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# **Project Brief**

## ***Origin***

The project has been formulated through pre-project CFM-PPD-006-10 which aimed to design a model community-based land ownership mapping and forest resource assessment system that supports CFM schemes within four pilot areas of PNG. The project proposal is the result of a series of project design activities that involved the (i) selection of demonstration sites for the full-project with landowner groups and local CFM partners in place, (ii) collection of baseline data at each demonstration site, and (iii) preparation of technical and functional specifications for the community-based data collection system and the online platform.

## ***Present Situation***

**PNG is the largest country in the Pacific Islands Region, with a land area of around 463,000 km<sup>2</sup>. The landscape comprises islands, lowlands and highlands ranging from sea level to over 4,000 metres. PNG has a very diverse natural environment due to large variations in landform, rainfall and altitude. The majority of land is held under customary ownership with only 27% occupied by people. PNG's social context is equally diverse, with over 800 tribal groups and languages. Important land-use decisions are usually made at the clan level.**

**In this context, the PNG Forest Authority has selected 6 pilot areas spread across the 4 regions of PNG, together with 6 local CFM partners. PRA guidelines and tools were assembled to assist local partners collect a set of disaggregated data on forest-livelihood interactions at each sample site.** The baseline data collection activities have revealed a diverse project context with some significant similarities. People living in the pilot areas are generally disadvantaged relative to those living in other parts of the country with regards to household income, local qualifications, and access to markets and services. On the other hand, each local community appears well organized and self-reliant, with large areas of forest owned and managed by local landowner groups. Households are generally well-focused on feeding, housing and educating their family, as well as contributing to their various clan and village obligations. In this environment, the project's local CFM partners provide an important link with the outside world; opening up new opportunities for enhancing rural livelihoods for present and future generations. Whilst local CFM partner resources and development strategies are quite varied, their overall objectives are similar, with head offices in the USA, Port Moresby and Walindi. Project entry-points relate to enhancing landowner awareness and technical capacity through strengthening external structures and processes, as well as local resources and capabilities.

## ***Problems to be Addressed***

**The key problem to be addressed by the project is:**

- **Landowners have limited technical capacity to participate effectively in community forestry schemes.**

**The pre-project identified the following direct causes of the project's key problem:**

- **Limited institutional capacity to formalize landownership at all levels.**
- **Limited landowner involvement in community forestry programs.**
- **Poor community forest management practices and often high community expectations.**
- **Inadequate policies, strategies and plans for promoting and supporting CFM.**

## ***Project Objectives***

The project has the following Development Objective which will be measured with reference to increased economic opportunities and sustainable forest management practices, as well as more equitable and transparent sharing of community forestry benefits.

- **CFM schemes in PNG are demonstrating sustainable forest management practices, as well as enhanced community livelihoods and social stability.**

The project has the following Specific Objective which will be measured with reference to improved forest management practices and resource security, increased landowner participation in feasible CFM schemes, and formalised landownership arrangements as and when required by specific clan groups.

- **A model community-based land ownership mapping and forest resource assessment system is established that supports CFM schemes (including PES and REDD+).**

## ***Project Benefits***

The project has four principle beneficiaries:

- **Selected landowner groups** will participate in the design, testing, implementation and monitoring of data collection tools with support from their local CFM partners, as well as ongoing training and awareness services; leading to: (i) increased understanding about the goods and services their forests provide, (ii) increased capacity to participate in feasible CFM schemes, (iii) improved forest management practices and security over their resources in the long-term, and (iv) formalized landownership arrangements as and when required by specific clan groups.
- **Selected local CFM partners** will participate in the design, testing, implementation and monitoring of the CFM data management system with their pilot landowner groups; leading to: (i) improved forest management practices and long-term resource security in their pilot areas, and (ii) increased access to CFM tools, services and opportunities.
- **The PNG Forest Authority** will supervise the establishment of the CFM data management system, operate the national web-based platform, and coordinate the development of policy and planning guidelines for CFM; leading to: (i) improved coordination with other government agencies responsible for CFM activities, and (ii) increased information flows from the forest that will support policy implementation, including forest planning processes.
- **Registered private sector markets for environmental goods and services** will participate in the design of the CFM data management system; leading to improved access to information and networks on landownership and forest resources in PNG.

