit
		Project pipeline identified using the	MCA Tool in the National Sectoral	Cosultation October	2019							Prioritisation	criteria						Pipeline criteria		Pipeline criteria
ng projects and programs		National priorities	identified with CCDA					v and ranking of	ine using MCA	6	v							>	 <!--</td--><td>→</td><td>alised pipeline</td>	→	alised pipeline
ying and prioritisir		Trend analysis and	determined. MCA Too	finalised with CCTWC Audust 2019				Raviaw	pipe										Printer Process		Fin
<pre>Jre 3-1: Process for identif</pre>		Regional	Consultations May-																NDA's existing pipeline Review and V		
Figu				I	Pha	ise ⁻	Two												Phase Th	iree	

Table 3–2 provides a summary of the priorities identified by participant groups at the four regional consultations across the country.²¹⁸ Table 3–2 also shows how many times each priority was identified by participants (occurrence); and how each of these priorities corresponds to each of the eight GCF Results Areas.

GCF Result Areas:

Mitiga	tion	Adaptation			
M1.	Energy generation and access	A5.	Health food and water security		
M2.	Transport	A6.	Livelihoods of people and communities		
M3.	Buildings, cities, industries, and appliances	A7.	Infrastructure and built environment		
M4.	Forests and land use	A8.	Ecosystems and ecosystem services		

	Priorities and their correspondence to GCF Resul					Areas					
		Mitigation				Adaptatio	n				
		М1.	M2.	M3.	M4.	A5.	A6.	A7.	A8.		
Priority	Occurrence	Energy generation and access	Transport	Buildings, cities, industries, and appliances	Forests and land use	Health food and water security	Livelihoods of people and communities	Infrastructure and built environment	Ecosystems and ecosystem services		
Climate proofing infrastructure	14							Х			
REDD+	9				х						
Food and water security	9					Х					
Climate- induced diseases	6					Х					
Coastal rehabilitation	6								Х		
Institutional capacity- building	6										

Table 3-2: Country-wide summary of participant-identified climate priorities from the four regional workshops

Sanitation	2			Х		
Climate- smart eco- tourism	2					Х
Mangrove rehabilitation	2					Х
Marine and terrestrial protected areas/ Conservation	2					Х
Land-use planning	1				Х	

3.3 National mitigation priorities in the context of GCF Result Areas

The long-list of mitigation project ideas, which was identified in the aforementioned consultations, is outlined in Table 3-3.

These proposals are aligned to the GCF Result Areas and contribute to low-emission sustainable development through achieving:

- Low-emission energy access and power generation
- Low-emission transport
- · Energy-efficient buildings, cities and industries
- Sustainable land use and forest management

The projects with an asterisk (*) denote those projects in the following table that participants at the NSC deemed to be the most important. How many times an asterisk (*) is present denotes the number of times groups deemed particular projects to be the most important. These projects are explored in more detail in Section 4.

²¹⁸This summary is drawn from combining results from each of the four regional consultations across the country. For region-specific participant-identified climate priorities, see Annex III.

Table 3-3: National mitigation funding proposal ideas in the context of GCF Result Areas

Part A. GCF Funding Proposals

Mitigation programmatic area 1

forestry and conservation

National investment program to enhance resilience in geothermal, hydro, wind and solar businesses and energy efficiency sectors*

No.	GCF proposal title	Project proponent	GCF Results Area alignment					
1.1	Development and scaling up of a National Renewable Energy and Energy Efficiency projects and policies to enhance investment in geothermal, hydro, wind and solar businesses to reduce GHG emissions (e.g. FREAGER) *	PNG DoTDPE	M1. Energy generation and access M3. Buildings, cities, industries and appliances					
1.2	Development and enforcement of energy efficiency policy and action plan (building code; minimum energy performance standards with label and resting scheme for lighting, refrigeration etc.) **	PNG DoTDPE	M3. Buildings, cities, industries and appliances					
Mitigati	ion programmatic area 2							
Scaling electric	Scaling up of RE businesses (e.g. solar mini-grid and solar home system, wind, hydro) to enhance access to electricity and livelihoods*							
2.1	Scaling up of off-grid renewable energy (e.g. solar mini-grid and solar home system and wind) to enhance access to electricity and	PNG DoTDPE	M1. Energy generation and access					
	livelihoods*		industries and appliances					
2.2	Scaling up of renewable energy businesses (e.g. solar mini-grid and solar home system	PNG DoT	M1. Energy generation and access					
	and hydro [mini, small and medium]) to enhance access to electricity and livelihoods	• DPE	M3. Buildings, cities, industries and appliances					
Mitigati	ion programmatic area 3							
Scaling	Scaling up of REDD+ programme to enhance carbon sequestrations and livelihoods*							
3.1	Development of REDD+ programme and benefit-sharing to enhance the resilience and livelihoods of communities through social	DALNARIPNGFA	M4. Forests and land use					

DLPP

CEPA

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3.2	Torricelli Mountain Range Forest Protection Project: (36 villages over the Torricelli Mountain Range; already strong community support for REDD+ in the region; focus on conservation and biodiversity but also benefits to water security, also supports forest food and medicine).	 DAL NARI PNGFA DLPP CEPA PNGFA DPE Department of Mineral Policy and Geohazards Management (DMPGM) Mineral Resources Authority (MRA) 	REDD+ M4. Forests and land use
3.3	Utilising MRV to Undertake Multi-Species Reforestation in [area TBD] (benefits to livelihoods, potentially scale up existing REDD+- related MRV activities; benefits to reducing soil erosion and landslides on slopes; increases to agricultural productivity and food security; supports land-use planning).	 DAL NARI PNGFA DLPP CEPA DPE 	REDD+ M4. Forests and land use
3.4	Carbon Sequestration Through Reforestation in [area TBD] by Agricultural Smallholders (benefits to food security, land-use planning; livelihoods)	 DAL NARI PNGFA DLPP CEPA DPE 	REDD+ M4. Forests and land use
3.5	Pilot 1: Eastern Highlands Province • Afforestation of grassland areas – 10,000 – 20,000 ha • Forest conservation – 5,000 – 10,000 ha	 DAL NARI PNGFA DLPP CEPA DPE 	REDD+ M4. Forests and land use
3.6	Pilot 2: West New Britain Province • Secondary Forest Management (on regenerating logged over forest): 100,000 – 150,000 ha • Reforestation – 40,000 – 50,000 ha of logged over forest	 DAL NARI PNGFA DLPP CEPA DPE 	REDD+ M4. Forests and land use

3.7	Pilot 3: Milne Bay Province • Trial to Reduce Impact Logging in a 60,0000 ha intact forest	 DAL NARI PNGFA DLPP CEPA DPE 	REDD+ M4. Forests and land use
3.8	Pilot 4: Sandaun Province • Afforestation Reforestation – 40,000 – 50,000 ha logged over forest • Forest Conservation – 100,000 – 200,000 ha intact forest	 DAL NARI PNGFA DLPP CEPA DPE 	REDD+ M4. Forests and land use
3.9	Pilot 5: East Sepik Province • April Salumei FMA – 343,900 ha intact forest • REDD+ activities will be determined after a development option study (DOS) is conducted by the PNGFA and other relevant stakeholders, including OCCD and NGOs first quarter of 2012.	 DAL NARI PNGFA DLPP CEPA DPE 	REDD+ M4. Forests and land use

3.4 National adaptation priorities in the context of GCF Result Areas

The long list of adaptation project ideas, which was identified in the aforementioned consultations, is outlined in Table 3-4 below.

These proposals are aligned to the GCF Result Areas and contribute to climate-resilient sustainable development through achieving:

- Enhanced livelihoods of the most vulnerable people, communities, and regions
- · Increased health and well-being, and food and water security
- · Resilient infrastructure and built environment to climate change threats
- Resilient ecosystems

The projects with an asterisk (*) denote those projects in the following table that participants at the NSC deemed to be the most important. How many times an asterisk (*) is present denotes the number of times groups deemed particular projects to be the most important. These projects are explored in more detail in Section 4.

Table 3-4: National adaptation funding proposal ideas in the context of GCF Result Areas

Part A. GCF Funding Proposals

Adaptation programmatic area 1

Development of climate-resilient infrastructure to enhance livelihoods

No.	GCF proposal title	Project proponent	GCF Results Area alignment
1.1	Development of climate- resilient infrastructure (e.g. roads and bridges) to link farmers to markets****	PNG DoTDoWPNGFA	A5. Livelihoods of people and communities A7. Infrastructure and built environment

Adaptation programmatic area 2

Enhancing environmental protection through coastal rehabilitation

2.1	Development of climate- resilient coastal defence/ rehabilitation infrastructure to enhance resilience and livelihood of coastal community	•	PNG DoT PNG Ports	A5. Livelihoods of people and communities A7. Infrastructure and built environment
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2.2	Development of sustainable reef to ridge programme to enhance the resilience of vulnerable communities to improve food and water security	 NARI DAL CEPA DLPP PNGFA NFA 	 A5. Livelihoods of people and communities A6. Health, food and water security A7. Infrastructure and built environment A8. Ecosystems and ecosystem services
2.3	Development of marine and terrestrial protected areas to enhance ecosystem services and community resilience and livelihoods	All Sectors	A5. Livelihoods of people and communities A6. Health, food and water security A8. Ecosystems and ecosystem services
2.4	Scaling up of climate-smart or resilient agriculture value chain, businesses and post-harvest infrastructure to produce safe fruits and vegetables	NARIDALPNG DoT	 A5. Livelihoods of people and communities A6. Health, food and water security A7. Infrastructure and built environment A8. Ecosystems and ecosystem services
2.5	Scaling up of coastal rehabilitation programme e.g. mangrove reforestation to enhance resilience and livelihoods of coastal community	 DAL NARI PNGA DLPP CEPA NFA 	A5. Livelihoods of people and communities A8. Ecosystems and ecosystem services
Adapta	ition programmatic area 3		
Enhanc	ing livelihoods through best pro	actice climate-smart agricult	ural approaches
3.1	Scaling up climate-smart agriculture best practices, innovation and businesses	 NARI DAL Commodity Board Coffee Industry 	A5. Livelihoods A6. Health food and water security

- Coffee Industry Corporation (CIC)
 Kokonas Indastri Koporesen (KIK)
 A7. Infrastructure and built environment
 - PNGFA
 - CEPA

to enhance food security,

nutrition and resilience of

vulnerable farmers*

3.2	Scaling up of climate-smart or resilient agriculture value chain and infrastructure to produce safe fruits and vegetables	• NARI • DAL	A5. Livelihoods A6. Health food and water security A7. Infrastructure and built environment		
3.3	Scaling up of climate- smart or resilient agriculture value chain, businesses (agroforestry, permaculture, mulching, conservation agriculture and integrated livestock farming) and infrastructure (road, bridges, post-harvest) to produce safe fruits and vegetables	 NARI DAL PNG DoT DoH 	A5. Livelihoods A6. Health food and water security A7. Infrastructure and built environment		
3.4	Scaling up of climate-smart or resilient agriculture value chain and infrastructure to produce safe fruits and vegetables to improve health, food and nutrition security	 NARI DAL DoH 	 A5. Livelihoods of people and communities A6. Health, food and water security A7. Infrastructure and built environment A8. Ecosystems and ecosystem services 		
Adaptation programmatic area 4					
Enhanc	ing climate information and ea	rly warning systems to improv	ve community resilience and livelihoods		
4.1	Scaling up of climate information and early warning systems to enhance smart decision-making to improve the resilience of	 NARI DAL PNG DoT NCDC NMSA 	A5. Livelihoods of people and communities A7. Infrastructure and built		

environment

٠ CEPA 4.2 Development of climate-NARI • resilient eco-tourism DAL • A5. Livelihoods of people and programme to enhance the PNG DoT • resilience and livelihood of PNGTPA communities • communities • NGOs • CEPA

PNGTA

Adaptation programmatic area 5

vulnerable communities

Improving community health outcomes through strengthening sanitation programmes

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5.1 Programme to prevent climate-induced diseases through enhanced sanitation and awareness outreach programme	 NARI DAL DoH Institute of Medical Research 	A5. Livelihoods of people and communities A6. Health, food and water security
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Part B.	GCF Concept Notes		
1.	Strengthened Weather and Climate Services for Resilient Development for Pacific Islands	SPREP Concept Note	SPREP Concept Note
2.	Strengthening Multi-sectoral Adaptation Responses Through Climate-related information (SMART Climate)	UNDP CIEWS Concept Note	UNDP CIEWS Concept Note

3.5 National cross-cutting priorities in the context of GCF Result Areas

The long-list of cross-cutting project ideas, which was identified in the aforementioned consultations, is outlined in Table 3-5. These proposals are aligned to the eight mitigation and adaptation GCF Result Areas.

Table 3-5: National cross-cutting funding proposal ideas in the context of GCF Result Areas

Part A.	GCF Funding Proposals		
Cross-c	utting programmatic area 1		
Develop	oment of renewable energy initiatives to com	bat climate change-ind	uced water insecurity
No.	GCF proposal title	Project proponent	GCF Results Area alignment
1.1	Scaling up solar farm and integrated wa- ter supply for rural communities in PNG*	 PNG DoT SOEs PNG Water DNPM 	M1. Energy generation and access A5. Livelihoods of people and communities A6. Health, food and water security

3.6 Multi-Criteria Analysis (MCA) Methodology Tool

3.6.1 Development of the Multi-Criteria Analysis (MCA) Methodology Tool

The MCA tool was developed in the CCTWG meeting in Port Moresby from the 12-14 August 2019. The tools criteria, sub-criteria, sub-criteria definitions, and sub-criteria weightings, which are based on the six GCF Investment Criteria, were discussed and agreed upon in this meeting. In this meeting, CCTWG stakeholders trialled the screening process by applying the MCA Methodology Tool and Programme Proposal Screening Criteria against the proposals suggested for GCF funding. Therefore, the MCA Analysis Methodology Tool was rigorously tested. Annex VI provides a detailed overview of the MCA tool.

3.6.2 Use of the Multi-Criteria Analysis Methodology Tool

The long list of project ideas (which is outlined in Table 3-3, Table 3-4, and Table 3-5) was prioritised in the NSC using the MCA Methodology Tool. The prioritised list of project ideas is shown in Table 3-6. The screening and scoring process is described in Annex VI.

Through applying the MCA methodology tool, projects have been selected which are aligned with national priorities and the GCF investment criteria.²¹⁹ The MCA Methodology Tool contains two components: scoring proposals, and ranking and prioritising proposals (this is outlined in Annex VI).

As a part of the MCA tool application, alignment to national priorities was crucial. The priorities identified must align to the development priorities of PNG as outlined in the Vision 2050, MTDP III, StaRS and provincial and sectoral plans, as well as contribute to the global efforts on climate action under SDG 13.²²⁰

Based on the prioritisation review process, proposals were categorised as high, medium or low priority to align with the MTDP III cycle. A high priority project was a score of >62.4, a medium priority project was a score of between 31.2 and 62.3, and a low priority score was a score of <31.2.

3.7 Synthesis of national priorities

3.7.1 Workshop prioritisation process

Table 3-6 presents the project ideas that have been prioritised for submission from the regional consultations held in 2019. Stakeholders prioritised projects by using the MCA Methodology Tool and Programme Proposal Screening Criteria. GoPNG will work closely with partners to mobilise funds to develop Concept Notes and full Funding Proposals for the prioritised project ideas.

²¹⁹Annex II presents analysis on aligning PNG national priorities in the context of GCF results areas, and an assessment of national adaptation and mitigation funding ideas in the context of GCF result areas.
²²⁰CCDA & GGGI. 2020. PNG GCF Project Development Manual.

