

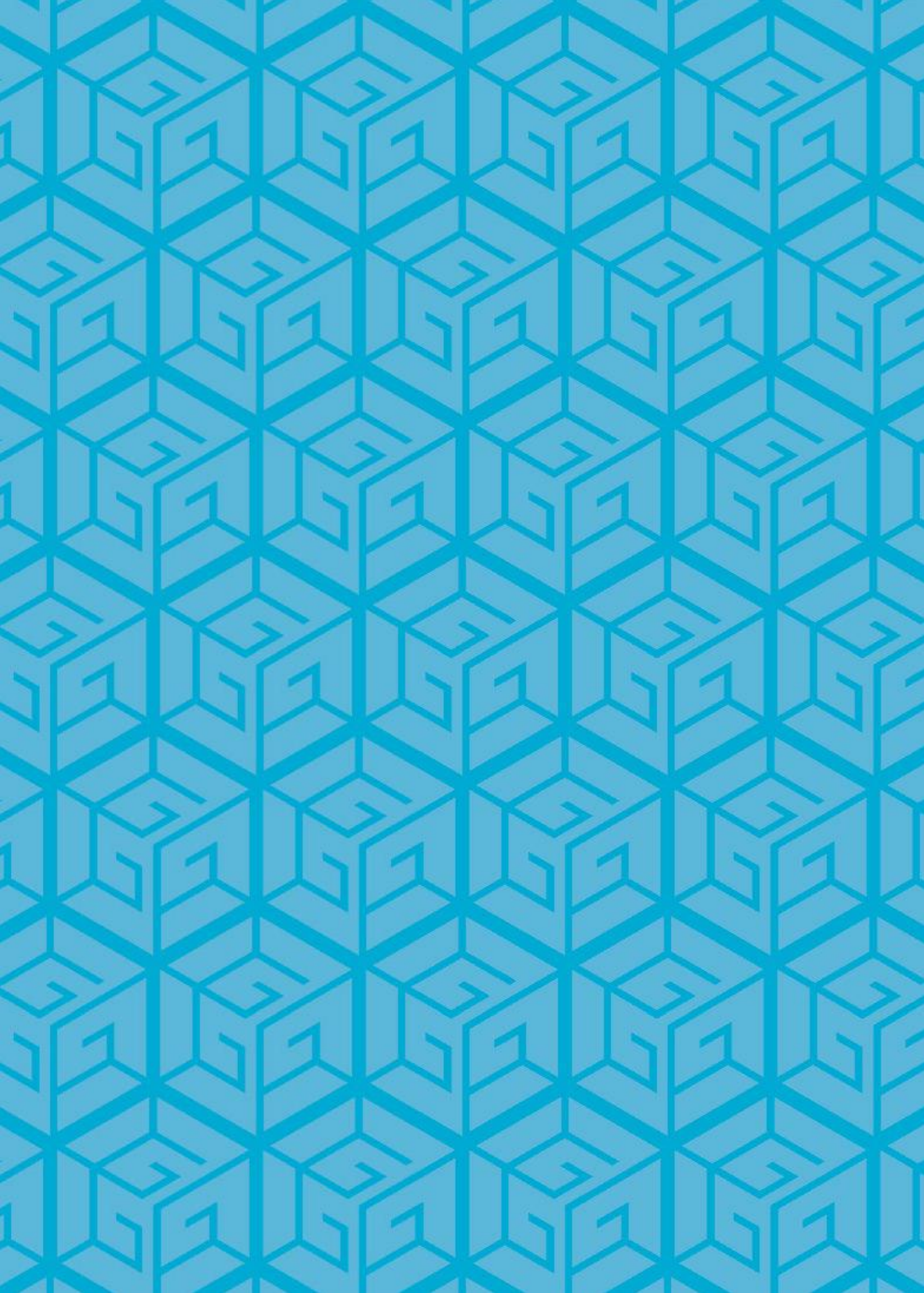


GGGI

Papua New Guinea

Country Planning Framework





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Abbreviations and Acronyms

ADB	Asian Development Bank
AFOLU	Agriculture, Forestry, and Other Land-Use
AQI	Air Quality Index
BPNG	Bank of Papua New Guinea
BUR	Biennial Update Report
CAEP	Climate Action Enhancement Package
CCDA	Climate Change and Development Authority
CEDAW	Convention on the Elimination of All Forms of Discrimination Against Women
CEFI	Centre for Excellence in Financial Inclusion
CO ₂ eq	Carbon Dioxide Equivalent
COP	Conference of the Parties
CPF	Country Planning Framework
CRGG	Climate Resilient Green Growth
DAL	Department of Agriculture and Livestock
DHERST	Department of Higher Education, Research, Science and Technology
DFAT	Department of Foreign Affairs and Trade (Australia)
DoE	Department of Energy
DoF	Department of Finance
DoT	Department of Transport
DoW	Department of Works and Implementation
EbA	Ecosystem-based Adaptation
FAO	Food and Agriculture Organization of the United Nations
FREAGER	Facilitating Renewable Energy and Energy Efficiency Applications for Greenhouse Emission Reduction
FSM	Fecal Sludge Management
GCF	Green Climate Fund
GDP	Gross Domestic Product
GESI	Gender Equality and Social Inclusion

Gg	Gigagram
GGGI	Global Green Growth Institute
GGPA	Green Growth Potential Assessment
GHG	Green House Gas
GII	Gender Inequality Index
GOP	Global Operational Priorities
GoPNG	Government of Papua New Guinea
HDI	Human Development Index
IFC	International Finance Corporation
ILO	International Labour Organization
ILOSTAT	International Labour Organization Statistics
IO	Intermediate Outcome
KRA	Key Result Area
LEAF	Lowering Emissions by Accelerating Forest finance
LECRD	Low Emissions Climate Resilient Development
LMI	Lower Middle Income
LT-LEDS	Long-Term Low Greenhouse Gas Emission Development Strategies
LULUCF	Land-Use, Land-Use Change, and Forestry
MOU	Memorandum of Understanding
MRV	Monitoring, Verification and Reporting
MSME	Micro, Small and Medium Sized Enterprise
MtCO ₂ e	Metric Tons of Carbon Dioxide Equivalent
MTDP	Medium Term Development Plan
NAP	National Adaptation Plan
NARI	National Agriculture and Research Institute
NbS	Nature-based Solution
NDC	Nationally Determined Contribution
ND-GAIN	Notre Dame Global Adaptation Initiative
NFI	National Forest Inventory
NFV	National Financing Vehicle

GGGI Country Planning Framework - **PAPUA NEW GUINEA**

NGO	Non-Governmental Organization
PGEN	Pacific Green Entrepreneurs Network
PHAMA+	Pacific Horticultural and Agricultural Market Access Plus Program
PNG	Papua New Guinea
PNGDSP	Papua New Guinea Development Strategic Plan
PNGFA	Papua New Guinea Forestry Authority
PS	Programmatic Solution
REDD+	National Reducing Emissions from Deforestation and Forest Degradation
SDG	Sustainable Development Goal
SME	Small to Medium Enterprise
SO	Strategic Outcome
StaRS	National Strategy for Responsible Sustainable Development
TPA	Tourism Promotion Authority
UN	United Nations
UNDP	United Nations Development Programme
UNFCCC	United Nations Framework Convention on Climate Change
USD	United States Dollar
WEF	World Economic Forum
WOCAN	Women Organizing for Change in Agriculture and Natural Resource Management

Foreword

by Dr. Frank Rijsberman, Director General of GGGI

Papua New Guinea joined the Global Green Growth Institute as a founding member in 2012. The partnership between PNG and GGGI is built on supporting and promoting a strong, sustainable, and inclusive economic growth and emerging economies. In 2018, GGGI developed a dedicated and collaborative in-country presence, with the objective to support the ongoing effort of the Government of Papua New Guinea to integrate planning for inclusive and climate resilient green growth (CRGG) and to successfully implement green growth projects and programs through the mobilization of climate finance and green investments.

GGGI supports its Members to take action in implementing their Nationally Determined Contributions under the Paris Agreement on Climate Change as well as their obligations under the 2030 Sustainable Development Goals. In Papua New Guinea, GGGI actively supports the Government in the imperative transition to a green economic development model. The GGGI PNG main office is embedded within the Climate Change & Development Authority, with presence in the Center of Excellence for Financial Inclusion at the Central Bank of Papua New Guinea, and at the sub-national level within Enga, New Ireland and Milne Bay Provincial Government Administrations. GGGI looks to expand its services in key Government priority sectors for inclusive green economic growth for PNG over the next five years.

This Country Planning Framework 2021-2025 sets out GGGI's response to Papua New Guinea's vulnerability to climate change challenges and green growth opportunities with tangible responses. The CPF lays the foundation for GGGI's program over the next five years, guiding the strategic alignment of GGGI's vision and goals with Papua New Guinea's green growth aspirations. The CPF offers GGGI the opportunity to evaluate its in-country advantage and identify the areas where it can make significant environmental, social, and economic impacts. With programs that focus on green investments through nature-based solutions, green job creation and improved supply chains and access to markets, targeting women and youth-led green businesses, enhanced adaptation to climate change in the agriculture, health and sanitation, water and food security, education, transport and infrastructure sector, the CPF articulates GGGI's contribution to PNG's green growth transition.

I am proud to present this ambitious strategy, especially in the face of the ever-changing covid19 pandemic, there is continued and resilient cooperation between GGGI and the Government of Papua New Guinea to work together to encourage Papua New Guinea on its trajectory of fulfilling its green growth potential.



DR. FRANK RIJSBERMAN

Director General

GGGI

Message from the Minister of Environment and Climate Change



MINISTRY OF ENVIRONMENT, CONSERVATION AND CLIMATE CHANGE

OFFICE OF THE MINISTER

Message from the Minister of Environment and Climate Change

Climate change is an existential threat to us all. Our very existence is intrinsically linked to the natural environment we live in. To survive, we cannot cut away the umbilical cord of our existence from Planet Earth, for we ourselves will perish. The COVID-19 pandemic is giving us a snapshot of what it feels like to cut the cord of our existence from Planet Earth, but in a much shorter and faster pace. Two things are clear for Papua New Guinea and the world is that both climate change and COVID-19 are here to stay for a very long time.

Papua New Guinea as an independent nation built its economy within the last forty-three years of its existence through a carbon intensive development pathway. We have seen industries, businesses, and societies thrive as a result. However, at the same time, we realise the side effects is not just felt locally but globally. The way we chose to develop ourselves has come at a price to the detriment of us all. We know this because it is real, we have seen it, felt it, experienced it.

Planet Earth is experiencing fast raising temperature causing havoc to polar ice caps, rising sea levels, and changing weather patterns. Papua New Guinea's front-line communities in the coastal areas are being inundated while our farmers in the highlands are now, more than before, feeling the harsh bite of drought-driven frost. Climate Change is real.

Papua New Guinea has carved out a low-carbon resilient development pathway as a response to climate change and to ensure that the economy does not falter the needs of its people and businesses going into an uncertain future. This pathway, guided by our very own the Sustainable Development Goal Roadmap of 30 Actions by 2030, and aligned to our Vision 2050, will help PNG meet its Nationally Determined Contribution. Tackling deforestation is at the heart of PNG's NDC and we look forward to addressing this as early as 2025 with the help of our development partners.

The Honourable Prime Minister James Marape stated at the seventy-six sessions of the United Nations General Assembly, that it is our collective responsibility to save Planet Earth. As Minister responsible for environment and climate change, I press on that our roles as Governments, civil society, private sector, and development partners are the collective that is responsible for realising our goals to address climate change.

As a founding member of Global Green Growth Institute, Papua New Guinea is proud of this partnership and commitment for green future for Papua New Guinea. The collaboration to develop this five-year Country Planning Framework for Global Green Growth Institute is a testament and commitment to the Government's vision of a green economy for Papua New Guinea and the Pacific.

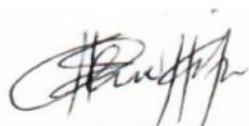
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I commend Frank Rijsberman and your team for listening and responding to PNG's need for a safer and more inclusive and sustainable economy and future. I wish to also thank a wonderful visionary and friend, Dr. Achala Abeyasinghe, PNG's first GGGI Country Representative and first woman leader for the role. PNG could not be prouder of your local achievements and commitments to PNG.

The Government of Papua New Guinea wishes Global Green Growth Institute the very best in its work and look forward to the positive outcomes of this five-year program.

Thank you



HON. SIMO KILEPA, MP

Minister for Environment, Conservation and Climate Change
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Executive Summary

Papua New Guinea (PNG) is highly vulnerable to the impacts of climate change. The Government of Papua New Guinea (GoPNG) has demonstrated its commitment to mitigating and adapting to climate change and to fulfilling its obligations under the United Nations Framework Convention on Climate Change (UNFCCC). GoPNG has mainstreamed climate change into its development priorities and captured the long-term political vision in the Vision 2050, the National Development Strategic Plan 2010-2030 (PNGDSP), the Medium-Term Development Plan (MTDP) III, PNG's Enhanced Nationally Determined Contribution (NDC), and the Sustainable Development Goal (SDG) Roadmap of 30 Actions by 2030. The Country Planning Framework (CPF) is designed to ensure that GoPNG's national development priorities remain at the center of the Global Green Growth Institute (GGGI) interventions.

Since 2018, GGGI has been partnering with GoPNG to support the country's transition toward climate resilient and inclusive green growth. GGGI carried out PNG's Green Growth Potential Assessment (GGPA) which sets the foundation of GGGI's work in the country, completed PNG's first Green Climate Fund (GCF) Readiness project enabling PNG to access GCF funds, and has successfully diversified PNG's donor base.

