

**CLIMATE RESILIENT
GREEN GROWTH PROJECT**



Papua New Guinea Climate-Resilient Green Growth (CRGG) Project

**Preliminary Gender Equality and Social Inclusion (GESI)
Assessment Report**

May 2020





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Acronyms and Abbreviations

ADB	Asian Development Bank
CEDAW	Convention on the Elimination of All Forms of Discrimination Against Women
DSP	Development Strategic Plan
GDP	Gross Domestic Product
GESI	Gender Equality and Social Inclusion
GGGI	Global Green Growth Institute
GII	Gender Inequality Index
GoPNG	Government of Papua New Guinea
NDC	Nationally Determined Contributions
NICTA	National ICT Authority of Papua New Guinea
PNG	Papua New Guinea
PPAP	Public Private Agriculture Partnership
SDGs	Sustainable Development Goals
STaRS	National Strategy for Responsible Sustainable Development
WOCAN	Women Organizing for Change in Agriculture and Natural Resource Management

Acknowledgement

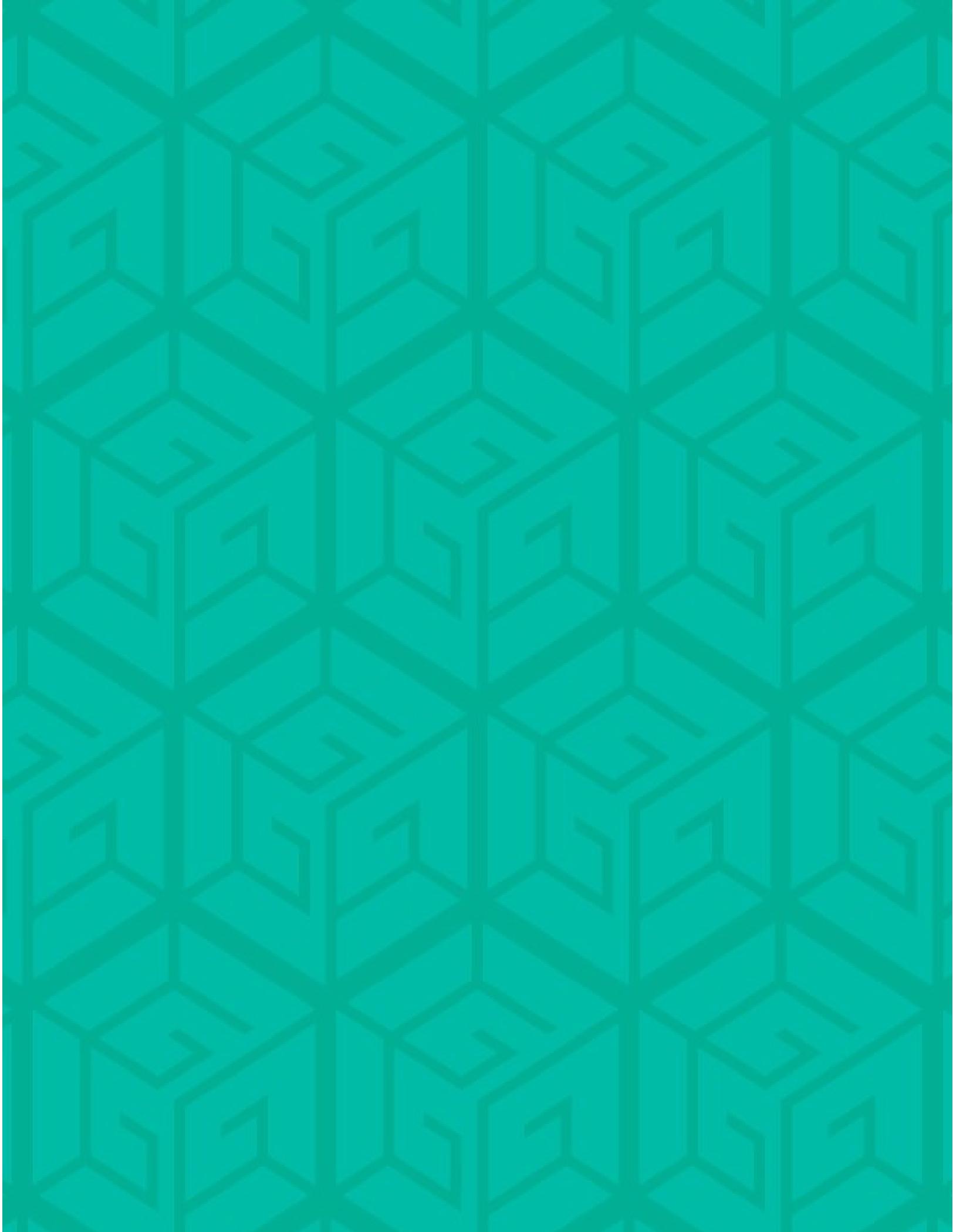
This publication was prepared by the Global Green Growth Institute (GGGI). This publication is part of the Climate-Resilient Green Growth (CRGG) program funded by the Australian Government.

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The work also benefited from the expertise of GGGI colleagues, in particular:

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Editorial support from The Greenhouse Studio was also gratefully acknowledged.



1. INTRODUCTION

This gender equality and social inclusion assessment is part of component one of the Government of Papua New Guinea (PNG) Climate-Resilient Green Growth (CRGG) project, which is aimed at ensuring that authorities in the three targeted PNG provinces of Enga, Milne Bay and New Ireland successfully incorporate CRGG into planning. The overall purpose of the project is to support PNG to plan for inclusive climate-resilient green growth in these three provinces and deliver green growth projects with leveraged finance. Various studies have shown that gender equality and green growth contribute to economic stability and that the design of green financial products and services can be enhanced through considering gender differences in climate risks and needs.¹ This initial assessment therefore contributes towards identifying impactful entry areas that contribute towards the Government of PNG's (GoPNG) efforts to achieve poverty alleviation, gender equality, women's empowerment and social inclusion.

1.1 GGGI and CRGG Project Background

The Global Green Growth Institute (GGGI) is a treaty-based international, inter-governmental organization dedicated to supporting and promoting strong, inclusive and sustainable economic growth in developing countries and emerging economies. GGGI's objective is a global transition toward a model of green growth. Working across the thematic priorities of sustainable energy, green cities, sustainable landscapes, and, water and sanitation, GGGI aims to deliver impact through six strategic outcomes: (i) GHG emission reduction (ii) creation of green jobs (iii) increased access to sustainable services, such as clean affordable energy, sustainable public transport, improved sanitation and sustainable waste management (iv) improved air quality (v) adequate supply of ecosystem services and (vi) enhanced adaptation to climate change. This GESI assessment is also premised on GGGI's global operational priority 5, which stipulates the accelerating progress of GGGI's country programs in poverty eradication and gender equality through organizational operations. The achievement of inclusive green growth therefore employs the alignment of NDC and SDG objectives in light of the CRGG sectors.