Table 3-6: Prioritised project ideas as a result of the National Sectoral Workshop

Prioritised GCF project idea

Mitigation programmatic area 1

National investment program to enhance resilience in geothermal, hydro, wind and solar businesses and energy efficiency sectors*

No.	Project title	Project proponent	GCF Result Area alignment	
1.1	Development and scaling up of a National Renewable Energy and Energy Efficiency projects and policies to enhance investment in geothermal, hydro, wind and solar businesses to reduce GHG emissions (e.g. FREAGER)	PNG DoTDPE	M1. Energy generation and access M3. Buildings, cities, industries and appliances	
1.2	Development and enforcement of energy efficiency policy and action plan (building code; minimum energy performance standards with label and resting scheme for lighting, refrigeration etc.)	PNG DoTDPE	M3. Buildings, cities, industries and appliances	
Mitigo	ation programmatic area 2			
Scalir enhar	ng up of renewable energy businesses (e.g. solar min nce access to electricity and livelihoods*	i-grid and solar home	system, wind, hydro) to	
2.1	Scaling up of off-grid renewable energy (e.g. solar mini-grid and solar home system and wind) to enhance access to electricity and livelihoods	PNG DoTDPE	M1. Energy generation and access M3. Buildings, cities, industries and appliances	
Mitigation programmatic area 3				
Scalin	ng up of REDD+ programme to enhance carbon seq	uestrations and liveliho	pods	
3.1	Development of REDD+ programme and benefit sharing to enhance the resilience and livelihood of the community through social forestry and conservation	 DAL NARI PNGFA DLPP CEPA 	M4. Forests and land use	
Adaptation programmatic area 1				
Development of renewable energy initiatives to combat climate change-induced water insecurity				

No.	Project title	Project proponent	GCF Result Area alignment
1.1	Implementing integrated water supply and hybrid energy systems for household and farming irrigation for the ten most drought-affected communities in the Oriomo-Bituri LLG of South Fly District in Western Province, PNG	PNG DoTSOEsPNG WaterDNPM	A5. Livelihoods of people and communities A6. Health, food and water security

Adapte	ation programmatic area 2			
Develo	pment of climate-resilient infrastructure to enhanc	e liveliho	oods	
2.1	Development of climate-resilient infrastructure	•	PNG DoT DoW	A5. Livelihoods of people and communities
	(e.g. roads and bridges) to link farmers to markets		PNGFA	A7. Infrastructure and built environment
Adapte	ation programmatic area 4			
Enhand	cing livelihoods through best practice climate-sma	rt agric	ultural approad	ches
4.1	Scaling up climate-smart agriculture best practices, innovation and businesses to enhance food security, nutrition and resilience of vulnerable farmers	• • • •	NARI DAL Commodity Board CIC KIK PNGFA CEPA	A5. Livelihoods A6. Health food and water security A7. Infrastructure and built environment

3.8 Phase Three: Review and verification process

Following the regional and national consultation workshops, the prioritised project ideas were reviewed and verified through bilateral consultations with stakeholders and via workshops held in 2020. The consultations undertaken in Phase Three are presented below in Table 3-7.

Consultation	Date	Stakeholders consulted	Stakeholder contribution
Private Sector Forum	18 March 2020	 CCDA (GCF NDA) Government agencies Private sector actors Development partners 	 Presentation of the pipeline of investment opportunities. Private sector provided feedback on the pipeline.
Bilateral Con- sultations	March- May 2020	Sectoral ministriesPrivate sector actorsDevelopment partners	 Stakeholders provided feedback and input on the pipeline of investment opportunities.
National Vali- dation Work- shop	17 May 2020	 National government partners Sectoral ministries Private sector actors AEs Development partners NGOs 	 The finalised priority project pipeline was presented to stakeholders. Stakeholders provided feedback on the prioritised projects.

Table 3-7: Phase three consultations

In bilateral consultations with CCDA, held between March-May 2020, sectoral ministries and private sector entities, the prioritised project ideas were reviewed and verified by potential project proponents. As a result of these consultations, additional proposals were also identified, including on low carbon transport.

Private sector organisations were consulted on the list of prioritised proposals in the Private Sector Forum held in March 2020 and via bilateral consultations. From these consultations, proposals were tailored to meet the needs of the private sector. This included designing proposals to strengthen the enabling environment and identifying proposals that could encourage companies to scale up private sector investment flows for lowcarbon and climate-resilient development.

The list of prioritised project ideas was then merged with the NDA's existing project pipeline (as shown in Figure 3-1). This finalised pipeline of projects was reviewed and verified in the GCF Country Programme Webinar, which was held on May 19, 2020. In this webinar, stakeholders from national government agencies, sectoral line ministries, non-governmental organisations, development partners and accredited entities, and the private sector were consulted on the finalised pipeline of projects. The finalised project pipeline is outlined below in Section 4.

For the annual consultations linked to the annual review of the Country Programme, the identification of GCF priorities should follow the process outlined herewith in Phase Three. The annual consultations will involve the below steps:

- Review of project ideas, Concept Notes and Funding Proposal submitted to the NDA from national stakeholders, development partners and AEs.
- Annual stakeholder consultation workshop, which will provide a platform for stakeholders to advance new projects and initiatives, revise and review the pipeline, and reflect on the progress made in implementing the GCF Country Programme.
- Bilateral consultations with stakeholders as necessary.

The detailed baseline assessment and regional consultations outlined in Phase One and Phase Two should be carried out on a five-yearly basis, in alignment with the MTDP process and the development of a new Country Programme.



This section outlines the pipeline of prioritised projects and programs for the GCF to finance in PNG, which includes the NDA's existing GCF pipeline and the proposals prioritised from the consultations outlined in Section 3. The summary of GCF financing requested over 2020-2027 is outlined in Table 4-1, Table 4-2, and Table 4-3.

4.1 Priority proposals for submission in 2020 to 2023 ²²¹

Table 4-1 outlines the high priority proposals that are planned to be submitted to the GCF Secretariat in 2020 to 2021. Table 4-2 outlines the priority proposals for submission in 2021 to 2023.

Table 4-1: High priority proposals for submission in 2020 to 2021

Proposal 1.1: Melanesia -	Coastal and Marine Ecosystem Resilience Programme (M-CMERP)
Description	The objective of the Melanesia Coastal and Marine Ecosystem Resilience Programme (M-CMERP) is to "Enhance the resilience and adaptive capacity of Melanesian Pacific Island people to climate change by protecting, restoring and managing coastal and marine ecosystems and the services they provide".
	M-CMERP will provide resource, technical and capacity support to enable holistic, long-term, effective and efficient climate-resilient development planning, decision making and investments through:
	 Prioritisation and integration of ecosystem-based adaptation (EbA) in national planning and decision making, including long term (30-50 year) climate future, impact and resilience scenarios and sharing information, best practices, and tools
	 Grants (Melanesia Blue Impact Facility) for EbA and resilient development investments.
Accredited Entity	IUCN
Implementing agencies	IUCN, SPREP, CCDA

²²¹The proposals in this table are not ordered based on priority.

Project duration	5 years
Theme	Adaptation
Sector	Public sector
Focus	Regional
Result areas	A5. Livelihoods of people and communities
	A8. Ecosystems and ecosystem services
Indicative GCF financing	US\$40 million
Indicative co-financing	US\$10 million
Indicative overall financing	US\$50 million
Status	PPF approved by the GCF, Funding Proposal is yet to be developed.

Proposal 1.2: Papua Nev	v Guinea REDD+ Results Based Payment for results period 2014-2015
Description	GoPNG has been actively exploring approaches to incorporate climate change mitigation goals into forest and land use policy and practice for over 10 years. GoPNG has stated its commitment to achieve sustainable development and a reduction in deforestation and forest degradation emissions in key national strategies and policies including the National Climate Compatible Development Policy (2014), CCMA (2015), and NDC (2015).
	PNG submitted a FRL in January 2017, well before the launching of the GCF Results Based Payment pilot in October 2017 and the publication of the GCF Scorecard (GCF/B.18.23). To meet the requirements of the GCF Scorecard, PNG recalculated REDD+ results against a historical average of emissions with an adjustment of 0.02% of the total forest carbon stock. The BUR technical annex, therefore, presents emission reductions of 9.0 M tCO ₂ in line with UNFCCC modalities, of which the country proposes to offer 6.6 M tCO ₂ in line with the guidance set out in the GCF scorecard.
Accredited Entity	FAO
Implementing agencies	FAO, CCDA
Results period	2014-2015
Theme	Mitigation
Sector	Public sector
Focus	Domestic
Result areas	M4. Forests and land use
Status	Concept Note developed and submitted, and currently under review by GCF Secretariat.

Proposal 1.3: Enhancing Early Warning (EARTH)	g Adaptation and Resilience Through Impact-Based Forecasting and End-to-End
Description	PNG is prone to climate-related hazards like flood, landslides, inland frost, drought, storms, strong winds, ocean warming, and sea swells. These affect the majority of the country's rural population, who rely on climate-sensitive sectors of agriculture, forestry and fishing for livelihoods. The project introduces impact-based forecasting and application of multi-timescale forecast information in adaptation initiatives to increase community resilience and to enhance preparedness against existing hazards, and to projected increases in temperature, more extreme rainfall, more intense storms and sea level rise.
	The objectives of this project will be achieved through the following outputs:
	 Developing integrated observation, forecasting and communication systems and procedures, including upgrading of observation, monitoring and forecasting systems, development of cost-effective information and data management systems, and establishing of appropriate IT infrastructure to communicate and disseminate impact forecasts and response advisories.
	 Establishing appropriate institutional mechanisms and capacity for weather/ climate applications, including setting up of a multi-agency, multi-hazard, impact-based forecasting and early warning centre; enhancing forecasting, IT systems, and monitoring; and capacity building of users at national and local levels.
	• Ensuring effective and efficient project implementation, which includes organising learning and sharing activities and M&E to assess project implementation.
Accredited Entity	FAO
Implementing agencies	FAO, CCDA, PNGNWS
Project duration	5 years
Theme	Adaptation
Sector	Public sector
Focus	Domestic
Result areas	A5: Livelihood of people and communities
	A6: Health and well-being, and food and water security
	A7: Infrastructure and built environment
	A8: Ecosystem and ecosystem services
Indicative GCF financing	US\$10 million (SAP)
Indicative	TRC
co-financing	
Indicative overall financing	TBC
Status	Concept Note developed and submitted, and currently under review by GCF Secretariat (builds on the SMART- UNDP Concept Note).

Proposal 1.4: Adapting Pacific Island Tuna Fisheries to Climate Change	
Description	Continued GHG emissions are degrading the coral reefs that Pacific Island communities rely on for food, and changing the distribution of the tuna resources underpinning economies in the Pacific region. This 'early warning system' regional project will: 1) prepare small-scale fisheries to catch more tuna as the abundance of coral reef fish declines; and 2) provide governments with the information needed to adapt industrial tuna fisheries to maintain the socio-economic benefits derived from tuna, thereby making tuna-dependent Pacific Island economies more resilient to climate change.
Accredited Entity	СІ
Implementing agencies	NFA, Regional Agencies (TBC)
Project duration	7 years
Theme	Adaptation
Sector	Public sector
Focus	Regional
Result areas	A5. Livelihoods of people and communities
	A6. Health, food and water security
	A8. Ecosystems and ecosystem services
Indicative GCF financing	US\$116 million
Indicative co- financing	US\$32 million
Indicative overall financing	US\$148 million
Status	Concept Note developed and submitted, and currently under review by GCF Secretariat. PPF support is to be requested.

Table 4-2: Priority proposals for submission in 2021 to 2023

Proposal 2.1: Application of Sustainable Agriculture Practices (ASAP) for Smallholder Farmers in the Southern Region (Western, Central and Milne Bay Province)	
Description	Food production in the three provinces is at risk from extreme rainfall, tidal surges and prolonged drought. The project objective is to enhance provincial and district agriculture resource centres, integrate climate-smart approaches to improve farm production and profits, as a means to build the resilience of vulnerable communities through sustainable agriculture practices and training.
	The project will be executed by DAL and implemented by PGs of the three provinces and monitored at the district level with lead key stakeholders. The project will also encourage PPPs to enhance local cooperative groups and support smallholder farmers to establish markets to sustain livelihoods.
	The project concept fits in with the country's national priorities, including the PNG Climate Change Compatible Development Management Policy (2014), PNG Vision 2050 and PNG Development Strategy Plan 2010–2030.
	The objectives of this project will be achieved through the following outputs:
	 Mainstream climate agriculture adaptation planning into provincial and district development plans and policies, including by developing an advisory committee and establishing a food crop policy to strengthen industry and the local economy. Strengthen climate-smart agriculture practices to increase food production
	 and enhance adaptive capacity of rural farming communities, including through enhancing climate agriculture infrastructure (e.g. community water harvesting / rain-fed systems) and farmer training in climate-smart agriculture and improved horticulture. Promote market accessibility & food security via provincial food production value chain development and supporting smallholder farmers to better access the local markets with improved support services and climate proofed infrastructure.
Accredited Entity	FAO
Implementing agencies	CCDA, DAL
Project duration	5 years
Theme	Adaptation
Sector	Public sector
Focus	Domestic
Result areas	A5. Livelihoods of people and communities
	A6. Health, food and water security
Indicative GCF financing	US\$10 million (SAP)
Indicative co- financing	ТВС
Indicative overall financing	ТВС
Status	Concept Note has been developed, and initial consultations have been undertaken.

