Concept Note

DRAFT

Project Title:	Financing Climate Smart Landscapes for Building Resilient Livelihoods in Agriculture and Forest Ecosystems in East New Britain and New Ireland Provinces, Papua New Guinea
Country:	Papua New Guinea
National Designated Authority (NDA):	Mr. Ruel Yamuna Managing Director Climate Change and Development Authority Savanna Heights, Waigani. Port Moresby, NCD P O Box 4017, Boroko 111, NCD. Papua New Guinea
Accredited Entity (AE):	Secretariat of the Pacific Regional Environment Programme (SPREP), Apia, Samoa
Date of first submission/ version number:	*[2021-03-30] [V.1]*
Date of current submission/ version number	*[2021-03-30] [V.1]*

GREEN CLIMATE FUND

Please submit the completed form to **fundingproposal@gcfund.org**, using the following name convention in the subject line and file name:
"CN-[Accredited Entity or Country]-YYYYMMDD"

Notes

- The maximum number of pages should **not exceed 12 pages**, excluding annexes. Proposals exceeding the prescribed length will not be assessed within the indicative service standard time of 30 days.
- As per the Information Disclosure Policy, the concept note, and additional documents provided to the Secretariat can be disclosed unless marked by the Accredited Entity(ies) (or NDAs) as confidential.
- The relevant National Designated Authority(ies) will be informed by the Secretariat of the concept note upon receipt.
- NDA can also submit the concept note directly with or without an identified accredited entity at this stage. In this case, they can leave blank the section related to the accredited entity. The Secretariat will inform the accredited entity(ies) nominated by the NDA, if any.
- Accredited Entities and/or NDAs are encouraged to submit a Concept Note before making a request for project preparation support from the Project Preparation Facility (PPF).
- Further information on GCF concept note preparation can be found on GCF website Funding Projects Fine Print.

A. Project/Programme Summary (max. 1 page)			
A.1. Project or programme	☒ Project ☐ Programme	**A.2. Public or private sector**	☒ Public sector ☐ Private sector
A.3. Is the CN submitted in response to an RFP?	Yes ☐ No ☒ If yes, specify the RFP: _____	**A.4. Confidentiality[1]**	☐ Confidential ☒ Not confidential
A.5. Indicate the result areas for the project/programme	Mitigation: Reduced emissions from: ☐ Energy access and power generation ☐ Low emission transport ☐ Buildings, cities and industries and appliances ☒ Forestry and land use Adaptation: Increased resilience of: ☒ Most vulnerable people and communities ☒ Health and well-being, and food and water security ☐ Infrastructure and built environment ☒ Ecosystem and ecosystem services		
A.6. Estimated mitigation impact (tCO2eq over lifespan)	270,000 tCO_2eq	**A.7. Estimated adaptation impact (number of direct beneficiaries and % of population)**	1,500 direct beneficiaries 5,000 indirect beneficiaries 2.2% of provincial population
A.8. Indicative total project cost (GCF + co-finance)	Amount: USD TBD when co-financing is finalised through the PPF phase	**A.9. Indicative GCF funding requested**	Amount: USD 14,045,000
A.10. Mark the type of financial instrument requested for the GCF funding	☒ Grant ☐ Reimbursable grant ☐ Guarantees ☐ Equity ☐ Subordinated loan ☐ Senior Loan ☐ Other: specify_____		
A.11. Estimated duration of project/ programme:	a) disbursement period: 5 years	**A.12. Estimated project/ Programme lifespan**	10 years
A.13. Is funding from the Project Preparation Facility requested?[2]	Yes ☒ No ☐ Other support received ☐ If so, by who:	**A.14. ESS category[3]**	☐ A or I-1 ☒ B or I-2 (draft screening report attached as Annex 1 ☐ C or I-3
A.15. Is the CN aligned with your accreditation standard?	Yes ☒ No ☐	**A.16. Has the CN been shared with the NDA?**	Yes ☒ No ☐

[1] Concept notes (or sections of) not marked as confidential may be published in accordance with the Information Disclosure Policy (Decision B.12/35) and the Review of the Initial Proposal Approval Process (Decision B.17/18).
[2] See here for access to project preparation support request template and guidelines
[3] Refer to the Fund's environmental and social safeguards (Decision B.07/02)

A.17. AMA signed (if submitted by AE)	Yes ☒ No ☐ If no, specify the status of AMA negotiations and expected date of signing:	**A.18. Is the CN included in the Entity Work Programme?**	Yes ☒ No ☐

A.19. Project/Programme rationale, objectives and approach of programme/project (max 100 words)	The project promotes climate-smart landscapes in vulnerable island communities of New Britain and New Ireland, Papua New Guinea. The project aims to (CSL) by focusing on: (i) enhancing agricultural extension and climate smart field schools; (ii) increasing research on climate smart landscapes; (iii) recognising and applying traditional ecological knowledge; (iv) increasing awareness of climate change and potential options; (v) increasing use of drought resistant agricultural and agroforestry systems; and (vi) promoting soil conservation measures to accommodate increased rainfall. Most importantly, the project will champion more productive and resilient agriculture based on sound management of natural resources, including land, water, soil, and biodiversity. Project interventions anticipate: an increased land cover of 5,000 hectares that will sequester 270,000 tCO2eq; have 1,500 direct and 5,000 indirect beneficiaries at the provinces of East New Britain and New Ireland; at least 2,000 households to improve food security; 200 farmers to benefit from the Small Grant Funding for Adoption of Climate Smart Alternatives; and an improvement in multiple ecosystems and ecosystem services.

B. Project/Programme Information (max. 8 pages)

B.1. Context and baseline (max. 2 pages)

Climate Context

Papua New Guinea (PNG) is ranked amongst the top 20 most vulnerable countries in the world which are prone to the impacts of climate change. It is also home to the world's third largest intact tropical rainforest, and the fifth largest tropical forest. The country encompasses more than 17,000km of coastline and 600 islands, most of which are low lying (inhabited or uninhabited) atolls or islets. There are almost 2,000 coastal villages, with a population of about 500,000, vulnerable to sea level rise and other weather-related manifestations of climate change. Based on 19 years of data, 22,000–26,000 people are affected annually by inland floods, displacing 6,000–8,000 and typically resulting in a few deaths each year.

New Britain and New Ireland

Surface temperatures have increased by about 0.5^{o}C in the mid-70s, and annual maximum and minimum temperatures have increased consistent with global patterns, at a rate of 0.11°C per decade since the 1980s, while rainfall has declined by as much as 15% in some areas. By 2030, it is projected that temperature will continue to increase between 0.4–1.0°C. Rainfall is projected to increase over the 21st century, with more extreme rainfall days projected. Sea level has risen by approximately 7mm per year since 1993, which is higher than the global average of 2.8–3.6mm per year. Under a high emissions scenario, sea level is expected to rise between 4–15cm by 2030, impacting storm surges and flooding in coastal regions. Coastal flooding is anticipated to increase, particularly in the northern areas, while inland flooding is projected to increase in wetlands and valleys in highlands and lowland areas. There were 23 tropical cyclones between 1969 and 2010 that passed within 400km of Port Moresby and projections show a trend of decreasing numbers of cyclones but an increase in intensity over this century. Climate change projections show increases in surface air temperature, sea surface temperature, annual mean rainfall, seasonal mean rainfall, intensity and frequency of days of extreme heat, intensity and frequency of days of extreme rainfall, and mean sea level rise, while there will be decreases in the incidence of drought and frequency of tropical cyclones.