The CPF is GGGI's planning document presenting the strategic initiatives that GGGI aims to pursue in partnership with GoPNG in the next 5 years. The CPF is formulated based on the national priorities embodied in key policies, while GGGI's organizational priorities are anchored in the GGGI Strategy 2030. Building on PNG's key strategic documents and with the use of analytical tools from GGGI including the GGPA and the Green Growth Index, green growth challenges have been identified.

To address these challenges, the CPF identifies GGGI's comparative advantage and determines priority interventions where GGGI can make significant contributions to enhancing PNG's green growth performance. As a result, the CPF 2021-2025 will expand on past interventions, focusing on seven programmatic solutions that were identified as critical to green growth and estimated to have transformative socio-economic impacts. The seven programmatic solutions (PS) and related actions for PNG are described below.

Green Investments

GGGI aims to address policy gaps and enable private sector engagement and investment in PNG. GGGI will develop inclusive green finance policies, green taxonomy, and closing the finance gap through the development of bankable projects and mobilizing green investments of up to USD 250 million. The aim is to also create at least 1,500 green jobs by improving the flow of finance towards climate resilient green growth (CRGG) activities targeting SMEs in the agriculture sector. GGGI is strengthening the enabling environment of green financing through the design and set up of green financing vehicles such as the Credit Guarantee Corporation and policies such as inclusive green financing policy for banking sector with the Central Bank of PNG.

Climate Action

GGGI will support PNG's efforts on climate action by linking global climate action to national climate action and vice versa through support to PNG's Enhanced NDC implementation, policy and regulatory setting, and reporting. GGGI will conduct training and capacity building for climate action with support from its development partners. GGGI will also embed a Climate Finance Access Network advisor within CCDA or a key Government agency such as the Department of Treasury to support the establishment of a unit to deliver on its responsibilities primarily to promote access to funding for PNG's bankable climate change and green growth projects. GGGI is looking to support the Government assess its options for introducing sustainable mobility in PNG to assist the country meet its NDC targets. GGGI is championing CRGG into provincial sector plans to implement NDC target activities.

Climate Resilient Agriculture

GGGI will mobilize funds (up to USD 100 million) for the implementation of climate resilient agriculture programs and projects at national and provincial levels. GGGI will support the Government in scaling-up and replicating climate smart agriculture programs and projects targeting smallholder farmers, cooperative societies, and micro, small and medium sized enterprises (MSMEs) through a nature-based solutions (NbS) approach, contributing to the creation of green jobs in the agriculture sector. Through its projects, GGGI will look towards generating 1,500 green jobs such as green business managers, farmers, pastoralists, agronomists, landscape/urban planners, tourist guides, managers semi-skilled workers, administrative positions.

Sustainable Forests

GGGI is urgently and immediately scaling up its contribution to strengthening protection of intact forest landscapes, national parks, and wildlife management areas. GGGI will seek to mobilize investments of up to USD 100 million to support projects across forestry, bioeconomy, and nature-based tourism, providing tangible returns on investments through carbon mechanisms. GGGI will also support programs for forests under enhanced management, creating 7,000 green jobs for rangers, foresters, managers, educators, community officers, environmental science jobs, and tourist guides. Further, GGGI will support the Government in exploring and accessing key financing instruments that will enhance PNG's capacity to deliver on its REDD+ Strategy and NDC AFOLU Roadmap targets by 2030.

Coastal Resilience

GGGI will scale up and replicate successful measures across coastlines country-wide, supporting the development of climate-resilient physical planning standards and codes, and seeking to protect and promote biodiversity conservation through NbS and ecosystem-based adaptation (EbA) approaches.

Solar PV

GGGI aims to increase access to clean affordable energy and improved sanitation for at least 20 percent of the population. Investing in climate-resilient infrastructure is central to PNG's priority to rebuild resiliently from the climate and Covid-19 dual crisis. GGGI will install solar PVs for provincial and district education and health post facilities in remote locations in largely off-grid provinces, as well as connecting farmers to markets in rural areas via climate-proofed and gender-responsive transport infrastructure, and through 'greening' urban development plans.

Cross-cutting (Poverty Eradication and Gender Equality)

GGGI will support at least 10,120 people (at least 40 percent being women) have access to green jobs. GGGI will partner with local and international agencies (UN Women, Women Organizing for Change in Agriculture and Natural Resource Management (WOCAN)) to identify opportunities for the development of project/s which have highest potential for impact on women and girls and that meet the W+ Certification Standards. GGGI continue to promote the 'do no harm' approach and adheres to the principle of free, prior, and informed consent (FPIC) in all its programs and projects.

To implement these solutions, GGGI will draw on its global and multi-country experience working with the PNG's national and provincial governments to accelerate climate adaptation and mitigation interventions across the country. Interventions include fostering an enabling policy environment, originating impactful and bankable projects, and catalyzing climate finance, with the aim of the reduction of GHG emissions, the creation of green jobs, greater access to sustainable services, and an enhanced adaptation to climate change.



1. Introduction

The PNG CPF is a five-year country level plan that sets out the priority areas for GGGI's interventions in supporting the green growth transformation of PNG's economy into a green growth model in sync with its NDC and SDG obligations, national ambition, and regional commitments. It covers the period 2021 to 2025 and serves to translate the implementation of GGGI's Strategy 2030 and Roadmap 2021-2025 at the country program level in line with the PNG Vision 2050, the PNGDSP 2010-2030, the MTDP III, National Strategy for Responsible Sustainable Development (StaRS), PNG's Enhanced NDC, and the SDG Roadmap of 30 Actions by 2030.

1.1 Strategy 2030

GGGI's Strategy 2030 sets out the long-term ambitions of GGGI with the goal to assist GGGI's Member countries achieve environmentally sustainable and socially inclusive economic growth that is aligned with their NDCs and SDGs obligations. Strategy 2030 is focused primarily on the delivery of quantifiable 2025 and 2030 results and impact targets based on the six strategic outcomes (SOs) that directly and indirectly address PNG's green growth agenda and ambitions (Box 1).

Box 1. Six Strategic Outcomes

1. GHG emissions reduction
2. Creation of green jobs
3. Increased access to sustainable services, including clean affordable energy, improved sanitation, sustainable waste management, and sustainable public transport
4. Improved air quality
5. Sustained natural capital for the adequate supply of ecosystem services
6. Enhanced adaptation to climate change

These SOs will be delivered under five Global Operational Priorities (GOPs) and 11 Programmatic Solutions that have been selected as priorities for PNG in this CPF. Each programmatic solution is linked to the GOPs as depicted in Table 1.

Table 1. Global Operational Priorities and Programmatic Solutions

GOP		PROGRAMMATIC SOLUTIONS 2021-2025		
1. Catalyze climate finance Catalyzing and accelerating access to climate finance/green investments for members’ public and private sector	←	1. Green Investments Green bankable projects, investment proposals, NFVs, green and climate instruments, carbon-focused engagements.	PS11 Carbon Pricing (Carbon policy design, carbon trading through institutional strengthening, transaction structuring and knowledge sharing)	
	2. Support Green Growth Supporting our members in strengthening policy, planning and regulatory frameworks and institutional capacity to achieve green growth outcomes	←		2. Climate Action Inclusive GG plans, Long-term Low Emissions and Development Strategies (LT-LEDS), NDC support, MRV system design, climate diplomacy
3. Sustain the economy and environment Achieving a sustainable and circular bioeconomy while securing healthy natural systems		←		3. Climate Resilient Agriculture Solar irrigation, RE application in agri value chain, resilient cropping practices, resource conservation
		←		4. Sustainable Forests. REDD+, landscapes financing mechanisms, natural capital markets innovations
4. Sustain cities and villages Making cities and communities sustainable, livable, and resilient, supported through green jobs, services, and green infrastructure capital markets innovations	←	5. Coastal Resilience Mangroves as ecosystem for livelihoods, aquaculture, marine issues - fisheries, flood protection and pollution		
	←	6. Waste Management Circular economies, urban and agricultural waste, wastewater, fecal sludge management (FSM), waste to resource		
	←	7. Sustainable Mobility e-mobility, non-motorized transport		
	←	8. Green Buildings Green urban infrastructure norms/standards/policies, energy efficiency in residential & commercial buildings		
	←	9 Solar PV Energy transition access and productive use - solar energy pumping, solar pave auctions, rooftop, utilize scale plants, storage		
5. Eradicate poverty and promote gender equality and social inclusion. Accelerating progress in our country programs in poverty eradication and gender equality through our operations	←	10 Green Industries Green industrial parks, green supply chains, EE in SMEs, labelling and standards		
	←	11. Cross-cutting issues in all programmatic solutions.		

1.2 GGGI Operations in Papua New Guinea

GGGI commenced its operations in PNG in 2018 with the support of the Climate Change and Development Authority (CCDA).¹ Its initial focus was on supporting the ongoing effort of the GoPNG to integrate planning for inclusive and climate resilient green growth (CRGG) and to successfully implement green growth projects and programs through the mobilization of climate finance and green investments.² (Refer to Annex 1).

⁴ 1 GGGI, 2021. Country Programs: Papua New Guinea Overall Objective. Retrieved from: <https://gggi.org/country/papua-new-guinea/>
 2 GGGI, 2021. Country Programs: Papua New Guinea Overall Objective. Retrieved from: <https://gggi.org/country/papua-new-guinea/>

1.3 Objectives of the CPF

The PNG CPF was formulated through analysis of major economic, climate and environmental/social trends and challenges and a comprehensive process of consultation with key green growth stakeholders and development partners including significant input and validation by the GoPNG.

The GGGI CPF for PNG for the period 2021-2025 has the following objectives:

- i) Ensure **strategic alignment** between country level interventions and the GGGI GOPs and PSs
- ii) Deliver **transformational and impactful programs** with measurable, attributed and contributed outcomes, serving as a framework for all GGGI projects in PNG
- iii) Focus on **national development priorities** and ensure government ownership, commitment, and support to GGGI interventions in PNG
- iv) Develop **stronger partnerships** and facilitate resource mobilization to accelerate inclusive green growth adoption and transformational impact at scale
- v) Promote **internal integration and knowledge sharing** by bringing together a cross-selection of GGGI experts to deliver a 'One GGGI' approach
- vi) Strengthen **linkages with key global development agendas** and the GGGI Strategy 2030.³

5 ³ Key global development agendas refer to the 2015 Paris Climate Change Agreement and the 2030 Sustainable Development Agenda (UN SDGs).



2. Country Overview

PNG is a part of the world's second-largest island landmass in the West Pacific⁴ with a young and growing population. The country faces many development challenges and is undergoing major social and economic transformation. The economy is largely supported by two sectors: i) agriculture, forestry, and fisheries; and ii) extractive industry (minerals and energy). The former is responsible for most of the employment, while the latter is responsible for the majority of gross domestic product (GDP) output.⁵ ⁶ As indicated by Table 2, PNG is currently classified as a lower middle income country with a GDP per capita (as of 2017) of USD 4,193,⁷ and 39.9 percent of the population living below the poverty line.⁸ The economic trajectory and abundance of resource potential provides a platform for economic opportunities both in the Asia-Pacific region and the world.⁹

Table 2. Papua New Guinea at a glance

Indicator name	Data	Year	Source
Population	8,776,109	2019	World Bank ¹⁰
GDP per capita PPP (current international \$)	4,193	2017	World Bank
World Bank income group classification	LMI ¹¹	2021	World Bank
Population living below income poverty line, national poverty line (%)	39.9	2008-2019	World Bank
Unemployment total (% of total labor force)	2.5	2019	World Bank
Informal economy employment rate	n.a.	n.a.	ILOSTAT
Inflation, consumer prices annual %	3.638	2019	World Bank
Central government debt, total (% of GDP)	29.9		World Bank
ODA as a % of overall government budget	59	2020	Finance Ministry
Human Development Index (rank)	155	2019	UNDP ¹²
Gender Inequality Index (GII)	0.725	2019	UNDP
Gini coefficient	41.9	2009	World Bank
CO ₂ e emissions (metric tons per capita)	0.911	2016	World Bank
Forest area (% of land area) ¹³	74.1	2016	World Bank

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

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

6 GoPNG, 2020. *Papua New Guinea and the Green Climate Fund Country Programme*.

7 As of May 2021, and extracted from the World Bank Open Database at <https://data.worldbank.org/>

8 As of May 2021, and extracted from the World Bank Open Database at <https://data.worldbank.org/>

9 World Bank, 2021. *The World Bank in Papua New Guinea*. Retrieved from: <https://www.worldbank.org/en/country/png/overview>

10 All World Bank data used to complete this table is recent as of May 2021 and extracted from the World Bank Open Database at <https://data.worldbank.org/>

11 LMI - lower middle income.

6 12 UNDP, 2021. *Human Development Reports. Papua New Guinea Human Development Indicators*. Retrieved from: <http://www.hdr.undp.org/en/countries/profiles/PNG>