## ***Project Implementation***

Project activities will be managed by the PNG Forest Authority at the national level; working in collaboration with 6 CFM partners and their pilot landowner groups at the local level. The following cross-cutting strategies will shape the technical components of the project:

- **Participatory Geographic Information Systems (PGIS)** will be used to promote community empowerment through involving local people in gathering data as well as determining the variables that are to be measured, mapped and interpreted. Smart phone and tablet data collection devices will be used with an Android operating system and open source software, together with rugged casings and solar chargers / battery packs.

- **Two-way communication** will foster knowledge sharing between pilot communities, local CFM partners and key stakeholders during the design, implementation, monitoring and evaluation phases. Data collection software will be designed with reference to language, perceptions and priorities of the communities involved in the project. Some data collection requirements, such as those associated with measuring forest carbon stocks, will be prescribed at national and international levels. The ultimate aim being to bridge the gap between new technology and traditional spatial knowledge through the online platform mechanism which will be carefully integrated with existing national forest management systems.
- **Capacity building** is a core strategy for promoting sustainability. Participating landowner groups will learn more about the National Land Development Program, CFM and REDD+. They will also improve their skills to effectively engage in these endeavours. Through PGIS, the project will help landowner groups to become as autonomous as possible in terms of their level of community engagement. Capacity building will also take place at provincial and national levels, since the data management platform will be designed to enable landowner groups, local CFM partners and key stakeholders to achieve shared resource management goals.

### ***Assumptions, Risks and Sustainability***

The project's logical framework highlights the assumption that participating landowner groups, local CFM partners, and key stakeholders will be willing and able to collaborate with the project. Measures have been identified that will encourage project partners to actively participate in project activities, so as to ensure the stated assumptions remain valid.

The "model community-based land ownership mapping and forest resource assessment system" will be managed by the PNG Forest Authority at the national level; working in collaboration with the project's selected CFM partners at the local level. This arrangement has the potential for ongoing replication in the future. The project's sustainability strategy focused on building the capacity of project partners, developing appropriate technology for local, national and international users, and encouraging active participation of key stakeholders during the development work.

### ***Project Budget***

The Project Proposal requests **USD 606,313** from the ITTO. This figure includes the re-imbursment of USD 122,040 in ITTO Pre-project costs. Around 40% of the ITTO budget is allocated to travel costs so as to ensure the project's pilot communities, local partners and key stakeholders participate effectively in the development of PNG's "model community-based land ownership mapping and forest resource assessment system".

The PNGFA will contribute around **USD 62,000** as well as make significant in-kind contributions through the Authority's national, regional and provincial forestry offices (e.g. personnel, vehicles, office utilities and materials). The 6 local CFM partners will also make similar in kind contributions to activities within the project pilot areas.