¹ ADB, 2016.

PNG is a founding member of the GGGI and is partnering with the Institute in the formulation of a comprehensive CRGG strategy and its implementation. GGGI therefore provides technical assistance support to GoPNG based on its recognition, expertise and track record of supporting other countries to successfully address similar challenges. GGGI has worked on nationwide and provincial CRGG strategies and implementation in Ethiopia, United Arab Emirates, the Philippines, and Fiji and has been supporting green growth in the Pacific since 2015. GGGI is currently implementing green growth programs and projects in Fiji, Vanuatu, Kiribati, Tonga and the Solomon Islands.

The 4-year CRGG project support to GoPNG to achieve inclusive climate-resilient green growth in PNG's provinces with support from Government of Australia was approved in 2019. Specifically, the project supports GoPNG to achieve the following long-term targets outlined in the PNG Vision 2050, the Development Strategic Plan (DSP) of 2010-2030 and the National Strategy for Responsible Sustainable Development (StaRS):

- shifting the composition of economic growth to 70% of GDP being derived from renewable or sustainable sectors;
- ensuring over 50% of PNG citizens are supported to become more resilient to climate change;
- achieving inclusive growth, with PNG ranked in the top 50 countries in the UN Human Development Index by 2050.

As stated, the purpose of the project is to support PNG to plan for climate-resilient green growth in multiple sectors and provinces and deliver green growth projects with leveraged finance.

The project is delivering a set of outputs grouped into 3 interrelated components:

- **Component 1:** The objective is to *strengthen planning for climate change at provincial levels* (i.e. successfully mainstreaming CRGG priorities into the Medium-Term Development Plans (MTDP) and/or Annual Development Budgets (ADB) in 3 provinces),

and, develop a replication plan to roll out a CRGG planning approach to additional provinces.

- **Component 2:** The objective is to *mobilize climate finance for climate-resilient green growth* in PNG by (a) developing sound projects and (b) submitting funding proposals (to finance such projects). This approach – identifying priorities, designing projects and mobilizing financing, will first be implemented in the three focused provinces and later replicated at scale at the national level.
- **Component 3:** The objective is to *identify new financing options and mechanisms for CRGG*. It involves developing and capitalizing a mechanism – e.g. a financing facility, a fund with periodic replenishments, etc. – that can effectively address the financing gap for CRGG projects.

This GESI assessment falls under component 1 of the project and will inform subsequent project components. Overall, the project is designed with a longer-term aspiration of building the institutional architecture and capacities necessary for CRGG planning, project preparation and financing in an effective and systematic manner, and that can be replicated in other provinces and eventually, in all of PNG's 22 provinces.

The initial GGPA identified three priority areas that the CRGG would develop projects from, and which are:

- (i) Renewable energy and energy efficiency
- (ii) Agriculture
- (iii) Forestry

1.2 Methodology and Approach

The aim of the GESI assessment is to create a preliminary view of gender issues at national, provincial and sectoral levels that can help identify a series of potential investment opportunities with high potential for socio-economic co-benefits, particularly in the context of women's empowerment, gender equality and poverty alleviation, and, overall contributions towards National Development Plans and SDGs. This assessment reviews and discusses existing

evidence on the various gender equality and social inclusion areas of action in PNG, analyses the various co benefits in the preliminary sectors of renewable energy and energy efficiency, agriculture, and, forestry and natural resources management. The assessment is primarily based on peer-reviewed literature and the preliminary provincial scoping activities which include stakeholder assessment and capacity assessment scorecards. Below is a brief description of each qualitative method used during the assessment:

- A review of existing gender and climate change-related initiatives in the country for insight into investment projects that may be viable, effective and appropriate in the country context.
- A review of secondary data sources from country, regional and international levels around issues of socio-economic co-benefits, W+ Standard, development partners' documents on gender and climate change, etc. A desk review of existing legislative frameworks and planning strategies in relation to gender equality, social inclusion and climate change was also undertaken.
- A rapid review of the initial project scoping activities such as the stakeholder analysis and capacity assessment scorecard. These yielded some information on key stakeholders implementing gender equality and women's empowerment programs from a climate action point of view, the provincial capacity in gender mainstreaming, and, opportunities for strengthening the same through the CRGG project. This analysis provided additional insights into the governance and coordination aspects that the CRGG project is operating in.
- A series of interviews were carried out with experts in the provinces including those leading climate-related actions, government-instituted gender focal points and some development partners.

The findings from the above actions have been integrated in this report and have helped shape conclusions and recommendations on a series of potential investment opportunities with likely socio-economic co-benefits in the areas of women's empowerment, gender equality and poverty alleviation, as well their potential overall contributions towards PNG's national development plans and SDGs.

2. NATIONAL SOCIAL DEVELOPMENT CONTEXT

PNG is a richly diverse society undergoing intense economic and social transformation. The country has a highly dispersed and in many parts, a remotely placed population of over 8.5 million with more than 800 different languages spoken and more than 1,000 ethnic clans. Since its independence from Australia in 1975, the country has successfully developed many of the institutions of a modern, diverse, and democratic state (FAO, 2019). FAO further states that the country's economy has tripled in size and independence; growth in its gross domestic product (GDP) has averaged 3.4% per year. However, the country continues to fall short of its development potential despite its enormous natural wealth, strategic geographic location, and, young and diverse population (ADB, 2018).

Despite its rapid economic growth in recent decades and significant increases in government expenditure, poverty remains persistent and prevalent in some areas and progress on human development indicators has been insufficient to support PNG's ambition of becoming an upper-middle-income country by 2030 and a top-50 country on the United Nations Development Programme's (UNDP) Human Development Index (HDI) rankings by 2050.

PNG still faces different development challenges including achieving and maintaining fiscal sustainability, reducing income inequality, gender equity, gender-based violence, improving the health and wellbeing of its citizens, and mitigating the impacts of climate change - among its other, critical socio-economic difficulties.