Proposal 2.2: Development and scaling up of national renewable energy projects and policies to enhance investment in geothermal, hydro, wind and solar businesses to reduce GHG emissions	
Description	As PNG's economy has developed, so too has its demand for energy, particularly electricity. With an electricity generation capacity of approximately 797 MW, half of PNG's supply is utilised by the private sector, primarily for extractive mining purposes. Approximately one-third is provided by diesel generators, and the remaining is provided through geothermal, gas and biogas generation.
	This initiative will support the GoPNG to develop renewable projects (geothermal, hydro, wind and biomass) through project loans and grant financing. Given the carbon intensity of PNG's energy supply, this project will contribute to avoiding emissions and achieving the key priorities identified in the NDC (2015), which include 100% renewables by 2030 and improvements in energy efficiency.
Description	This project will also build on the results of the Facilitating Renewable Energy & Energy Efficiency Applications for Greenhouse Gas Emission Reduction (FREAGER) project, which strengthened the enabling environment for adopting and up- scaling of renewable energy and energy-efficient technologies to achieve greenhouse gas emissions reductions in PNG.
	The objectives of this project will be achieved through the following outputs:
	 Development of a renewable energy policy and renewable energy action plans. Strengthen the enabling environment, including to engage the private sector in up-scaling of and investing in renewable energy (in particular extractive industries co-financing renewable energy projects).
	Completing feasibility studies and implementing investment projects, which could include:
	 Large-sized projects that provide renewable energy, including potential projects that could be co-financed by extractive industries. The 90 MW Kaugel Hydropower is a potential project, which could be implemented as an IPP.
	 Small-and medium-sized projects, including methane capture from wastewater treatment processes for New Britain Palm Oil Limited (NBPOL) sites. In this example, captured methane could be used to generate renewable energy for processing oil palm. There are potential sites in West New Britain (Warastone, Kapiura, Nunrundo); Milne Bay (Hagita), and Higaturu (Sangara). In total, NBPOL has identified 8-10 potential sites for biogas plants, but these are conditional on finance being available. Other renewable energy projects, including geothermal, hydro, wind and biomass power projects.
Accredited Entity	TBC
Implementing agencies	CCDA, PPL, DPE, Independent Consumer and Competition Commission (ICCC) (TBC)
Project duration	ТВС
Theme	Mitigation

Sector	Public/private sector
Focus	Domestic
Result areas	M1. Energy generation and access
	M3. Buildings, cities, industries and appliances
Indicative GCF financing	US\$30 million
Indicative	TRC
co-financing	IBC
Indicative overall financing	ТВС
Status	Project idea

	PNG's infrastructure, including roads, bridges and airstrips, provide a significant role in connecting rural communities to major cities and economic centres. As climate change impacts escalate and extreme weather becomes more frequent, critical transport infrastructure, such as roads and bridges, are increasingly threatened by intense floods and landslides.
	The development of resilient infrastructure is a key priority of GoPNG, and this project will contribute to achieving economic development and strengthen the resilience of agricultural producers and rural communities. This project will contribute to achieving the goals and targets of the NCCDMP (2014), the National Road Network Strategy (2018-2037), and the MTDP III (2018-2022).
Description	The objectives of this project will be achieved through the following outputs:
	 Completion of a national climate change vulnerability assessment to identify at-risk critical infrastructure; Development of climate change hazard maps to inform future infrastructure development; Design, construction, rehabilitation and climate-proofing of critical infrastructure, including roads that are critical for linking agricultural producers to markets; Mainstreaming of climate-resilient approaches into design and maintenance processes, including through developing guidelines and checklists for developing climate-resilient infrastructure; Capacity building of DoW to assess climate change vulnerability, and develop and design climate-resilient infrastructure.
Accredited Entity	TBC
Implementing agencies	DoW
Project duration	TBC
Theme	Adaptation
Sector	Public sector
Focus	Domestic
Result areas	A7 Infrastructure and built environment

Indicative GCF financing	US\$40 million
Indicative co-financing	TBC
Indicative overall financing	TBC
Status	Project idea

Proposal 2.4: Scaling up of off-grid renewable energy to enhance access to electricity and improve livelihoods		
Description	Given PNG's low electrification rate, as well as the high cost of extending the grid to remote areas, off-grid renewable energy solutions can enhance energy security in PNG. This project will engage the private sector to deploy off-grid energy systems, and strengthen regulation and legislation to overcome market barriers. As well as reducing energy poverty, this project will result in avoided emissions from reduced kerosene and diesel use.	
	This project will contribute to achieving the National Energy Policy (2018-2028) target of 70% electrification by 2030, and is also aligned to the policies and targets of the NDC (2015) and the NCCDMP (2014).	
	The objectives of this project will be achieved through the following outputs:	
	• Deployment of off-grid energy systems (e.g. mini-grids, solar home systems and biogas digesters) via an affordable payment plan to households and essential community services (i.e. providing UPNG with 1.5 MW off-grid solar farm on campus). The private sector will install, operate and maintain the off-grid energy systems.	
	 Strengthen regulation and legislation to support private sector activity, including through facilitating access to finance and certifying the quality of off- grid renewables equipment sold in PNG. 	
	• The project will also strengthen the capacity of DPE to collect, compile, verify, and disseminate data on off-grid energy access to inform policy design, monitor impact, and evaluate effectiveness.	
Accredited Entity	ТВС	
Implementing agencies	DPE, PPL, ICCC (TBC)	
Project duration	ТВС	
Theme	Mitigation	
Sector	Public/private sector	
Focus	Domestic	
Result areas	M1. Energy generation and access	
Indicative GCF financing	US\$20 million	
Indicative co-financing	ТВС	
Indicative overall financing	TBC	
Status	Project idea	

Proposal 2.5: Investment in energy efficiency programme to decouple energy consumption with productivity whilst reducing GHG emissions in the building and industrial sectors		
Description	While PNG has limited experience implementing energy efficiency initiatives for buildings and industry, there have been lighting initiatives which have resulted in significant financial savings.	
	This project will enable energy efficiency investments through regulatory and policy development, capacity building, overcoming of financing barriers, and implementation of energy efficiency programs. The scaling up of energy efficiency investments for buildings and industry will provide substantial mitigation impacts in PNG.	
	This project will also build on the results of the Facilitating Renewable Energy & Energy Efficiency Applications for Greenhouse Gas Emission Reduction (FREAGER) project, which strengthened the enabling environment for adopting and upscaling of energy-efficient technologies to achieve greenhouse gas emissions reductions in PNG.	
	 The objectives of this project will be achieved through the following outputs: Development, enforcement and M&E of energy efficiency policy and action plan - which could include a review of the building code, development of minimum energy performance standards and label scheme supported with accredited appliance testing facility (e.g. lighting, refrigeration) 	
	 Development of mechanisms for overcoming financial barriers to undertake energy audits, adopt energy-efficient technology, and other actions. 	
	• Implementation of comprehensive energy efficiency programs (including building and industrial energy audits and retrofits, and support for future and large power customers).	
Accredited Entity	TBC	
Implementing agencies	DPE, PPL, ICCC (TBC)	
Project duration	TBC	
Theme	Mitigation	
Sector	Public/private sector	
Focus	Domestic	
Result areas	M1. Energy generation and access	
Indicative GCF financing	US\$20 million	
Indicative co-financing	ТВС	
Indicative overall financing	ТВС	
Status	Project idea	

4.2 Medium-term pipeline of GCF projects and programs (2023 to 2027)

The pipeline of proposals to be developed over the medium term is shown in Table 4-3.

Table 4-3: Pipeline of proposals to be developed over 2023 to 2027

Proposal 3.1: Climate Resilient Agriculture for Farmers and Agricultural SMEs in Vulnerable Regions of Papua New Guinea	
Description	PNG is highly vulnerable to extreme weather events caused by climate change. Located in cyclone-prone South Pacific with a coastline of 5,150 kilometres, it is heavily exposed to tsunamis, floods, and droughts, the threats of which are compounded by weak institutional capacity and inadequate infrastructure. The majority of those affected are 4.3 million low-income smallholder farmers living in rural areas. These households rely primarily on rain-fed subsistence agriculture to produce staple and cash crops such as sweet potato, cassava, yam, and sugarcane – it is estimated that more than 75% of food consumed is locally grown.
	This program aims to address climate change related risks/hazards faced by smallholder farmers and agricultural SMEs by accelerating and scaling up the development of a climate-resilient agricultural sector, thereby enhancing their adaptive capacity and contributing to sustainable and inclusive growth.
	The objectives of this project will be achieved through the following outputs:
	 Scale up investments in climate-resilient agriculture – particularly those concerning the needs of smallholder farmers and SMEs – by establishing a guarantee corporation. The corporation, in which non-government entities hold majority ownership, will provide partial guarantees to participating banks for a specific type of loan, i.e. one that will be used to generate adaptation outcomes targeted by this program. Foster a market ecosystem in which service providers and smallholder farmers can enter into mutually beneficial arrangements. Activities include setting up an online registry of existing service providers, launching a start-up incubator program, preparing standardised contracts, and training for current/prospective entrepreneurs. Capacity building activities for different stakeholder groups whose understanding and buy-in are critical for program implementation. Participating banks will receive training on climate change and mitigation/adaptation projects; government entities will learn about optimal coordination and best practices for monitoring, evaluation, and codification of lessons learned; SMEs and rural communities will attend workshops on climate change generally as well as crop-specific knowledge for improved resilience.
Accredited Entity	TBC
Implementing agencies	DAL, GGGI
Project duration	5 years
Theme	Cross-cutting
Sector	Public/private sector
Focus	Domestic

Result areas	A5. Livelihoods of people and communities
	A6. Health, food and water security
Indicative GCF financing	US\$10 million
Indicative co-financing	US\$2 million
Indicative overall financing	US\$12 million
Status	SAP Concept Note fully developed and yet to be submitted to GCF. AE not identified.

Proposal 3.2: Safeguarding of vulnerable districts and local-level government areas through strengthened adaptation planning	
Description	The project will build community resilience to climate hazards through improving risk management and strengthening institutional capacity to implement appropriate adaptation measures. The impacts of climate change may result in the displacement of highly vulnerable communities. This is exemplified by the climate-induced migration of communities from the Manam and the Carteret Islands, which have been impacted by environmental degradation and climate change hazards.
	This project is aligned with the adaptation policy theme (risk management and adaptive governance) in the NCCDMP (2014), and the NDC (2015).
	The objectives of this project will be achieved through the following outputs:
	• Capacity building of DLPP and local government institutions (provinces, districts and LLGs) on strengthening vulnerability assessments and adaptation planning.
	 Completion of sub-national climate change risk assessments and adaptation plans for highly vulnerable districts and LLGs. This will focus on communities most at risk of climate change hazards (e.g. coastal and inland flooding, landslides, and vector-borne diseases), and will build on and align to the NAP.
	 Sub-national climate change adaptation plans will outline the process for supporting migration within PNG for highly vulnerable districts and LLGs.
	 In consultation with relevant stakeholders, adaptation actions will be identified and prioritised for the most vulnerable districts and LLGs. This could include the development of climate-proofed housing for vulnerable communities and climate-induced migrants, deployment of end-to-end early warning systems to reduce risk from hydrometeorological hazards, and community-based mangrove planting
Accredited Entity	TBC
Implementing agencies	DLPP, CCDA, Provincial Climate Change Offices
Project duration	5 years
Theme	Adaptation
Sector	Public sector
Focus	Domestic

Result areas	A5. Livelihoods of people and communities		
	A7. Infrastructure and built environment		
Indicative GCF financing	US\$10 million		
Indicative co-financing	TBC		
Indicative overall financing	ТВС		
Status	Project idea		

Proposal 3.3: Scaling up geothermal power investment to improve energy supply and access whilst reducing GHG emissions				
Description	This project will harness geothermal energy development to help reduce GHG emissions while meeting electrification needs in PNG. PNG has considerable geothermal potential, with 55 known areas of surface geothermal activity in the country, particularly on the island of New Britain. Despite the large potential, exploitation to date has been limited, mainly due to lack of an appropriate regulatory framework.			
	Given the isolated locations of geothermal resources—usually remote from larger population centres—and the high early-stage development costs for exploration and drilling, geothermal energy is highly suitable for supporting mining and other industrial activities. The only geothermal plant in PNG is the Lihir Gold Mine in New Ireland Province, which has a capacity of 56 MW. There is also an option for geothermal producers to connect to the grid as an IPP.			
	Given the high carbon intensity of PNG's energy supply, this project will contribute to avoiding emissions and achieving the key priorities identified in the NDC (2015), which includes 100% renewable energy generation by 2030.			
	The objectives of this project will be achieved through the following outputs:			
	 Enabling private sector and public sector development through developing a conducive regulatory and policy environment. Conducting reviews of policy (including the 2012 Geothermal Energy Policy), regulations and legislation. 			
	 Assessment of financing options for geothermal developers (such Power Purchase Agreements, and contracts for providing power to industry). 			
	• Early-stage exploration designed to define geothermal reservoirs, including drilling and reservoir testing in known geothermal systems such as the Rabaul, East New Britain Province (Southern Energy Systems Limited has undertaken preliminary studies at this site).			
	• Construction of a small geothermal pilot projects to understand and test the viability of geothermal resources.			
Accredited Entity	TBC			
Implementing agencies	CCDA, DPE, PPL, ICCC, MRA (TBC)			

Project duration	TBC	
Theme	Mitigation	
Sector	Public/private sector	
Focus	Domestic	
Result areas	M1. Energy generation and access	
Indicative GCF financi	US\$30 million	
Indicative co-financine	g TBC	
Indicative overall financing	ТВС	
Status	Project idea	
posal 3.4: Development	of REDD+ programme and benefit sharing to enhance the resilience and hrough social forestry and conservation	
scription I c c ł ł	n PNG, nearly two-thirds of the land is covered by forests, 97% of which are held inder custom landownership. The distribution of results-based finance is a critical component of REDD+ emission reduction initiatives. This project will focus on the development of equitable and transparent benefit sharing arrangements to define now monetary and/or non-monetary benefits are shared among stakeholders in PNG.	

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Benefits could include community training and provision of social forestry and conservation inputs (such as equipment, seedlings, and facilities for processing products), and also benefits for community development (such as schools and health facilities). The provision of these benefits will have the potential to generate further emissions reductions and result-based finance for communities.

This project is aligned to the MTDP III (2018-2022), which aims to promote sustainable forestry, and the NDC (2015), which states that "PNG can contribute to addressing the global mitigation gap by reducing deforestation and promoting forest conservation and sustainable management of its forests".

The objectives of this project will be achieved through the following outputs:

- Comprehensive consultations with stakeholders to design and develop benefit-sharing arrangements.
- Identification of land for conservation in PNG.
- Design and implementation of social forestry and conservation initiatives.

Accredited Entity	TBC
Implementing agencies	PNGFA, CEPA
Project duration	TBC
Theme	Mitigation
Sector	Public sector
Focus	Domestic
Result areas	M4. Forests and land use
Indicative GCF financing	US\$10 million
Indicative co-financing	TBC
Indicative overall financing	TBC
Status	Project idea

Proposal 3.5: Papua New Guinea green energy transport project				
Description	With increased urbanisation in PNG, there is a need to provide additional transport services, such as low-emissions public transport. Public transport services are currently old and poorly maintained in PNG's urban centres, leading to high fuel consumption, inadequate services, and high operating costs. This project aims to develop low-emission climate-resilient transport infrastructure for urban centres in PNG. This project will also build on the results of a recent UN Women program to upgrade transport infrastructure incorporating gender considerations.			
	This project will contribute to achieving the goals and targets of the MTDP III (2018-2022), the NDC (2015), and the NCCDMP (2014).			
	The objectives of this project will be achieved through the following outputs:			
	Action plan for implementing green transport projects linked to the Medium- Term Transport Plan III;			
	 Completion of feasibility studies, including for electrified bus rapid transit systems in urban centres and climate-resilient supporting infrastructure (such as flood proofing of bus stops); 			
	 Implementation of pilot projects in key urban centres, including Port Moresby and Lae. 			
Accredited Entity	TBC			
Implementing agencies	PNG DoT (TBC)			
Project duration	TBC			
Theme	Cross-cutting			
Sector	Public/private sector			
Focus	Domestic			
Result areas	M1. Energy generation and access			
	A7. Infrastructure and built environment			
Indicative GCF financing	US\$20 million			
Indicative co-financing	TBC			
Indicative overall financing	TBC			
Status	Project idea			

Proposal 3.6: Implement irrigation for the ten mo Western Province, PNG	ing integrated water supply and hybrid energy systems for household and farming st drought-affected communities in the Oriomo-Bituri LLG of South Fly District in			
Description	 The project seeks to strengthen the adaptive capacity of smallholder subsistence farmers to address climate-induced irrigation and drinking water shortages by improving the resilience of communities. The project covers the ten most drought-affected communities in the Oriomo-Bituri LLG of South Fly District in Western Province, which has experienced frequent and intense droughts over the past decade. This project will address food and water security to develop adaptive capacity throughout longer drought periods. This project aligns with the National Food Security Policy 2016-2025, which prioritises addressing the impact of changing weather patterns on food production and stability of food supply. The objectives of this project will be achieved through the following outputs: Completing climate vulnerability assessments to identify the ten most drought-affected communities. Implementation of commercial farming initiatives, such as a vanilla cooperative, to foster rural economic development. Implementing actions to strengthen food and water security, including through: Implementation of potable water supply systems to households and agricultural producers. 			
	 Implementation of renewable energy systems (up to 30 kW electricity per community). 			
Accredited Entity	ТВС			
Implementing agencies	DAL, NARI (TBC)			
Project duration	ТВС			
Theme	Adaptation			
Sector	Domestic			
Focus	Public sector			
Result areas	M1. Energy generation and access A5. Livelihoods of people and communities A6. Health, food and water security			
Indicative GCF financing	US\$10 million (SAP)			
Indicative co-financing	ТВС			
Indicative overall financing	ТВС			
Status	Project idea			

4.3 GCF proposal development requirements

There are a number of steps required for preparing and submitting of a Funding Proposal.²²² The PNG GCF Project Development Manual outlines in detail the steps and requirements for developing GCF Concept Notes, Project Preparation Facility applications, and full Funding Proposals. Project Proponents should refer to this Manual, and resources on the GCF website, for guidance on GCF processes, policies, and requirements, including for the preparation of GCF proposals. There is also guidance provided on GCF processes and terminology in Annex IX of this document.