## **List of Abbreviations and Acronyms**

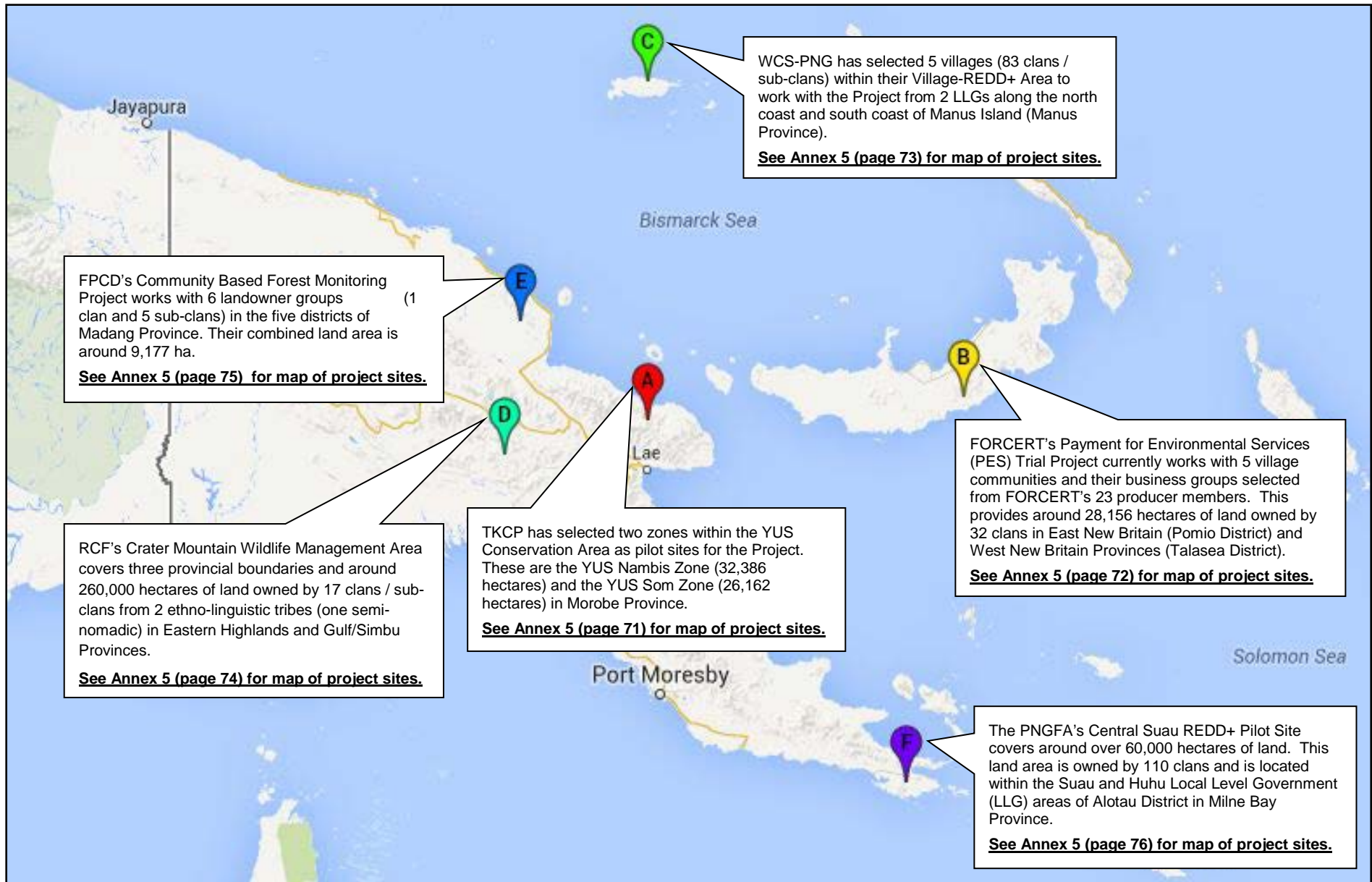
ACIAR	Australian Centre for International Agricultural Research
ADB	Asian Development Bank
AR	Afforestation and Reforestation
AusAID	Australian Agency for International Development
CA	Conservation Area
CBFM	Community Based Forest Monitoring
CDM	Clean Development Mechanism
CEP	Conservation Education Program
<b><u>CEPA</u></b>	<b><u>Conservation, Environment and Protection Authority</u></b>
CFM	Community Forest Management
CFME	Community Forest Management Enterprise
CMWMA	Crate Mountain Wildlife Management Area
CO	Community Organisation
DFID	Department for International Development
EU	European Union
FAO	Food and Agriculture Organisation
FORCERT	Forest Management and Product Certification Service
FSC	Forest Stewardship Council
GIS	Geographic Information System
GIZ	German Agency for International Development
GPS	Global Positioning System
ILG	Incorporated Land Group
ITTO	International Tropical Timber Organisation
JICA	Japan International Cooperation Agency
KML	Keyhole Markup Language
LLG	Local Level Government
MBPA	Milne Bay Provincial Administration
MRV	Monitoring, Reporting and Verification
NFS	National Forest Service
NLDP	National Land Development Program
NRMP	Natural Resource Management Program
<b><u>PNGCCDA</u></b>	<b><u>Papua New Guinea Climate Change Development Authority</u></b>
PD	Project Document
PES	Payment for Environmental (or Ecological) Services
PGIS	Participatory Geographic Information System
PNG	Papua New Guinea
PNGFA	Papua New Guinea Forest Authority
PPD	Pre-project Document
PRA	Participatory Rural Appraisal
RCF	Research and Conservation Foundation
REDD	Reduced Emissions from Deforestation and Degradation
TKCP	Tree Kangaroo Conservation Program
UNDP	United Nations Development Program
UNFCCC	United Nations Framework Convention on Climate Change
USD	United States Dollar
WCS	Wildlife Conservation Society
WMA	Wildlife Management Area
YUS	Yopno-Uruwa-Som