2.1 Relevant National and Sub-National Policies

Some efforts have been made to institutionalize gender equality and the empowerment of women, however, challenges and opportunities in this regard, remain. Enacting laws and strategies that address gender and social inequalities is only a first step to the realization of the related sustainable development goals at various levels. PNG ratified the Convention on the Elimination of All Forms of Discrimination Against Women (CEDAW) in 1995. Since then, the

country has domesticated some of the provisions of CEDAW including the Child Protection Act of 2009, which has a range of provisions to protect girls from discrimination. In 2002, the GoPNG enacted the Sexual Offences and Crimes against Children Act under the revised Criminal Code, providing legislation that covered a series of previously excluded offences including marital rape, with punishment graded according to the severity of the harm involved and defining the forms of sexual violation of women.² The country has further adopted a number of policies, plans and programmes on women and gender development such as the National Strategic Plan 2010-2050 (Papua New Guinea Vision 2050) which includes human capital development and gender, youth and people empowerment as major pillars that promote gender equality and participation.

The National Constitution on the other hand has included commitments towards gender equity and equality: of the five national goals and directive principles, the second one is about equality and participation, i.e. *"we declare our second goal to be for all citizens to have equal opportunity to participate in, and benefit from, the development of our country."* The National Policy for Gender Equality and Women's Empowerment (2011-2015) provides three main components and areas of focus – women's equality and representation: women's economic empowerment, and, gender-based violence and vulnerability. The Gender Equity and Social Inclusion Policy of 2012 on the other hand, includes targets to increase the participation of women within the public sector and the number of women in public service leadership positions to 30%, giving greater recognition to women as leaders, although the proportion of seats held by women in the national parliament is at 2.7% (World Bank, 2016).

Efforts to institutionalize gender equality and women's rights are evident apart from the legal and policy perspectives mentioned above. During the project's provincial scoping exercises, it was found that gender focal persons exist at provincial level as a minimum requirement (with exception of Enga and New Ireland provinces). However, there are capacity challenges involved and no clear linkages exist with climate actions planning. Secondly, the IPDP has made

² CEDAW report, July 2010.

provisions for the inclusion of women. However, the extent to which this has been implemented and is effective, is yet to be fully assessed. On the Government side, the Office for the Development of Women in the Department for Community Development has the overall mandate to lead in the strategic thinking on women's development in the key developmental sectors.

2.2 Poverty, Gender Equality and Social Inclusion Context

The downside to the World Bank forecast that real GDP growth in PNG was projected to hover around 3% between 2020 and 2022, included risks such as unexpected external shocks or potential political and economic turbulence domestically. Poverty is evident especially in the 87% of the Papua New Guineans who live in rural areas. The proportion of the population that lived below the national poverty line in 2017 was pegged at 37.5%, while the proportion of those that were employed at below \$1.90 per day, was at 21.8% in 2019 (ADB, 2020). For every 1,000 babies born in the country in 2018, 48 will die before their 5th birthday (UNICEF, 2019).

The country's economy is dominated by two broad sectors: the agricultural, forestry and fishing sectors that engage most of PNG's labor force (with the majority in informal labor), and, the minerals and energy extraction sector that accounts for the majority of export earnings and GDP (World Bank, 2018). From a social development point of view, the country is characterized by complex cultural dynamics deeply rooted in tribal and ethnic identity, traditional and social institutions, and relationship to the land – all of which contribute towards the country's unique challenges as well as its considerable resilience. In 2019, the World Bank further found there are limited formal job opportunities for the growing employment-age population. Other risks include environmental management, population growth, political fragmentation, inequalities in the country's resource dominated economy, and social exclusion of some groups and other ethnic minorities and indigenous groups.

From a gender equality and women's rights perspective, PNG has a Gender Inequality Index (GII) value of 0.740, ranking it 161 out of 162 countries in the 2018 index³. The country ranks very low among global indicators on advancing gender equality and the elimination of violence against women and girls. It is experiencing severe impacts from gender-based violence and HIV and AIDS and its demography is characterized by low levels of literacy, a high dependency ratio, high unemployment rates (2.5% of the national labor force was unemployed as of 2019) and a high cost of living, exacerbating inequality (World Vision Australia, 2013). The participation of women in decision making spaces is also an area of concern. The country has one of the lowest levels of women's representation in parliament and local government. Cultural and systemic obstacles prevent women from participating in political life and holding public office (UN Women, 2020).

The majority of the population in PNG lives in rural areas (87.5%) with agriculture as the hub of the country's economy, dominated by smallholder farming systems engaged in both cash crop production - most notably coffee, copra and cocoa, and, subsistence production.⁴ However, PNG faces persisting institutional and governance challenges in creating an enabling environment for promoting and enhancing women's participation in food value chains (NARI, 2002). There are still persistent gender disparities in access to and control over productive resources in agriculture, energy, markets, forestry, fisheries and other sectors, yet women are the major contributors to the economy (on farms, at home and in the community). Women are systematically excluded from access to resources, essential services and decision making despite a conducive legal and policy framework.

Women's participation in the labor force through employment and entrepreneurship lies at about 70% - slightly less than men at 71% (UNDP, 2016). More than 50% of the female labour force is engaged in agriculture and women comprise nearly 35 percent of the economically active population in agriculture (FAO, 2019). It is also important to mention that the majority of rural women play a prominent role in subsistence food production, agricultural value chains and rural livelihoods, and have ventured into small to medium enterprise activities. However, rural

³ 2019 HDR, UNDP

⁴ IFAD, 2019.

women are challenged by their multiple roles and chronic time poverty as they bear the primary responsibility for the nutritional, health needs and childcare of their families in addition to the many community, social and cultural activities they are expected to engage in (FAO, 2019).

2.3 The Context of Climate Resilience Green Growth and Social Development

GGGI defines green growth as economic growth that is environmentally sustainable as well as socially inclusive. Globally, countries and economies are facing the challenges of unsustainable growth at an unprecedented scale in terms of environmental degradation and climate crisis. While extreme poverty levels have dropped significantly globally over the past few decades, large parts of the global population still live in poverty. Growing inequality is a threat to sustained future growth and development. Hence it is recognized that the old models need to be replaced with sustainable solutions and that countries need to move onto sustainable pathways for development. Green growth in the context of PNG includes the right to development of the country, just transitions towards sustainable models and inclusive models that benefit the poor, rural women and indigenous groups.

3. DEFINING IMPACT AREAS FOR SOCIO-ECONOMIC CO-BENEFITS

As countries including PNG implement the 2015 Paris Agreement and the 2030 Sustainable Development Agenda, NDCs and SDGs have become a priority of national development planning. There are growing calls for emphasis on sustainability and inclusivity and the need to ensure climate change mitigation actions are consistent with other environmental priorities and socioeconomic needs. The CRGG project aims to contribute towards the achievement of SDGs, which is at the core of the definition of "green growth". This includes the achievement of SDG 1 on Poverty Alleviation, SDG 5 on gender equality, SDG 10 on reduced inequalities, in addition to the initiative's potential to directly influence SDG 7 on energy, SDG 15 on sustainable landscapes and other related SDGs. Particularly in the context of policy and investment work under the

initiative, specific entry points for socio-economic impacts and women's empowerment have been identified⁵ and discussed below.