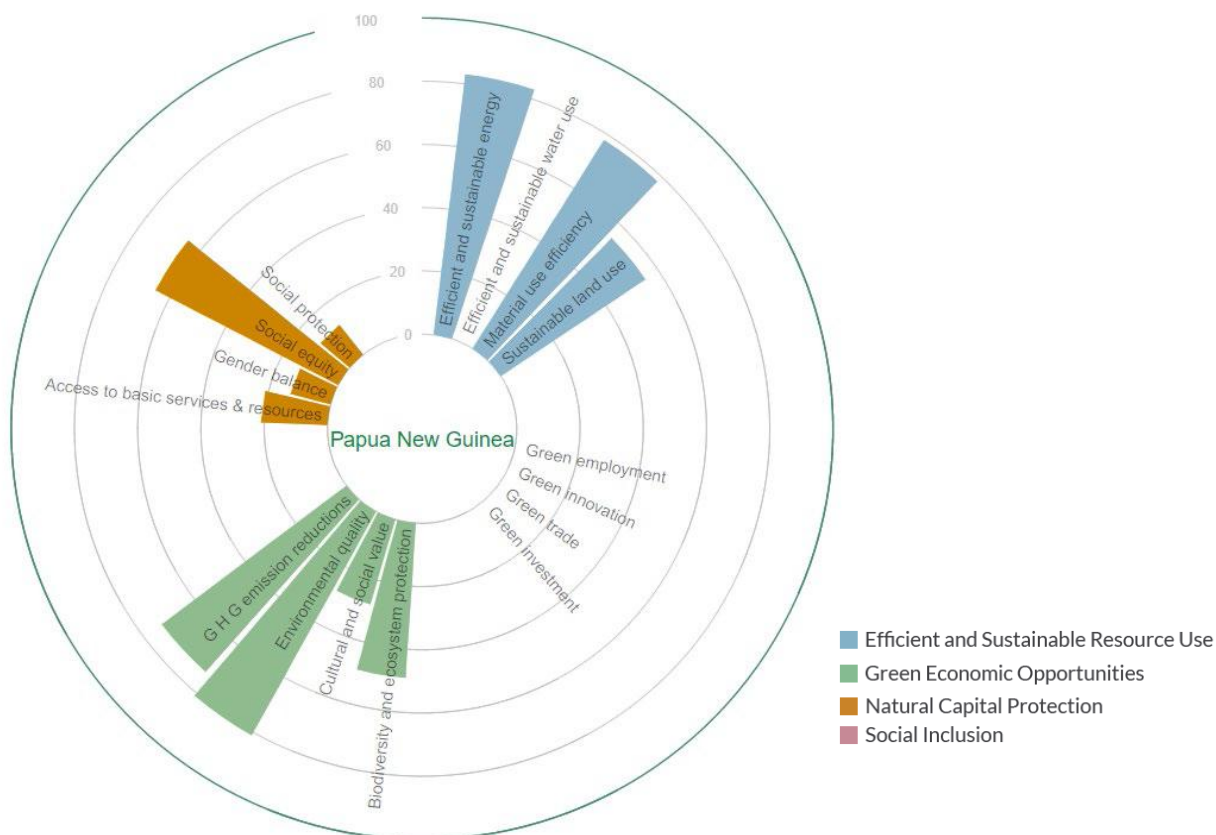
13 Forest area in this context refers to forest cover or standing forests.

Indicator name	Data	Year	Source
Agricultural land (% of land area)	2.6	2018	World Bank
Agriculture, forestry, and fishing, value added (% of GDP)	17	2018	World Bank
Renewable energy consumption (% of total final consumption)	52.5	2015	World Bank
Fossil fuel energy consumption (% of total)	n.a.	n.a.	World Bank
Annual freshwater withdrawals, total (% of internal resources)	0	2017	World Bank
Urban population growth (annual %)	2.6	2019	World Bank
Urban population growth (% of total population)	13	2019	World Bank
Sanitation facilities (% of population with access)	n.a.	n.a.	World Bank
Environmental Performance Index (rank)	146	2021	Yale ¹⁴
Global Competitiveness Index (rank)	n.a.	n.a.	WEF
ND-GAIN Adaptation Index (rank)	149	2020	ND-GAIN ¹⁵

2.1 Papua New Guinea’s Green Growth Performance

PNG is ranked 208 out of 251 countries assessed for green growth performance in achieving targets including SDGs, the Paris Climate Agreement, and Aichi Biodiversity Targets for four green growth dimensions – efficient and sustainable resource use, natural capital protection, green economic opportunities, and social inclusion.

Figure 1. Distance to Targets for Green Growth Indicators for PNG (GGGI, 2020)

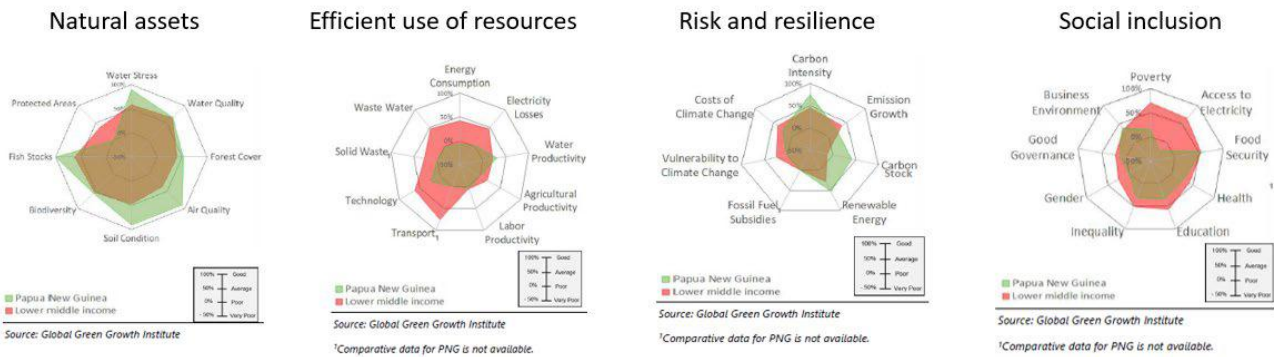


14 Yale, 2021. *Environmental Performance Index*, Papua New Guinea. Retrieved from <https://epi.yale.edu/epi-results/2020/country/png>

15 ND-GAIN, 2020. *Country Rankings*. Retrieved from: <https://gain.nd.edu/our-work/country-index/rankings/>

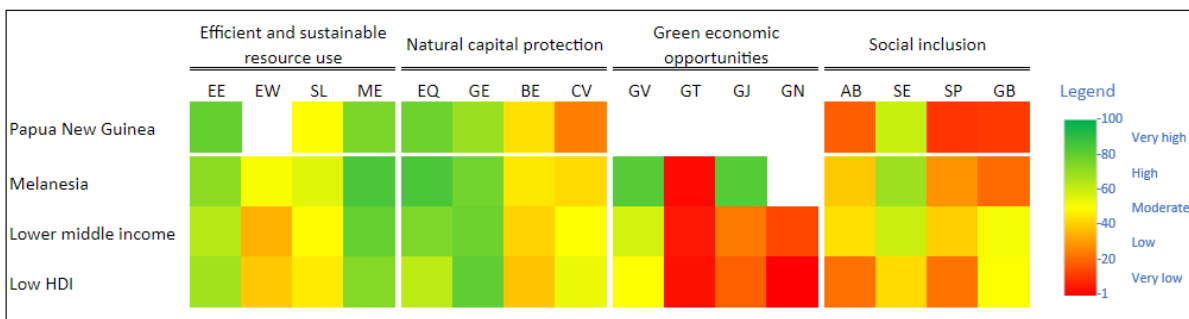
PNG performs low on green growth for two main reasons, firstly the lack of data in indicators for green economic opportunities defined by the four green growth dimensions. Secondly, PNG also ranks low under the social inclusion dimension (see Figure 1 and 2), compared to other countries in the region such as the Solomon Islands, Vanuatu and Fiji.

Figure 2. Spider web diagrams for Papua New Guinea



However, PNG is performing well in a few green growth indicators including environmental quality and efficient and sustainable use of energy and materials with very high scores of about 80 (Figure 1 and 2). PNG’s performance is slightly better than other countries in Melanesia, other low middle-income countries, and countries with low HDI with respect to efficient and sustainable energy and environmental quality (Figure 3).

Figure 3. Performance dashboard of indicators for the green growth indicators (GGGI, 2020)



Legend:

Efficient and sustainable energy (EE), efficient and sustainable water use (EW), sustainable land use (SL), material use efficiency (ME), environmental quality (EQ), GHG emissions reduction (GE), biodiversity & ecosystem protection (BE), cultural and social value (CV), green investment (GV), green trade (GT), green jobs (GJ), green innovation (GN), access to basic services and resources (AB), gender balance (GB), social equity (SE), and social protection (SP).

PNG has significant opportunities to realize green employment, innovation, trade and investment in the environment, energy, agriculture and forestry sector through sustainable and inclusive climate resilience, green growth and nature-based solutions. PNG is also able to improve green growth performance in the social inclusion dimension, particularly by improving access to basic services and resources, gender balance and diversity, and social protection.

2.2 Papua New Guinea's Green Growth Potential

In 2018, GGGI conducted a GGPA which formed the basis for initiating a green growth country program and development pathway in PNG. As presented in Table 3 below, the GGPA identified four potential priority areas for green growth interventions in PNG¹⁶ with specific recommendations for policy action to enhance the role of the private sector, strengthen evidence-based policy development and strengthen good governance to mitigate corruption.¹⁷

Table 3. Green Growth Potential Priorities and Recommendations

No.	Green Growth Potential Priorities	Green Growth Recommendations
1	Resilience. Increasing PNG's resilience toward the adverse impacts of climate change, given the country's high vulnerability.	<ol style="list-style-type: none"> 1. Support a larger role for private sector initiatives by strengthening policy coherence and providing regulatory certainty. 2. Strengthen data collection as a fundamental requirement to design well-informed policies. 3. Strengthen efforts toward good governance and address the issue of corruption.
2	Renewable energy. Deploying renewable energy as an opportunity to increase the country's low electrification rate.	
3	Agriculture. Improving agricultural productivity, due to the high importance of agriculture for the country's mostly rural population, as well as food security and PNG's economy.	
4	Forest conservation. Conserving the country's extensive forests, due to their global significance for carbon storage, the role they play in sustainable agriculture, their provision of ecosystem services, and their economic potential.	

¹⁶ GGGI, 2019. *Green Growth Potential Assessment. Papua New Guinea Country Report. July 2019*. Retrieved from: <https://ggi.org/report/green-growth-potential-assessment-of-papua-new-guinea/>

¹⁷ p. 94 GGGI, 2019. *Green Growth Potential Assessment. Papua New Guinea Country Report. July 2019*. Retrieved from: <https://ggi.org/report/green-growth-potential-assessment-of-papua-new-guinea/>



3. Programmatic Solutions

In line with PNG's climate change and green growth development priorities, GGGI's PNG country program will be based on the following programmatic solutions.

3.1 Green Investments

GGGI aims to address policy gaps through the development of inclusive green finance policies, green taxonomy, and closing the finance gap through the development of bankable projects and mobilizing green investments (up to USD 250 million) in nature-based solutions, renewable energy, and energy efficiency technologies. The projects will target key sectors such as health and sanitation, agriculture, water and food security, education, transport and infrastructure, while establishing financial mechanisms that support sustainability and project funding for such investments.

GGGI will seek to addressing challenges for the private sector to invest in PNG through private sector mobilization and engagement, supporting green jobs and green investments through the design and establishment of green financing vehicles such as the Credit Guarantee Corporation and policies such as inclusive green financing policy for banking sector with the Central Bank of PNG. These policies seek to improve the flow of finance towards CRGG activities by targeting SMEs in the agriculture sector with the best potential for success and scalability. This work will contribute to GGGI's strategic objective of creating green jobs. Furthermore, providing technical support to mature data management infrastructure and supporting Government agencies to apply the **Information Collection Act 2019** would promote data sharing between agencies, redress of institutional reform, capacity development, education and knowledge sharing, and additional green job opportunities.

Strategic Outcomes

Over the next 5 years, the Green Investments PS aims to commit to the following government contributed impact outcomes:

- SO1: Reduced GHG emissions – GGGI will contribute to the NDC target of 10,000 Gg CO₂e emissions reduction from AFOLU sector against 2015 levels by 2030, and the MTDP III (2018) strategy of improved systems and inventories to monitor GHG and account for carbon emissions.
- SO6: Enhanced adaptation to climate change – GGGI will contribute to the NDC target of 10% of the population (25% being female) with increased resilience of food and water security, health and wellbeing, and 100% of the population benefit from introduced health measures to respond to malaria and other climate-sensitive diseases in PNG.

And the following attributed impact outcomes:

- SO2: Green jobs – 1,500 people have access to green jobs
- SO4: Improved air quality – 347 days/year above US-EPA Orange Air Quality Index (AQI) – 7.1 million tCO₂e avoided
- SO6: Enhanced adaptation to climate change – 3.8 million people supported to cope with climate change in agriculture, health, infrastructure and transport.

3.2 Climate Action

The CPF provides the opportunity for GGGI to support PNG's efforts on climate action by linking global climate action to national climate action and vice versa through support to PNG's Enhanced NDC implementation, policy and regulatory setting, and reporting. GGGI aims to strengthen PNG's climate investment framework for climate action by establishing a climate resilience and investment unit within Treasury.

GGGI will also embed a Climate Finance Access Network advisor within CCDA or a key Government agency such as the Department of Treasury to support the establishment of a unit to deliver on its responsibilities primarily to promote access to funding for PNG's bankable climate change and green growth projects. Through the support, GGGI will help to meet PNG's SDG Roadmap Action 1 – 'strong investment framework for climate action', the SDG Roadmap Target 13.b – 'mechanisms to raise capacity for effective climate change action'¹⁸ and MTDP III strategy on 'Access funding for technical, institutional and technology support for implementing mitigation and adaptation programs.'¹⁹

By championing climate resilience and green growth mainstreaming into provincial plans and budgets through ongoing work in Enga, Milne Bay and New Ireland and replicating successes in other provinces, GGGI is supporting PNG priority development sector agencies in health, agriculture, forestry and land use to implement NDC target activities. The key activities include training and capacity building for climate action, including training for international negotiations (climate diplomacy), performance audits for climate and environment, sustainable agriculture, national forestry inventory, green policy for transport and national weather services, carbon market and REDD+ coordination and regulations, and promoting climate action within the tourism sector.