Impacts of climate change are already being experienced through (i) destruction of tree crops from increasingly frequent and severe tropical storms and cyclones; (ii) loss of food gardens from extensive flooding; (iii) contamination of freshwater supplies from saline intrusion; (iv) increasing hailstorms and frosts damaging highland gardens; (v) landslides from extreme rainfall events in the highlands; and (vi) irregular rainfall patterns and prolonged dry seasons affecting soil fertility, crop yields, and disease and pest incidence. Communities in the island and coastal areas have been increasingly affected by coastal erosion,

king tides, cyclones and storm surges, degradation of coral reefs and marine ecosystems and diminished fish resources. Salinization of freshwater resources is affecting crop production, and communities are being pushed further inland due to receding coastlines.

During the 1997 El Niño drought, some 200,000 people were in a life-threatening situation with little or no food requiring them to hunt and collect food from the bush. Another 980,000 people were estimated to have had inadequate amount of food available from gardens, sago palm, coconuts, or freshwater fisheries.
Key Policies in Papua New Guinea?

PNG became a signatory to the UNFCCC in 1992 and ratified its commitment in 1993. The Kyoto Protocol was signed in 1997 and ratified in 2000, and in 2009 PNG supported the Copenhagen Accord and commitments which aim to reduce greenhouse gas (GHG) emissions by 50% by 2030, towards becoming a carbon neutral country by 2050. In 2015, PNG became a signatory to the Paris Agreement which aims for member countries to strengthen their global response to the threat of climate change in terms of adaptation and mitigation, increase financial flows, introduce new and affordable technology, and build national capacities. In December 2015, PNG was one of the first countries to produce its Nationally Determined Contribution (NDC). The initial NDC has been reviewed and submitted to the UNFCCC in December 2020 as the *PNG Enhanced Nationally Determined Contribution.* The 2020 Enhanced NDC provided summaries of emissions from the: energy sector, industrial processes and product use, agriculture, land use, land-use change and forestry (LULYCF) and waste (Figure 1). It is noteworthy how PNG went from a net sink in 2000 to a net source in 2015.

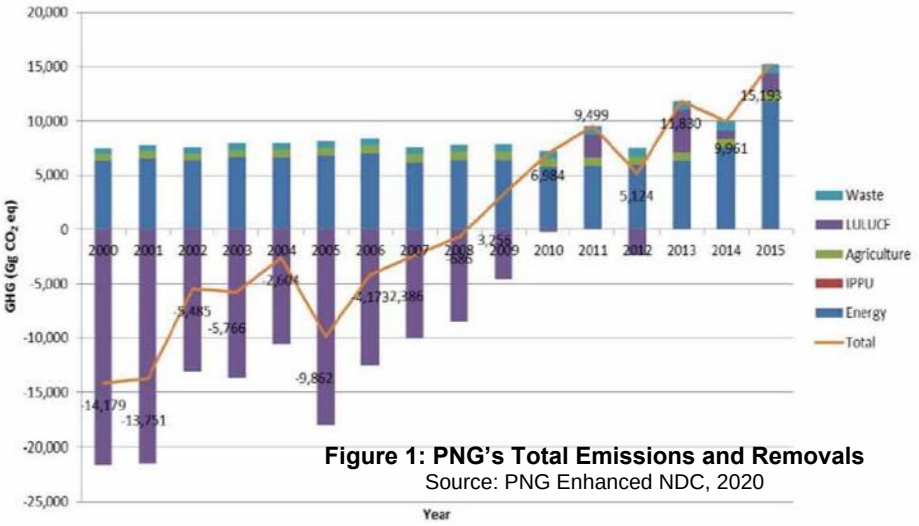

Figure 1: PNG's Total Emissions and Removals
Source: PNG Enhanced NDC, 2020

The 2020 NDC further highlights the nine priority adaptation actions for: coastal flooding and sea-level rise; inland flooding; food security; cities and climate change; climate induced migration; damage to coral reefs; malaria and vector-borne diseases; water and sanitation; and landslides.

In the National Climate Change Development Management Policy, adaptation strategies and risk management have been prioritised and quantified. This has further emphasised that PNG is highly vulnerable to the effects of climate change and given the temperature increases locked in by global emissions of GHGs, adaptation is a high priority. The country will need financial support, capacity building and technical support to face the uncertain future posed by climate change.

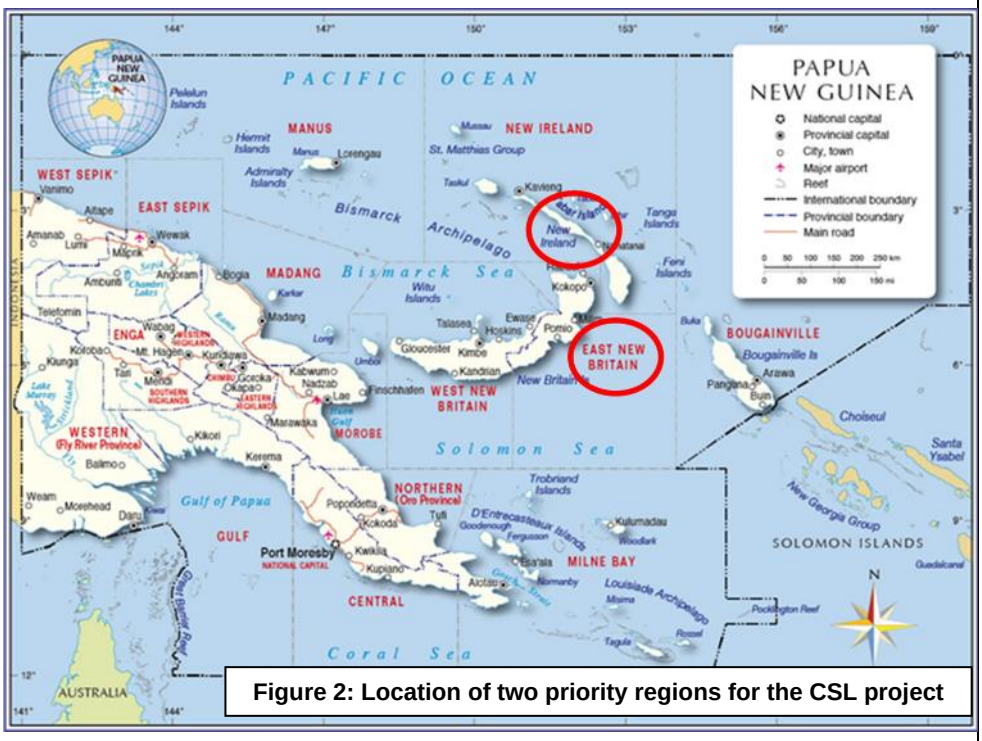

Figure 2: Location of two priority regions for the CSL project

This project will reflect the PNG SDG13 roadmap by strategically setting out a clear pathway to achieve SDG13 by 2030 through meaningful action on climate change. Central to this is the need to ensure that globally relevant action on climate change is integrated as domestically appropriate objectives across all sectors of PNG's economy and government. As such the SDG 13 roadmap is closely linked with existing national development plans including the Strategic Development Plan, Medium Term Development Plan as well as the guiding framework of the Sustainable and Responsible Development Strategy (STaRS). It also pays close attention to the priorities of sector development plans. Implementation of the proposed project actions is aligned with the NDC targets and adherence to the Paris Agreement through synergies with the SDGs, and commitment to climate action and water security, gender equity, nature-based solutions, inclusion of traditional knowledge, public participation, facilitation of partnerships, and cost and energy efficiency (CCDA, 2020)[4].