3.1 Access to improved services for underserved communities

Climate change impacts not only the delivery of some public services but also ecosystems and the services that ecosystems provide to society. While it has been proven that climate impacts are not gender neutral, gender norms and attitudes mainly constrain the most marginalized groups in society in accessing sustainable and reliable services in agriculture, energy, environment and natural resources, and transport, among others. Due to climate impacts, social and economic opportunities are constrained, especially for underserved communities, most poor women, men, indigenous groups, and youth. It is critical that the CRGG priorities and pipeline projects and investments addresses the specific needs of the underserved communities that have been identified in PNG and ensure that those initiatives are contributing towards increased access to reliable and sustainable services.

3.2 Economic empowerment particularly for women and youth

In PNG, although participation rates in the labor force are relatively even, men are almost twice more likely than women to hold a wage job in the formal sector, while women are three times more likely than men to work in the informal sector (ILO, 2018). Men tend to work longer hours in economically profitable activities (almost triple in cocoa, copra and coffee related activities), whereas women are mainly responsible for domestic activities (World Bank, 2012). The average number of hours women work in cocoa-growing areas, including all hours worked (productive and reproductive work) is 2.7 hours more than men per day (World Bank, 2012). This disproportionate burden of domestic work limits women in substantively engaging in more value-added activities. In responding to climate impacts, it is therefore essential that economic empowerment initiatives are central particularly for women, youth, indigenous groups and other marginalized people. This encompasses investments that support decent green jobs creation,

⁵ CRGG Inception Report

improving livelihoods for farmers, fisherfolks, and low-end value chain actors, and the inclusion of informal sector actors in sector level transformations.

3.3 Climate adaptation and increased resilience

There is urgent action across the globe to reduce greenhouse gas emissions and the impacts of climate crisis, which, even as they are being felt today, could worsen in the foreseeable future if not fully addressed. The 2015 Paris Agreement under the United Nations Framework Convention on Climate Change (UNFCCC) and the Gender Action Plan (GAP) established a global goal for adaptation to climate change as a recognition that investment in adaptation is both necessary and increasingly urgent. The Agreement makes the links between climate change and human rights, poverty eradication and sustainable development. Considering that people have different adaptation needs, their sustainability of livelihoods also differs. With different livelihoods and roles that different genders are aligned with in families and communities (opportunities, responsibilities, access to resources and information, decision making power etc.), all these and all of these influence how vulnerable people are to climate crisis. It is therefore important to understand those dynamics in adaptation and resilience plans.

For the most vulnerable communities, it is important that initiatives strengthen their food security and support their livelihoods to meet their economic and social needs. Assessing climate change adaptation results for women, men and marginalized groups promotes equitable benefits and brings unintended consequences to the surface as too often, the definition of results ignores the perspectives of women and of other groups whose voices are excluded. Consideration of who is benefiting from adaptation investments, as well as why some people are left out, can help to avoid exacerbating existing inequalities and improve equity in outcomes.⁶

3.4 Gender and inclusion in the context of COVID-19

In the context of the global COVID-19 pandemic, these impact areas are increasingly relevant. Additionally, the impacts on public and environmental health may also be considered a priority

⁶ NAP Global Network

for the Government of PNG. Links between green growth and health can be found in linking infrastructure (e.g. water, sanitation, electricity) to health facilities; improved sanitation and solid waste services in the communities; and, economic empowerment to increase resilience and capabilities that also enable people to follow guidance on social distancing. With women being the primary caregivers for the ill, there are clear links between health outcomes and gender equality and women's empowerment. The CRGG project therefore could also provide an opportunity to create win-win strategies for health and climate change mitigation, e.g. potential projects that are aimed at improving energy-efficient heating and cooking facilities.

3.5 Social and environmental safeguards

The continued call by various development partners across the globe for the enactment of safeguard policies and strategies that can prevent and mitigate undue harm to people and their environment, has also been an area of action for the CRGG project from its inception. Improving women's green growth potential and the security of their livelihoods is an essential part of the 'do no harm' approach. The CRGG inception report indicated the minimum environmental and social safeguards. The project should continue to ensure that it does not compromise on the safety of women by, among other things, ensuring projects build 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. Additionally, the structuring of activities will need to consider issues of gender-based violence, women's workload especially home-based care work and other socio-cultural issues. In cases where associated risks (environment or social) whether positive or negative have been identified in the proposed pipeline projects, it is important that clear measures and processes are developed to effectively manage risks and enhance positive impacts.

3.6 The W Plus Certification Standard

The CRGG project aims to identify green growth investment opportunities and has committed to invest in the identification of projects with high potential to achieve women's empowerment outcomes. This outcome will be measured using the W+ Standard. This W+ Standard was

created by Women Organizing for Change in Agriculture and Natural Resource Management (WOCAN) and is the first women-specific standard that measures women's empowerment in a transparent and quantifiable manner, gives a monetary value to results and creates a new channel to direct financial resources to women. The W+ Standard measures how companies, governments and individuals can drive social and economic empowerment for women. In addition to generating benefits for the women themselves, the standards contribute towards transformative impacts on gender equality, the economy, poverty, and, food security. It tracks women's empowerment in the following six areas: time, income and assets, health, leadership, education & knowledge, and food security⁷. All of these have been briefly described by WOCAN as follows:

1) **Domain 1 - Time Savings**

Time is a key factor for women's empowerment. While many organizations support women's entrepreneurship, food security and other development initiatives, until women are freed from the necessary chores that consume so much time, they will make little progress in other areas. Therefore, Time is the domain that enables success in all other domains and enables project developers to document the increase in women's discretionary time, by measuring shifts in the use of time away from lower-value activities toward higher-value activities. This can be accomplished through the use of time-saving technologies and tools.

2) **Domain 2 - Income and Assets**

In many regions of the world, women have limited access to financial or technical assets. Property ownership and control over money and other assets, as well as being empowered to independently decide about resource use, are all important leverage points for women's empowerment. However, women's contributions are often uncompensated, but when they are, women can powerfully affect the well-being of their families and communities. The Income and Assets method therefore enables project developers to assess the extent to which the project has increased income and assets (accessible to, or, controlled by women). The Income and Assets method will enable measurable and verifiable improvements in access to resources and control of earned assets by women in the pilot project provinces.