GGGI will support the Government through the Department of Transport (DoT), in conducting a policy and framework needs assessment for sustainable mobility in the country. The feasibility assessment will help PNG prepare and mobilize investment support for e-mobility and non-motorized transport. It will explore options with sea, land and air transport in close collaboration with Government agencies and private sector in the transport sector.

Strategic Outcomes

Over the next 5 years, the Climate Action PS aims to commit to the following government contributed impact outcomes:

- **SO1: Reduced GHG emissions** – GGGI will contribute to the NDC target of 10,000 Gg CO₂e emissions reduction from AFOLU sector against 2015 levels by 2030, and the MTDP III (2018) strategy of improved systems and inventories to monitor GHG and account for carbon emissions
- **SO6: Enhanced adaptation to climate change** – GGGI will contribute to the NDC target of 10% of the population (25% being female) with increased resilience of food and water security, health and wellbeing, and 100% of the population benefit from introduced health measures to respond to malaria and other climate-sensitive diseases in PNG.

3.3 Climate Resilient Agriculture

GGGI will support the Government in scaling-up and replicating climate smart agriculture programs and projects targeting smallholder farmers, cooperative societies, and MSMEs through a NbS approach, contributing to the creation of green jobs in the agriculture sector. Through its projects, GGGI will look towards generating 1,500 green jobs such as green business managers, farmers, pastoralists, agronomists, landscape/urban planners, tourist guides, managers semi-skilled workers, administrative positions.

GGGI will support the development of climate smart agriculture policies, regulations, and plans at national and sub-national levels, including climate resilient green growth strategies for provinces, and provincial sector and sub-sector plans, and support the implementation. To do this, GGGI will mobilize funds (up to USD 100 million) for the implementation of climate resilient agriculture programs and projects at national and provincial levels. Furthermore, GGGI will develop tools and build capacity of co-operatives and smallholder farmers to access climate smart agriculture technology, improve supply chains to access markets, agriculture product certification schemes, and funding access, as well as support research and knowledge management to enhance food safety, security, and nutrition.

Strategic Outcomes

Over the next 5 years, the Climate Resilient Agriculture PS aims to commit to the following government contributed impact outcomes:

- SO1: Reduced GHG emissions – GGGI will contribute to the NDC target of 10,000 Gg CO₂e emissions reduction from AFOLU sector against 2015 levels by 2030, and the MTDP III (2018) strategy of improved systems and inventories to monitor GHG and account for carbon emissions.

And the following attributed impact outcomes:

- SO1: GHG reduced – 1.1 million tCO₂e avoided
- SO2: Green jobs – 1,500 people with access to green jobs

3.4 Sustainable Forests

Through implementation of CPF, GGGI is urgently and immediately scaling up its contribution to strengthening protection of intact forest landscapes, national parks, and wildlife management areas, and support the coordination of NDC monitoring activities (National Forest Inventory (NFI), forest land assessments for more reliable estimation of GHG removal of forest degraded land, timber concessions for precise emission data collection, and rezoning of old timber concessions. These attribute to increasing community participation in forest management, including tree planting initiatives under national and provincial reforestation and rehabilitation programs, creating green jobs for foresters, farmers, administrative positions.

GGGI will also support programs for forests under enhanced management, creating green jobs for rangers, managers and educators, community liaison officers, environmental science jobs, and tourist guides. GGGI will seek to mobilize investments (up to USD 100 million) to support projects across forestry, bioeconomy, and nature-based tourism, providing tangible returns on investments through carbon mechanisms. GGGI will work to enhance the timber legality system by the implementation of a near-real-time Deforestation and Degradation Alerts Monitoring System for PNG at relevant government institutions and agencies.

GGGI will support the Government in exploring and accessing key financing instruments that will enhance PNG's capacity to deliver on its REDD+ Strategy and NDC AFOLU Roadmap targets by 2030. These mechanisms include the Green Climate Fund (GCF) REDD+ Results Based Payment Pilot, Lowering Emissions by Accelerating Forest finance (LEAF) Coalition, Coalition for Rainforest Nations – REDD+ Registry, Voluntary Carbon Markets, Article 6 Agreements and other financing instruments such as sector focused private investment and green bonds.

Strategic Outcomes

Over the next 5 years, the Sustainable Forests PS aims to commit to the following government contributed impact outcomes:

- SO1: Reduced GHG emissions – GGGI will contribute to the NDC target of 10,000 Gg CO₂e emissions reduction from AFOLU sector against 2015 levels by 2030, and the MTDP III (2018) strategy of improved systems and inventories to monitor GHG and account for carbon emissions.
- SO5: Adequate maintenance of natural capital – GGGI will contribute to the NDC target of area of annual deforestation reduced by 25% of 2015 level by 2030 through reduction of 8,300 ha of annual deforestation and forest degradation reduced by 25% of 2015 level by 2030 through reduction of 43,000 ha of annual degradation; and the area of planted forest and forest restoration is increased.

And the following attributed impact outcomes:

- SO1: GHG reduced – 6.0 million tCO₂e avoided and 1.8 million tCO₂e sequestered over 40 years
- SO2: Green jobs – 7,000 people with access to green jobs
- SO5: Adequate maintenance of natural capital - .003 million ha rehabilitated, 1.4 million ha under improved management

3.5 Coastal Resilience

GGGI recognizes potential opportunities to support presently unsupported adaptive actions including the scaling-up and replication of successful measures across coastlines country-wide, supporting the development of climate-resilient physical planning standards and codes, and seeking to protect and promote biodiversity conservation through NbS and EbA approaches. GGGI will seek to improve local sea level data collection and determination in the maritime provinces of Milne Bay, Manus, Madang and East New Britain, and collate coastline data and mapping of soft and hard defense structures in highly vulnerable coastlines including Manus Province, and the East Cape Road in Milne Bay Province.

Strategic Outcomes

Over the next 5 years, the Coastal Resilience PS aims to commit to the following government contributed impact outcomes:

- SO6: Enhanced adaptation to climate change – GGGI will contribute to the NDC target of 10% of the population (25% being female) with increased resilience of food and water security, health and wellbeing, and 100% of the population benefit from introduced health measures to respond to malaria and other climate-sensitive diseases in PNG.

And the following attributed impact outcomes:

- SO6: Enhanced adaptation to climate change - 3.8 million people supported to cope with climate change in agriculture and health

3.6 Solar PV

GGGI will support the Government and engage the private sector in the installation of solar PVs for provincial and district education and health post facilities in remote locations in largely off-grid provinces, as well as transport infrastructure connecting farmers to markets in rural areas via climate-proofed and gender-responsive infrastructure, and through 'greening' urban development plans.

Strategic Outcomes

Over the next 5 years, the Solar PV PS aims to commit to the following government contributed impact outcomes:

- SO3: Increased access to sustainable services – GGGI will contribute to the NDC target of electricity generation from renewable energy sources increased from 30% (2015) to 78% by 2030

And the following attributed impact outcomes:

- SO3.1: Clean affordable energy: 20% of population gain access to clean energy
- SO3.2: Improved sanitation: 20% of population gain access to improved sanitation

3.7 Cross-cutting (poverty eradication and gender equality)

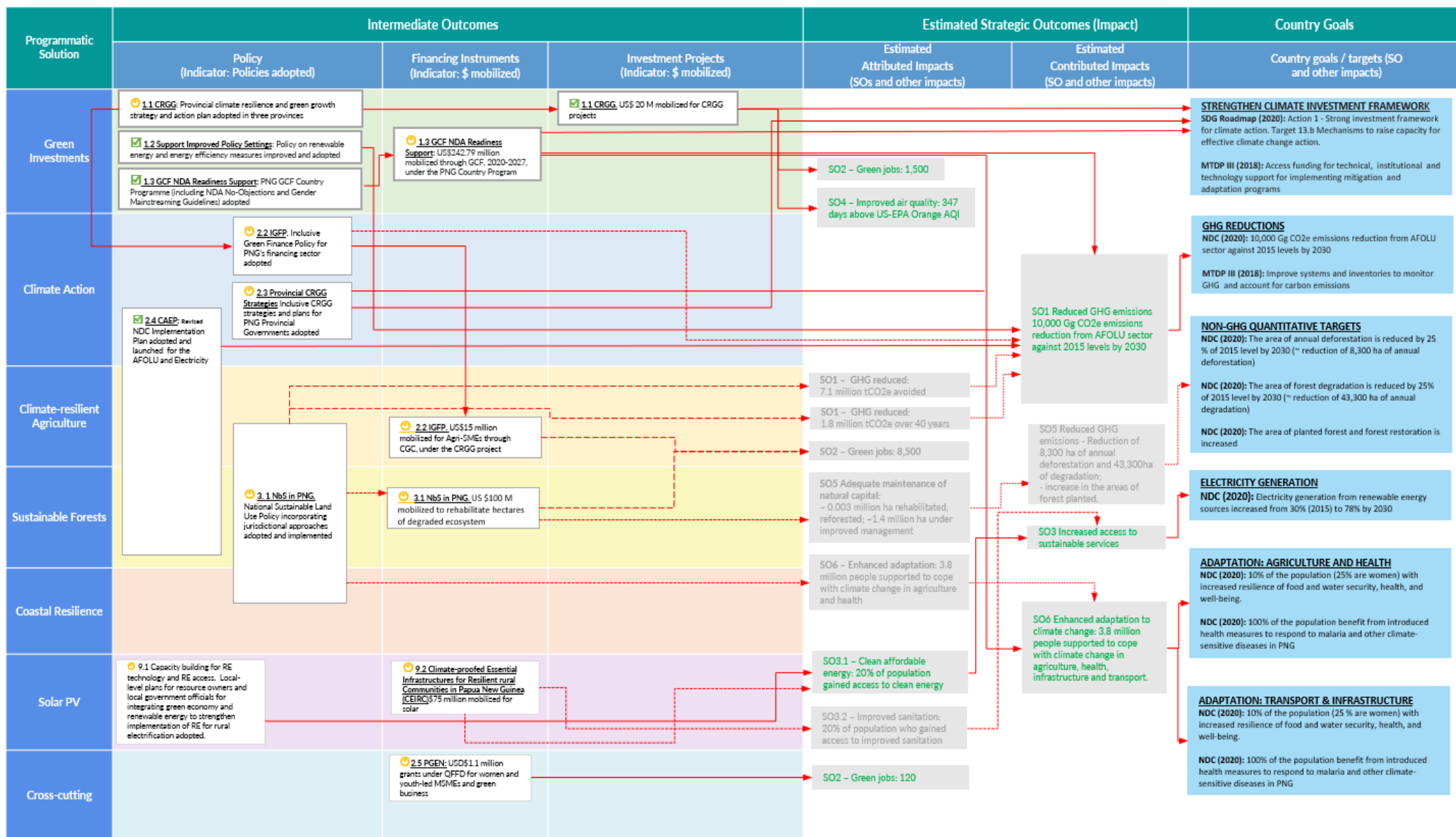
GGGI has been championing the mainstreaming of gender, women empowerment, and social inclusion through a concrete GESI framework and annual GESI action plan in PNG. GGGI in partnership with WOCAN has also identified opportunities for the development of project/s which have highest potential for impact on women and girls, the W+ Certification Standards – a unique certification label developed by WOCAN that endorses projects that create increased social and economic benefits for women participating in economic development or environment projects, including those that provide renewable energy technologies, time and labor saving devices, forest and agriculture activities, and employment opportunities²⁰. Furthermore, GGGI applies the 'do no harm' approach and adheres to the principle of free, prior, and informed consent (FPIC).

Strategic Outcome

Over the next 5 years, the Cross-cutting PS aims to commit to the following attributed impact outcomes:

- SO2: 10,120 people have access to green jobs

²⁰ WOCAN, 2021. The W+ Certification Standards <https://www.wocan.org/the-w-standard/>



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Annexes

Annex 1. List of PNG country subprograms - national and Pacific regional 2018-2021

Annex 2. Strategic and Immediate Outcomes

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Annex 4. Lists of stakeholders by category and influence, and stakeholders consulted

Annex 5. Monitoring & Evaluation

Annex 1. List of PNG country subprograms - national and Pacific regional 2018-2021

The Pacific regional subprogram includes four projects implemented under the GGGI Pacific program.