Project proponents can submit Funding Proposals to the GCF – through an AE– at any time or by responding to a specific request for proposals published on the GCF website. Funding Proposals submitted to the GCF must include a NoL signed by CCDA, the GCF NDA. Through the no-objection procedure, the NDA is responsible for ensuring that Funding Proposals are aligned with national climate strategies, developed using country-driven approaches, and are in conformity with relevant national laws and regulations, in accordance with the GCF's Environment and Social Safeguards (ESS). The no-objection procedure for PNG is outlined in the NDA No-Objection Procedure Guidelines.²²³

The GCF has a Policy on Co-financing, which sets out key principles and approaches to determine and monitor public and private co-financing applicable to all GCF-funded activities.²²⁴ The GCF seeks to attain adequate levels of co-finance to, amongst other objectives, achieve the highest possible impact and ambition, strengthen climate action through both public and private sector contributions to the projects and programs, and strengthen country ownership and provide the necessary resources for the long-term sustainability of climate actions in developing countries. The key principles regarding co-financing, as outlined in the GCF Policy on Co-financing, are as follows:

- "Co-financing" means the financial resources required, whether Public Finance or Private Finance, in addition to the GCF Proceeds, to implement the Funded Activity for which a Funding Proposal has been submitted.
- There is no minimum amount of Co-financing required for a Funded Activity, and no specific sources of Co-financing that must be complied with.
- While maximising Co-financing is deemed desirable, GCF will avoid using Co-financing metrics as standalone targets since maximising climate mitigation and adaptation results does not necessarily equate with minimising or optimising spending on climate mitigation and adaptation.
- Where GCF funding is covering the whole or part of the incremental costs of a Funded Activity, other costs should be co-financed by other sources.

 ²²²CCDA & GGGI. 2020. PNG GCF Project Development Manual.
 ²²³CCDA. 2020. NDA No-Objection Procedure Guidelines.
 ²²⁴GCF. 2019. Policy on Co-financing.

Different approaches have been used to define the concept of incremental costs associated with projects to address climate change adaptation and mitigation. The IPCC, for example, defines incremental costs as "the cost of capital of the incremental investment and the change of operating and maintenance costs for a mitigation or adaptation project in comparison to a reference project. It can be calculated as the difference of the net present values of the two projects".

4.4 Project preparation support

The GCF's PPF offers financial support for project preparation of up to US\$1.5 million per project to cover feasibility studies, and market and financial analysis. As part of the PPF application process, project proponents should first prepare and submit, through an AE, a Concept Note where specific financial support from GCF is required. Capacity building may be required to ensure that project proponents understand the needs and requirements of a GCF proposal. In this instance, resources may need to be identified. As noted above, a PPF has been approved for the "Melanesia – Coastal and Marine Ecosystem Resilience Programme (M-CMERP) proposal".

4.5 Accreditation

At this stage, PNG does not have a domestic DAE. Therefore, PNG must currently indirectly access GCF finance through regional DAEs (SPREP and SPC) and international AEs.

The NDA has commenced a preliminary assessment of potential national entities which could apply for GCF accreditation. The current status of the accreditation pipeline is presented in Table 4-4.

As outlined below in Section 4.6, a priority is to use readiness finance to develop an accreditation strategy. This strategy will include the following actions: (i) Completion of a partner mapping to determine potential entities; (ii) stakeholder analysis on the suitability and qualification of public, private and NGO entities, the complementarity of nominated entities in terms of their fiduciary capacities, ESS and risk management capacities; and, (iii) an assessment of potential DAEs based on potential alignment to the Country Programme priorities, including the sectors and types of instruments envisaged.

²²⁵IPCC. 2014. Climate Change 2014: Mitigation of Climate Change. Contribution of Working Group III to the Fifth Assessment Report of the Intergovernmental Panel on Climate Change. Cambridge: Cambridge University Press; GCF. 2018. Incremental cost methodology: potential approaches for the Green Climate Fund. GCF/B.19/34.

Table 4-4: Status of accreditation

Entity	Alignment with prioritised p	Status of accreditation	
	Adaptation	Mitigation	
National Development Bank	Proposals 2.2, 2.4, 3.1 & 3.6 (TBC)	Further analysis is required	Correspondence is ongoing with this entity
Department of Treasury	Further analysis is required	Further analysis is required	Correspondence is ongoing with this entity
Bank South Pacific	Further analysis is required	Further analysis is required	Correspondence is ongoing with this entity
Kina Bank	Further analysis is required	Further analysis is required	Correspondence is ongoing with this entity
MiBank	Further analysis is required	Further analysis is required	Correspondence is ongoing with this entity
Center for Excellence in Financial Inclusion	Proposals 2.2, 2.4, 3.1 & 3.6 (TBC)	Further analysis is required	Correspondence is ongoing with this entity
National Agriculture Research Institute	Proposals 3.1 & 3.6 (TBC)	Further analysis is required	Correspondence is ongoing with this entity
Bank of Papua New Guinea (BPNG)	Further analysis is required	Further analysis is required	Identified by the NDA as a potential DAE
Department of Finance (DoF)	Further analysis is required	Further analysis is required	Identified by the NDA as a potential DAE
Department of National Planning and Monitoring (DNPM)	Further analysis is required	Further analysis is required	Identified by the NDA as a potential DAE
Climate Change and Development Authority (CCDA)	Further analysis is required	Further analysis is required	Potential DAE

4.6 Readiness needs

The Readiness Programme may provide up to US\$1 million per country per year for support related to institutional capacity building, coordination, policy and planning, and programming for investment.²²⁶

Although there has been progress through implementation of the first Readiness Programme, further institutional strengthening efforts are required (as outlined in Table 1-9) in the following areas:

- Direct Access to Climate Finance: PNG does not have a DAE and therefore this area is a high priority.
- Climate Finance Access: PNG has not yet accessed GCF project/program funding at the national level therefore, the development of Concept Notes and Funding Proposals for national projects/programs is a high priority.

In addition, the second Readiness Programme will shortly commence. The pipeline of readiness activities is shown in Table 4–5.

²²⁶GCF. 2020. Readiness and Preparatory Support Programme Guidebook.
Table 4-5: Pipeline of readiness activities

Project Title	Delivery Partner	Total Funding	Duration	Implementing Agencies	Status
Strengthening the NDA capacity to develop GCF project pipeline and monitor and coordinate GCF project implementation in PNG	SPREP	US\$805,971	18 months	SPREP, CCDA	Submitted to the GCF and currently under review.
Establishment of REDD+ registry and nesting mechanism in PNG.	FAO	US\$993,396	2 years	FAO, CCDA, UNDP	Submitted to the GCF and currently under review.
 Institutional strengthening and low carbon planning. Country programming development of low carbon strategy and NDC implementation roadmap, and strengthen M&E frameworks for CCDA and sectoral agencies. Accessing climate finance - develop an accreditation strategy prioritising and selecting public, private and NGO entities as a DAE. Undertaking private sector mapping and conducting analysis on engaging the private sector climate action. 	TBC	TBC	2 years	TBC	Readiness request to be developed.

4.7 Summary of GCF financing

The summary of GCF financing requested over the 2020-2027 period is shown in Table 4 6. The estimated total GCF financing requested over this period is US\$ 242.79 million.

Table 4-6: Summary of GCF financing from 2020 to 2027

Thematic areas	2020 to 2021	2021 to 2023	2023 to 2027	Total
Adaptation	US\$31 m	US\$50 m	US\$20 m	101
Mitigation	-	US\$70 m	US\$40 m	110
Cross cutting	US\$10 m	_	US\$20 m	30
GCF Readines Proposals	US\$1.79 m	-	-	1.79
Total	US\$42.79 m	US\$120 m	US\$80 m	242.79

CHAPTER 5 Monitoring and Evaluation

5.1 Introduction

This section presents the preliminary framework and process for monitoring and updating of the Country Programme. The Country Programme is a living strategy that will need to be annually updated to reflect new developments, changing national circumstances, and lessons learnt from implementation.

A M&E system forms part of a comprehensive and iterative process that includes the assessment of impacts, progress towards achieving GCF readiness, and the implementation of adaptation and mitigation measures. ²²⁸Under this Country Programme, there will be periodic M&E of implementation progress and performance results of the investments, initiatives and activities.

M&E of the Country Programme will utilise a results framework focusing on outcomes, outputs, and indicators, which will be strengthened and further developed in future iterations of the Country Programme. The M&E framework will track progress on:

- Implementation of the Country Programme pipeline, including the development of Concept Notes and Funding Proposals
- Contribution of GCF investments in achieving national climate change and sustainable development objectives, in particular PNG's NDC and NAP, and the SDGs
- PNG achieving direct access to the GCF through the accreditation of national DAEs
- Implementation of the GCF Readiness Programme

In order to conduct M&E of the Country Program implementation, there is a need quantify the impact of GCF interventions, particularly in the agriculture, forestry, energy sectors and in relation to gender impacts. This includes quantifying the intended and unintended, positive and negative impacts of interventions. At present, there is a limited understanding of the impacts that GCF investments will have in priority areas and insufficient M&E frameworks that can sufficiently measure these impacts. Therefore, monitoring of the implementation of PNG's GCF Country Programme will require the development of theories of change, establishment of baselines, identification of measurable indicators of relevance, and development of data collection capacity.

²²⁸OECD. 2017. Insights from national adaptation monitoring and evaluation systems.

5.2 Framework for monitoring and updating the Country Programme

5.2.1 Monitoring and evaluation framework

The Country Programme is a living document, which will be updated periodically to reflect new developments and changing circumstances. Periodically updating the Country Programme will also have the benefit of improving the impact and efficiency of GCF investments in PNG, and foster continuous learning on the best practices for implementing climate action.

Monitoring is required to ensure the Country Programme is responsive and that the delivery of planned results is progressing on track. Monitoring of the Country Programme will focus on systematically collecting data (both qualitative and quantitative data) at the national and sectoral levels.

The progress made on the implementation of the Country Programme will be evaluated based on the preliminary results framework in Table 5-2, which will enable a more in-depth analysis of strategic issues and assessment of the effects and possible impacts of supported actions and interventions. Based on the feedback and the lessons learnt from the evaluation, the Country Programme will be updated and modified to improve outcomes. The evaluation of the Country Programme will consider the following questions.

- Are mitigation and adaptation action(s) on track to meet pre-defined objective(s) and why/why not?
- Are these actions effectively reducing GHG emissions and/or climate risks and how are they doing so?
- What are the critical factors that have resulted in success or failure?

It is recommended that readiness and project preparation finance be used to strengthen M&E capacity of the NDA and sectoral agencies to ensure interventions in major sectors can be ex-ante estimated, monitored and verified as well as evaluated. It is recommended that priority baseline data, measurable indicators of relevance, and statistics for prioritised sectors are developed, including the development of risk and disaster event register, establishment of agricultural value chain benchmarks, identification of ecosystem risk trigger indicators, and collection of building and transport statistics.

M&E of the Country Programme will complement and not substitute the responsibilities of the GCF Secretariat and the AE to undertake and implement required M&E of GCF projects and programs. Each project and program financed by the GCF requires an M&E framework, which will ensure that implementation progresses according to the Funding Proposal. The AE will be encouraged to adopt gender-sensitive and participatory approaches in planning, and M&E to assure that the needs of communities are appropriately addressed. The AE, moreover, will be required to regularly report on relevant project performance indicators to the NDA and the GCF Secretariat, and complete an end-of-project/program evaluation. During the annual Country Programme reviews, the NDA will verify that the AE has performed the required oversight of its activities.

5.2.2 Stakeholder contribution and roles

Conducting monitoring of the Country Program will require comprehensive and inclusive stakeholder engagement, which will be led and facilitated by the NDA. Stakeholders will contribute to monitoring and the updating of the Country Programme through the following processes:

- Annual stakeholder consultation workshop, which will coincide with the annual update of the Country Program. This workshop will provide a platform for stakeholders to advance new projects and initiatives, revise and review the pipeline, and reflect on the progress made in implementing the GCF Country Programme.
- Consultations with AEs and project proponents to verify that GCF projects/programs under implementation are on track. It is recommended that the NDA proactively monitors projects/programs to ensure that gender-sensitive and participatory approaches are utilised, and the needs of communities are appropriately addressed.
- Consultations will take place with project proponents and sectoral ministries to conduct M&E on the progress made in developing GCF Concept Notes and Funding Proposals.
- Consultations with national entities to evaluate progress in applying for GCF accreditation.

The roles and responsibilities of key stakeholders for updating the Country Program are outlined below:

CCDA, as the NDA, will be responsible for reviewing and updating the Country Program. CCDA will reflect on the types of developments that might warrant adjustments to the Country Program, and lead the revision with the engagement of stakeholders from government, civil society, the private sector, and other key actors.

Key stakeholders, including sectoral ministries, sub-national agencies, AEs, civil society, the private sector, and international partners, will be responsible for providing the NDA with data on the progress made in implementing the Country Program, including the progress made in developing GCF Concept Notes and Funding Proposals.

National stakeholders and sub-national stakeholders (through Provincial Climate Change Committees) will be responsible for advancing proposed projects and initiatives, which will be assessed in the annual review of the Country Programme.

TWCs will be responsible for reviewing the updates to the Country Programme.

The revision and update of the Country Programme will be approved by the Managing Director, CCDA/Head of the NDA.

5.2.3 Process for annual review

In the annual review, factors such as relevance, effectiveness and impact of the Country Programme will be assessed. The Country Programme will be updated based on the criteria outlined below and in Table 5-1. These criteria, however, are not exhaustive, and there may be additional adjustments to the Country Programme required.

- There are new national priorities, policies and plans adopted: Such as the adoption of a new NDC and NAP, or national planning framework.
- The GCF project and program pipeline changes: There is new information on mitigation/adaptation actions, new opportunities to align GCF investment, and changing costs of various options.
- · Changes to the GCF operational processes and requirements.
- New and improved data on climate change impacts and vulnerability, and opportunities to reduce GHG emissions.

Context	Points to integrate
Investment	New opportunities to achieve low-carbon green growth
priorities	 Changing climate risk profile, such as increased flood risk or revised sea level rise projections
	Technological changes, such as new opportunities to reduce GHG emissions
National	Changing sectoral priorities, such as the adoption of a new sectoral plan or roadmap
priorities	• The adoption of a new climate change plan or strategy, such as the NAP or NDC
GCF processes	GCF operational changes, such as new financing modalities and approval processes
Accreditation	The accreditation of new DAEs
Stakeholder	The level of engagement of AEs
engagement	• The roles and responsibilities of stakeholders changing, e.g. through political reform

Table 5-1: Contextual factors triggering adjustments to the Country Programme

5.2.4 Process for a five-yearly review

A comprehensive and systematic review should take place five-yearly to develop a new Country Programme for the next five-year period. This review will align with the PNG's national planning cycle, and will mirror the timeline for developing the next MTDP. Therefore, the first five-yearly review of the Country Programme will take place in 2023, to align with the MTDP planning cycle, and then five-yearly following this review.