⁷ WOCAN <https://www.wplus.org/w-domains/>

3) **Domain 3 - Education and Knowledge**

The benefits of female education for women's empowerment and gender equality are broadly recognized: As the level of female education increases, fertility, population growth, and infant and child mortality fall, and family health improves. Increases in girls' secondary school enrollment are associated with increases in women's participation in the labor force and their contributions to household and national income. Women's increased earning capacity, in turn, has a positive effect on child nutrition. The Education and Knowledge method therefore enables project developers to evaluate how projects have resulted in women's increased knowledge and skills, as well as the transmittal of women's knowledge and skills to others in the community.

4) **Domain 4 – Leadership**

Within developing economies, women are still widely under-represented in decision-making at all levels - in the household, in businesses, and, in the public sphere. Addressing these inequities through legislation and public policy is a way of formalizing the goal of gender equality. The Leadership method enables project developers to evaluate how projects result in increased decision-making roles for women – within the context of the project itself or within households and communities. This can be measured through assessing the increases in women's representation and participation and the extent to which their representation/leadership roles influence the necessary changes in the community; women's active/meaningful participation including their contribution to decision making; increase in the effectiveness of women's groups to advocate, manage funds, negotiate; and, network through leadership and entrepreneurship skills development.

5) **Domain 5 – Food Security**

Improvements in food security are critical for women's attainment of economic, social and health improvements. Women are often responsible for ensuring that their families are fed, yet they themselves may go without adequate nutrition. Women in developing economies, particularly in indigenous communities, are the custodians of local plant knowledge, traditional methods and practices of crop and soil management. Supporting women in their role as food-producers is critical for long-term food security, improved nutrition, and effective, sustainable resource stewardship. The Food Security method enables project developers to evaluate how the project has decreased the quantity and quality of food insecurity within households.

Investments in projects ensuring that women have access to tools, resources, information, knowledge, facilities, and access to markets for their production, can have multiple positive benefits in women's economic empowerment, nutrition and health, and, resource stewardship.

6) **Domain 6: Health**

According to UNICEF, 66% of the world's work is done by women, and which includes work outside the home as caregivers for children, in paid and unpaid labor, in food production and in resource management. If women are in poor health due to poor nutrition, lack of access to health care, or the impacts of disease, their reduced work capacity will inevitably lead to multiple, cumulative, negative impacts upon families, communities and to national economies. In this regard, improving women's health, and community health overall, can have a positive multiplier effect locally and nationally. The Health method therefore, guides the project developers to evaluate how the project has specifically improved the overall health of women. With the Health method, outcomes in health investments can be effectively measured, and changes over time can be tracked.

This GESI assessment is therefore also guided by this W+ standard and looks at each of the preliminary sectors to guide in the identification of possible projects that would fit under this certification in the targeted provinces as these are critical for women's empowerment and contribute towards measuring and quantifying progress on some of the domains in the CRGG project.

4. SOCIAL AND GENDER REVIEW AT SECTORAL LEVEL

Women in PNG derive limited benefits from the formal economy. The majority of them operate small-scale informal businesses. They are held back by a male-dominated culture, negative social cultural norms, limited ability to control business income, limited access to resources and information, violence directed against them and exclusion from the decision-making spaces in both the public and private sectors. Additionally, the legislative framework and customary laws do not adequately protect the interests of women and other socially excluded groups particularly with regards to employment and property rights.

Unemployment among the youth is high with many young people, mostly men, leaving the rural areas in the hope of finding paid jobs as unskilled labor in towns and cities. The job market however is still limited and most of the youth remain unemployed. The informal sector is dominated by the rural population who tend to be involved in subsistence and semi-commercial activities (DFCD, 2012; ADB, 2012). There has been, however, a gradual increase in micro-, small- and medium-scale business enterprises by indigenous people and women, both in rural and urban areas. The national government sponsored a Papua New Guinea SME Policy 2016 providing enablers for SME development, including in the agricultural sector (Ministry of Trade, Commerce and Industry, 2015).

Subsequent sections discuss the sector-specific gender and social analysis and provide possible entry points and potential projects for each of them for W Plus certification standards and the generation of socio-economic benefits. The preliminary scoping assessment and stakeholder consultations of the CRGG identified three main sectors as likely priority areas of the project, i.e. renewable energy and energy efficiency, agriculture, and forestry.

4.1 Renewable energy and energy efficiency

Globally, energy poverty is a problem that is on the rise in industrialized countries; when there is an increase in oil and gas prices, there is a rise in energy costs which particularly affects poor households (EIGE, 2020). In PNG, the proportion of the population with access to electricity in 2017 was at 54.4% (ADB, 2020). PNG has set strong targets for increasing levels of electrification from close to 12% of the population to 70% by 2030. As this SDG 7 (Affordable and Clean Energy) is one of the key national development goals in PNG, it is important that the social, poverty, environmental and gender aspects are fully assessed and addressed at all levels of investments and programming including policy formulation and implementation. Energy plays an essential role in both women's and men's lives, therefore, achieving gender equality, social inclusion and poverty alleviation in the area of renewable energy can be linked with human rights and social, environmental and economic development.

In many countries, including PNG, rural women play multiple roles simultaneously – in households, communities and workplaces. Women and girls take on the primary responsibility to ensure energy needs are met especially at household level and given their multiple roles and duties, they lack time to participate in other opportunities that could potentially help to enhance their knowledge, skills, income and self-esteem.

The gender equality, social inclusion and poverty alleviation approach to energy largely rests on the first and most obvious reason that men and women have different energy needs due to their roles in society and within households. The provision of new forms or modalities of energy has quite unintended differential effects on men and women, for example, the provision of powered agricultural equipment and the consequent cultivation of a much larger land area – the tractors are inevitably operated by men, and replace the hard task of hand or ox ploughing which is typically men's work.⁸ In cases like these, many other agricultural tasks that require energy such as weeding and harvesting have to still be done by hand and predominantly by women. Thus, although the tractor may improve the family's overall income, a new balance in the work has arisen in which the women carry a heavier burden.⁹

According to EIGE, women tend to be more sustainable consumers than men as they are more likely to buy eco-labelled products, pay more attention to green procurement, attach more importance to energy efficient transport and fuels and they are more willing to change their behavior to achieve sustainability goals including energy efficiency. Studies have shown that the use of renewable energy is often associated with co-benefits such as reduced air pollution, local employment opportunities, fewer severe accidents (when compared with the use of other energy supply technologies), as well as improved energy access and security. In this regard, below is a list of potential renewable energy investment opportunities that could help address the various gender, poverty, social and empowerment issues in the targeted CRGG provinces, and which will need to be vetted by key stakeholders in the country.