List of PNG country subprograms - national and Pacific regional 2018-2021

Project Title	Short Description	Project Information
(a) National		
1) Climate Resilient Green Growth Project (CRGG)	Incorporate climate resilient green growth in multiple sectors across PNG's provinces and deliver green growth projects with leveraged finance.	Status: Ongoing US\$: 4.41 M Donor: Australian Government Duration: 4 years. 2019-2021 Key Partner: CCDA
2) Climate Action Enhancement Package (CAEP)	Provide technical support to GoPNG in revising its NDC with a focus on the energy, and the agriculture, forestry and other land-use (AFOLU) sector and improve MRV and REDD+ functions of CCDA. ¹	Status: Ongoing US\$: 332,542 Duration: 2 years. 2020-2021 Key Partner: CCDA
3) Supporting Improved Policy Settings	GGGI and UNDP/GEF conducted a policy gap analysis on renewable energy and energy efficiency measures under the Facilitating Renewable Energy and Energy Efficiency Applications for Greenhouse Emission Reduction Project (FREAGER). ²	Status: Completed Duration: 2 years. 2018-2019 Key Partner: CCDA Lead Partner: UNDP/GEF
4) Capacity Building on Climate Change Project Identification and Development	The project built capacity and strengthened information for climate change project development stakeholders ³	Status: Completed US\$: 112,830 Duration: 2 years. 2018-2019 Key Partner: CCDA
5) Readiness Support to Strengthen PNG's Engagement with the Green Climate Fund	The project strengthened PNG's engagement with the GCF and supported the functions of PNG's National Designated Authority (NDA). ⁴	Status: Completed US\$: 677,427 Donor: GCF Duration: 2 years. 2018-2019 Key Partner: CCDA

1 GGGI, 2020. PG08 Climate Action Enhancement Package. Available at: <https://ggi.org/project/climate-action-enhancement-pf-programme/>

2 GGGI, 2018. Papua New Guinea Supporting Improved Policy Settings. Available at: [PG2 Papua New Guinea Supporting improved policy settings – Global Green Growth Institute \(ggi.org\)](https://www.ggi.org/publications/papua-new-guinea-supporting-improved-policy-settings)

3 GGGI, 2018. Papua New Guinea Capacity Building on Climate Change Project Identification and Development. Available at: <https://ggi.org/project/project-reference-profiles-papua-new-guinea3-papua-new-guinea-capacity-building-on-climate-change-project-identification-and-development/>

4 GGGI, 2017. Readiness Support to strengthen Papua New Guinea's Engagement with the Green Climate Fund. Available at: <https://ggi.org/project/readiness-support-to-strengthen-pngs-engagement-with-the-gcf/>

(b) Pacific Regional		
1) Capacity building to strengthen sustainable implementation of Renewable Energy Technologies for Rural Energy Access.	To strengthen inclusive informed decision-making by resource owners and local government officials for integration of Green Economy and Renewable Energy into local-level planning and to strengthen implementation of RE for rural electrification. ⁵	<p>Status: Ongoing</p> <p>US\$: 1.5 million</p> <p>Donor: Korean International Cooperation Agency (KOICA)</p> <p>Duration: 3 years. 2019-2021</p> <p>Key Partner: CCDA</p> <p>Project member countries:</p> <p>PNG, Fiji, Solomon Islands, Vanuatu.</p>
2) Pacific Green Entrepreneurs Network (PGEN)	The Network aims to support green and inclusive job growth by supporting entrepreneurs (particularly women and youth) develop their green and sustainable businesses whose business models include solutions aimed at contributing to their country's climate and sustainable development goals.	<p>Status: Ongoing</p> <p>US\$: 2,475,000</p> <p>Donor: Qatar Fund for Development (QFFD)</p> <p>Duration: 3 years. 2019-2021</p> <p>Key Partner: SMEs</p> <p>Project member countries:</p> <p>PNG, Fiji, Kiribati, Samoa, Tonga, Vanuatu</p>
3) Low Emissions Climate Resilient Development (LECRD)	The regional program aims to develop a National Inclusive Green Finance Policy for the banking sector to boost financial inclusion and guide public and private sector investment towards Low Emission and Climate Resilient Development.	<p>Status: Ongoing</p> <p>US\$: 187,512</p> <p>Donor: New Zealand Ministry of Foreign Affairs & Trade.</p> <p>Duration: 3 years. 2021-2023</p> <p>Key Partners: Bank of PNG, Centre for Excellence in Financial Inclusion (CEFI)</p> <p>Project member countries:</p> <p>PNG, Fiji, Kiribati, Tonga, Vanuatu</p>
4) Climate Finance Advisory Network	The network is designed to provide a prompt and practical solution to the climate finance bottleneck in SIDS, Least Developed Countries and African countries. PNG amongst eight other Pacific SIDS have requested for highly trained climate finance advisors embedded in the country with ongoing technical support from the network.	<p>Status: Initiation</p> <p>US\$: 7.4 million (CAD 9.5 million) (regional total)</p> <p>Donor: Global Affairs Canada</p> <p>Duration: 2021-2023</p> <p>Key Partners: CCDA</p> <p>Project member countries:</p> <p>PNG, Fiji, Kiribati, Samoa, Solomon Islands, Tonga, Tuvalu, Vanuatu</p>

⁵ GGGI, 2019. KOICA Capacity Building Project Summary.

Annex 2. Strategic and Immediate Outcomes

(PNG's CPF strategic and immediate outcomes linkages is work in progress, in close consultation with GGGI Strategy and IEU team.)

GOP, PS, SO and IO alignment with PNGs country goals and targets

GOP	Programmatic Solution	Strategic Outcome		Intermediate Outcome	
		GGGI	PNG	GGGI	PNG
GOP1	PS1: Green investments	SO1: Reduced GHG emissions	<p>Energy industries sub-sector</p> <p>NDC Target: Carbon neutrality within the energy industries sub-sector</p> <p>LULUCF sub-sector</p> <p>NDC Target: By 2030, the annual emission from deforestation and forest degradation due to agriculture expansion and commercial logging will be reduced by 10,000 Gg CO₂ eq compared to 2015 level.</p>	IO1: Strengthened national, sub-national, and local green growth policy planning, financing, and institutional frameworks.	National Inclusive Green Finance Policy developed for PNG's banking sector to boost financial inclusion and guide public and private sector investment towards Low Emission and Climate Resilient Development. ⁶
		SO1: Reduced GHG emissions	<p>Energy industries sub-sector</p> <p>NDC Target: Carbon neutrality within the energy industries sub-sector</p> <p>LULUCF sub-sector</p> <p>NDC Target: By 2030, the annual emission from deforestation and forest degradation due to agriculture expansion and commercial logging will be reduced by 10,000 Gg CO₂ eq compared to 2015 level.</p>	IO2: Increased green growth investment flows	<p>PNGs Enhanced NDC</p> <p>Submissions to GCF, composing of:</p> <ul style="list-style-type: none"> 7 Concept Notes 2 Readiness Proposals 2 Approved project preparation funding applications 1 Country Programme 2 Approved Funding Proposals⁷ <p>LULUCF sub-sector</p> <p>NDC Targets will be achieved by:</p> <p>A 25 percent reduction in both the area of annual deforestation and annual degradation against 2015 levels (equating to a reduction of 8,300 ha of annual deforestation and 43,300ha of degradation) as well as an increase in the areas of forest planted.</p>

⁶ GGGI, 2021. GGGI teams up with Bank of PNG, CEFI, and New Zealand for the development of an Inclusive Green Finance Policy for PNG's Banking Sector. Available at: <https://ggi.org/project-launch-and-mou-signing-ceremony-for-the-inclusive-green-finance-policy-for-the-banking-sector-in-papua-new-guinea/>

⁷ Concept Notes: Papua New Guinea REDD+ RBP for results period 2014-2015; Melanesia - Coastal and Marine Ecosystem Resilience Programme (M-CMERP);

Adapting tuna-dependent Pacific Island communities and economies to climate change; Enhancing Adaptation and Resilience Through Impact-Based Forecasting and End-to-End Early Warning (EARTH); Strengthened Weather and Climate Services for Resilient Development for Pacific Islands;

GOP	Programmatic Solution	Strategic Outcome		Intermediate Outcome	
GGGI	GGGI	GGGI	PNG	GGGI	PNG
		SO2: Creation of green jobs			NDA capacity development
		SO4: Improved air quality			NDA capacity development
GOP2	PS2: Climate action	SO2: Creation of green jobs		IO2: Increased green growth investment flows	Submissions to GCF, composing of: 7 Concept Notes 2 Readiness Proposals 2 Approved project preparation funding applications 1 Country Programme 2 Approved Funding Proposals ⁸
		SO4: Improved air quality			

Implementation of Papua New Guinea's REDD+ Finance and Investment Plan; Strengthening Multi-sectoral Adaptation Responses Through Climate-related information (SMART Climate); Readiness Proposals: Adaptation planning support for Papua New Guinea through UNDP; NDA Strengthening and Country Programming support for Papua New Guinea through GGGI. Approved project preparation funding applications: Melanesia Coastal and Marine Ecosystem Resilience to Climate Change Programme; Enhancing Early Warning Systems to Build Greater Resilience to Hydro and Meteorological Hazards in Pacific Small Island Developing States (SIDS). GCF Country Programme: Papua New Guinea Country Programme. Approved Funding Proposals: GEEREF NeXt; Pacific Islands Renewable Energy Investment Programme.

⁸ Concept Notes: Papua New Guinea REDD+ RBP for results period 2014-2015; Melanesia - Coastal and Marine Ecosystem Resilience Programme (M-CMERP); Adapting tuna-dependent Pacific Island communities and economies to climate change; Enhancing Adaptation and Resilience Through Impact-Based Forecasting and End-to-End Early Warning (EARTH); Strengthened Weather and Climate Services for Resilient Development for Pacific Islands; Implementation of Papua New Guinea's REDD+ Finance and Investment Plan; Strengthening Multi-sectoral Adaptation Responses Through Climate-related information (SMART Climate); Readiness Proposals: Adaptation planning support for Papua New Guinea through UNDP; NDA Strengthening and Country Programming support for Papua New Guinea through GGGI. Approved project preparation funding applications: Melanesia Coastal and Marine Ecosystem Resilience to Climate Change Programme; Enhancing Early Warning Systems to Build Greater Resilience to Hydro and Meteorological Hazards in Pacific Small Island Developing States (SIDS). GCF Country Programme: Papua New Guinea Country Programme. Approved Funding Proposals: GEEREF NeXt; Pacific Islands Renewable Energy Investment Programme.

Annex 3. GESI Assessment Briefing

1. Introduction

This gender equality and social inclusion (GESI) assessment briefing forms a component of the Government of Papua New Guinea (GoPNG) and Global Green Growth Institute (GGGI) Country Planning Framework (CPF) for the period of 2021-2025. The CPF aligns country level interventions with the GGGI Strategy 2030 and the GoPNG's climate change mainstreaming priorities as captured in the national long-term political vision of the PNG Vision 2050, PNG Development Strategic Plan 2010-2030 (PNGDSP), the Medium Term Development Plan (MTDP) III, the National Strategy for Responsible Sustainable Development (StaRS), PNG's Enhanced Nationally Determined Contribution (NDC), and the Sustainable Development Goal (SDG) 13 Roadmap of 30 Actions by 2030. The Country Planning Framework (CPF) is designed to ensure that GoPNG's national development priorities remain at the center of the Global Green Growth Institute (GGGI) interventions.

GESI and poverty eradication are embedded in the 'Leaving No One Behind' rights-based principle determined by the UN Sustainable Development Goals (SDGs).¹ This principle is equally committed to in the Paris Agreement, GGGI's Strategic Framework² and PNG's development priorities.

The CPF has the following objectives:

- i) ensure strategic alignment between country level interventions and the GGGI GOPs and PSs
- ii) deliver transformational and impactful programs with measurable, attributed and contributed outcomes, serving as a framework for all GGGI projects in PNG
- iii) focus on national development priorities and ensure government ownership, commitment, and support to GGGI interventions in PNG
- iv) develop stronger partnerships and facilitate resource mobilization to accelerate green growth adoption and transformational impact at scale
- v) promote internal integration and knowledge sharing by bringing together a cross-selection of GGGI experts to deliver a 'One GGGI' approach
- vi) strengthen linkages with key global development agendas and the GGGI Strategy 2030.³

This GESI assessment briefing draws on existing information available in the recently released Papua New Guinea Climate Resilient Green Growth Project. Preliminary Gender Equality and Social Inclusion Assessment Report⁴ to provide a succinct overview of impactful entry points that contribute towards the GoPNG's efforts to eradicate poverty, achieve gender equality, and contribute to women's empowerment and social inclusion. This briefing looks at how these recent findings can be applied through the CPF, contextualizing them as appropriate. This GESI assessment also draws from literature, reports, assessment, toolkits, guidelines, and case studies attributed to the GoPNG, GGGI, UNDP, the World Bank, the Asian Development Bank (ADB), the Department of Foreign Affairs and Trade (DFAT) Australia, the International Labour Organization (ILO) and the Food and Agriculture Organization of the United Nations (FAO).

1 GGGI, 2021. Focus Areas: Gender and Inclusive Development. Available at: <https://ggi.org/theme/gender-and-inclusive-development/>

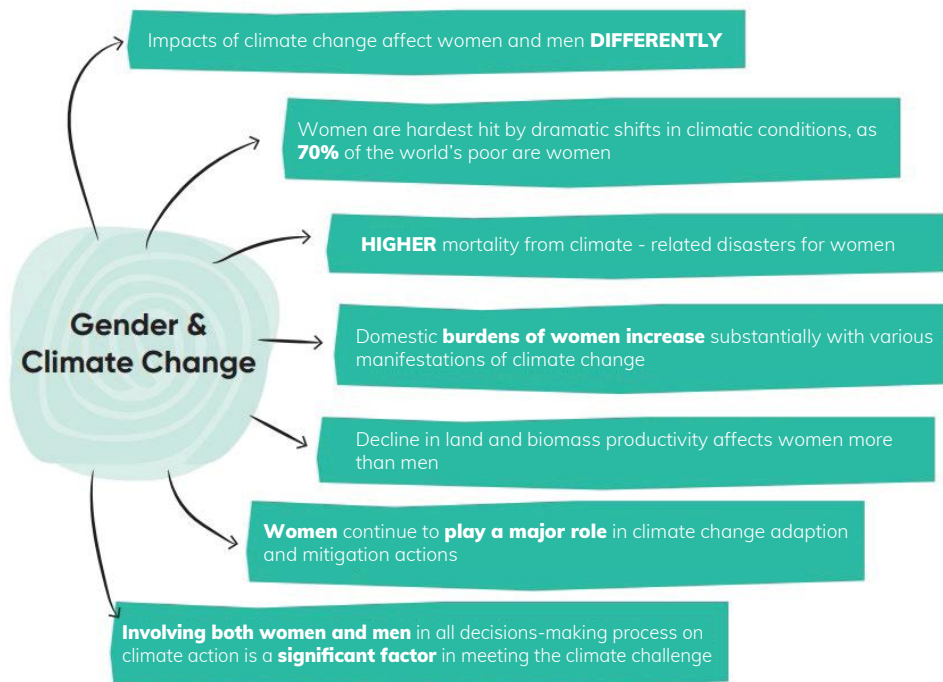
2 GGGI, 2021. Focus Areas: Gender and Inclusive Development. Available at: <https://ggi.org/theme/gender-and-inclusive-development/>

3 Key global development agendas refer to the 2015 Paris Climate Change Agreement and the 2030 Sustainable Development Agenda (UN SDGs).