The main focus of this five-yearly review is drawing out lessons learned and assessing the outcome and impacts achieved across the whole project portfolio. This review will have a strong focus on the effectiveness of the Country Programme, and the broader impact of climate finance in PNG. The outcome of the five-yearly review will be a summary document that outlines recommendations for updating the Country Programme for the next five-year period. This will be discussed and reviewed in a consultative workshop, and will form the basis for the five-yearly update of the Country Programme.

1.1 Table 5-2: Results framework for the Country Program

Im	pact: GCF financ	ce contributes to t	he implementation of	the NDC, NAP, Vi	sion 2050, and	the SDGs.
Ou	tcome	Outputs	Activities	Key performance indicators	Target	Means of verification
1.	Investment disbursed from GCF for mitigation proposals.	1.1 Funding Pro- posals submit- ted to the GCF Secretariat.	 1.1 Concept Notes and Funding Pro- posals developed with AEs and na- tional stakeholders. 1.2 NoLs issued by the NDA. 	Number of proposals submitted, approved, pending or rejected by the GCF each year. Volume and percentage of funds approved and disbursed by project and year.	1. Funding Proposal submitted to GCF each year	Approved Funding Proposal documentation NoL
2.	Investment disbursed from GCF for adaptation proposals.	2.1 Funding Pro- posals submit- ted to the GCF Secretariat.	 2.1 Concept Notes and Funding Pro- posals developed with AEs and na- tional stakeholders. 2.2 NoL issued by the NDA. 	Number of proposals submitted, approved, pending or rejected by the GCF each year. Volume and percentage of funds approved and disbursed by project and year.	1. Funding Proposal submitted to GCF each year	Approved Funding Proposal documentation NoL
3.	PNG achieves direct access to the GCF.	 3.1 Accreditation applications submitted to the GCF Secre- tariat. 3.2 Accredita- tion nomina- tions aligned with country programming priorities, strat- egies and plans identified and prioritised. 	 3.1 Accreditation application sub- mitted to the GCF Secretariat. 3.2 Nomination letter issued by NDA. 3.3 DAE candidates selected and pri- oritised. 	Number of DAEs accredited to the GCF. Number of accreditation applications submitted to the GCF Secretariat, and number of nomination letters issued.	1. national DAE accredited by 2023	Accreditation application and nomination letter.
4.	Capacity of GCF stakeholders strengthened.	4.1 Trainings completed on GCF processes and national stakeholder awareness strengthened.	 4.1 Trainings on GCF processes and best practices. 4.2 Country Programme is disseminated to national stakeholders. 	Strengthened understanding of the Country Programme, and GCF national processes. National stakeholders follow national procedures.	National trainings completed	Cadre of national stakeholders with a strengthened understanding and awareness of the Country Programme and GCF processes.

Engagement of stakeholders in GCF processes is strengthened.	5.1	The NDA develops and implements mechanisms for engaging national stake- holders in GCF processes.	5.1 5.2	GCF consultation workshops and meetings held. Communications strategy for the GCF developed.	Number of participants disaggregated by gender at workshops. Number of communication products developed.	National consultations held	Workshop completed Communic products developed
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Workshop completed. Communication products

5.3 Results framework

5

Monitoring the implementation of PNG's Country Programme requires an established results framework which outlines objectives, outcomes and outputs. The results framework is presented in Table 5-2.

5.3.1 Overview of key performance indicators

The preliminary indicators used for monitoring and evaluating the implementation of the Country Programme are outlined in Table 5-2.

Additional key indicators will be incorporated into subsequent drafts of the Country Programme to ensure that means of verifications of potential interventions in different sectors can take place. This will include the development of science-based indicators to measure mitigation (estimation of GHG emissions reductions) and adaptation (determining number of beneficiaries) outcomes across priority sectors.

At present, there are a number of challenges in PNG pertaining to the collection of data required for completing M&E.

- In CCDA, climate change information is actively used for decision making, conducting baseline assessments, adaptation planning and preparing the national communications report for the UNFCCC.²⁹⁹ GCF readiness assistance could be used to further develop capacity on the collection and management of climate change information.
- In general, there is a challenge in obtaining disaggregated data and information at provincial, district and local levels.230
- At the sectoral level, the capacity of agencies to collect data and conduct M&E needs to be strengthened. In the DoW, for example, the use of climate change information is currently limited, and issues include poor availability of data and information management practices. GCF readiness assistance could be used to access the data and information gaps in priority climate change sectors.²³¹

Due to the cross-cutting nature of the GCF Country Programme, the performance indicators and the data required should be tailored wherever possible to match existing data collection from CCDA and national stakeholders.

²²⁹Morioka, K., McGann, M., Mackay, S. and Mackey, B. 2019. Applying Information for Climate Change Adaptation Planning and De-1.1 cision Making in the Pacific: Situation Analysis. Griffith University, Brisbane.

²³⁰lbid. 11

²³¹lbid 11

5.3.2 Country Program implementation risks

There are potential risks from insufficient readiness support being provided to GoPNG. Readiness support may be required for Concept Note and Funding Proposal development, particularly to support project proponents and national DAEs once direct access is achieved. In addition, long-term readiness support is required for the accreditation of DAEs. To ensure there is sufficient assistance, Readiness Support from the GCF should be requested in advance (at least a year in advance) and additional support should be requested from other development partners as required.

There could potentially be a risk from international organisations proposing to include PNG in regional and multicountry projects and programs to be funded by the GCF. Whereas such projects/programs may constitute an opportunity for PNG, the government may have very little control over what may occur once funding has been released by the GCF. There is a need, therefore, to ensure project ideas are screened thoroughly before providing a NoL.

Risks due to Money Laundering (ML), Terrorist Financing (TF), and other illicit activities have been minimised in PNG due to progress made in strengthening PFM processes and systems. The NEC in 2014 approved a policy directive on the implementation of the Public Expenditure & Financial Accountability (PEFA) Program in PNG. Between March 2014 and February 2015, PNG officials conducted a Self-Assessment using the PEFA Framework, and identified both the strengths and weaknesses in PNG's PFM systems. Subsequently, in March 2015, the Self-Assessment was used to inform an independent assessment conducted by the International Monetary Fund. This PFM Reform Roadmap (2015-2018) was subsequently developed, which listed and prioritised important actions to remedy the major weaknesses identified by the PEFA assessment.

Moreover, in 2015, PNG passed a suite of legislation on Anti-Money Laundering and Counter-Terrorist Financing (AML/CTF). These laws were designed to meet the Financial Action Taskforce (FATF) standards and were enacted by GoPNG as part of its efforts to meet its international obligations on combating money laundering and terrorist financing.



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Annex I: National policies and strategies

Year	Policy/Strategy	Key focus areas
1991	Forestry Act ²³³	The Act focuses on the conservation, development, and management of PNG's forest resources.
2009	Vision 2050	National development strategy to guide PNG's social and economic development. Contains a strong focus on:
		Environmental sustainabilityClimate change
2010	PNG Climate Compatible Development Strategy	The Strategy has an aspirational goal of carbon neutrality by 2050 while still achieving annual economic growth of 7%. ²³⁴
		Climate change mitigation through low carbon growth by:
		 Reducing emissions from deforestation and forest degradation and increasing forest carbon stocks (REDD+)
		 Greenhouse gas abatement in non-forestry sectors Maxing ante glaw agrhan growth pathway
		 Moving onto a low-carbon growth pathway Climate resilience through adaptation by:
		Hazard identification
		Identification of effective adaptation measures
2012	National Strategy on Responsible Sustainable Development	Renewable resources
2012	National Food Security Policy (2012- 2016)	Climate change adaptation
2014	National Climate Compatible	Climate-resilient sustainable economic development
	Development Management Policy (NCCDMP)	Carbon neutral sustainable economic development

Table I-1: Key focus areas of PNG's national policies and strategies²³²

²³³Government of Papua New Guinea, 1991. Forestry Act 1991. <u>https://theredddesk.org/sites/default/files/forestry_act_1991_png_0.pdf</u>
²³⁴GoPNG 2010.

2015	Climate Change Management Act (CCMA)	Coastal flooding and sea-level rise Inland flooding Food insecurity caused by crop failures due to droughts and inland frosts Cities and climate change Climate induced migration Damage to coral reefs Malaria and vector-borne diseases Landslides
2016	Nationally Determined Contribution (NDC)	 The NDC outlines the following mitigation options, which are conditional to financial and technical assistance: Increased energy efficiency, including through the adoption of energy-efficient vehicles; Reduction of emissions in the oil and gas sector; Implementation of REDD+ activities under the UNFCCC; Conservation, sustainable management of forest; Enhancement of carbon stocks.
2016-2020	PNG National Energy Policy ²³⁵	 Key focus areas of the national energy policy are to: Strengthen institutional capacity and recruit the right human capital to manage the energy sector. Develop an integrated planning process for sustainable energy supply and utilisation. All energy resources will be developed by the State for the betterment of all citizens. Promote a conducive environment for long term sustainable economic solutions in the supply of all energy sources. Encourage involvement of the private sector in the development and provision of energy services. Ensure energy resources are developed and delivered in an environmentally sustainable manner. Promote efficient systems and safety in energy supply in all sectors (transport, residential, commercial, industrial and agriculture). Diversify the development and utilisation of energy resources for the nation's well-being and economic prosperity. Promote energy efficiency and conservation measures and wise use of energy.

²³⁵Government of Papua New Guinea, 2015. Papua New Guinea National Energy Policy <u>http://prdrse4all.spc.int/system/files/national</u> <u>energy_policy_19.07.2015v5_final_png.pdf</u>

2017- 2027	PNG's National REDD+ Strategy	PNG's approach to achieving REDD+ results includes:
		 Support a transformational change in the way that the country approaches economic and land use development to enable PNG to achieve a low emission, green development pathway; Support sector agencies, communities and landholders to take actions in line with the policies and measures described within the strategy through support based on indicators of improved forest management; Be in line with the guidance of the UNFCCC; Initially focus on reporting emissions and removals related to three of the five REDD+ Activities, namely; (1) reducing emissions from deforestation, (2) reducing emissions from forest degradation and (3) the enhancement of forest carbon stocks; Require any projects targeting the voluntary carbon market to follow guidelines linked to the national REDD+ development process and UNFCCC guidance.
2018-	PNG's Mid-term Development Plan	 Actions to deliver REDD+ Results are as follow: Strengthened land-use and development planning: Strengthened and Coordinated National Level Development and Land Use Planning; Integrated Subnational Planning; Strengthened environmental management, protection and enforcement: Strengthening climate change legislation, financing and management; Strengthening forest management and enforcement practices; Strengthening environmental management, enforcement and protection; Strengthen access to information and recourse mechanisms; Enhanced economic productivity and sustainable livelihoods: Development of a sustainable commercial agriculture sector; Strengthened food security and increased productivity of family agriculture.
2018- 2022	PNG's Mid-term Development Plan (MTDP) III	The MTDP III is a five-year development plan for PNG which will cover the period 2018-2022. The strategic development priorities were crafted in the Alotau Accord II for delivery over 2018-2022. The Alotau Accord II embodies five major priorities: 1) Inclusive economic growth with a renewed focus in agriculture, 2) infrastructure development, 3) improvement of quality of health care, 4) improvement of quality of education and skills development, and 5) improvement of law and order. The overall goal of MTDP III is to secure the future through inclusive sustainable economic growth.

Annex II: Alignment of national priorities in the context of GCF Result Areas

Table II-1: Alignment of national priorities in the context of GCF Results Areas

		s; lation	A8.	Ecosystems and ecosystem services	 Coverage /scale of ecosystems protected and strengthened Value (US\$) of ecosystem services generated or protected. 	
		lirect beneficiaries ive to total popul	A7.	Infrastructure and built environment	1. Number of valued physical assets made more resilient to climate variability and change	
		ber of direct and ind f beneficiaries relat	A6.	Livelihoods of people and communities	 Change in expected losses of lives and economic assets (US\$) Number of males and females benefiting from diversified, climate-resilient livelihoods Support for effective adaptation to fish stock migration and depletion 	
	Adaptation	 Total Numb Number of 	A5.	Health food and water security	 Number of males and females benefiting from introduced health measures to respond to climate-sensitive diseases Number of food-secure households in areas at risk Number of males and females with year-round access to reliable + safe water supply 	
			M4.	Forests and land use	1. Hectares of land or forests under improved and effective management	
		uivalent (t CO ₂ eq) by Fund	M3.	Buildings, cities, industries, and appliances	1. Energy intensity/ improved efficiency of buildings	pment strategies
		carbon dioxide equ co ² EQ decreased finance leveraged	M2.	Transport	1. Number of additional female and male passengers using low- carbon transport 2. Vehicle fuel economy and energy source	d in national develo
GCF Results Areas	Mitigation	Tonnes of Cost per T Volume of	M1.	Energy generation and access	 Technologies and innovative solutions transferred or licensed Improved institutional and regulatory systems Proportion of low-emission power supply Number of households, with improved access to low-emission energy MWs of low- emission energy 	Priorities identified
Priorities	identified in national	strategies and initiatives			Relevant metrics (from the GCF Performance Framework) ²³⁶	

²³⁶https://www.greenclimate.fund/documents/20182/239759/5.3 - Performance Measurement Frameworks PMF. pdf/60941cef-7c87-475f-809e-4ebf1acbb3f4

Vision 2050	Wealth Creation Environmental Sustainability and Climate Change	Human Capital Development, Gender, Youth and People Empowerment Spiritual, Cultural and Community Development Environmental Sustainability and Climate Change	Environmental Sustainability and Climate Change	Institutional Development and Service Delivery Environmental Sustainability and Climate Change Change	Human Capital Development, Gender, Youth and People Empowerment Spiritual, Cultural and Community Development Relations Institutional Relations Institutional Development and Service Delivery Strategic Planning, Integration and Control Environmental Sustainability and Climate Change	Environmental Sustainability and Climate Change Change	Environmental Sustainability and Climate Change
DSP 2010-2030	Wealth Creation Environment and Climate Change	Human Development Partnership with Churches for Integral Human Development Environment and Climate Change Strategic Planning	Environment and Climate Change	Institutional Development and Service Delivery Climate Change Climate Change	Human Development Partnership with Churches for Integral Human Development Relations Institutional Development and Service Delivery Systems and Institutions Environment and Climate Change	Environment and Climate Change Strategic Planning	Environment and Climate Change