This project will contribute towards alleviating some of climate hazards prevalent in PNG, with project sites in East New Britain (ENB) and New Ireland Province (NIP) (Figure 2). The total population of ENB is 603,443 (2011 census statistics). The population of ENB is growing at a rapid rate of 3.1–3.6% per year and is expected to increase to 1,909,911 by 2050. The NIP population as per 2011 statistics indicate 243,035.

In ENB and NIP, the following land and marine ecosystems are present: New Britain-New Ireland lowland Rainforests, Vogelkop-Aru lowland rainforests, Amhem Land Tropical Savanna, and Cape York Penninsula rainforests. The Global Forest Watch (2020), https://www.globalforestwatch.org/dashboards/country/PNG/16/?category=land-cover reveals that in ENB as of 2000, 96% (321,000 ha) of Gazelle was natural forest cover compared to 2016 where 19% (62,900 ha) of Gazelle's tree cover was intact forest. For NIP it was 69% (647,000 ha) in 2001 falling to 20% (185,000 ha) in 2016.

https://www.undp.org/content/dam/papua_new_guinea/docs/Publications/GEF%20Publications/10.PES%20Final%20Report_Low%20res.pdf

Barriers to overcome: The specific barriers that the proposed project is designed to overcome are (i) a lack of awareness by landholders in the two provinces of climate risks and the long-term impacts of climate change on food security; (ii) in the absence of knowledge about science-based adaptation options, an almost exclusive reliance on indigenous, traditional coping strategies that may be inadequate in future; (iii) the lack of awareness among national and provincial stakeholders of the contribution that climate smart landscapes could make to increase food security, increase vegetation cover, reduce landslide, prevent soil erosion, and preserve the region's unique biodiversity; (iv) inadequate support from the private sector or the government agricultural extension services to farmers in addressing climate risks; (v) the inability of farm households to access finance for climate smart alternatives, in part due to the insecure customary land tenure system; (vi) lack of trained facilitators to advocate and demonstrate CSL practices; and (vii) few tangible opportunities to demonstrate climate smart landscapes; Figure 6.0.

[4] CCDA (2020). Papua New Guinea's Sustainable Development Goal 13 Roadmap an Empowering Response to Challenges and Opportunities Posed by Climate Change.

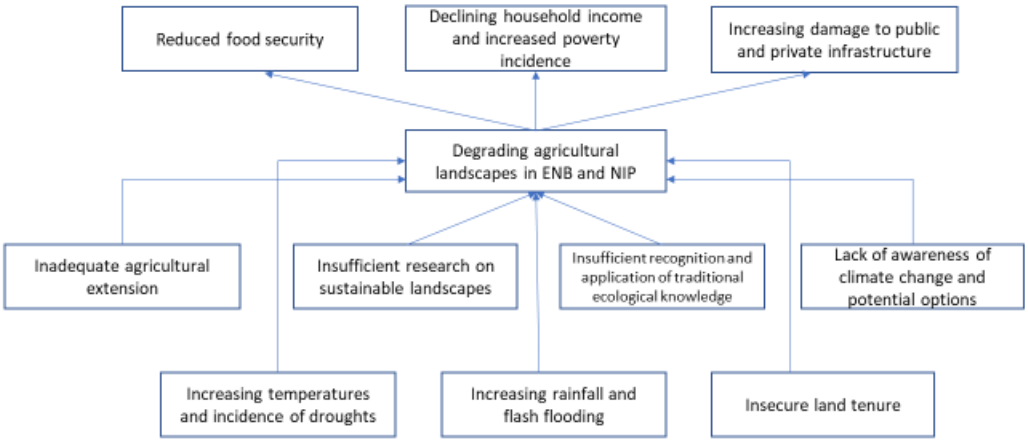

Figure 3: Problem Tree

Technological barriers

Regulatory/ Institutional barriers

Cultural/Social/Gender barriers

Financial barriers

B.2. Project/Programme description (max. 3 pages)

The proposed project will respond to the challenges through promoting climate-smart landscapes (CSL) by focusing on: (i) enhancing agricultural extension and climate smart field schools; (ii) increasing research on climate smart landscapes; (iii) recognising and applying traditional ecological knowledge; (iv) increasing awareness of climate change and potential options; (v) increasing use of drought resistant agricultural and agroforestry systems; and (vi) promoting soil conservation measures to accommodate increased rainfall (Figure 4). The project most importantly, will champion more productive and resilient agriculture based on sound management of natural resources, including land, water, soil, and biodiversity.

An integrated ecosystem-based management (EBM) approach will be used in combination with Participatory Action Research (PAR) to build resilience through Collaborative Planning and Learning (CPL). These collaborative approaches involve a wide range of different stakeholders and blend traditional ecological knowledge with ~~Western~~ science. Local knowledge is needed to help frame and prioritise the communities' challenges as well as to inform socio-culturally appropriate action, thus ensuring local ownership and longer-term sustainability of community responses.

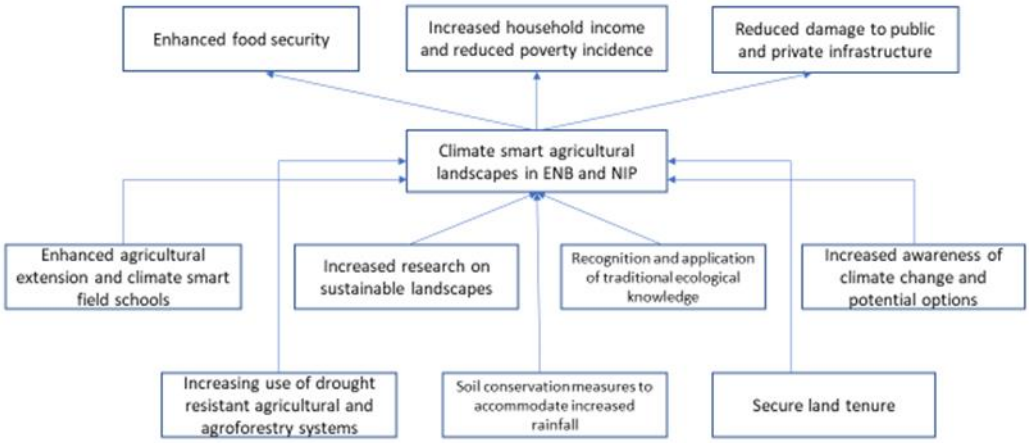

Figure 4: Objectives Tree

The project will demonstrate value-added agroforestry and sustainable production systems and encourage and equitably empower women and girls to make informed decisions, drawing on the traditional wisdom and expertise. Findings from the landscape assessments and demo-farms will also have wider, generic, implications for Pacific Island nations adapting to a changing climate, and the project team will engage with regional networks to ensure comprehensive dissemination.

The project has four components with strategic focus Table x).

Components	Strategic Focus
Component 1: Mapping potential landscapes, Science and Indigenous Knowledge Transformational Planning and Utilization of Indigenous Knowledge	Conduct research on science-based and local/traditional knowledge of ec and their human uses in ENB and NIP landscapes, as well as their vulne to climate change. Ethically and respectfully engage local knowledge providers in parallel w government extension specialists to increase awareness and build adapt capacity of farmers in the project area.
Component 2: Climate Change Innovation	Develop a comprehensive understanding of traditional ecological knowle coping strategies and adaptation practices at the farm and landscape lev extreme weather events and climate change impacts in each vulnerable ecotype.
Component 3: Development of Best Practice and Demonstration Models for Climate Smart Landscape Management	Identify and implement a network of CSL “demo-farms” (i.e., climate sma schools) that combine drought resistant agriculture (including non-timber food systems) and mixed agroforestry systems, to improve livelihoods, management of natural resources and lower GHG emissions
Component 4: Mobilization of Finance at Scale - Small Grant Funding for Adoption of Climate Smart Alternatives	Assist farmers in ~~ENB and NIP~~ to access small grants to implement the c smart agriculture practices proven and disseminated through farmer clim field schools and the demo-farms, to create climate smart landscapes throughout the two provinces, and hopefully to other similar locations in F and beyond.