⁸ FAO, 2006.

⁹ Ibid

Potential Renewable Energy and Energy Efficiency Investment Opportunities

4.1.1 Provision of clean cookstoves

In the effort to lessen the burden of fuel-wood collection on women and girls and the high cost of energy systems on household poverty, , initiatives that promote/provide clean cookstoves have a higher, sustainable impact. This could be considered as a potential W+ certification project as the provision of cookstoves helps mainly women and children (girls in many cases) gain productive time (time savings), in addition to the poverty alleviation and health benefits that would result.

4.1.2 Introduction of biogas technologies and strengthening biogas programs

Biogas as a renewable energy technology has the potential to reduce women's workloads, improve their health, reduce the cost of energy for households and provide livelihood opportunities for women and men in the community. For typical rural areas, biogas programs can reduce household expenditures and the use of other traditional cooking fuels, freeing women for other economically productive activities. The construction and installation of biogas plants on the other hand creates employment and additional income for households. On the part of children, these technologies enable them (especially girls) to attend school, extend time spent on studying and increase their information and educational needs. Biogas programs have proved that they improve the quality of life for women and men, and promote social, political and economic empowerment.

Through the CRGG Assessments, the types of biogas technologies that would be relevant to the specific provinces will need to be assessed by relevant community stakeholders. However, it is vital that the management of the technologies and biogas technologies is mainly led by women themselves.

4.1.3 Institutionalization of gender and energy in the education sector

To enhance access to inclusive and equitable education-related outcomes in the country's energy sector, and for the sake of long-term sustainability, the institutionalization of the sector is key. This could be achieved by working with the relevant government ministries and departments, the academia and the private sector to provide comprehensive training on gender and renewable energy in tertiary institutions such as the PNG University of Technology. The aim would be to enhance the capacity in gender responsive renewable energy including technologies, and, provide opportunities for employment at different points along the energy value chain.

4.1.4 Support women entrepreneurship programs at local/provincial level

Linked to the WEF initiative mentioned above, energy projects that support the productive use of locally available energy sources can provide opportunities for women's entrepreneurship, for example, local enterprises that can deliver reliable energy services (Practical Action, 2019). More often than not, women entrepreneurs face barriers such as lack of access to information about new forms of energy, lack of education and training on business management and other aspects of renewable energy technology, lack of access to credit and financial services to startup businesses, etc. Since women play a critical role in energy provision and consumption within the households and communities, they possess valuable knowledge relevant to sustain energy solutions. Renewable energy projects can enhance women's economic autonomy and social status while allowing them to earn income and drive the sustainable development of their communities.

4.2 Agriculture sector

Despite the economic growth and abundance of natural resources, the bulk of PNG's population - primarily engaged in subsistence agriculture - remains poor. Most of the people in PNG rely on semi-subsistence agriculture for their living and it is critical that country initiatives empower smallholders to mobilize their resources for higher incomes. The 2000 census showed that 2.4 million people out of the total population of 5.2 million were employed (National Census, 2000).

About 10 percent of those employed were in formal employment, while 67 percent were employed in subsistence or semi-subsistence agriculture.

Women play various roles in food production, whether through subsistence farming or growing cash crops for income. Despite the critical role that women play in food production, they often face barriers to accessing agricultural land, training, credit and services,¹⁰ as the agricultural production functions that women and girls perform tend to be considered part of their household role and responsibility. This becomes a barrier to them making a living out of agriculture. Given the unique knowledge and skills held by women, development planning needs to acknowledge and effectively utilize women's contributions to adapt to climate change impacts. Changes in rainfall patterns, droughts, floods, rising sea-levels and salinization make it harder for communities to make a living out of agriculture as these impacts are likely to make life even harder for women, who are responsible for the production of the majority of food for subsistence.¹¹

The social and gender differentiated domestic work burden affects the ability of women to allocate their labor to the agricultural fields. Crops cultivated by women tend to be valued at only half as much as those crops typically cultivated by men (World Bank et al., 2012, yet women comprise over half the agricultural workforce (ADB, 2016). The participation of women and youth and their contribution to the agricultural sector at various levels is yet to be realized. This is coupled with challenges in accessing agricultural knowledge and skills.

People that live in highly marginal environments continue to suffer from periodic food shortages and as a buffer against such risks, the production of staple food crops (sweet potatoes, potatoes, yams and bananas) involving traditional systems of shifting cultivation, remains the most important economic activity for rural PNG, especially for rural women (FAO and UN Women, 2018). Women engage mostly in growing and selling fresh food crops (as opposed to cash crops

¹⁰ UN Women, 2016.

¹¹ Ibid

such as coffee, cocoa, copra and vanilla) and are responsible for most of the planting, weeding, and harvesting of these crops (World Bank, 2012).

In its policy framework, the Medium Term Development Strategy, the GoPNG identified private sector-led growth and the promotion of income-earning opportunities as one of the key priorities, with a focus on export-driven growth based on agriculture (oil palm, rubber, fruit and vegetables, forestry and fisheries and tourism). Agriculture plays a critical role in PNG's economy, therefore, empowering women and achieving gender equality is vital for economic growth and food security. Men and women may face different barriers to the formalization of their businesses. It is sensible for investment climate reforms designed to facilitate business formalization, to address the barriers faced by women as well as those faced by men. Currently, most women in PNG are not formalizing their businesses and most formal sector enterprises are run by men (UN Women, 2018).

Strategies and actions in the sector should focus on developing alternative livelihood options that consider the impacts of climate change on agriculture and changing lifestyles to ensure long-term food security. Agriculture projects need to explore opportunities that adapt to climate change including identifying resilient crops and animals, and, the provision of training and information for those involved in food production, among others. However, any action should consider women's knowledge and skills. PNG already has opportunities for enhanced women's empowerment and gender equality promotion in the agriculture sector. The 2018-2022 Country Programming Framework under the assistance of the FAO has put in place three priority areas that would also be important leverage in the implementation of the CRGG project: enhancing equitable, productive and sustainable natural resource management; strengthening resilience for food security and nutrition; and, sustainable inclusive economic development and job creation in rural areas.

Potential Agriculture Investment Opportunities

4.2.1 Strengthen PNG's Business Women's Association

While the Business Women's Association represents women involved in the formal business sector, the CRGG could support the sub-sector of women who are in the agriculture sector. This preliminary assessment found there are very few women-led agriculture related groups in the provinces and financial lending schemes for women-operated small business have also been established under the national development bank. Strengthening of these groups/associations provides a formalized opportunity and representation of interests of the majority of the women in agribusiness, especially those who are small-scale agricultural producers and/or petty traders with not only the government but also the private sector. As women's voices are not well represented in public or private dialogue forums, projects that support that representation especially in the sector would contribute towards enhanced capacity and the promotion of women in the agriculture sector including women's economic empowerment and networking.