4 GGGI, 2020. Papua New Guinea Climate-Resilient Green Growth (CRGG) Project. Preliminary Gender Equality and Social Inclusion (GESI) Assessment Report

Numerous studies have demonstrated that GESI and green growth add to the economic stability of a country and that by applying a gender lens, tailored approaches can be identified when considering the impacts of climate change, as well as the distinct risks and needs of all members of the community (Figure⁵¹).

Figure 1: The importance of mainstreaming GESI into climate action. Source: GCF and UNWomen 2017



The GGGI Global Operating Priority (GOP) 5 stipulates accelerating progress in country programs in the areas of poverty eradication, and social inclusion gender equality through GGGI’s operations. Ensuring GOP 5 is integrated into the CPF, not only adheres to the commitments of GGGI, but also aligns to PNGs commitments to GESI through the SDGs and PNGs Enhanced NDC. This GESI assessment briefing seeks to address GESI considerations under the five GOPs and subsequent programmatic solutions (PSs) identified by the PNG CPF, while also ensuring alignment with the priority areas identified in PNG’s Green Growth Potential Assessment (GGPA).

Figure 2: Global Operational Priorities and Programmatic Solutions

GLOBAL OPERATIONAL PRIORITIES and PROGRAMMATIC SOLUTIONS		
GLOBAL OPERATIONAL PRIORITIES	PROGRAMMATIC SOLUTIONS 2021-2025	
[1] Catalyze CF. Catalyzing and accelerating access to climate finance/green investments for members' public and private sector	[1] Green Investments	(Green bankable projects, investment proposals, NFVs, green and climate instruments, carbon-focused engagements).

5 GGGI, 2020. Papua New Guinea Climate-Resilient Green Growth (CRGG) Project. Preliminary Gender Equality and Social Inclusion (GESI) Assessment Report.

6 ADB, 2012. Gender toolkit: Energy. Going beyond the meter.

7 p. 13. GGGI, 2020. Mainstreaming Gender in GCF Projects Guideline. Available <https://eggi.org/site/assets/uploads/2020/09/07.-GCF-Gender-Mainstreaming-Guideline.pdf>

[2] Support GG. Supporting our members in strengthening policy, planning and regulatory frameworks and institutional capacity to achieve green growth outcomes.	[2] Climate Action	(Inclusive GG plans, Long-term Low Emissions and Development Strategies (LT-LEDS), NDC support, MRV system design, climate diplomacy)
[3] Sustain eco/env. Achieving a sustainable and circular bioeconomy while securing healthy natural systems.	[3]CR Agriculture	(Solar irrigation, RE application in agri value chain, resilient cropping practices, resource conservation)
	[4] Sustainable Forests	(REDD+, landscapes financing mechanisms, natural capital markets innovations)
	[5] Coastal Resilience	(Mangroves as ecosystem for livelihoods, aquaculture, marine issues - fisheries, flood protection and pollution)
[4] Sustain cities/villages. Making cities and communities sustainable, livable, and resilient, supported through green jobs, services, and green infrastructure capital markets innovations.	[6] Waste Management	(Circular economies, urban and agricultural waste, wastewater, fecal sludge management (FSM), waste to resource).
	[7] Sustainable Mobility	(e-mobility, non-motorized transport)
	[8] Green Buildings	(Green urban infrastructure norms/standards/policies, energy efficiency in residential & commercial buildings)
	[9] Solar PV	(Energy transition access and productive use - solar energy pumping, solar pave auctions, rooftop, utilize scale plants, storage)
	[10] Green Industries	(Green industrial parks, green supply chains, EE in SMEs, labelling and standards)
[5] Poverty/GESI. Accelerating progress in our country programs in poverty eradication and gender equality through our operations.	[11] Cross-cutting	(Cross cutting in all PSs)

2. Social Development Context

PNG forms part of the world’s second-largest island landmass in the West Pacific⁸ with a total land area of 452,860 square kilometers.⁹ The mainland of PNG comprises of the eastern half of the island of New Guinea,¹⁰ together with the islands of New Britain, New Ireland, and the Autonomous Region of Bougainville. A further six hundred smaller islands and atolls occupy over 800,000 square kilometers of surrounding ocean.¹¹

According to the World Bank and PNG’s GCF Country Programme, as of 2017, PNG’s population was estimated at 8.4 million people.^{12 13} Population has increased rapidly over the past decade, resulting in a population growth rate of 3.1 percent since the 2000 Census.¹⁴ Recent government reports including the MTDP III (2018-2022) and PNG’s GCF Country Programme stipulate that the country’s population is young, with 40 percent being under 15.^{15 16}

PNG’s population is spread across 22 provinces within four regions - the Highlands Region, the Islands Region, the Momase Region, and the Southern Region. PNG’s Biennial Update Report (BUR) states that, 88 percent

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

9 Department of Foreign Affairs and Trade (DFAT). N.D. Papua New Guinea country brief. Retrieved from: <https://dfat.gov.au/geo/papua-new-guinea/Pages/papua-new-guinea-country-brief.aspx>; 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: <https://www.intechopen.com/online-first/climate-risk-and-early-warning-systems-crews-for-papua-new-guinea>

10 GoPNG. 2014. UNFCCC PNG Second National Communication.

11 GoPNG, 2020. Papua New Guinea and the Green Climate Fund Country Programme.

12 GoPNG, 2020. Papua New Guinea and the Green Climate Fund Country Programme.

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

14 GoPNG, 2020. Papua New Guinea and the Green Climate Fund Country Programme.

15 GoPNG, 2018. MTDP III 2018 - 2022 Volume One.

16 GoPNG, 2020. Papua New Guinea and the Green Climate Fund Country Programme.

of the population live in rural areas,¹⁷ where essential services are limited.^{18 19 20} Based on traditional village structures, rural livelihoods are largely dependent on subsistence farming and cash-cropping.²¹ An estimated 97 percent of all land in PNG is customarily owned by local indigenous people; the remaining 3 percent is under ownership of the state.^{22 23}

Linguistically, PNG is home to more than 800 languages, spoken amongst more than 10,000 distinctive ethnic clans.²⁴ This diversity contributes to complex cultural dynamics and social systems, deeply rooted in traditional and ancestral lands, and tribal and ethnic identity.^{25 26}

2.1 Relevant Policies to GESI

PNG has made significant progress in addressing GESI, however there is still further progress to be made.²⁷ GESI remains a substantial social, economic, and political issue in PNG in both urban and rural areas. PNG's national Constitution advocates equality and ratified the Convention on the Elimination of All Forms of Discrimination Against Women (CEDAW) in 1995.²⁸

Furthermore, PNG has enacted or adopted several policies, plans, programmes, and strategies that actively integrate GESI considerations into green growth and climate change goals and targets, including the:

- National Strategic Plan 2010-2050 (Vision 2050). This is the national development strategy that guides PNG's social and economic development. It has incorporated 'Human Capital Development, Gender, Youth and People Empowerment' as one of its strategic focus areas.²⁹
- Gender Equity and Social Inclusion (GESI) Policy. The Policy seeks positive direction in advancing gender mainstreaming and equality in PNG,³⁰ and recognizes that women are underrepresented in climate change, sustainability, and natural resource leadership positions. The Policy acknowledges the barriers for women to contribute to natural resource use and management as 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.^{31 32}
- National Policy for Women and Gender Equality (2011-2015).
- National Strategy to Prevent and Respond to Gender Based Violence 2016-2025, which is the Government's framework to prevent and respond to gender-based violence.
- Child Protection Act 2009 and the Criminal Code (Sexual Offences and Crimes Against Children) Act 2002.³³

17 GoPNG, 2018. Biennial Update Report.

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

19 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. Available at: <https://www.intechopen.com/online-first/climate-risk-and-early-warning-systems-crews-for-papua-new-guinea>.

20 GoPNG, 2020. Papua New Guinea and the Green Climate Fund Country Programme.

21 GoPNG, 2018. Biennial Update Report.

22 GoPNG, 2018. Biennial Update Report.

23 GoPNG, 2020. Papua New Guinea and the Green Climate Fund Country Programme.

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

25 GoPNG, 2018. Biennial Update Report.

26 GoPNG, 2020. Papua New Guinea and the Green Climate Fund Country Programme.

27 AUS-PNG Network, 2021. Gender equality. Available at: <https://auspng.lowyinstitute.org/issue/gender-equality/#:~:text=In%20Papua%20New%20Guinea%2C%20gender%20inequality%20is%20a,social%20practices%20that%20hinder%20the%20development%20of%20women>.

28 GGGI, 2020. Papua New Guinea Climate-Resilient Green Growth (CRGG) Project. Preliminary Gender Equality and Social Inclusion (GESI) Assessment Report.

29 p. 33, GoPNG, 2020. Papua New Guinea and the Green Climate Fund Country Programme.

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

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

32 GoPNG, 2020. Papua New Guinea and the Green Climate Fund Country Programme.

33 Papua New Guinea Consolidated Legislation, 2002. Criminal Code (Sexual Offences and Crimes Against Children) Act 2002. Available at: <http://www.pacii.org/pg/legis/>

- Sorcery and Witchcraft Accusation Related Violence National Action Plan 2015, which seeks to address violence associated with sorcery accusations.
- PNGs Enhanced NDC 2020-2030.

2.2 Poverty, Gender Equality and Social Inclusion Context

Policy agendas that incorporate GESI and women's empowerment support social development and poverty eradication and are crucial to economic development. Economic development that incorporates the ethos of green growth acknowledges not only equity across gender and social groups, but also recognizes women, the poor, and the marginalized as agents of change.³⁴

PNG's Human Development Index (HDI) as of 2019 is 0.555, ranking the country at 155 of 162.³⁵ The HDI measures achievement in three dimensions of human development - a long and healthy life, access to knowledge, and a decent standard of living.³⁶ When adjusted for inequality in the distribution of each of the human development dimensions, the inequality-adjusted HDI or IHDI is 0.390.³⁷

The Gender Inequality Index (GII) is a composite measure that reflects a country's inequality between women and men in three areas: reproductive health, empowerment, and the labour market.³⁸ The GII score ranges from 0, where women and men fare equally, to 1, where one gender fares as poorly as possible in all three of the measured areas.³⁹ PNG's GII is 0.725, resulting in a high level of inequality.

PNG's population of people in multidimensional poverty is 56.6 percent, while those considered to be in vulnerable employment is 77.9 percent.⁴⁰

PNG's low ranking on poverty, vulnerability, and GESI-related global indicators, coupled with severe levels of gender-based violence, a high level of HIV infection, low levels of literacy, and low level of female representation in parliament and local government contribute to inequalities.⁴¹

3. Defining Impact Areas for Socio-Economic Co-Benefits

The CPF contributes to GESI aspirations in partnership with PNG's aim to meet the SDGs and green growth by actively seeking to address SDG 1 (poverty alleviation), SDG 5 (gender equality), and SDG 10 (reduced inequalities), in conjunction with the core goal of the CPF to directly impact SDG 6 (clean water and sanitation), SDG 7 (affordable and clean energy), SDG 8 (decent work and economic growth), SDG 9 (industry, innovation and infrastructure), SDG 11 (sustainable cities and communities), and SDG 13 (climate action).

Potential policy and investment initiative opportunities revealed in the development of the CPF, have enabled exploration of specific entry points for GESI that both align with the priority areas identified in PNG's GGPA and the programmatic solutions identified in the CPF. These opportunities can improve access to services in communities, economically empower women and youth, increase climate resilience and adaptation, and improve social and environmental safeguards.

Furthermore, GGGI applies the 'do no harm' approach and adheres to the principle of free, prior and informed consent (FPIC).

34 GGGI and the Kingdom of Jordan, 2020. Agriculture Sector Green Growth National Action Plan 2021-2025. Available at: [sets/uploads/2020/10/20022_Jordan_Agriculture_v07_HL_Web.pdf](#)

35 UNDP, 2021. Papua New Guinea Human Development Indicators. Available at: <http://www.hdr.undp.org/en/countries/profiles/PNG>

36 UNDP, 2020. Human Development Report Technical Notes. Available at: <http://files.hdr.undp.org/en/indicators/68606>

37 UNDP, 2021. Papua New Guinea Human Development Indicators. Available at: <http://www.hdr.undp.org/en/countries/profiles/PNG>

38 UNDP, 2021. Human Development Reports Gender Inequality Index. Available at: <http://www.hdr.undp.org/en/indicators/68606>

39 UNDP, 2020. Human Development Report Technical Notes. Available at: <http://files.hdr.undp.org/en/indicators/68606>

40 UNDP, 2021. Papua New Guinea Human Development Indicators. Available at: <http://www.hdr.undp.org/en/countries/profiles/PNG>

41 GGGI, 2020. Papua New Guinea Climate-Resilient Green Growth (CRGG) Project. Preliminary Gender Equality and Social Inclusion (GESI) Assessment Report

'Do no harm' approach

GGGI recognises that improving women's green growth potential and their livelihood security is an essential part of the 'do no harm' approach.⁴² In adhering to the guidance as outlined in GGGI's Papua New Guinea Climate-Resilient Green Growth (CRGG) Project. Preliminary Gender Equality and Social Inclusion (GESI) Assessment Report, project interventions and activities should ensure that they do not compromise on women's safety. By building on "community-based gender transformative programs, involving male engagement where applicable, and, ensuring that women's voice and participation is enhanced at all project levels."⁴³ When determining effective and inclusive activities that do no harm, issues and impacts relating to gender-based violence, women's workload (including unpaid work, caring responsibilities, and home-based work), and contextual socio-cultural issues must be considered.⁴⁴

Projects that identify direct or indirect social or environmental risk in their safeguarding measures must ensure that "clear measures and processes are developed to effectively manage risks and enhance positive impacts."⁴⁵

Free, prior and informed consent

FPIC is a key component of socially inclusive stakeholder engagement and a legal principle enshrined in the UN Declaration on the Rights of Indigenous Peoples.⁴⁶ PNG has a diverse indigenous population and FPIC provides "the right for indigenous peoples, regardless of their gender, to be consulted and to give or withhold their prior consent for actions that may impact their lands, resources or livelihoods."⁴⁸ To ensure that all determined decisions are given free of coercion and with full consent of the communities involved, communities must be fully and accurately informed of each step of the decision-making process and that by doing so, clear and culturally appropriate messaging and engagement methods are applied utilizing local traditional decision-making bodies.⁴⁹

4. GESI Review of Green Growth Priority Areas

4.1 Renewable Energy

Link to CPF Programmatic Solution

The green growth area of renewable energy links to the CPF PSs of green investment, climate action and green buildings.