. Component details and proposed activities are:

Component 1: Mapping potential CSLs, Sciences and Indigenous Knowledge on Coping Strategies
Landscape level criteria and indicators will be identified within the ecosystem-based management approach to identify important forestry, fisheries, crop and livestock systems in the landscape vulnerable to climate change (Figure 3). These criteria and indicators will be used to design participatory action research and collaborative planning and learning methods (or alternatives) to collect spatial data on land-use patterns and trends to inform local and regional planning processes. GPS hand-held equipment and GIS information will be used to collect datasets across a large geographical area, providing a coarse snapshot of use patterns at the landscape level. Oral narratives will be recorded on site, GPS located and translated to “oral-maps”.

This option will produce a static spatial, temporal and oral atlas to begin identifying potential CSLs and matching adaptation options to specific ecotypes. A regional picture of land-use patterns will allow for collection of important relational data such as demographics, socioeconomic values, cultural and spiritual importance of trees and crops, intensity of use, and temporal dimensions of activities. Spatial analysis using GIS will be used for the storage, analysis, and representation of these data.

Activities

- ~~Prepare a typology of ecotypes in the landscape and their human uses.~~
- Participatory Land Use plan?
- Climate Vulnerability Assessment?
- Adaptation Investment Plan?
- Undertake a bottom-up ecosystem-based assessment using PAR and CPL approaches to help identify the ecosystem services and benefits that are accrued by poor, disadvantaged, or marginally isolated /vulnerable communities and particular sub-groups (as well as the constraints, barriers and trade-offs involved) and to determine the likely risks posed by climate change**.**
- Con~~sult with local land users to document all the uses they make of plants and animals in each ecotype.~~
- Produce a static spatial, temporal and oral atlas using GIS for the storage, analysis, and representation of these data.
- Establish landscape-level criteria and indicators within the ecosystem-based management approach to identify important forestry, fisheries, crops and livestock production systems vulnerable to climate change.
- Document how land users traditionally change their behaviour, coping strategies, and use patterns during extreme weather events such as droughts, and match these to western science-based adaptation options.

Component 2: Climate Change Impacts and Response Options

From the mapping exercise in Component 1, communities will prioritise potential CSLs that can contribute to sustainable livelihoods /human wellbeing and provisioning of ecosystem services under a changing climate[5]. The project will undertake a community-based risk-analysis posed by climate change and help to assess the current community level of understanding about climate change risks. A bottom-up, participatory approach will help to raise awareness, empower local land users, drawing on traditional or local knowledge, and help them to identify the benefits of CSLs. Adopting a PAR /CPL-based approach will ensure that potential adaptation responses align more closely with the needs of disadvantaged communities. Equity and land tenure issues will be an important consideration, drawing on earlier quantitative and qualitative data to reflect local perceptions of tenure related barriers and opportunities.

Activities

- In each of the selected landscape types, identify communities which will be the primary focus of the intended application of climate smart adaptation approaches.
- Survey the selected communities in each landscape to gauge the level of understanding about climate change, with particular focus on gender and age differences.
- Prepare highly visual explanatory material in the local languages such as colour brochures, fact-sheets, posters, visual art, as well as other cultural forms of expression[6]). Themes could be about climate change, sea level rise, the landscape approach, and climate smart adaptation options that can be implemented at the farm level.
- Conduct community outreach programmes to build greater awareness of climate change and potential responses.

Component 3: Demonstration of Climate Smart Landscapes

To develop a CSL framework that bridges gaps between science and traditional ecological knowledge, analysis with full involvement of local communities will explore enabling conditions and opportunities for promoting the creation of CSLs including locally derived agroforestry systems, such as cassava *(Manihot esculenta),* taro *(Colocacia esculenta),* mama tree or growstick *(Gliricidia sepium)* and coral tree (*Erythrina spp*.) as well as cocoa *(Theobroma cacao*), coconut *(Cocus nucifera),* betelnut palm *(Areca catechu*),

Provisioning Services (agricultural non-timber forest products (fibre, nuts, medicinal herbs, etc) for sustenance or selling, urban gardens, food security, etc.); Regulating Services (erosion control, and forest products, riverbank stabilization, reduction of GHGs through afforestation and reforestation, etc.); and Cultural Services (tourism opportunities, social networks, community health and well-being, etc.).

[6] According to Teaero (2010) most Melanesian countries are very diverse and rich culturally in terms of *inter-alia* language, stories, legends, art, music, architecture, dances, worldviews, values, ceremonies and material culture (Crocombe, 2001). These are all cultural forms of expression and are manifest as both tangible and intangible cultural heritage.

cashew nut (*Anacardium occidentale*), and kwuila (*Intsia bijuga*)], that provide stable income, shade for cattle or goats, reduce upland erosion, and provide fuelwood and fodder. These agroforestry systems also sequester carbon and contribute to reducing GHGs[7]. A CSL framework relevant to each local context will be developed by distilling the key findings and working closely with local facilitators. Key findings and intellectual property from case studies will be treated ethically and respectfully and disseminated to relevant stakeholders.

A network of demonstration farms will be established to highlight the practices and benefits of the identified CSLs. Climate smart farmer field schools will be used to disseminate improved practices to local land users. Trainers will be prepared to lead community CSL workshops and climate smart field schools. Guidance manuals will provide recommendations for policymakers and practitioners, to provide more effective integration of ecosystem services into assessment and planning tools, identify opportunities for mainstreaming into sectoral policies, and how to use assessment methodologies such as multi-criteria analysis and cost benefit analysis. The climate smart field schools will offer leading farmer/community members a chance to become facilitators and disseminate improved practices to neighbouring communities.

Activities

- Identify farmer leaders willing to use their farms for demonstration of climate smart practices.
- Establish at least ten demonstration farms to cover most ecotypes in the ENB and NIP landscapes.
- Train the agricultural extension officials and farmer/community leaders in conduct of climate field schools.
- Conduct climate field schools at key seasonal points.
- Develop a guidance manual for policymakers and practitioners.
- Use the results of the demonstration farms to develop a CSL framework for adoption by the provincial governments as part of their land use planning efforts.
- Forest model; mangrove model? – not clear

Component 4: Small Grant Funding for Adoption of Climate Smart Alternatives

One of the major constraints on farmers adopting climate smart agriculture and agroforestry practices is the lack of access to grant financing and an inability due to scale and other factors to access commercial loans. The World Bank PNG Agriculture Commercialization and Diversification Project, approved in 2020, will "channel project funding by providing partnership grants to legal entities in the private sector and civil society, which are already engaged with smallholders and are interested in consolidating, scaling up, or diversifying those activities by forming partnership with them". The proposed project will link with these recipients of partnership grants where there is a mutual connection of interests. The proposed project will also complement the UNDP/GEF Small Grants on land-use, biodiversity, and conservation. The UNDP/GEF small grants project focuses on building a physical three-dimensional model of the Baining area, including portions of Inland and Lassul Baining LLGs, and practical training on land use mapping or planning of resources and the environment. Other avenues of grant funding, such as through contract farming, purchasers of farm products, or suppliers of farm inputs will be explored by the project implementation team during full [proposal development, .