Strategic Planning Human Development eation Wealth Creati int and Environment c hange Climate Chan	cord Alotau Accoro Priority 1: Increase Revenue Create Alotau Accoro Create Priority 4: Creo Wealth Sord Alotau Accoro Deliver Priority 5: Deliv rivices Quality Servic	Area 1: Key Result Are Increased ection Wealth Creati Area Key Result Are 7: Responsible ure Sustainable ent Area Cevelopment le le
Strategic Planning Human Developm Wealth Cr Environme Climate C	Alotau Acc Priority 1: Increase Revenue Alotau Acc Wealth Alotau Acc Priority 5: [Quality Se Quality Se	Key Result Increased Revenue of Wealth Cr Key Result X: Quality Infrastruct and Utilitie Key Result X: Responsib Developm Key Result 8: Sustainab Population
Strategic Planning Human Development Wealth Creation Environment and Climate Change	Alotau Accord Priority 1: Increase Revenue Alotau Accord Priority 4: Create Wealth	Key Result Area 1: Increased Revenue and Wealth Creation Key Result Area Sustainable Social Development Key Result Area 4: Improved Law and Justice and National Security Key Result Area 5: Improved Service Delivery Key Result Area 6: Improved Service Delivery Key Result Area 5: Improved Service Delivery Key Result Area 6: Service Delivery Key Result Area 5: Improved Service Delivery Key Result Area 6: Development Development
Strategic Planning Human Development Wealth Creation Environment and Climate Change	Alotau Accord Priority 1: Increase Revenue Alotau Accord Priority 4: Create Wealth Alotau Accord Priority 5: Deliver Quality Services	Key Result Area 1: Increased Revenue and Wealth Creation Key Result Area Service Delivery Key Result Area 7: Responsible Sustainable Development
Strategic Planning Wealth Creation Environment and Climate Change	Alotau Accord Priority 1: Increase Revenue Alotau Accord Priority 4: Create Wealth	Key Result Area 1: Increased Revenue and Wealth Creation Key Result Area 7: Responsible Sustainable Development
Strategic Planning Human Development Wealth Creation Environment and Climate Change	Alotau Accord Priority 1: Increase Revenue Alotau Accord Priority 4: Create Wealth	Key Result Area 1: Increased Revenue and Wealth Creation Key Result Area Sustainable Social Development Key Result Area 7: Responsible Sustainable Development Key Result Area 8: Sustainable Development Key Result Area 7: Sustainable Development Key Result Area 7: Sustainable Development
Strategic Planning Wealth Creation Environment and Climate Change	Alotau Accord Priority 1: Increase Revenue Alotau Accord Priority 4: Create Wealth	Key Result Area 1: Increased Revenue and Wealth Creation
Strategic Planning Wealth Creation Environment and Climate Change	Alotau Accord Priority 1: Increase Revenue Alotau Accord Priority 4: Create Wealth Alotau Accord Priority 5: Deliver Quality Services	Key Result Area 1: Increased Revenue and Wealth Creation Key Result Area 7: Responsible Sustainable Development
Sta RS	Alotau Accord II 2017-2022	MTDP III 2018- 2022

CCMA (2015)	Promote and manage climate compatible development through climate change mitigation and adaptation activities	Promote and manage climate compatible development through climate change mitigation and adaptation activities	Promote and manage climate compatible development through climate change mitigation and adaptation activities	Promote and manage climate compatible development through climate change mitigation and adaptation activities	Promote and manage climate compatible development through climate change mitigation and adaptation activities	Promote and manage climate compatible development through climate change mitigation and adaptation activities	Promote and manage climate compatible development through climate change mitigation and adaptation activities	Promote and manage climate compatible development through climate change mitigation and adaptation activities
NCCDMP	Sustainability	Sustainability	Sustainability	Sustainability	Sustainability	Sustainability	Sustainability	Sustainability
SDGs	No Poverty Zero Hunger Gender Equality Decent Work and Economic Growth Reduced hequalities Sanitation Affordable and Clean Energy Sustainable Clean Energy Sustainable Communities Responsible Consumption and Production Climate Action		Sanitation Affordable and Clean Energy Sustainable Communities Responsible Consumption and Production Climate Action Life Below Water Life on Land	Sanitation Affordable and Clean Energy Sustainable Communities Responsible Consumption and Production Climate Action Life Below Water Life on Land	Good Health and Well-Being Quality Education Sanitation Affordable and Clean Energy Sustainable Cities and Communities Responsible Consumption and Production Climate Action Life Below Water Life on Land	Peace, Justice and Strong Institutions Good Health and Well-Being Quality Education Partnerships for the Goals Sanitation Affordable and Clean Energy Sustainable Clean Energy Sustainable Communities Responsible Consumption and Production	Industry, Innovation and Infrastructure Sanitation Affordable and Clean Energy Sustainable Crities and Communities Responsible Consumption and Production Climate Action Life Below Water Life on Land	Sanitation Affordable and Clean Energy Sustainable Communities Responsible Consumption and Production Climate Action Life Below Water Life on Land
	Life Below Water Life on Land					Climate Action Life Below Water Life on Land		

Table II-2: Alignment of climate change national priorities in the context of GCF Results Areas

Priorities Identi-	GCF Results Areas	S						
fied in National Strateaies and	Mitigation				Adaptation			
Initiatives	Tonnes of carbon	dioxide equivalent	(t CO ₂ eq)		Total Number of di	irect and indirect be	eneficiaries;	
	Cost per Tco ₂ EQ c	decreased			Number of benefic	ciaries relative to to	tal population	
	Volume of finance	e leveraged by Fund	-					
	Energy genera- tion and access	Transport	Buildings, cities, industries, and appliances	Forests and land use	Health food and water security	Livelihoods of people and communities	Infrastructure and built envi- ronment	Ecosystems and ecosystem services
Relevant Metrics	1. Technologies	1. Number of	1. Energy inten-	1. Hectares of	1. Number of	1. Change	1. Number of	1. Coverage /
(from the GCF	and innova-	additional fe-	sity/improved	land or forests	males and fe-	in expected	valued physical	scale of ecosys-
Performance	transferred or	nuccenders lic-	elliciericy of briticiace	and affactive	from introduced	and aconomic	ussets ITIQUE mora raciliant to	and strangth-
Framework ²³⁷)	licensed	ing low-carbon	200	management	health measures	assets (US\$)	climate variabil-	ened
	2 Improved	transport)	to respond to	2 Nimber of	ity and change	2 Value (LIS\$) of
	institutional	2. Vehicle fuel			climate-sensi-	males and fe-		ecosystem ser-
	and regulatory	economy and			tive diseases	males benefiting		vices generated
	systems	energy source			2. Number of	from diversified,		or protected.
	3. Proportion of				food-secure	climate-resilient		
	low-emission				households in	livelihoods		
	power supply				areas at risk	3. Support for		
	4. Ni imher of				3. Number of	effective ad-		
	households.				males and	aptation to fish		
	with improved				females with	stock migration		
	access to				year-round ac-	and depletion		
	low-emission				cess to reliable			
	enerav				+ safe water			
					supply			
	5. MWs of							
	low-emission							
	energy capacity							

²³⁷https://www.greenclimate.fund/documents/20182/239759/5.3 - Performance_Measurement_Frameworks_PMF_.pdf/60941cef-7c87-475f-809e-4ebf1acbb3f4

Priorities Identified	in National Initiati	ves Under the UNFC	00					
ЧАР	Cities and Cli- mate Change	Cities and Cli- mate Change	Cities and Cli- mate Change Inland Flooding Climate-In- duced Migration Water and San- itation Landslides	Food Insecurity (caused by crop failures due to droughts and inland frosts) Landslides	Food Insecurity (caused by crop failures due to droughts and inland frosts) Malaria and Vector-Borne Diseases Water and San- itation Landslides	Food Insecurity (caused by crop failures due to droughts and inland frosts) Inland Flooding Coastal Flood- ing and Sea Level Rise Damage to Coral Reefs Water and San- itation Landslides	Cities and Cli- mate Change Inland Flooding Coastal Flood- ing and Sea Level Rise Water and San- itation Landslides	Damage to Coral Reefs Landslides
National REDD+ Strategy				Strengthened Land-Use and Development Planning Strengthened Environmental Management, Protection and Enforcement		Strengthened Land-Use and Development Planning Enhanced Economic Productivity and Sustainable Livelihoods	Strengthened Land-Use and Development Planning	Strengthened Land-Use and Development Planning Strengthened Environmental Management, Protection and Enforcement
NDC	Cities and Cli- mate Change	Cities and Cli- mate Change	Cities and Cli- mate Change Inland Flooding Climate-In- duced Migration Water and San- itation Landslides	Food Insecurity (caused by crop failures due to droughts and inland frosts) Landslides	Food Insecurity (caused by crop failures due to droughts and inland frosts) Malaria and Vector-Borne Diseases Water and San- itation Landslides	Food Insecurity (caused by crop failures due to droughts and inland frosts) Inland Flooding Coastal Flood- ing and Sea Level Rise Damage to Coral Reefs Water and San- itation Landslides	Cities and Cli- mate Change Inland Flooding Coastal Flood- ing and Sea Level Rise Water and San- itation Landslides	Damage to Coral Reefs Landslides

Table II-3: National adaptation priorities in the context of the GCF Result Areas

Adapto	ation Programmatic Area 1		
Develo	pment of renewable energy initiatives - solar		
No.	GCF Proposal Title	Sector Alignment	GCF Result Area Alignment
1.1	Scaling up solar farm and integrated water supply for rural communities in PNG	Transport and Energy	A5. Livelihoods of people and communities
Adapto	ation Programmatic Area 2		
Develo	oment of climate-resilient infrastructure to enhar	nce livelihoods	
2.1	Climate-resilient infrastructure e.g. roads and bridges	Transport and Energy	A7. Infrastructure and built environment
2.2	Development of climate-resilient roads and bridges to link farmers to markets.	Transport and Energy	A5. Livelihoods of people and communities
			A7. Infrastructure and built environment
Adapto	ition Programmatic Area 3	'	
Enhanc	ing environmental protection through coastal rel	habilitation	
3.1	Development of climate-resilient coastal defence/rehabilitation infrastructure to enhance resilience and livelihood of coastal community.	Transport and Energy	A5. Livelihoods of people and communities A7. Infrastructure and built environment
3.2	Development of sustainable reef to ridge programme to enhance the resilience of vulnerable community to improve food and water security	Agriculture and Food Security	A8. Ecosystems and ecosystem services
3.3	Development of Provincial Climate Change Policy and action plan with strong institutional and oversight structure and review of the Mangrove Policy 2019	Agriculture and Food Security	A5. Livelihoods of people and communities
3.4	Development of marine and terrestrial protected areas to enhance ecosystem services and community resilience and livelihoods	All Sectors	A8. Ecosystems and ecosystem services
3.5	Scaling up of climate-smart or resilient agriculture value chain and infrastructure to produce safe fruits and vegetables to improve health, food and nutrition security	Agriculture and Food Security Health	A6. Health, food and water security
3.6	Scaling up of climate-smart or resilient agriculture value chain, businesses and post- harvest infrastructure to produce safe fruits and vegetables	Agriculture and Food SecurityTransport and Energy	A6. Health, food and water security

Adaptation Programmatic Area 4

Enhancing livelihoods through best practice climate-smart agricultural approaches

4.1	Scaling up climate-smart agriculture best practices, innovation and businesses to enhance food security, nutrition and resilience of vulnerable farmers	Agriculture and Food Security	A5. Livelihoods A6. Health food and water security
4.2	Scaling up of climate-smart or resilient agriculture value chain and infrastructure to produce safe fruits and vegetables	Agriculture and Food Security	A5. Livelihoods A6. Health food and water security
4.3	Scaling up of climate-smart or resilient agriculture value chain, businesses (agroforestry, permaculture, mulching, conservation agriculture and integrated livestock farming) and infrastructure (road, bridges, post-harvest) to produce safe fruits and vegetables	Agriculture and Food Security Transport and Energy Health	A5. Livelihoods A6. Health food and water security A7. Infrastructure and built environment
4.4	Development of ecosystem-based adaptation best practices and businesses to enhance food and water security and health.	Agriculture and Food Security Health	A5. Livelihoods A6. Health, food and water security

Adaptation Programmatic Area 5

Enhancing climate information and early warning systems to improve community resilience and livelihoods

5.1	Scaling up of climate information and early warning system to enhance smart decision making to improve the resilience of vulnerable communities	Agriculture and Food Security	A5. Livelihoods of people and communities
		Transport and Energy	
5.2	Development of climate-resilient eco-tourism programme to enhance the resilience and livelihood of communities	Agriculture and Food Security	A5. Livelihoods of people and communities
		Transport and Energy	

Adaptation Programmatic Area 6

Improving community health outcomes through strengthening sanitation programmes

6.1	Programme to prevent climate-induced diseases through enhanced sanitation and awareness outreach programme	Agriculture and Food Security Health	A6. Health, food and water security
6.2	Programme to prevent climate-induced diseases through enhanced sanitation and awareness outreach programme	Health	A6. Health, food and water security

Table II-4: National mitigation priorities in the context of the eight GCF Result Areas

Mitigat	ion Programmatic Area 1					
Develo busines	pment of National Policy and Action Plan to enh sees	ance investment in geother	mal, hydro, wind and solar			
No.	GCF Proposal Title	Sector Alignment	GCF Result Area Alignment			
1.1	Development of a National RE policy to enhance investment in geothermal, hydro, wind and solar businesses	Transport and Energy	M1. Energy generation and access			
Mitigat	ion Programmatic Area 2					
Develo	oment of energy efficiency policy and businesse	S				
2.1	Scaling up Renewable Energy & Energy Efficiency solutions to reduce GHG emissions (e.g. FREAGER)	Transport and Energy	M1. Energy generation and access			
2.2	Development of climate-resilient post- harvest infrastructure to enhance access to the market by vulnerable farmers.	Agriculture and Food Security	M3. Buildings, cities, industries and appliances			
2.3	Development and enforcement of energy efficiency policy and action plan (building code; minimum energy performance standards with label and resting scheme for lighting, refrigeration etc.)	Transport and Energy	M3. Buildings, cities, industries and appliances			
Mitigation Programmatic Area 3						
Scaling and live	up of RE businesses (e.g. solar mini-grid and sol plihoods	lar home system, wind, hydro	o) to enhance access to electricity			
3.1	Scaling of renewable energy (e.g. solar mini- grid and solar home system and wind??) to enhance access to electricity and livelihoods	Transport and Energy	M1. Energy generation and access			
3.2	Scaling up of renewable energy businesses (e.g. solar mini-grid and solar home system and hydro [mini, small and medium]) to enhance access to electricity and livelihoods.	Transport and Energy	M1. Energy generation and access			
3.3	Scaling up of renewable energy businesses (e.g. solar mini-grid and solar home system and wind to enhance access to electricity and livelihoods	Transport and Energy	M1. Energy generation and access			

Mitigation Programmatic Area 4

Scaling up of REDD+ programme to enhance carbon sequestrations and livelihoods

4.1	Development of REDD+ programme to enhance the resilience and livelihood of the community through social forestry and conservation	Agriculture and Food Security	M4. Forests and land use
4.2	Scaling up of coastal rehabilitation programme e.g. mangrove reforestation to enhance resilience and livelihood of coastal community	Agriculture and Food Security	M4. Forests and land use
4.3	Mainstreaming of DRR into Climate Change Adaptation and land-use policies	Agriculture and Food Security	M4. Forests and land use
4.4	Torricelli Mountain Range Forest Protection Project: (36 villages over the Torricelli Mountain Range; already strong community support for REDD+ in the region; focus on conservation and biodiversity but also has benefits to water security, also supports forest food and medicine).	Agriculture and Food Security Oil, Gas and Mining	REDD+
4.5	Utilising MRV to Undertake Multi-Species Reforestation in [area TBD] (benefits to livelihoods, potentially scales up existing REDD related MRV activities; benefits to reducing soil erosion and landslides on slopes; increases to agricultural productivity and food security; supports land-use planning).	Agriculture and Food Security Oil, Gas and Mining	REDD+
4.6	Carbon Sequestration Through Reforestation in [area TBD] by Agricultural Smallholders (benefits to food security, land-use planning; livelihoods)	Agriculture and Food Security Oil, Gas and Mining	REDD+
4.7	Pilot 1: Eastern Highlands Province • Afforestation of grassland areas – 10,000 – 20,000 ha • Forest conservation – 5,000 – 10,000 ha	Agriculture and Food Security Oil, Gas and Mining	REDD+
4.8	Pilot 2: West New Britain Province • Secondary Forest Management (on regenerating logged over forest): 100,000 – 150,000 ha • Reforestation – 40,000 – 50,000 ha of logged over forest	Agriculture and Food Security Oil, Gas and Mining	REDD+

4.9	Pilot 3: Milne Bay Province • Trial to comprise Reduce Impact Logging (RIL) in a 60,0000 ha intact forest	Agriculture and Food Security Oil, Gas and Mining	REDD+
4.10	Pilot 4: Sandaun Province • Afforestation Reforestation – 40,000 – 50,000 ha logged over forest • Forest Conservation – 100,000 – 200,000 ha intact forest	Agriculture and Food Security Oil, Gas and Mining	REDD+
4.11	Pilot 5: East Sepik Province • April Salumei FMA – 343,900 ha intact forest • REDD+ activities will be determined after a development option study (DOS) is conducted by the PNGFA and other relevant stakeholders including OCCD and NGOs first quarter of 2012.	Agriculture and Food Security Oil, Gas and Mining	REDD+

Annex III: Regional Consultations

The broader purpose of the regional consultations as a whole looked at strengthening the role of CCDA as the NDA to the GCF and improving their coordinating capacity to ensure stakeholders across PNG understand and can implement GCF projects.