Context

42 p. 12 GGGI, 2020. Papua New Guinea Climate-Resilient Green Growth (CRGG) Project. Preliminary Gender Equality and Social Inclusion (GESI) Assessment Report

43 p. 12. GGGI, 2020. Papua New Guinea Climate-Resilient Green Growth (CRGG) Project. Preliminary Gender Equality and Social Inclusion (GESI) Assessment Report

44 p. 12. GGGI, 2020. Papua New Guinea Climate-Resilient Green Growth (CRGG) Project. Preliminary Gender Equality and Social Inclusion (GESI) Assessment Report

45 p. 12. GGGI, 2020. Papua New Guinea Climate-Resilient Green Growth (CRGG) Project. Preliminary Gender Equality and Social Inclusion (GESI) Assessment Report

46 FAO, UNDP, UNEP, 2013. UN-REDD Programme Guidelines on Free, Prior and Informed Consent. Available at: <https://www.unclearn.org/wp-content/uploads/library/un-redd05.pdf>

47 UNDP Asia and the Pacific, 2020. Papua New Guinea: Ensuring Women Have a Say - Putting Gender at the Heart of Free, Prior and Informed Consent. https://www.asia-pacific.undp.org/content/rbap/en/home/stories/papua_new_guinea_ensuring_women_have_a_say_putting_gender_at_the_heart_of_free_prior_and_informed_consent.html

48 UNDP Asia and the Pacific, 2020. Papua New Guinea: Ensuring Women Have a Say - Putting Gender at the Heart of Free, Prior and Informed Consent. https://www.asia-pacific.undp.org/content/rbap/en/home/stories/papua_new_guinea_ensuring_women_have_a_say_putting_gender_at_the_heart_of_free_prior_and_informed_consent.html

49 UNDP Asia and the Pacific, 2020. Papua New Guinea: Ensuring Women Have a Say - Putting Gender at the Heart of Free, Prior and Informed Consent. https://www.asia-pacific.undp.org/content/rbap/en/home/stories/papua_new_guinea_ensuring_women_have_a_say_putting_gender_at_the_heart_of_free_prior_and_informed_consent.html

PNG's demand for energy, in particular electricity, has increased as the country's economy has grown. Over the past ten years, demand for electricity has increased by 2.2 percent over the previous decade, with the trend set to continue over the medium-term.^{50 51}

In PNG's most recent energy output analysis (2015), the total electricity output of that year was estimated at 43 24 GWh,⁵² which comprises approximately 23 percent from hydro-electric generation, 56 percent from petroleum products, 11 percent from natural gas, and 10 percent from geothermal sources.⁵³ Of this total, an estimated 50 percent of PNG's energy supply is used by the private sector, primarily for extractive mining purposes.^{54 55}

Challenges

The Enhanced NDC target of increasing levels of renewables in the energy mix for on-grid connection through increasing the share of installed capacity of renewable energy from 30 percent in 2015 to 78 percent in 2030⁵⁶ will not be achieved if GESI considerations are not addressed. Presently reducing energy consumption is challenged by a lack of public awareness of energy use and knowledge of how to reduce energy use.

Opportunities

Strengthening education and training in green energy technologies

Greater participation of women in the energy sector can contribute to closing the gender gap in PNG's paid labour force. This could be achieved by working to remove existing barriers by strengthening education and training programmes in green energy technologies. Appropriate approaches have the potential to grow PNG's green energy talent pool, which in turn contributes to broader socio-economic co-benefits that are associated with women's empowerment and gender equality.⁵⁷

Greening the future through energy education and training programs

GGGI's Papua New Guinea Climate Resilient Green Growth Project Preliminary Gender Equality and Social Inclusion Assessment Report⁵⁸ suggests that in institutionalizing the energy sector, access to inclusive and equitable education-related outcomes would be enhanced. The report suggests that this could be achieved by working in coordination with relevant government departments, academics, and the private sector to create and deliver a training program on renewable energy that is tailored to both encourage women's participation and be socially-inclusive.⁵⁹ The resulting program's aim is 'to enhance the capacity in gender responsive renewable energy including technologies, and provide opportunities for employment at different points along the energy value chain.'⁶⁰

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

51 GoPNG, 2020. Papua New Guinea and the Green Climate Fund Country Programme.

52 GoPNG, 2020. Papua New Guinea and the Green Climate Fund Country Programme.

53 According to a statement in GGGI, 2019, pp. 29-30 (GGGI, 2019. Green Growth Potential Assessment Papua New Guinea Country Report. Retrieved from: https://gggi.org/site/assets/uploads/2019/07/GGPA-PNG-Report_FINAL.pdf) 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."

54 GoPNG, 2018. Biennial Update Report.

55 GoPNG, 2020. Papua New Guinea and the Green Climate Fund Country Programme.

56 GoPNG, 2020. Papua New Guinea Enhanced Nationally Determined Contributions. Available at: <https://www4.unfccc.int/sites/ndcstaging/PublishedDocuments/Papua%20New%20Guinea%20Second/PNG%20Second%20NDC.pdf>

57 GGGI and the Kingdom of Jordan, 2020. Energy Sector Green Growth National Action Plan 2021-2025. Available at: https://gggi.org/site/assets/uploads/2020/10/20022_Jordan_Energy_v04_HL_Web.pdf

58 GGGI, 2020. Papua New Guinea Climate-Resilient Green Growth (CRGG) Project. Preliminary Gender Equality and Social Inclusion (GESI) Assessment Report

59 GGGI, 2020. Papua New Guinea Climate-Resilient Green Growth (CRGG) Project. Preliminary Gender Equality and Social Inclusion (GESI) Assessment Report

60 p. 19. GGGI, 2020. Papua New Guinea Climate-Resilient Green Growth (CRGG) Project. Preliminary Gender Equality and Social Inclusion (GESI) Assessment Report

The Enhanced NDC target of reducing emissions in part by reducing energy demand through the adoption and implementation of Minimum Energy Performance Standards and Labelling (MEPSL), as well as regulations and enhancing public awareness of energy use could directly tie to energy education modules. Renewable energy literacy and practical data collection on energy use and associated emissions could form part of a GESI-targeted training program that would directly support reducing emissions and contribute to improving policy and energy regulation.

Economic incentives to inspire the transition to renewable energy

PNG's commitment to a renewable energy transition is dependent on assuring the needs of the country's complex geographies and dispersed and growing population are well considered. An opportunity exists to support economic incentives in this transition by financing household nature-based solutions that will reduce emissions through offsetting while empowering the community.⁶¹

Empowering the community

Drawing on existing regional and provincial women's networks, formal cooperatives could be established and serve as a central point in providing advice, support, education, and access to economic incentives. By fostering relationships with networks already embedded within the community and who are aware of contextual nuances, partnerships with donors, educational institutions and government could be strengthened.

Empowerment in the community would build ownership of any grass roots projects, promote learning, act as a support to members and build capacity. Established networks could in turn advocate for the needs of their GESI members.

Green jobs in the renewable energy sector

For green job creation in the energy sector, an increased reliance on renewable energy will see not only an increase in employment in this field, but additional positions arising in education and training, plus an increase in renewable technology teachers and trainers to upskill and retrain adults and provide youth with pathway opportunities to embrace emerging green jobs.⁶²

The ILO posits that green jobs must be of quality, be decent and be in line with four strategic objectives at the center of the decent work agenda. These seek to:

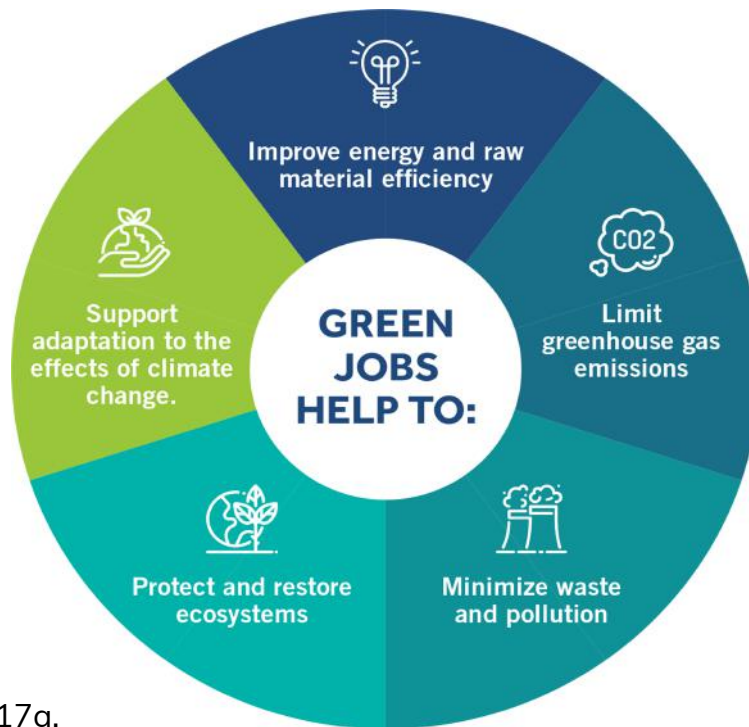
- set and promote standards and fundamental principles and rights at work
- create greater opportunities for women and men to obtain decent employment and income
- enhance the coverage and effectiveness of social protection for all; and
- strengthen tripartism (government, workers', and employers' organizations) and social dialogue.⁶³

61 GoPNG, 2020. Papua New Guinea Enhanced Nationally Determined Contributions. Available at: <https://www4.unfccc.int/sites/ndcstaging/PublishedDocuments/Papua%20New%20Guinea%20Second/PNG%20Second%20NDC.pdf>

62 p. 11, ILO, 2019. Green jobs and a Just Transition for Climate Action in Asia and the Pacific. Available at: [--ro-bangkok/--sro-bangkok/documents/publication/wcms_734887.pdf](https://www.ilo.org/publications/ilo/ro-bangkok/ro-bangkok/documents/publication/wcms_734887.pdf)

63 p. 11, ILO, 2019. Green jobs and a Just Transition for Climate Action in Asia and the Pacific. Available at: [--ro-bangkok/--sro-bangkok/documents/publication/wcms_734887.pdf](https://www.ilo.org/publications/ilo/ro-bangkok/ro-bangkok/documents/publication/wcms_734887.pdf)

Figure 3 How green jobs help (Source: ILO, 2017) ⁶⁴



Source: ILO, 2017a.

Supporting Greenpreneur

Renewable, locally available sources of energy have the potential to provide entrepreneurial opportunities for women. With household and care duties falling mostly to women in PNG, they are in a greater position to understand the unique energy uses, challenges and consumption patterns of their communities.⁶⁵ By leveraging their knowledge base and insights, renewable energy projects and start-ups could target women which could ‘enhance women’s economic autonomy and social status while allowing them to earn income and drive the sustainable development of their communities.’⁶⁶

Embracing new technologies at a household level

At a household level, GESI members could be targeted as pilots for small renewable energy technological interventions. Off-grid renewable energy projects that directly link to a household or village serve both as an instrument for economic empowerment and climate resilience. This has the potential to profoundly empower households as they become proficient in understanding community energy use and in energy production itself.⁶⁷ Furthermore, time-intensive fuel collecting, replaced by renewable energy production will provide women with additional time for other pursuits.

⁶⁴ ILO, 2017. Just transition, decent work, and climate resilience.

⁶⁵ p. 19. GGGI, 2020. Papua New Guinea Climate-Resilient Green Growth (CRGG) Project. Preliminary Gender Equality and Social Inclusion (GESI) Assessment Report

⁶⁶ p. 19. GGGI, 2020. Papua New Guinea Climate-Resilient Green Growth (CRGG) Project. Preliminary Gender Equality and Social Inclusion (GESI) Assessment Report

⁶⁷ ADB, 2011. Social Dimensions of Climate Change: Adaptation, Water, Energy and Green Employment Policy Brief.

4.2 Agriculture

Link to CPF Programmatic Solution

The green growth priority area of agriculture links to the CPF PSs of green investment, climate action, climate resilient agriculture, and coastal resilience.