World Bank
GEF
GCF

This project will develop a small grants financing scheme dedicated to the provinces of ENB and NIP to up-scale the adoption of CSLs. This will be guided from the experiences and lessons-learned in Component 3, demo-farms. It is anticipated that at minimum, 200[8] farmers will be selected for financing under the small grant funding scheme for adopting climate smart alternatives

Activities

- Identify a suitable local financing institution and conduct due diligence, if not already completed for the World Bank partnership grants.

[7] At the farm level, there are opportunities to increase productivity and carbon sequestration through conservation agriculture. Conservation agriculture combines TEK, or local knowledge, zero or minimum tillage with crop rotations and cover crops or mulch. It enhances biomass by integrating trees and shrubs in and around the fields. Conservation agriculture increases tolerance to changes in temperature and rainfall occasioned by extreme climate events such as droughts or flooding (FAO,2012:15).

[8] Represents approximately 13.3 % of the total (1500) direct beneficiaries. This percentage may increase depending on replicability of CSL across other farms and increase awareness/acceptability (cultural and social adaptation) of locally adopted agroforestry technologies and livelihood improvements,

- Establish a set of eligibility criteria for farmers to access the fund for climate smart agriculture and agroforestry.
- Allocate the funds to eligible farmers, with a special focus on women-headed households.
- Monitor the use of funds and successful implementation of climate smart agriculture practices throughout ENB and NIP.
- Expansion, replication, sustainability?
- Should include TA for exploring small business grants / loans

Fund-level Impacts and Outcomes, and Project Results: This outline how the project results align to the GCF impacts and outcomes framework.

GCF Key Result Areas (KRA) Fund-level Impacts, Outcomes and Indicators	Project-level Results
GCF KRA: Forestry and land use	
Impacts Reduced emissions from land use, reforestation, reduced deforestation, and through sustainable forest management and conservation and enhancement of forest carbon stocks **Outcomes** Improved management of land or forest areas contributing to emissions reductions **Indicator** • Tonnes of carbon dioxide equivalent (tCO2 eq) reduced or avoided (including increased removals) - forest and land use • Hectares of land or forests under improved and effective management that contributes to CO2 emission reductions	• Increased vegetation coverage across the key landscapes in ENB and NIP, especially through expansion of agroforestry. The increased land cover of 5,000 ha is expected to sequester 270,000 tCO_2eq. • Farmers in the selected landscapes will be trained in improved land management and encouraged to adopt agroforestry systems that will increase tree cover and carbon sequestration across the landscape. • Establishment of (at least) 10 demo-farms on selected farms in two Provinces (ENB and NIP). • Demonstration farms results used to develop a CSL framework for adoption by the provincial governments as part of their land use planning efforts • ~~Further definition of the area to be covered by the project will be undertaken in the PPF phase, but it is expected that at least 5,000 ha will be improved.~~ • Increased network of "demo-farms" that showcase locally adopted sustainable agroforestry systems • Conduct of Climate Smart Field Schools in ENB and NIP
GCF KRA: Most vulnerable people and communities	
Impacts Increased resilience and enhanced livelihoods of the most vulnerable people, communities and regions **Outcomes** • Strengthened institutional and regulatory systems for climate-responsive planning and development • Increased generation and use of climate information in decision-making **Indicator** • Total Number of direct and indirect beneficiaries; Number of beneficiaries relative to total population • Number of males and females benefiting from the adoption of diversified, climate resilient livelihood	• The project is expected to assist 1,500 beneficiaries directly, through investment in climate smart adaptation measures proven in the demo-farms, plus 5,000 indirect beneficiaries. • Selection and engagement of, at minimum six local knowledge providers that will increase awareness and build adaptive capacity for farmers in ENB and NIP. • The agricultural extension service in the two provinces will be strengthened through their involvement in the climate farm field schools. • Farmers in selected landscapes will have received locally relevant and translated materials and learnt about climate change at the landscape level. • Landscape-level criteria and indicators developed to guide adaptation choices

options (including fisheries, agriculture, tourism, etc.)	• Geo-spatial mapping of CSL's and creation of at least six "oral maps" • Catalogue of science-based and traditional ecological knowledge (TEK)-based ecotypes and their human-uses in ENB and NIP • Community-based vulnerability assessments to climate change to identify the most vulnerable communities • ~~Improved coping strategies and adaption practices as a result of a more comprehensive understanding of TEK~~ • ~~10 research publications (including TEK research) submitted and accepted in high impact factor international peer reviewed journals~~ • Through the outreach and information dissemination activities, other parts of PNG and other Pacific islands will be able to adopt the demonstrated CSL approach
GCF KRA: Health and well-being, and food and water security	
Impacts Increased resilience of health and well-being, and food and water security **Outcomes** Strengthened adaptive capacity and reduced exposure to climate risks **Indicator** Number of food secure households (in areas/periods at risk of climate change impacts)	• One of the main objectives is to improve food security in the time of extreme weather events. This has important impacts on health and well-being of the affected communities in ENB and NIP. • Through awareness raising and the adoption of climate smart agriculture and agroforestry the selected communities will have improved adaptive capacities. • The final numbers of food secure households targeted by the project will be determined during the PPF phase but are expected to be at least 2,000. • Emphasis will be placed on empowering females who are the major influences on family health and well-being
GCF KRA: Ecosystem and ecosystem services	
Impacts Improved resilience of ecosystems and ecosystem services **Outcomes** Strengthened awareness of climate threats and risk-reduction processes **Indicator** Coverage/scale of ecosystems protected and strengthened in response to climate variability and change	• Through the climate smart landscape approach, multiple ecosystems and ecosystem services will be improved by the project. • All stakeholders in the project areas will have increased awareness of climate risks and the appropriate responses available, at the farm level and across the landscape. • The ecosystems in each landscape type targeted by the project will see improved responses to climate variability and change. • Production and dissemination of at least 10 production manuals related to the 10 demo-farms • Development of guidance manual(s) for policymakers and practitioners.