As a part of the activities undertaken at the regional consultations from May-July 2019, participants were asked to identify key climate risks and the priorities for that region. Results were then analysed to produce a trends analysis which was presented to the CCTWG in August 2019.

The purpose of this presentation is to focus on drawing out the trends and identifying the priorities for climate action that were a result of the group activities undertaken.

Acknowledging the purpose of undertaking the regional consultations and the priority identification in the group activities underpinned what the GCF looks for in the development of a Country Programme, results were determined based on the identification of PNG's key climate change priorities based on a consultation process that was open, fair, transparent and inclusive, which produced a scope of potential transformative projects and programs that could be translated into fundable projects for the GCF.

Four 3-day regional consultations took in representation from all of PNGs provinces and took place from May to July 2019 with representation from government, PG, private sector and CSOs.

Dates and Location for the Four Regional Consultations:

- 1. Highlands Region; Mt Hagen, WHP from the 21-23 of May at Highlander Hotel
- 2. Momase Region: Lae, Morobe Province from the 28-30 May at Lae international
- 3. Islands Region: Kimbe, West New Britain from the 11-13 June at Liamo Beach Hotel
- 4. Southern Region: Alotau, Milne Bay from the 09-11 July, Alotau International

The group activities, four spread over the course of two days covered:

Day 1:

- Climate Change priorities: what are they and how can they be addressed. ²³⁸
- Stakeholder mapping: who are they and what are they doing in each province, and what are their strengths and weaknesses.

Day 2 exercises for the first 2 Regional Workshops focused on:

- Province coordination/decision-making mechanisms where are the gaps and how could a PCCC could assist.
- GCF project concept development; understand and consider the type of questions that a province will need to answer when developing a GCF project proposal.

²³⁸Note that for the first two Regional Workshops we were genuinely asking what these priorities were, while in the final 2 workshops we were validating what the priorities were as CCDA had previously been in these regions/provinces documenting climate change priorities.

Day 2 exercises for the last 2 workshops focused on:

- Mapping the decision-path a project concept must work its way through before getting approval from a Provincial Administration
- Linking a provincially approved project to national development priorities and objectives i.e. MTDP III.

This section is primarily focused on the information collated from the activities that tell us what participants identify as a priority.

The Highlands Regional Workshop welcomed participants from seven provinces, the Eastern Highlands, Enga, Hela, Jiwaka, Simbu, Southern Highlands, and Western Highlands. The Momase Regional Workshop welcomed participants from four provinces, Madang, Morobe, Ease Sepik and West Sepik provinces. The Islands Region Regional Workshop welcomed participants from five provinces, AROB, East New Britain, Manus, New Ireland and West New Britain. Lastly, the Southern Regional Workshop welcomed participants from five province and Milne Bay.

Annex IV: Participant-identified climate priorities from the four regional workshops

Table IV-1 is a region-specific summary detailing the priorities identified by participant groups at the four regional consultations; how many times each priority was identified by participants (occurrence); and how each of these priorities corresponds to each of the eight GCF Results Areas. Table IV-2 presents a nationwide summary of identified priorities from the regional workshops.

Mitigation

Adaptation

M1. Energy generation and access A5. Health food and water security M2. Transport A6. Livelihoods of people and communities M3. Buildings, cities, industries, and appliances A7. Infrastructure and built environment M4. Forests and land use A8. Ecosystems and ecosystem services

Table IV-1: Participant-identified climate priorities from the four regional workshops

			×		×	
×			×	×		×
×	×	×	×	×		×
×	×	×	×	×		×
	×	×	×			×
				×	×	
Climate-induced diseases Climate-proofing infrastructure Climate-smart agriculture Institutional capacity- building	REDD+ Climate information and early warning systems Climate-smart agriculture Climate-induced diseases	Climate-smart agriculture Climate-induced diseases REDD+	Climate-proofing infrastructure Food and water security Coastal rehabilitation REDD+ Sanitation Land use planning Institutional capacity- building	Sanitation REDD+ Food and water security Climate-proofing infrastructure Climate information and early warning systems Renewable energy Institutional capacity- building	Climate information and early warning systems Coastal rehabilitation Renewable energy	REDD+ Renewable energy Food and water security Climate proofing infrastructure
••••	••••	• • •		••••	• ••	• • • •
Simbu	Southern Highlands	Western Highlands	Madang	Morobe	Ease Sepik	West Sepik
				Momase		

×	×		×	×	×		×	×	×
		×	×		×			×	×
	×		×		×				
	×		×		×	×	×	×	×
×			×						
×	×	×	×				×	×	×
Renewable energy REDD+ Coastal rehabilitation	Renewable energy Climate-smart agriculture Marine and terrestrial protected areas	Renewable energy Climate information and early warning systems Climate proofing infrastructure	Renewable energy REDD+ Climate-smart eco-tourism Climate -smart agriculture Climate proofing infrastructure	Institutional capacity- building Mangrove rehabilitation	Climate-smart agriculture Climate proofing infrastructure Coastal rehabilitation Climate-induced diseases	Food security Climate-induced diseases	Renewable energy Coastal rehabilitation Food and water security	Renewable energy Climate-induced diseases Food and water security Coastal rehabilitation Climate proofing infrastructure	Renewable energy Mangrove rehabilitation Food and water security Climate proofing infrastructure
• • •	• • •	•••	• • • • •	• •	••••	••	•••	• • • • •	• • • •
AROB	East New Britain	Manus	New Ireland	West New Britain	Central Province	Oro	Western Province	Gulf Province	Milne Bay
		Islands Region					Southern	Region	

	-)			
			Pri	orities and th	ieir correspor	idence to GC	F Results Are	as	
			Mitigo	ation			Adapt	tation	
		M1.	M2.	M3.	M4.	A5.	A6.	A7.	A8.
Priority	Occurrence	Energy gen- eration and access	Transport	Buildings, cities, industries, and appli- ances	Forests and land use	Health food and water security	Livelihoods of people and com- munities	Infrastruc- ture and built envi- ronment	Ecosystems and ecosys- tem services
Climate proofing infrastructure	14							×	
Renewable energy	12	×							
Climate-smart agriculture	6					Х	×		
REDD+	6				×				
Food and water security	6					×			
Climate-induced diseases	9					×			
Coastal rehabilitation	9								×
Institutional capacity-building	9								
Sanitation	2					×			
Climate-smart eco-tourism	2								×
Mangrove rehabilitation	2								×
Marine and terrestrial protected areas/Conservation	5								×
Land-use planning	-							Х	

Table IV-2: Countrywide summary of participant-identified climate priorities from the four regional workshops

Annex V: Climate Change Technical Working Group (CCTWG) Planning Meeting for the National Sectoral Consultation (NSC)

To assist with the development of the Country Programme, DNPM proposed the creation of a core CCTWG for the GCF Country Programme. At the invitation of the NDA (CCDA), letters were sent to key staff at the following government departments to attend a planning meeting in order to further discuss PNG's climate change priorities, priority alignment with key government policy, and the development agenda of the Country Programme:

Key central government agencies and development partners are members of the CCTWG for the development of the PNG GCF Country Programme. They include:

Government agencies: DNPM, DoT, DoF, DPLGA, CCDA (Secretariat).

Development Partners: GGGI - delivery partner of the GCF Readiness Support project and GCF Country Programme lead partner; USAID Climate Ready - supporting partner.

Local agencies: Tanorama - consulting firm to the GCF Readiness Support project and lead firm for organising and delivery of the NSC.

The objective of the planning meeting was for the government to organise and deliver the GCF NSC planned for the 30 September- October 2019. The planning meeting consisted of three half-day meetings from 9:00am-1:00pm, Monday to Wednesday 12-14 August 2019.

The purpose of the CCTWG planning meeting was to:

- Update the CCTWG on the Country Programme joint work plan
- Present a Priority Identification Summary stemming from the Regional Consultations
- Consult and provide training on the MCA Methodology developed for prioritising the Country Programme priorities identified within the regional consultations and by the CCTWG
- Select and review the MCA sub-criteria, sub-criteria definitions, and sub-criteria weightings for each subcriterion for all six GCF Investment Criteria
- Finalise program agenda for the NSC

Annex VI: Multi-Criteria Analysis Methodology Tool

VI.1 Introduction

The criteria to screen the PNG proposals for funding from the GCF was discussed and agreed by the core Climate Change Technical Working Group in Port Moresby, 12–14 August 2019. The criteria are based on GCF Investment Criteria for use in the MCA of pipeline proposals for funding with the GCF.

The MCA methodology has two parts: scoring and ranking/prioritisation. The stakeholders of the national climate change technical working groups under the CCDA conduct the screening process by applying the Country Programme Proposal Screening Criteria against a proposal. Stakeholders used Table VI-1 to screen GCF Concept Notes and full Funding Proposals.

Proposal Title:	
Proposed Funding Re- quest (US\$):	Proposed Funding Re- quest (PGK):
Co-financing (US\$):	Co-financing (PGK):
AE / Delivery Partner:	EE / EE Partner:
AE email:	EE email:
NDA receipt date:	NDA responsible:
TWG submission:	TWG rep email:
TWG screening number:	Screening Date:
Total Eval. Score	Proposed Category:

Table VI-1: PNG GCF Country Programme proposal screening criteria

VI.2 Screening process using the MCA methodology:

The proposed concept ideas were developed for inclusion in a GCF project pipeline ensuring that the projects and programs in the project preparatory pipeline were:

- · Not ill-conceived or duplicative of other on-going projects or other submitted Concept Notes;
- · Well aligned with national development and climate priorities;
- · Reflective of the national priorities with a balanced focus between adaptation and mitigation solutions;
- Representative of a wide range of financial instruments (grant) and GCF support (readiness, preparatory or funding/implementation support);
- Inclusive and cover a wide range of key sectors (e.g. agriculture, tourism, meteorological information, access to renewable and efficient energy) and partners (minority, youth, disadvantaged groups); and
- Of high quality, competitive, fundable, and transformative with a strong exit strategy.

The GCF Programme Proposal Screening Criteria (outlined in Table VI-2) can then be used by national stakeholders to screen proposals for further consideration using the screening process steps outlined below.

Screening process:

- A. Scoring each proposal/concept note by following the steps below for scoring:
 - a. Add a score from 1 (low) to 5 (high) against each criterion;
 - b. Multiply score of each criterion by its agreed weighting;
 - c. Sum all the scores together;
 - d. Agree on the final score;
 - i. If time is limited, propose to assign a mixed group through an open plenary session to build consensus on the final score
 - ii. Experts within a sector or a province could form a focused group/build on an existing focused group, to decide on the final score for each proposal and criterion
- B. Rank and prioritise the proposal based on the range of scores, into (to align with MTDPIII development cycle):
 - a. High (2019 to 2022),
 - b. Medium (2023 to 2026), or
 - c. Low priority (2027 to 2030)
| Table VI-2: GCF | proposals | screening | criteria |
|-----------------|-----------|-----------|----------|
|-----------------|-----------|-----------|----------|

1		2	3	4	5	6 = (4*5)
GCF Invest- ment Criteria	No	Sub- criteria	Score Guide / Sub-criteria description	Score	Weight- ing	Product
1. Impact po- tential	Size of beneficiary group(s) and mitigation potential (GHG sav- ing/avoid- ance)	 i) Is this a climate-related project/programme or purely development (ODA)? YES - It is a climate-related project/programme. The climate rationale is significant and clear. It is addressing climate vulnerability, climate resilience. It promotes climate compatible, low carbon development. Decision: Accept proposal for further review. NO - It is not a climate-related project/programme. It is purely ODA. No or poor climate rationale. It is not trying to address climate vulnerabilities, increase climate resilience, or promote climate-compatible, low carbon development. Decision: Reject Proposal. No further review required. Advise proponent. 	YES	NO		
		group(s) e.g. m project/progro High impact po significant size aggregation b Medium impact vant, significan by gender info needed. Low impact po size of populat request, lump s gender, poor in For cross-cutti measures indiv iii) Mitigation m avoidance) e.g High impact po achieve. Signifi (MTDPIII indica Medium impact Somehow com Low impact po ment to MTDP	 ii) Adaptation measures - Size and significance of beneficiary group(s) e.g. number of vulnerable farmers impacted by the project/programme. Disaggregated by gender: High impact potential (5) – Beneficiary group(s) is relevant, significant size of population against size of project. Clear disaggregation by gender and people with disabilities. Medium impact potential (3) – Beneficiary group somehow relevant, significant population size. Consistency of disaggregated by gender information could be improved. More information needed. Low impact potential (1) – Unclear who the beneficiaries are, size of population is not relative to the proposal resource request, lump sum of beneficiary with no disaggregation by gender, poor information. For cross-cutting measures – score adaptation and mitigation measures individually and find average to yield one score. 		1.0	
				iii) Mitigation me avoidance) e.g. High impact pot achieve. Signific (MTDPIII indicato Medium impact Somehow contri Low impact pote ment to MTDP II	 iii) Mitigation measures – Mitigation potential (GHG saving/avoidance) e.g. tCO₂e/year: High impact potential (5) – Clear mitigation potential goal to achieve. Significant contribution to national mitigation goals (MTDPIII indicator alignment). Medium impact potential (3) – Outlined mitigation potential. Somehow contributing to national mitigation goals. Low impact potential (1) – Unclear mitigation goals, no alignment to MTDP III goals. 	