Context

Agriculture is key for PNG's country's economy. Subsistence and smallholder agricultural practices provide an income for over 80 percent of PNG's population.^{68 69} Climate change is a clear threat to food security impacting agricultural yields both on land and at sea. Women are the major players in subsistence agricultural practices and ensuring food security. Cocoa, palm oil, vegetables, rubber, coffee, and betel nut are grown but while PNG's landmass is relatively vast, only around 30 percent of land is agriculturally viable due to mountain ranges and localized climatic conditions, including long dry seasons, heavy rainfall, or excessive cloud cover.^{70 71} In coastal areas, women harvest fish and shellfish which are being impacted by rising sea levels, storm surges, and ocean acidification.

Challenges

According to the National Agriculture and Research Institute (NARI) as referenced in FAO's 2019 report Country Gender Assessment of Agriculture and the Rural Sector in Papua New Guinea, the country faces persistent institutional and governance challenges when attempting to create an enabling environment that both promotes and enhances women's participation in food value chains.⁷² The World Bank reports that despite women contributing up to 70 percent of agricultural and cash crop labour,⁷³ including clearing, planting, weeding, harvesting, processing, transporting, storing and marketing activities.⁷⁴ Any income from cash crops is usually considered to belong to a man affiliated with the smallholding.⁷⁵ Furthermore, for smaller, informal or household-based producers, where deficiencies exist in transport, cold chain and warehousing and barriers to market access are present, women are disproportionately affected.⁷⁶ To compound effects on women, the World Bank and ADB report that crops cultivated by women are often valued at 50 percent of those cultivated by men.⁷⁷ This labour, time, and financial imbalance flows on to affect gender and socially-differentiated domestic workloads.

Education, skill development and training, and innovation are imperative to achieving gender and social parity in the agricultural sector.⁷⁸

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

69 GoPNG, 2020. Papua New Guinea and the Green Climate Fund Country Programme.

70 GoPNG, 2018. Biennial Update Report.

71 GoPNG, 2020. Papua New Guinea and the Green Climate Fund Country Programme.

72 FAO, 2019. Country Gender Assessment of Agriculture and the Rural Sector in Papua New Guinea. Available at: <http://www.fao.org/3/ca6308en/ca6308en.pdf>

73 World Bank, 2012. Papua New Guinea Country Gender Assessment 2011-2012.. Available at: <https://documents1.worldbank.org/curated/en/491231468058779689/pdf/755800REVISED0011020120Final0Report.pdf>

74 GoPNG, 2007. National Agriculture Development Plan 2007 - 2016. Policies and Strategies. Volume 1. Available at: <https://png-data.sprep.org/system/files/National%20Agriculture%20Development%20Plan%20%282007-2016%29.pdf>

75 World Bank, 2012. Papua New Guinea Country Gender Assessment 2011-2012.. Available at: <https://documents1.worldbank.org/curated/en/491231468058779689/pdf/755800REVISED0011020120Final0Report.pdf>

76 World Bank, 2012. Papua New Guinea Country Gender Assessment 2011-2012.. Available at: <https://documents1.worldbank.org/curated/en/491231468058779689/pdf/755800REVISED0011020120Final0Report.pdf>

77 World Bank, 2012. Papua New Guinea Country Gender Assessment 2011-2012. Available at: <https://documents1.worldbank.org/curated/en/491231468058779689/pdf/755800REVISED0011020120Final0Report.pdf>

78 GGGI and the Kingdom of Jordan, 2020. Agriculture Sector Green Growth National Action Plan 2021-2025. Available at: sets/uploads/2020/10/20022_Jordan_

Opportunities

Green jobs in climate-resilient agriculture

Green jobs are essential to building a low-carbon sustainable future, to enhancing resource productivity and efficiency, and providing avenues to respond to climate change challenges.⁷⁹ Concurrently, green jobs provide a window of opportunity for socially inclusive economic development.

Transitioning to a low-carbon and resource-efficient green growth economy will bolster employment in related natural resource management, environmental protection, public administration of natural resource use, and other environmental service industries.⁸⁰ While green job opportunities will be directly attributed to the agricultural sector through the transition to sustainable production and organic farming methods, indirectly additional related green job creation will come to arise in parallel industries in PNG, including waste management and reforestation.⁸¹

Improving access to climate finance

Access to climate finance is critical to climate resilient agriculture and food security. A review of PNG's financial services by the Bank of Papua New Guinea (BPNG) and the International Finance Corporation (IFC) noted challenges in accessing credit and financial products, this is especially so for women and those in vulnerable circumstances.⁸² Inequality was found to present itself through a lack of transparency and information in relation to fees, rates and conditions, in conjunction with an absence in financial consumer protection, in turn resulting in vulnerable and at-risk members of the community being subject to unregulated lending practices.⁸³

84

Inclusive climate finance access can provide opportunities for investment in agricultural adaptation by utilizing crop varieties that are resilient to a changing climate, by modifying existing planting cycles, or by improving soil and water management.

Improving access to markets

GESI access to markets could be explored in two ways, firstly by investing in physical infrastructure and mobility, and secondly through social infrastructure including access to credit, insurance, and social protection measures.⁸⁵

Embracing time and labour-saving technologies

At present, time and labour-saving technologies for small scale crop production, fishing and harvesting are limited. Women in PNG utilise labour-intensive agricultural hand tools for soil preparation, weeding, planting, watering, harvesting and crop/seafood processing. These time intensive methods perpetuate poverty and

Agriculture_v07_HL_Web.pdf

79 p. 11, ILO, 2019. Green jobs and a Just Transition for Climate Action in Asia and the Pacific. Available at: [--ro-bangkok/---sro-bangkok/documents/publication/wcms_734887.pdf](https://ro-bangkok/---sro-bangkok/documents/publication/wcms_734887.pdf)

80 p. 11, ILO, 2019. Green jobs and a Just Transition for Climate Action in Asia and the Pacific. Available at: [--ro-bangkok/---sro-bangkok/documents/publication/wcms_734887.pdf](https://ro-bangkok/---sro-bangkok/documents/publication/wcms_734887.pdf)

81 p. 11, ILO, 2019. Green jobs and a Just Transition for Climate Action in Asia and the Pacific. Available at: [--ro-bangkok/---sro-bangkok/documents/publication/wcms_734887.pdf](https://ro-bangkok/---sro-bangkok/documents/publication/wcms_734887.pdf)

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

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

84 GoPNG, 2020. Papua New Guinea and the Green Climate Fund Country Programme.

85 ADB, 2011. Social Dimensions of Climate Change: Adaptation, Water, Energy and Green Employment Policy Brief.

inequality by reducing opportunities. The challenge remains how to enable female farmers and fishers to increase their productivity and generate more income while reducing the burden on time and labour so that the livelihoods of themselves and their families can improve.⁸⁶

Barriers to embracing time and labour-saving technologies may be as a result of availability, poverty, low levels of education and awareness of the importance of improved agricultural tools, cultural perceptions limiting the adoption of tools and implements; lack of market access technologies, and limited purchasing power.⁸⁷

Leveraging local knowledge and encouraging innovation in the GESI community is at the cornerstone of successful new technology uptake. Agricultural tools, water irrigation systems, pumps, and tanks, as well as post-harvest methods could be explored through innovator meetups, connecting community, agricultural specialists, marketers, and distributors.

4.3 Forestry

Link to CPF Programmatic Solution

The green growth priority area of forestry links to the CPF PSs of green investment, climate action, climate resilient agriculture, and sustainable forestry.

Context

PNG is home to a rich and biologically diverse abundance of species, with approximately 6 percent of the world's total biodiversity.⁸⁸ About one-third of all known species are endemic to PNG. Occupying less than 1 percent of the world's total land mass, PNG is considered one of the few remaining megadiverse countries on the planet. PNG's National Reducing Emissions from Deforestation and Forest Degradation (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. In addition, there are approximately 150,000 species of insects and 314 species of freshwater fish.⁸⁹ It is estimated that one-third of species are endemic to PNG, while more than 70 percent are endemic to broader Papuasia). 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.⁹⁰

Challenges

Governance and accountability remain a challenge in protecting GESI community members. There are barriers in ensuring all members of a community are safeguarded and have the same rights to land, to decent and fair work, to equal income for goods and services, and consumer rights and protection. Adapting to a changing forestry environment and the associated livelihoods cannot succeed without the active participation of all members of a community. Active participation will aid in empowering the community by incorporating local knowledge, reducing maladaptation and risk, and encouraging a grass roots approach to adaptive technologies.

86 CGIAR, 2011. Research Program on Climate Change, Agriculture and Food Security. Labour Saving Technology to Empower Women Smallholder Farmers. Available at: <https://ccafs.cgiar.org/news/labour-saving-technology-empower-women-smallholder-farmers>

87 CGIAR, 2011. Research Program on Climate Change, Agriculture and Food Security. Labour Saving Technology to Empower Women Smallholder Farmers. Available at: <https://ccafs.cgiar.org/news/labour-saving-technology-empower-women-smallholder-farmers>

88 GoPNG, 2014. UNFCCC PNG Second National Communication.

89 GoPNG, 2014. UNFCCC PNG Second National Communication.

90 GoPNG, 2014. UNFCCC PNG Second National Communication.

Opportunities

GGGI's Papua New Guinea Climate Resilient Green Growth Project Preliminary Gender Equality and Social Inclusion Assessment Report⁹¹ provides potential investment opportunities in several forestry areas. Two areas that could be explored as part of this CPF are: i) skills building for women and indigenous groups; and ii) provision of labor-saving and time-reducing technologies.⁹²

Skills building for women and indigenous groups

Socially-inclusive technical training in the fields of hydro-engineering, agroforestry, financial literacy, small business management and other related forestry sub-industries would serve to empower and build the capacity of the community.⁹³

Embracing time and labour-saving technologies

Linked to GGGI's CRGG project, the Papua New Guinea Climate Resilient Green Growth Project Preliminary Gender Equality and Social Inclusion Assessment Report⁹⁴ acknowledges the opportunity to embrace biogas investment from oil palm waste products. This biogas waste product can be harnessed to serve as a source of fuel for cook stoves, thereby reducing women's time and labour contributing to collecting fuel wood.⁹⁵

5. Next Steps

Green investment and climate action cut across advances in renewable energy, climate-resilient agriculture, sustainable forestry, and coastal resilience. GESI-appropriate green investment and climate action for PNG must incorporate, in a participatory manner, agricultural adaptation, water and soil management, climate-proofing physical infrastructure, and ensuring social infrastructure including climate finance and market access, risk insurance, and regulatory and social protection schemes are fit for purpose.

91 GGGI, 2020. Papua New Guinea Climate-Resilient Green Growth (CRGG) Project. Preliminary Gender Equality and Social Inclusion (GESI) Assessment Report

92 GGGI, 2020. Papua New Guinea Climate-Resilient Green Growth (CRGG) Project. Preliminary Gender Equality and Social Inclusion (GESI) Assessment Report

93 GGGI, 2020. Papua New Guinea Climate-Resilient Green Growth (CRGG) Project. Preliminary Gender Equality and Social Inclusion (GESI) Assessment Report

94 GGGI, 2020. Papua New Guinea Climate-Resilient Green Growth (CRGG) Project. Preliminary Gender Equality and Social Inclusion (GESI) Assessment Report

95 GGGI, 2020. Papua New Guinea Climate-Resilient Green Growth (CRGG) Project. Preliminary Gender Equality and Social Inclusion (GESI) Assessment Report

Annex 4. Lists of stakeholders by category and influence, and stakeholders consulted

(a) List of stakeholders consulted on a one-to-one basis during the period of July-August 2021

Stakeholders consulted during July-August 2021	
1	Bank of PNG
2	Central Provincial Administration
3	Centre for Excellence in Financial Inclusion (BPNG) (CEFI)
4	Climate Change and Development Authority (CCDA)
5	Conservation and Environment Protection Authority (CEPA)
6	Department of Higher Education, Research, Science and Technology (DHERST)
7	Department of Prime Minister and NEC (DPM/NEC)
8	Department of Provincial and Local Level Government Affairs (DPLGA)
9	Department of Transport (DoT)
10	Department of Treasury (TSY)
11	DFAT Australia
12	European Union
13	Japan International Cooperation Agency (JICA)
14	Kokonas Industri Koporesen (KIK)
15	National Agriculture Research Institute (NARI)
16	New Zealand Ministry Foreign Affairs & Trade (NZMFAT)
17	PHAMA+ Project
18	PNG Auditor General's Office
19	PNG Forestry Authority (PNGFA)
20	PNG National Weather Service (NWS)
21	Small and Medium Enterprises Corporation (SME Corp.)
22	Tourism Promotion Authority (TPA)
23	UN International Labour Organization (ILO)
24	University of Papua New Guinea (UPNG)

Annex 5. Monitoring & Evaluation

This section presents the preliminary framework and process for monitoring and updating of the CPF. GGGI PNG will be updated annually to reflect new developments, changing national circumstances, and lessons learnt from implementation.

The M&E framework will track progress on:

- Implementation of the CPF including its programmatic solutions and achievement of its strategic outcomes, and
- Contribution of GGGI PNG in achieving national climate change, green growth and sustainable development objectives, in particular PNG's NDC, MTDP III, and the SDGs
- Quantifying intended and unintended, positive and negative impacts of GGGI interventions

Monitoring is required to ensure the CPF meets its objectives and that the delivery of planned results is progressing on track. Monitoring of the CPF will focus on systematically collecting data (both qualitative and quantitative data) at the national, provincial and sectoral levels.

The progress made on the implementation of the CPF will be evaluated at PS level, building on M&E results of programs and projects of GGGI PNG. The CPF evaluation will consider the following questions:

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

GGGI PNG will be guided by GGGI Headquarters on stakeholder participation, process for annual, mid-term and end-of-term review of the CPF.

During the mid-term and end-of-term CPF reviews, GGGI will verify that the GGGI PNG has performed the required oversight of its activities.



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