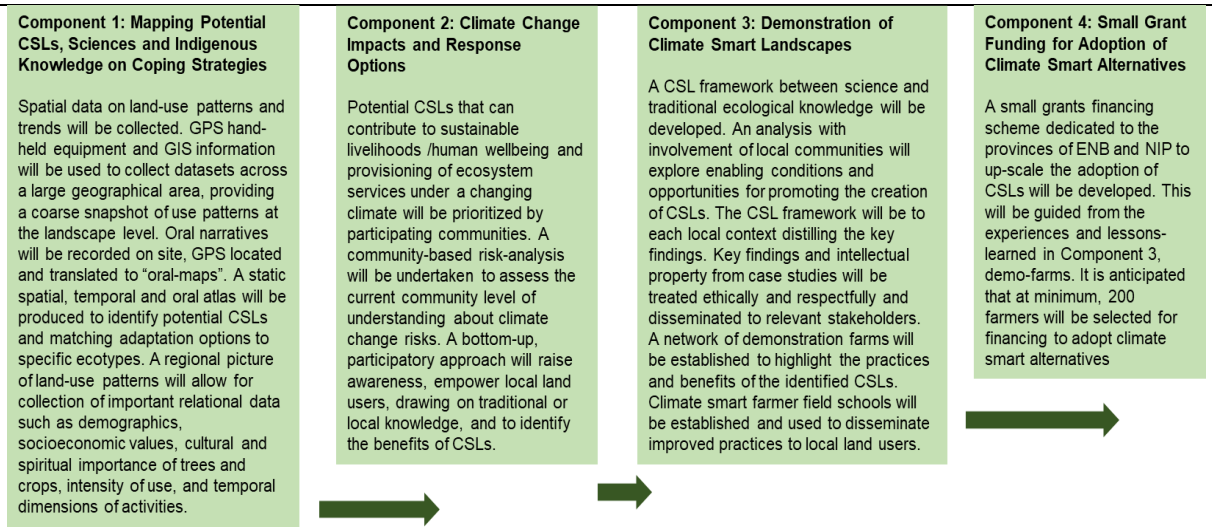

Figure 5: Summary of Project Components and Activities

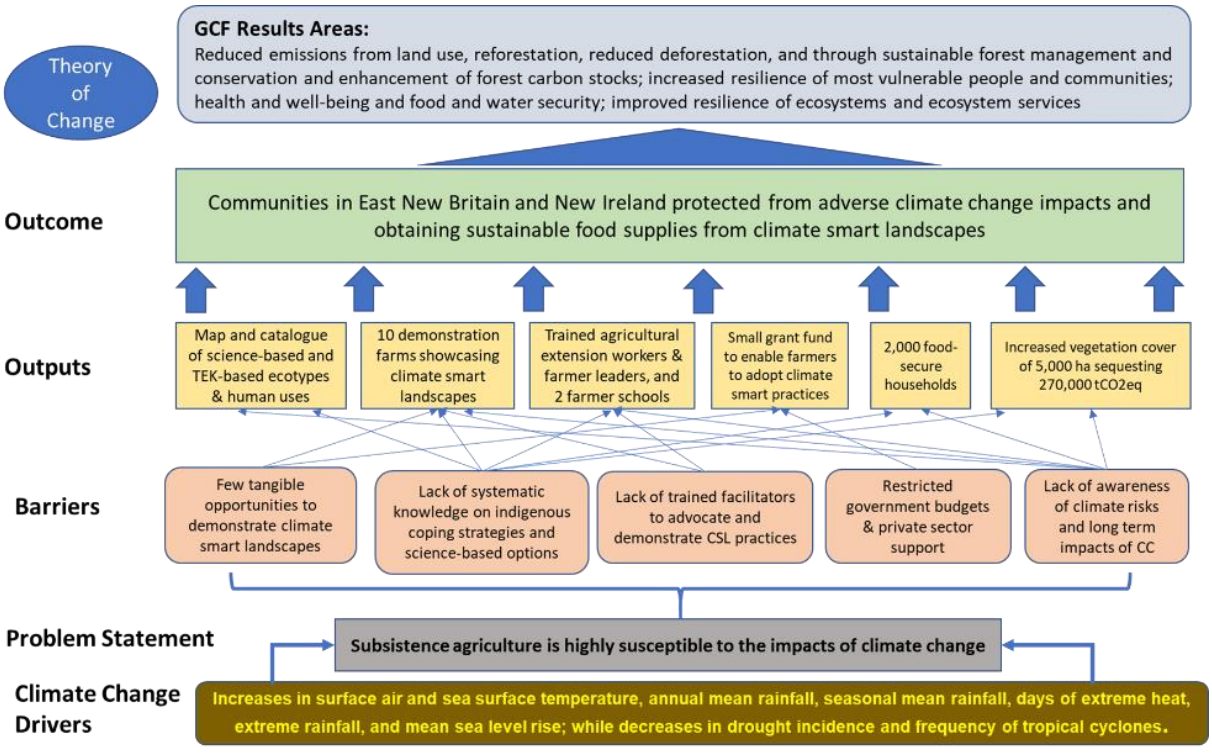

Figure 6: Theory of Change

The project **rationale** is that subsistence agriculture in ENB and NIP is increasingly vulnerable to the impacts of climate change, which acts like a slow onset disaster (Figures 3 and 4). Farmers and resource managers in the area recognize that change is taking place, but they don't always make the link to climate change, as in their perception the weather always changes. Because they are not aware of climate change as the driving force, they also have insufficient knowledge of the climate smart alternatives that would begin to address these changes.

The project responses with **key outputs**, reference Figure 4, include: (i) a clear understanding and map of indigenous knowledge and climate change strategies in the event of extreme weather events; (ii) at least

10 demonstration farms showcasing the essential elements of climate smart landscapes; (iii) at least 100 trained extension workers or farmer leaders who are capable of continuing to disseminate the practices and advantages of climate smart landscapes beyond the life of the project; and (iv) establishment of a small grants window to provide grant funding to farmers willing to adopt some of the climate smart practices demonstrated by the project. The combination of indigenous and western knowledge, farmer-led demonstration, trained facilitators, and farmer access to grant financing will enable multiple landscapes in ENB and NIP to become climate smart, an achievement that can be replicated throughout similar situations in PNG and in other Pacific island countries.

Implementation Arrangements

The project aims at supporting local universities, NGOs and selected community-based organisations by elaborating the concept of CSLs, installing practical results-based CSL demo-farms and pragmatically demonstrating its potential (and limitations) and facilitating decision makers at all levels (e.g., political, agriculture sector, forestry or agroforestry investors, and natural resource managers). The project also anticipates providing more secure and resilient livelihoods for women and girls and explore the unique vulnerabilities of women and girls to climate change, while mobilizing gender specific knowledge and skills to capture potential synergies among activities in the agriculture and forestry sectors. Further, this effort will continue to strengthen existing networks such as those established by the UNRE community outreach and extension programme (Kairak IATP) through Provincial, District and Local Level Government in East New Britain and New Ireland Provinces. Through past networks and partnerships, this will enable the project to extend collaboration particularly to work in consultation with Provincial Climate Change Office and Provincial Climate Change Committees.

As a GCF accredited entity (AE) and the proposed **Implementing Entity** (IE) for the project, SPREP is well placed to perform the required functions of GCF projects. SPREP also provides technical advice and support capacity building for the region's environmental and development priorities. SPREP supports action on climate change in the key areas of adaptation, mitigation, policy and science. As the lead regional coordinating agency on climate change, SPREP supports the engagement with and addresses sustainable development and climate change challenges in the region. SPREP as an accredited entity with the GCF and the Adaptation Fund, and an executing entity with the Global Environment Facility, stands as the ideal organization in the Pacific to deliver new climate finance to the Pacific region in a systematic, strategic, integrated and transparent manner, to build country resilience to climate change and to support low-carbon development pathways outlined in the country National Determined Contributions (NDCs). SPREP also promotes a regionally collaborative approach around the regional frameworks such as the Forum Communiqués, the Framework for Resilience Development in the Pacific (FRDP), and the SAMOA Pathway by working with all Council of Regional Organizations in the Pacific (CROP) agencies and development partners, where appropriate, and to harness each area of comparative advantage for integrated support and coordination in response to the Pacific priority climate change needs.

A suitable executing entity will be identified and engaged during the proposal development phase and this could include national entities provided they meet the GCF and SPREP requirements under the financial management and capacity assessments. Other technical entities such as the Pacific Community (SPC[9]) where there is a dedicated Land Resources Division will also be considered.

The project anticipates the following **financial and operational risks.**

Types of Risks	Mitigating features
Poor compliance with policies and legal requirements	SPREP, as the IE is a regional direct access accredited entity with the GCF and has policies and fiduciary standards aligned to GCF requirements. The implementation and execution of activities will adhere to such requirements.
Funding terms and conditions – ensuring that executing entities involved and any co-investors /co-financing are formally established, have reputable project track records and extensive networks on project execution, to ensure on-ground delivery	Due diligence will be conducted through assessments to be carried out by SPREP prior to formal agreements. For co-investors /co-financing, these will be scoped during the PPF phase with formal agreements to be established during that period.