## Map of Project Area



Figure 1: Map showing the location of Papua New Guinea (created in Google Maps)





**Figure 2:** Map showing the location of the project's pilot areas selected by the 6 local CFM partners (created in Google Maps)

## **Part 1: Project Context**

### **1.1 Origin**

The project is a key outcome of the PNG Forest Authority's *Forestry and Climate Change Framework for Action (2009-2015)* which highlights the need for a multi-stakeholder approach to CFM programming that engages customary landowners at the local level and enhances the capacity of government institutions at the national level. Whilst customary landowners are generally well informed about the quality of their forests, they are often excluded from forest resource assessment activities, forest management decision-making processes, and associated development opportunities.

The project has been formulated through the pre-project CFM-PPD-006-10 **titled: *Enabling customary landowners to participate effectively in CFM and REDD schemes within four pilot areas of PNG. The pre-project aimed to design a "community-based data collection system with online platform for managing and sharing spatial data and other information related to customary landownership and forest quality"***. The PNG Forest Authority **has** executed the pre-project through a project management team with technical support from community development and community technology specialists.

Pre-project activities involved:

#### **1. The selection of demonstration sites for the full-project with landowner groups and local CFM partners in place.**

The project coordinator and consultants first prepared an assessment form to assist project management team members choose appropriate local CFM partners to collaborate with the pre-project.

The PNG Forest Authority then sent out formal letters to 23 potential local partners from the government, non-government and private sectors; inviting each organization to apply to become a local partner to the project. The project coordinator and consultants then visited each short-listed partner to discuss the selection of pilot site(s) and landowner groups for the project to work with. The 6 selected local CFM partners then prepared their pilot site maps with landowner group boundaries. Table 4 (page 12) introduces the proposed pilot areas for the full-project.

#### **2. The collection of baseline data at each demonstration site.**

The project coordinator and consultants first assembled PRA guidelines to assist local CFM partners collect a set of disaggregated data on forest-livelihood interactions at each selected site, with reference to 5 field research tools: (i) village profile form; (ii) community sketch map, (iii) Venn institutional diagram, (iv) group discussion sheets, and (v) seasonal calendar.

The proposed context for the full-project is diverse; spanning the Highlands, Islands, Momase and Southern Regions of Papua New Guinea. Not surprisingly, the baseline data revealed a wide range of: (i) resources that are available for people to use; (ii) structures and processes that either help or restrict people's ability to use these resources; (iii) strategies that are now being used to realize people's short and long-term livelihood objectives. The study concluded that the full-project should build on shared strengths, address similar weaknesses, and learn from the diverse skills and experiences of local project partners and target communities. Figure 4 (page 30) provides the study's overall assessment of pilot community strengths and weaknesses. Table 14 (page 31) presents the study's proposed entry points for the full-project proposal.