1		2	3	4	5	6 = (4*5)
GCF Invest- ment Criteria	No	Sub- criteria	Score Guide / Sub-criteria description	Score	Weight- ing	Product
	2	Sustainabil- ity (Policy, institutional, technical, financial, business, social)	 High sustainability (5) – Sustainable beyond the life of the project funding (> 15 years), innovative and with a strong exit strategy. Medium sustainability (3) – Sustainable only over a short term (5 years). Low sustainability (1) – Not sustainable when the project funding stops with no exit strategy. Need more external funding to carry on. 		1.0	
			Degree of institutional capacity and competence:			
	7	Institutional absorptive capacity	High capacity (5) – Strong public, private and CSO institutional capacity to carry on with the implementation of the outputs after the project has ended.		10	
	3		Medium capacity (3) – Medium level of institutional absorptive capacity across the relevant institutions.		1.0	
			Low capacity (1) – No capacity to support the outputs when the project stops.			
2. Paradigm shift 2	4	Scalability and replica- bility	High scalability/replicability (5) – Strong viable business case, value chain actors empowered and incentivised to scale up within the project sites and able to replicate the outputs to other provinces even after the project has ended.			
			Medium scalability/replicability (3) – Some capacity to carry on with further support needed. Needs further monitoring after the project has ended.		0.8	
			Low scalability/replicability (1) – Limited capacity to carry on with the outputs when the project has ended – 'white elephant' project.			
	5	Monitoring and Evalu- ation	Presence or absence of M and E plan:			
			High presence of M and E plan (5) – Strong opportunity to develop a robust M and E plan with SMART indicators (baseline vs. target).		0.8	
			Medium presence of M and E plan (3) – Some opportunity to develop a robust M and E plan.		0.0	
			Low presence of M and E plan (1) – Limited opportunity to develop a robust M and E plan.			

1		2	3	4	5	6 = (4*5)
GCF Invest- ment Criteria	No	Sub- criteria	Score Guide / Sub-criteria description	Score	Weight- ing	Product
3. Country ownership	6	National and sectoral policy and strategy alignment	 Degree of alignment with the national and sectoral policies and strategies: High degree of alignment (5) – Strong alignment to MTDPIII, NDC, NAMA, Vision 2050, etc. Medium degree of alignment (3) – Shows attempt to align to the national priorities, MTDP III, NDC, NAMA, Vision 2050, etc. Low degree of alignment (1) – No alignment. 		1.0	
	7	National and Sectoral regulatory compliance	 Degree of compliance with environmental regulations: High (5) – High opportunity to comply with national and sectoral regulatory standards and decrees. Clear plans on attempting to comply with environmental regulations during implementation. Medium (3) – High opportunity to comply but the proposal does not have clear plans on how to comply, when to comply throughout the life of the project. Low (1) – Limited opportunity to comply with regulatory standards, etc. 		0.8	
	8	Synergies with other initiatives	 High synergy (5) – Strong opportunity to build upon and scale up past and proven baseline projects. Clear evidence of replication and upscaling. Medium synergy (3) – The intent is clear to synergise with other initiatives, clear proven initiatives, but unclear on how to scale up. Low synergy (1) – Limited opportunity, completely new and untested solutions (GCF will not fund pilot or demonstration project). 		0.6	
	9	Political will and com- mitment	 High political will and commitment (5) – Rigorous consultations have taken place. There is evidence of support by high chiefs and all groups at the community level (e.g., signed agreements, endorsements). Ward, LLG, Provincial, and Government support are clear in the proposal. Medium political will and commitment (3) – There is evidence of consultations but lacks rigour in consultations. Not all relevant stakeholders and levels of authorities consulted. Low political will and commitment (1) – There is limited evidence of consultation with authorities at all development interventions. 		1.0	
	10	Potential en- vironmental and social risks	 Degree of environmental and climate change risk: No or Low risk (5) – The resilient solutions will still work after 15 years, strong ESS, clear and solid environmental and social management plan, mitigation plans for risks. Medium risk (3) – Environmental and social risks outlined but need full and detailed plan on how to mitigate, respond, avoid, transfer risks. High risk (1) – The solutions may only work for first 5 years e.g. danger of solving a problem only to create a new one with unintended consequences e.g. e-waste. 		1.0	
4. SDG	11	SDG (Envi- ronmental, Econom- ic, Social, Co-benefits)	Number of benefits achieved: High number (5) – More than 5 SDGs. Medium number (3) – 3 SDGs. Low number (1) – 1 SDG.		0.8	

1		2	3	4	5	6 = (4*5)
GCF Invest- ment Criteria	No	Sub- criteria	Score Guide / Sub-criteria description	Score	Weight- ing	Product
			Degree of social acceptance by the target group:			
		Social and cultural ac- ceptability	High acceptance (5) – e.g. well adopted and strongly promoted by the community e.g. solar mini-grid for domestic and productive uses.			
	12		Medium acceptance (3) – good technology but lack endorsement and support by community and area.		1.0	
			Low acceptance (1) – e.g. good technology but poor us- er-friendliness e.g. improved cookstove that gives poor food taste.			
		Tupor	Types of beneficiary engaged:			
		(vulnerable, youth, big	High participation (5) – All groups targeted and benefitted, disaggregated by gender.			
5.Needs of the recipients	13	agribusiness vs. small-	Medium participation (3) – All groups included, but no clear targets, poor data and information about beneficiaries.		1.0	
		beneficiary	Low participation (1) – Only benefit a few, dominated by large agri-business, unclear target groups, no target groups.			
			Degree of consideration given to gender issues and inclusive- ness:			
	14	Gender responsive- ness	High responsiveness (5) – Women and youth are beneficiaries and actively participate and their full participation is deemed as critical to the success of the project.		10	
			Medium responsiveness (3) – Women and youth seen as mere beneficiaries, and participation will suffice.		1.0	
			Low responsiveness (1) – Only paying lip service to women and youth participation, 'box ticking' exercise with limited impact on women and youth.			
		Upfront investment cost of the technologies	Upfront investment cost:			
	15		Low or affordable upfront cost (5) – Solar, energy efficient solutions.		1.0	
	15		Medium upfront cost (3) – investment in hybrid technology solutions.			
			High upfront cost (1) - e.g. nuclear, desalination.			
		Imple- menting, operational and mainte- nance cost	Maintenance/operational cost:			
	16		Low or affordable cost (5) – High opportunity to cover O and M cost e.g. high revenue and viable business model to cover O and M cost		1.0	
ciency and			Medium cost (3) – Medium opportunity to cover O and M cost.			
effectiveness			High cost (1) – Limited opportunity to cover the O and M cost.			
			Ease of implementation:			
	17	Ease of implementa- tion	Easy to implement (5) – high level of support from all relevant stakeholders to ensure easy implementation and access to services, resources and support.			
			Medium ease to implement (3) – there is degree of difficulty to implement the project, but a risk plan to ensure easy of implementation is outlined.		0.8	
			Difficult to implement (1) – inherent level of risk to implementation in the area exists, but no plan to ensure ease of implementation.			
		Total Evalu- ation Score				

Annex VII: National Sectoral Consultation

The National Sectoral Consultation (NSC) took place in Port Moresby from the 21-23 October. The three-day consultation brought together representative from key sectors. CCDA as the NDA recognises that under PNG's planning and budgeting system, key agencies at both national and sectoral levels need to coordinate action and link their programming to complement climate change activities. Furthermore, CCDA encouraged linkages to sub-national levels and across the private sector, civil society and community, in order for any action to be effective.

The NSC provided an opportunity to discuss the status of the establishment of GCF in PNG and gauge stakeholder feedback to improving the establishment effort. As part of this, it is also examined specific funding opportunities that should be pursued under the GCF. This consultation sought to:

- Look at the GCF global requirements and seek feedback on how the GCF programme for PNG should be finalised so it aligns with PNG's own planning and budgeting system and encourages bankable project proposals.
- Examine sector programs that meet GCF criteria and could be prioritised as a GCF funding submission.
- Examine potential projects recommended by provinces, as extracted from the discussions at four regional workshops held earlier in 2019.
- Examine how sector programs can integrate viable provincial project ideas and promote the partnerships required to do this.
- Map out next steps for advancing both the GCF Country Programme and procedures and developing project proposals for the GCF.

Exercises as part of the NSC sought elicitation of potential new sector projects and programs. This was achieved by providing the participants with a list of the potential projects drawn from the four regional workshops.

Each project idea in the sheet provided was listed against one of the four sector groups represented at this workshop: Transport and Energy; Agriculture and Food Security; Health; and Oil, Mining and Gas. Each project idea was also listed against at least one of the eight GCF Result Areas. Participants were requested to work through each project idea and answer the following questions:

- Are there any you would remove? Cross them out.
- Are there any you would amend to contextualise it further? Amend as necessary.
- Are there any you would add? Add them in.
- What are your top three? Circle the three most important to your sector.

Participants were then asked to consider whether the top three priority projects selected would apply a Normal or Simplified approval process:

- Normal approval process? Write 'Normal'
- Simplified approval process? Write 'Simplified'

Normal approval process

Priority project must: US\$0-250m | ESS: Hi Med Low | pilot, demo, upscaling

Simplified approval process

Priority project must: US\$0-10m | ESS: Low only | upscaling, replication only

Annex VIII: National Sectoral Consultation Prioritisation Exercise

Papua New Guinea Green Climate Fund Country Programme

POTENTIAL GCF PROJECT IDEAS

Based on

PRIORITIES and PROJECT IDEAS raised at the Four Regional Consultations and by the Climate Change Technical Working Group

Introduction

Participants at the four regional consultations outlined the climate change priorities evident in their provinces and regions.

Following on from priority identification, participants at the regional consultations were asked to come up with project ideas for potential funding. In order to be recognised as a potential project idea, it needed to align with the priorities identified in key GoPNG plans, strategies and vision documents.

Exercise

Overleaf is a working draft list of potential project ideas for consideration based on project ideas raised in the regional consultations and alignment with government priorities.

Each project idea is listed against one of the four sector groups represented at this workshop. Each project idea is also listed against at least one of the eight GCF Result Areas:

Mitigation. Shifting to low-emission sustainable development pathways through:

- 1. Low-emission energy access and power generation
- 2. Low-emission transport
- 3. Energy-efficient buildings, cities and industries
- 4. Sustainable land use and forest management

Adaptation: Increasing climate-resilient sustainable development for:

- 5. Enhanced livelihoods of the most vulnerable people, communities, and regions
- 6. Increased health and well-being, and food and water security
- 7. Resilient infrastructure and built environment to climate change threats
- 8. Resilient ecosystems

Questions

Working through each project idea:

- Are there any you would remove? Cross them out.
- Are there any you would amend to contextualise it further? Amend as necessary.
- Are there any you would add? Add them in.
- What are your top three? Circle the three most important to your sector.

Annex IX: Glossary of Terms

Term	Description
Accreditation	A process under which entities have to demonstrate that they have the ability to manage the GCF's resources in accordance with standards and criteria set out by the GCF in the accreditation application.
Accredited Entity (AE)	An entity that is accredited by the GCF Board in accordance with the Governing Instrument and relevant Board Decisions. The GCF mobilises climate finance by working through a wide range of AEs. Organisations seen to have specialised capacities in driving climate action may apply to become GCF AEs. They can be private, public, non- governmental, sub-national, national, regional or international bodies.
Adaptation	An adjustment in natural or human systems in response to actual or expected climatic stimuli or their effects, which moderates harm or exploits beneficial opportunities.
Climate Finance Readiness	Climate finance readiness reflects a country's capacity to plan for, access, and deliver international and domestic climate finance, as well as monitor and report on expenditures.
Concept Note	A document which provides essential information about a proposal to seek feedback on whether the concept is aligned with the objectives, policies and investment criteria of the GCF. The GCF Concept Note template can be downloaded from the GCF website.
Country Programme	The country programme articulates and defines national climate priorities and presents a pipeline of projects and programs that PNG would like to develop with the GCF. It provides an action plan that details how projects and programs are to be developed, the type of entity to partner with, and the readiness and project preparation support required.
Delivery Partner	An institution selected by the NDA to implement activities approved under the Readiness and Preparatory Support Programme.
Direct Access Entities (DAEs)	DAEs are GCF AEs that are public, private or non-governmental institutions that apply for accreditation through the direct access modality. DAEs are regional, national and sub-national institutions, which are nominated by the NDA.
Enhanced Direct Access	The EDA is a modality for devolving the approval of individual proposals to the country. Under this country driven programmatic approach, the submission of individual projects is not required, with fund management, implementation and execution all devolved to the national level.
Environmental and Social Safeguards (ESS)	A reference point for identifying, measuring and managing environmental and social risks. The purpose of the ESS is to determine the key environmental and social risks the accredited entity intends to address in the conceptualisation, preparation and implementation of Funding Proposals, and to provide guidance on how these risks are to be managed.
Executing Entity (EE)	An entity through which GCF proceeds are channelled for the purposes of a funded activity or part thereof; and/or any entity that executes, carries out or implements a funded activity, or any part thereof. An accredited entity may carry out the functions of an EE, though it is preferable if local and national actors execute projects and programs.

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Funding Proposal	A document that is submitted by entities who want to get access to GCF resources for climate change projects and programs. Funding Proposals can be submitted to the GCF at any time, and are subject to a review process, culminating in a decision by the GCF Board as to whether to support the project. The GCF Funding Proposal template can be downloaded from the GCF website.
Gender Policy	The Fund's Gender policy aims to ensure the GCF will efficiently contribute to gender equality and will, in return, achieve greater and more sustainable climate change results.
Investment Criteria	Six investment criteria adopted by the GCF Board, namely impact potential; paradigm shift potential; sustainable development potential; needs of the recipient; country ownership; and efficiency and effectiveness. There are coverage areas, activity-specific sub-criteria, and indicative assessment factors that provide further elaboration.
Mitigation	In the context of climate change, mitigation refers to interventions that aim to reduce emission of greenhouse gases and/or enhance carbon sinks.
National Designated Authority (NDA)	A core interface and the main point of communication between a country and the GCF. The NDA seeks to ensure that activities supported by the GCF align with strategic national objectives and priorities, and help advance ambitious action on adaptation and mitigation in line with national needs. Key roles of NDAs are to issue NoLs for proposal and provide letters of nomination to DAEs.
Nomination Letter	A letter provided by the NDA to prospective entities seeking GCF accreditation. Entities applying for accreditation need to submit a nomination letter as a part of the accreditation application.
No-Objection Letter (NoL)	A letter issued from the NDA confirming that it has no objection to a Funding Proposal submitted by an AE. The NoL will only be issued following the completion of the no-objection procedure.
Private Sector Facility	The Private Sector Facility (PSF) engages the local and global private sector to invest in mitigation and adaptation activities. The PSF aims to change the current paradigm by de-risking the delivery of private capital and scaling up private sector investment flows for low carbon and climate-resilient development.
Project Preparation Facility	Project Preparation Facility (PPF) is financial support provided by the GCF usually in the form of grants to the accredited entities (AEs), especially for development of Funding Proposals for micro-to-small size projects submitted by DAEs.

Project Proponent	A group or organisation that submits or proposes a project idea to the NDA. It can be from the private or public sector (including ministries, local governments, private sector actors, CSOs and community organisations), and can also be an existing AE of the GCF.
Results areas	Eight result/impact areas which will deliver major mitigation and adaptation benefits to promote a paradigm shift towards low-emission and climate-resilient development. Mitigation includes four result areas, namely low-emission energy access and power generation; low-emission transport; energy-efficient building, cities and industries; and sustainable land use and forest management. Adaptation covers the other four, namely enhanced livelihoods of the most vulnerable people, communities and regions; increased health and well-being, and food and water security; resilient infrastructure and built environment to climate change threats; and resilient ecosystems. All proposals must reflect one or more of the result/impact areas.
Simplified Approval Process	The Simplified Approval Process Pilot Scheme (SAP) is an application process for smaller- scale projects or programmes. Projects or programmes are eligible for the SAP if they meet three main eligibility criteria: (i) Ready for scaling up and having the potential for transformation; (ii) a request for financing to GCF of up to US\$10 million of the total project budget; and (iii) the environmental and social risks and impacts are classified as minimal to none.