[9] SPC is a direct access accredited entity with the GCF and is a member of the Council of Regional Organisations in the Pacific (CROP)

Models not suitable, communities don't uptake; social risks; land tenure; change of government; land use plans not adopted etc. etc.	
Country-specific risks such as political risks; trade embargoes; stability of legal and regulatory environment; and natural catastrophes	Country (and site) -specific risks will be treated on as the situation arises. Whether the project activities are directly impacted or not, these will be considered (e.g., to have insurance) to address some of these potential risks.
Financial and cash flow	The PPF phase will have financial and cash flow analyses including stress analyses considering areas such as: market conditions, sensitivity of the asset value and liquidity to economic cycles, debt service financial ratios, etc., that are applicable to the project. These will form part of the funding proposal.
Operating risks in terms of staff /team placements	A project management unit (PMU) will be established preferably at one of the participating provinces through the selected EE with a Task Manager at SPREP, as the IE. The composition of the PMU will be determined at the PPF phase when activities and components are firmed up. There will be short-term experts engaged to address specific tasks.

B.3. Expected project results aligned with the GCF investment criteria (max. 3 pages)

Impact potential

Climate change adaptation is often quite localised. The project anticipates significant impacts as it is addressing climate change at the landscape scale in two provinces in PNG. The demonstration farms in each of the key ecotypes, training local farm leaders to become important future facilitators of climate smart landscapes even after the project is completed, and combining science and traditional, indigenous knowledge will lead to the following fund-level impacts.

- Increased land cover is expected to sequester 270,000 tCO_2eq and improve at least 5,000 hectares.
- The proposed project anticipates 1500 direct and 5000 indirect beneficiaries in total at ENB and NIP, reference Table below.

Province	*Direct Beneficiaries*	*Indirect Beneficiaries*	*% of total population*
East New Britain	1100	3000	1.24
New Ireland	400	2000	0.98
Total	1500	5000	2.22

- .
- Anticipating 200 farmers to benefit from Component 4 Small Grant Funding for Adoption of Climate Smart Alternatives
- Through the climate smart landscape approach, multiple ecosystems and ecosystem services will be improved, additional details on the eco-types and areas will be articulated in the funding proposal.

Paradigm shift

The principal paradigm shift is to start with a more comprehensive and systematic understanding of how indigenous communities in ENB and NIP already undertake various coping strategies for extreme weather events in each landscape zone (or ecotype) and then build on those with an additional layer of science and knowledge regarding effective climate change adaptation measures gleaned from global experience, including lessons learned from completed and ongoing projects. A further paradigm change is to shift the project perspective to a holistic, integrated landscape view, away from the narrow household, farm, or even sector view, as the landscape is made up of a mosaic of land uses, soil types, and vegetation (natural and cultivated). At the landscape level, specific ecotypes will be identified, the valued ecosystem services and functions studied, and viable climate smart alternatives identified for agriculture and agroforestry systems within each ecotype to sustain those ecosystem services despite the continued impact of climate change. The project provides the opportunity to upscale the paradigm shift to a wider audience of farmers in the two provinces.

- Planning

- Innovation
- Finance Availability
- Coalition and Scale up Success.

Sustainable development
The project will contribute to PNG's achievement of multiple sustainable development goals. A primary focus is SDG1 (end poverty in all its forms) as most of the project beneficiaries will be close to or below the poverty line and they will benefit from increased revenue from crop diversification and greater stability of income through increased resilience to climate change impacts and other shocks. Of course, SDG1 is closely linked to SDG2 (end hunger, achieve food security and improved nutrition and promote sustainable agriculture) which are goals at the heart of the project design. The project will equally contribute to SDG15 (protect, restore and promote sustainable use of terrestrial ecosystems, sustainably manage forests, combat desertification, and halt and reverse land degradation and halt biodiversity loss) as these goals aptly describe the landscape approach to be followed by the project. The proposed project is a direct response to SDG13 (take urgent action to combat climate change and its impacts) as the climate smart landscape project design is regarded as the most appropriate climate change action in the selected provinces. The project will also pay attention to SDG5 (achieve gender equality and empower all women and girls) by involving women and girls in the project activities and giving strong preference to female-headed households. Sustainability after the project duration is ensured through the establishment of demonstration farms, trained facilitators, and access to grant finance through a locally vetted finance institution, as well as dissemination of the successful outcomes throughout PNG and other Pacific islands.

Needs of recipients
Two case provinces (East New Britain and New Ireland) will be targeted (coincidental with affiliated local indigenous community groups or organizations) and will focus on disadvantaged, or marginally isolated women and girls in vulnerable rural and peri-urban upland or coastal communities and low-income families. Particular attention will be paid to those groups most dependent on herbs or medicinal plants, traditional-subsistence or commercial agriculture crops, fisheries and have productive or established agroforestry systems. Criteria for study area selection will include communities or villages which are likely to be most susceptible to the impacts of climate change (subject to double exposure). These include coastal communities, informal settlements, and upland to mid-watershed isolated communities.

Country ownership
UNRE-SECC as well as CCDA and CEPA have signed an overarching MOU, that will consolidate government-to-government and institutional affiliations to strengthen coordination in climate compatible development activities regionally and locally. The NDA will facilitate implementation of strategic goals, policies and programmes related to the project development and follow through at the national level. In addition, PNG's Nationally Determined Contribution (NDC) spells out its bold climate action commitments to reduce greenhouse gas emissions and adapt to climate change. The project is fully aligned with PNG's national priorities, including the Climate Change Compatible Development Management Policy (2014), PNG Vision 2050 and PNG Development Strategy Plan 2010-2030. The PNG Country Programme for the GCF refers to the need to protect the country's forested landscapes as well as promotion of sustainable agriculture. Proposal 2.1 in the Country Programme refers to a proposed FAO Simplified Approval Process project "application of sustainable agriculture practices for smallholder farmers in the Southern Region (Western, Central, and Milne Bay Provinces). The proposed project is also closely aligned with the ongoing World Bank PNG Agriculture Commercialization and Diversification Project approved in 2020 and will specifically link to that project for farmer access to grant financing for implementation of climate smart agriculture.

Efficiency and effectiveness
While the project takes a broad, holistic view at the landscape level, specific activities will be at the farm level, ensuring that climate smart agriculture and agroforestry can be implemented as part of the mosaic of land uses across the landscape. This is believed to be the most efficient and effective way to spread climate smart best practices across the whole landscape, as not all landholders will be prepared or willing to implement new climate adapted practices or crops until they have seen successful demonstrations with their own eyes. The approach is also highly efficient as it relies heavily on local farmer leaders to make their land available for the demonstration farms and to become well-trained facilitators in their own and neighbouring communities.

The project will also ensure effectiveness and efficiency by linking with other ongoing projects. For example, instead of establishing a separate financing facility, the linkages and potential collaboration with ADB and World Bank projects that have already established small grants facilities for climate adaptation in PNG will

be explored. The ADB's BRCC project, for example, has allocated $5 million to the small grant facility to finance approved climate adaptation subprojects (requiring a 20% in-kind contribution from the beneficiary communities) and financial administrator fees. This facility will serve as a pilot for the Climate Change and Green Growth Trust Fund, which the Government intends to establish in due course.

The cost effectiveness of the proposed reduction in GHG emissions from the climate smart landscape restoration and rehabilitation interventions will be further examined during the PPF phase, indicating the potential for scaling up such climate mitigation alternatives in other similar landscapes throughout PNG.