### **3. The preparation of technical and functional specifications for the community-based data collection system and the online platform.**

A literature review was first undertaken to help contextualize the project amongst broader forest conservation initiatives and resources that could improve project implementation or expose project partners to CFM / REDD+ components that they may not yet address. Over 150 articles, reports and guides that address CFM and REDD+ were gathered, documented and stored in the project's *DropBox* folder to enable partners to easily identify materials relevant to their work. The annotated bibliography summarizes 38 references that were deemed central to the project: comprising the following sub-topics: (i) community engagement, (ii) community forest management, (iii) community forest monitoring / monitoring, reporting and verification, (iv) REDD+ in PNG, (v) reference levels in PNG, (vi) payments for REDD and other ecosystem services, (vii) natural resource conflict management, and (viii) guidance materials. A web-based organization review then identified government and non-governmental institutions as well as multi-institution initiatives that address CFM, REDD+ or other aspects of forest conservation. A summary of each organization or initiative was documented and stored in the project's *DropBox* folder together with a contact list to foster an inclusive dialogue for project development, and at a later stage, project expansion.

The research work was completed through direct consultations with project partners and other stakeholders. A web- and paper-based questionnaire was first disseminated to gather more up-to-date information regarding existing CFM / REDD+ activities and to assess the technical needs and resources associated with these activities. The questionnaire covered the following topics: (i) programmatic and geographic scope of forest management projects, (ii) software used for data collection and analysis, (iii) existing datasets related to CFM and REDD, (iv) data needs, (v) willingness to share data, and (vi) preferred data formats. Semi-structured interviews were then conducted with representatives from local CFM partners and other stakeholders in the Eastern Highlands, Madang, Manus, Milne Bay, Morobe and West New Britain provinces, and the National Capital District. The first part of the interviews helped form a more complete sustainable livelihoods profile for the landowner groups supported by each institution. The second part of the interviews shifted focus from the participating landowner groups to the partner organizations, and the transforming structures and processes introduced through their work, their strategies for working with communities, and the assets at their disposal. Focus group sessions were also conducted during the project planning workshop in Port Moresby to refine or develop the (i) project scope, (ii) level of community engagement, and (iii) stakeholder responsibilities for the land tenure and forest data management system developed through the project.

The proposed technical and functional specifications for the community-based data collection system and the online platform comprise are a result of the consultative, step-by-step process described above. These specifications are shaped by 3 important cross-cutting strategies: (i) participatory GIS, (ii) two-way communication, and (iii) capacity building for long-term sustainability. Section 3.2 (pages 40-43) presents the proposed implementation approaches and methods for the full-project proposal.

#### **Pre-project outcomes have laid the following foundations for the full-project:**

- **Six pilot areas in the 4 regions of PNG have been selected with customary landowner groups and local CFM partners in place.**
- **A local forest resource assessment and land ownership mapping system has been designed for landowners and landowner groups.**
- **An interactive online platform has been designed for managing forest and land tenure data and facilitating collaboration between PNGFA, forest communities, NGOs and investors.**
- **A process for developing PNG's policy and planning guidelines for CFM has been agreed.**

## 1.2 Relevance

### 1.2.1 Conformity with ITTO's Objectives and Priorities

The present project proposal is compliant with the objectives of the International Tropical Timber Agency (ITTA) of 2006, to promote the expansion and diversification in international trade of tropical timber originating from sustainably and legally managed forest operations. More specifically, the project will assist PNG in meeting the following objectives:

- By facilitating participatory management of forest resources as well as community-based mapping and monitoring of overall forest activities, the project will *(1c) contribute to sustainable development and to poverty alleviation* as well as *(1n) strengthen the capacity of Papua New Guinea to improve forest law enforcement and governance, and address illegal logging and related trade in tropical timber.*
- In view of the need for capacity building and institutional support both at the PNGFA as well as at the grassroots level, the project will also *(1p) promote access to, and transfer of technologies and technical cooperation to implement the objectives of the ITTA;*