Under this initiative, the CRGG project can facilitate the formalization of female, indigenous, youth (and other identified vulnerable groups) business groups at community level to strengthen these groups at local level. As women and youth find it more difficult to access credit than men in PNG with only 30% of all customers of financial inclusion services in the country being women (UNDP, 2016a), projects and investments that would increase access to and control over economic resources and financial services would increase not only women's economic autonomy but also their agricultural production. For both male and female entrepreneurs formalizing a business brings with it advantages including the potential for growth, access to credit and investment. Creating an economy with a higher proportion of formal enterprises and jobs is important to long-term welfare creation, stability and poverty reduction as there is international evidence that resources in the hands of women do more for family welfare.

4.2.2 Mobilize/develop local women and youth model farmers for climate smart agriculture

In order to create a platform for sharing lessons among women, youth, indigenous groups and farmer groups and to recognize their contribution to rural and provincial development, these model farmer groups will provide an opportunity for climate-smart agriculture practices through self-help initiatives and income generation through group savings and group marketing opportunities. While it is known that making agricultural systems climate-smart requires action at different levels of policy, institution, investment and practice, studies have shown that projects that provide evidence generated from the model groups make more sustainable impacts. These targeted model farmer groups can contribute towards creating steps and enabling environments for climate-smart agriculture – by assessing the barriers at local level and adopting local sustainable solutions to water harvesting, crop residue mulching, composting, manure management, agroforestry, etc. The Public Private Agriculture Partnership (PPAP) by the World Bank in PNG encourages mobilization of women through co-operatives such as the women in coffee or cocoa co-operatives.

4.2.3 Identification and provision of time and labor-saving technologies in agriculture

Most of the rural population in PNG are subsistence farmers and women are largely responsible for food-crop production for family consumption and rearing of small livestock. In coastal areas, women move along the coastline catching small fish and harvesting various shellfish for household consumption, and local sale. It is estimated that women's harvest accounts for more than 20% of the annual fishing yields, but this contribution is under appreciated (JICA, 2012).

As women are burdened with home-based care work and crop production, the provision of time and labor-saving technologies that are appropriate for the respective communities would reduce women's agricultural work burden. Technologies for pre-harvesting such as water irrigation systems, water pumps and tanks, and low-cost labor-saving technologies and post-harvest technologies, were basically non-existent in rural PNG (FAO, 2019).

4.2.4 Establishment/strengthening of rural resource centers

In order to increase access to information on agriculture, nutrition and food security among others, the agricultural one stop resource centers could contribute towards enhanced skills and capacities within local farmer groups including fisher folks. These resource centers could also provide an opportunity for building partnerships with various cooperatives, creating access to markets and building negotiation and marketing skills amongst the most marginalized groups.

4.2.5 Promotion of E Agriculture

According to the FAO, E-Agriculture is an emerging field that provides agricultural services and technology dissemination and information, which are delivered through the internet or related technologies to improve communication and learning processes in the agriculture sector. Since the majority of marginalized groups such as rural and poor women and men farmers, youth and indigenous groups do not have adequate access to information, the promotion of e-agriculture would help address that challenge. FAO has been supporting the GoPNG to integrate the use of ICT in its agriculture development plans and strategies. The CRGG project can leverage on this initiative and scale up in areas where FAO is not implementing these ICT solutions. In addition to the FAO initiative, the National ICT Authority of Papua New Guinea (NICTA) is working with local entrepreneurs to use blockchain to keep data on livestock in Jiwaka province. Women owning a phone or having access to the internet in cocoa-growing areas significantly correlates with higher bargaining power of women in intra-household decision-making processes. Therefore, there is a need to enhance access to, and the use of, sustainable and innovative technologies by rural women and girls and to promote their skills development, digital literacy and financial literacy to support their labor market entry and livelihoods (World Bank et al., 2012).

Agriculture is labor-intensive and the result is that many smallholder farmers have more women and girls remaining on the farms providing the bulk of the labor force. The adoption of technology and ICTs can help leverage on the inequalities. According to USAID, in low- and middle-income countries, over 1.7 billion women do not own mobile phones and in cases where they do, they are less likely to make full use of the available services. This calls for improving

women's access to technologies in order to not only reduce inequalities in digital technologies but also increase their access to productive agricultural services. E Agriculture has proved that it strengthens resilience for food security and nutrition and greater gender equality and women's empowerment in agriculture that enhance child nutrition and family food security.

4.3 Forestry

The forests of Papua New Guinea cover approximately 60% of its total land area and both women and men living in forested regions of the country depend on forest resources for their livelihood needs. In many PNG societies, women make extensive use of forest resources for food, firewood, medicine and material for handicrafts. In 2019, UNDP found that in PNG, 97% of the total land area is classified as customary and with the existing customary law and cultural barriers, women have very limited rights or abilities to control income and other resources. It further found that the forestry sector suffers from gender-blind governance systems because women's challenges, needs and opportunities are not heard and their decision-making power is limited leading to final decisions being made by male clan leaders or village councils.

Both women and men living in forested regions of the country depend on forest resources for their livelihood needs. However, women make extensive use of forest resources for firewood, food, medicine and materials for handicrafts. Men on the other hand, largely use forests for activities such as hunting, cutting trees for building etc. As both women and men depend on forests for their livelihoods and income, there are inequalities in rights, roles and responsibilities. Deforestation and forest destruction disproportionately affects poor women as they have fewer opportunities to earn income than men and challenges the source of fuel, which in many cases is a role that is largely played by women and children (especially girls).

Often, men control the most valuable forest resources that can be sold on the market, such as timber (Aguilar et al. 2011; FAO 2015; Agarwal 2009) and most women lose assets such as trees due to tribal fights. In most parts of the country, sago palms provide the staple food resource and both women and men cooperate to produce these palms. Mainly, the role of men is to cut

down and split the palms and construct sluices, while women extract, wash, store and cook the sago starch (FAO, 2018). The coastal communities depend heavily on mangrove forests, which play very important ecological and cultural roles. Women harvest various mollusk and crustacean species from these areas for food, as well as for sale if there are accessible markets (World Bank, 2012). Mangrove forests serve a wide range of other uses as well, including providing wood for house construction and fuel, serving as breeding grounds for fisheries and reducing coastal erosion from the action of sea waves and tidal movements (PNGFA, 2011).