B.4. Engagement among the NDA, AE, and/or other relevant stakeholders in the country (max ½ page)

Key stakeholders should be:

- Communities and Women's Groups
- National & Regional Entities – How does this relate to capacity for Component 1 2 3?
- Private Sector
- Banks / Financial Institutions – How relate to Component 4
- Extension Agencies
- Projects
- ?University needs explaining carefully how it can support this

CCDA currently has an MOU with the PNG UNRE through SECC, which includes a commitment to support PNG UNRE in its climate change work. The MOU was entered into effect 20 July 2020 between PNG UNRE-School of Environment and Climate Change (SECC), CCDA and CEPA. The MOU encapsulates commitments by CCDA to support environmental studies programmes and projects, capital infrastructure, research, development funding, as well as the establishment of the SDG 13 Hub within PNG UNRE-SECC, implementation of SDG 13, 30 x 30 roadmap and a REDD+ Academy. CEPA support will ensure environmental studies are developed, so that the latest norms and capacity building are strengthened to better serve CEPA at the national, regional and international level.

CCDA will also provide resources and funding to UNRE-SECC, provide an Endowed Chair within SECC, provide research placements, scholarships, internships for students and training /professional development for public servants including Provincial Climate Change Committee members undergoing programmes at the CGS and SECC with both domestic and partner institutions overseas. CCDA will also provide staff as guest lectures to UNRE-SECC on a needs basis to teach climate change courses and support research-related data collection in climate change adaptation and mitigation. Consultations have been held with farmer networks through East New Britain Women & Youth in Agriculture Cooperative Societies Association (ENBWYiACSA) and through KVRTC under the Papua New Guinea Agriculture Commercialisation and Diversification Project. With NARI Kerevat, an MOU is under development and will be signed once arrangements are complete on behalf of PNG UNRE through SECC.

The key stakeholders in ENB are the UNRE School of Environment and Climate Change (UNRE-SECC), Utumei Secondary School (USS) Kerevat, Ramoaina Technical High School (Duke of York Island) and the ENBWYiACSA. In NIP, the proposed project will work directly with associated communities and schools. At the local government level, the Climate Change, Environment and Forestry Division within the LLG will be fully involved and the project activities will be seamlessly incorporated within their work programmes and projects currently in place. At the national level, the project will liaise with CCDA and CEPA on environmental and climate change protocols, regulatory processes, and contributions to national climate change objectives. All of these stakeholders have been fully engaged in the process of preparing this concept note and have expressed their strong willingness to participate in implementation.

UNRE-SECC, NDA and SPREP as the AE have worked on the development of the concept note including the standard processes (e.g., ESS screening) within SPREP. Additional consultation will be undertaken during the PPF phase, including with ongoing and planned projects, to clarify the final implementation arrangements.

C. Indicative Financing/Cost Information (max. 3 pages)

C.1. Financing by components (max ½ page)

The costs are estimated and rounded-off and presents only the proposed GCF investment. Consultations undertaken during the development of this concept note indicate that there is available co-financing. This and other possible co-financing will be provided and substantiated with formal agreements during the PPF phase.

Component /Output	Indicative cost (USD)	GCF financing		Co-financing		
		Amount (USD)	Financial Instrument	Amount (USD)	Financial Instrument	Name of Institutions
Component 1 – Mapping potential CSLs, Sciences and Indigenous Knowledge on Coping Strategies	?	600,000	Grants	0		
Component 2 – Climate Change Impacts and Response Options	?	400,000	Grants	0		
Component 3 – Demonstration of Climate Smart Landscapes	?	1,200,000	Grants	0		
Component 4 – Small Grant Funding for Adoption of Climate Smart Alternatives	?	10,300,000	Grants	0		
Sub-total Activities costs	*?*	*12,500,000*		0		
Project management fee - 5% (PMU at the EE)	?	625,000		0		
Activities costs and PMU	*?*	*13,125,000*		0		
Accredited Entity fee - 7%	?	920,000		0		
Indicative total cost (USD)		**14,045,000 – Grants**				

C.2. Justification of GCF funding request (max. 1 page)

The main reasons why grant funding will be required under GCF and why government financing will not be adequate are as follows:

(i) The Government of PNG in current circumstances is under extreme fiscal pressure as a result of COVID-19 and has had to cut back on funding in the agriculture sector

(ii) Project funding would not be possible under the current budgets of partners such as the UNRE-SECC, ENBWYiACSA, or the local schools in ENB and NIP. The recent consultations have indicated in-kind support equivalent to an estimated USD42,500 that has been earmarked by these partners for the project – this will be revisited during the proposal development phase.

(iii) GCF grant funding is required because there is presently, very little start-up, implementation, monitoring, evaluation, or follow-through funding within government and partners that will be involved in this project. There is also no locally available grant funding for farmers in the two provinces to implement /upscale climate smart alternatives.

This grant from GCF will be a fundamental landmark to not only initiate on-ground climate change adaptation and mitigation strategies in ENB and NIP, but also for the disadvantaged farmers in the two provinces who without this grant funding would not be able to implement the demonstrated climate smart agricultural and agroforestry alternatives.

C.3. Sustainability and replicability of the project (exit strategy) (max. 1 page)

The project interventions anticipate a range of results such as 1,500 direct beneficiaries and 5,000 indirect beneficiaries, 2,000 households with improve food security, 200 farmers to benefit from the small grants for the adoption of climate smart alternatives, establishment of two farmer schools and 10 demo-farms, 5,000 ha will be improved through the climate smart landscape approach, training of farmers on climate smart alternatives, enhancement of the agricultural extension services, and the documentation of traditional ecological knowledge and mapping these with science for an improved farmer-coping approaches to climate change impacts.

These results will be disseminated through local and country level networks to ensure that the experience and impact of the project is widely shared and maximised. There will also be active support for community-based education through initiatives such as integrated ecosystem-based management training and the co-generation of knowledge, which integrates scientific evaluation with more traditional management systems.

A CSL framework will be developed for adoption by the provincial governments and will be integrated into decision support mechanisms for use towards Participatory Integrated Land Use Planning (ILUP), which has become a central prerequisite for any development intervention that aims at social, ecological and economic sustainability.

The project key stakeholders of provincial governments, UNRE-SECC, ENBWYiACSA, and the local schools and farmers in ENB and NIP will continue to promote CSL approaches post project. This will be further enhanced with the replication of such approaches across PNG which will be possible through collaboration and partnerships built by the project with other initiatives such as those implemented by the government of PNG, ADB and World Bank.

A clear approach to make the interventions sustainable and up scalable across PNG should be presented. This should focus on building capacity; developing solid models (that have financial gains); and developing financial mechanisms. More work should be undertaken to discuss potential finance through PNG's Trust Fund that is being developed but hasn't been mentioned yet.

D. Supporting documents submitted (OPTIONAL)

☐ Map indicating the location of the project/programme

☐ Economic and financial model with key assumptions and potential stressed scenarios

☐ Pre-feasibility study

☐ Evaluation report of previous project

☒ Results of environmental and social risk screening

Self-awareness check boxes

Are you aware that the full Funding Proposal and Annexes will require these documents? Yes ☒ No ☐

- Feasibility Study
- Environmental and social impact assessment or environmental and social management framework
- Stakeholder consultations at national and project level implementation including with indigenous people if relevant
- Gender assessment and action plan
- Operations and maintenance plan if relevant
- Loan or grant operation manual as appropriate
- Co-financing commitment letters

Are you aware that a funding proposal from an accredited entity without a signed AMA will be reviewed but not sent to the Board for consideration? Yes ☒ No ☐