The forestry industry operates widely in remote areas of the country and many households derive income from royalties, lease payments and wages. These payments are made to men since they are employed in logging operations. However, in reforestation programs, women may be engaged in plant propagation and maintaining nurseries (FAO, WFP 2018). The forestry sector has the ability to address inequalities and empower disadvantaged groups and expand opportunities for rural men and women in landscapes. Development forests programs need to make comprehensive social and environmental considerations and achieve multiple social and environmental co-benefits.

Potential Forestry investment opportunities

4.3.1 Skills building for women and indigenous groups

The provision of technical training (especially for women's groups in forestry) on water engineering, agro-forestry and other related technical skills based on specific capacity needs would facilitate the empowerment of various social and vulnerable groups in the community's empowerment. Forestry capacity development activities that are targeted for women's empowerment include increased education and knowledge on financial literacy, income generation, micro enterprise management and other skills (UN REED, WOCAN, USAID, 2013). It is important that the technical trainings enable women and other marginalized groups to form self-help groups on other critical issues such as hand-pump repairs, agroforestry, sanitation and health.

4.3.2 Provision of labor-saving and time-reducing technologies

Biogas and improved cook stoves contribute towards reducing women's time and labor in collecting fuel wood and freeing them for other economically productive activities. An opportunity in the country exists for biogas investments especially from oil palm waste products that the CRGG project could explore.

4.3.3 Introduction of equitable benefit sharing mechanism in forests

To promote gender-equitable distribution within community forestry through the CRGG project, the extent to which specific communities are benefiting from carbon payments and how equitable these are, could be assessed. From this, seed grants for carbon payments can be provided in the respective pilot provinces, with guidelines on how payments can be spent. A defining feature of such expenditure would be the extent (or proportion) to which the payments are spent on activities related to women's empowerment and needs. A lesson that the CRGG project could emulate from outside the forestry sector on structuring pro-women benefit sharing agreements, is the case of the Ok Tedi Mine in PNG, where women were invited to join the re-negotiations of the Community Mine Continuation Agreements (Menzies and Harley 2012). The OK Tedi Mine Agreement provides 10% of mine royalties to dedicated funds for women; women are co-signatories on bank accounts; there are scholarships for women and girls (UN REDD, WOCAN, USAID, 2013).

4.3.4 Enterprise development and credit provision to women's cooperatives

At the local level, the mobilization (and strengthening) of women's cooperatives in the forestry sector could have higher level impacts especially in accessing microfinance support to start small enterprises and alleviate poverty. This assessment found that there are no existing/formalized women's cooperatives in the targeted provinces. However, the project could work with the existing groups as a starting point.

4.3.5 Establishment (or reviving) women's networks in forests

The creation of forest networks or federations at provincial level in PNG can play a highly significant role in not only developing effective policy advocacy with government and donor agencies, but also in promoting learning, capacity building and innovations within the networks. Women's networks or federations can serve as a valuable means for championing women's interests if well-organized and well-resourced (USAID, 2012). The networks provide opportunity to build members' capacities; sensitize women to the particular demands; reduce transaction costs; scope new market opportunities; connect women to policy processes; develop women and men as gender champions; and, influence the shape of reforms – including tenure reforms, enterprise development and organizational culture.¹² In return, women's leadership is built through organizational and individual transformation and the push for women's inclusion in REDD+ at all levels. This approach can also be used in the other sectors e.g. establishment of women's networks in energy and agriculture.

5. GENDER AND INCLUSION IN ACCESSING FINANCE – Opportunity for establishment of women's empowerment fund

The CRGG component 3, which aims to enable financing, provides an opportunity for the project to identify barriers to accessing finance and develop tailored solutions to address these barriers. The overarching vehicle that the CRGG program could use to achieve the various outcomes across the sectors discussed above, is the establishment of a women's empowerment fund for PNG. Based on the opportunities that will be identified during project prioritization stages, this fund will need to be tailored to specific needs. The Clean Cooking Alliance piloted the Women's Empowerment Fund (WEF) initiative in countries like Vietnam, Ghana and Bangladesh, designed to scale effective business models for empowering women energy entrepreneurs. The WEF provides funding and capacity building to enterprises to increase the participation of women in business to scale women's inclusion through clean and efficient cookstoves.

¹² USAID, 2012

In PNG, women are not as engaged as men in the energy value chain. Improved levels of engagement could potentially demonstrate a positive impact on business performance and the overall social impacts in the provinces if adapted according to PNG's context. While the WEF is largely inclined towards women and energy, the PNG CRGG program can adapt the model for various areas of focus according to the contextual needs of the country across the sectors of energy, agriculture, and forestry.

Women are the key drivers of economic prosperity and equality. It has been noted that when women earn an income, they spend 90% of it on their household, on expenses such as food, healthcare and education. Women worldwide face significant barriers to leading their fullest and most productive lives because of a lack of access to capital, inequitable labor markets and negative cultural norms and beliefs. Therefore, the establishment of the fund could provide key impetus to women in the lower income bracket, support women's empowerment across all sectors, and, implement investment management practices that empower women. The fund would contribute towards increasing the number of women entrepreneurs, innovative approaches to addressing the various energy/agriculture/forestry needs in the country and share lessons as it builds evidence for women-led business models.

6. CONCLUSION

The CRGG project has committed to and continues to use inclusive approaches while addressing the social and environmental safeguards mentioned throughout the three project components. The gender equality and social inclusion assessment has analyzed various aspects of PNG's climate related issues from a gender, women's rights, poverty alleviation and social inclusion perspective, particularly in the three preliminary sectors of energy, agriculture, and forestry. Through this process, the report has presented the key impact areas for socio-economic co-benefits and the empowerment of women. It is envisaged that during the CRGG project assessments and prioritization, clear linkages will be established using this assessment and/or a selection of project priorities which will be piloted in the three provinces of Enga, Milne Bay and New Island.

During the CRGG assessments and consultations, the project team in PNG will need to facilitate the validation of the proposed entry points and potential opportunities presented herein. In instances where the relevant stakeholders in the pilot provinces identify other opportunities that have not been analyzed in this report, it is important to align those with the core impact areas discussed above. A Gender and Social Inclusion Action Plan will be developed for the project during the project prioritization stage. It is at that level that a more concrete action plan will be discussed, and strategies put in place to realize the action plan.

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The Global Green Growth Institute was founded to support and promote a model of economic growth known as “green growth”, which targets key aspects of economic performance such as poverty reduction, job creation, social inclusion and environmental sustainability.

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