In terms of the Community Forest Management and Enterprise (CFME) thematic program, the project is compliant with the overall objectives as well as with the priorities of initial call for proposals to *(A) strengthen community-level capacity in sustainable forest management and adding value to the forest resource* through *(1e) forest management planning and related resource assessments, surveys and studies, (1h) basic and intermediate technology transfer* and *(1i) the strengthening of management and information systems.* The project will also address *(C) knowledge management issues* by *(6) supporting knowledge generation on community forestry and CFEs, including forest uses and management methods.* Tables 1 and 2 show how the project will make an effective contribution towards the scope and objectives of the CFME Thematic Program.

**Table 1:** ITTO CFME scope and the project's contribution.

CFME Scope	Project Contribution
Creation and strengthening of community forest management and enterprises	The project will strengthen the capacity of selected landowner groups in six pilot areas to undertake land ownership mapping and forest resource assessment activities through the development of appropriate tools and support services. The project will also strengthen the capacity of the PNG Forest Authority to acquire and utilise forest resource data to support CFM schemes in PNG, such as PES and REDD+.

**Table 2:** ITTO CFME specific objectives and the project's contribution.

CFME Specific Objective	Project Contribution
a. Strengthen community level capacity in SFM and adding value to the forest resource;	The project contributes towards strengthening community level capacity to participate effectively in CFM schemes through developing landownership mapping and forest resource assessment tools and support services
b. Strengthen country capacity and enabling conditions for community forest management and enterprises;	The project contributes towards strengthening the capacity of the PNG Forest Authority to acquire and utilise land ownership and forest resource data at all levels.
c. Strengthen knowledge management at all levels.	The project contributes towards strengthening CFM networks and information exchange mechanisms at local, national and international levels.

## 1.2.2 Relevance to the Submitting Country's Policies

The project is well-aligned with national government priorities and strategies including the Mid Term Development Strategy (2005-2010), the National Forest Policy (1991), the draft National Eco Forestry Policy (2004) and the PNGFA Corporate Plan's (2007-2012). Table 3 (below) shows how the project overall is guided by PNG's forestry and climate change policies and strategies. This ITTO funded pre-project has used a thoroughly participatory approach to fully understand these challenges and to develop a strategy that address them.

PNG's Forestry and Climate Change Framework for Action **(2009-2015)** (refer Table 3 below) emphasizes the need for a multi-stakeholder approach to CFM (including PES and REDD+) that engages customary landowners at the local level and enhances the capacity of government institutions at the national level. PNG's indigenous forest communities possess a wealth of knowledge about the quality of their forests, but many have historically been excluded from forest resource assessment activities, forest management decision-making processes, and associated development opportunities such as PES and REDD+. The pre-project has used a participatory approach to fully understand these challenges and to develop a strategy that addresses them. The full-project will extend this collaborative planning process to participating landowner groups to develop a model community-based land ownership mapping and forest resource assessment system that supports CFM (including PES and REDD+) schemes in PNG. The PNG Forest Authority, selected local CFM partners and pilot landowner groups - through participatory GIS, two-way communication and capacity building - will set a new standard for improved forest management and land use decision making. The strengths of this model will guide and inform future CFM policy developments in PNG.

**Table 3:** Relevant national forest policy guidelines.

Policy Document	Relevant Policies and Strategies
Draft National Eco Forestry Policy (2004)	Information Collection and Management: <ul style="list-style-type: none"> <li>• An Eco Forestry Management and Information System shall be designed and implemented</li> <li>• The Eco Forestry Management and Information System shall be used as a monitoring and evaluation system</li> </ul>
	Community-Based Management of Natural Forests: <ul style="list-style-type: none"> <li>• The PNGFA in consultation with selected partners shall define an approach that empowers communities in decision making and planning processes that deal with eco forestry activities.</li> <li>• The PNGFA shall delegate and outsource the extension function to local service providers.</li> </ul>
	Training and Awareness: <ul style="list-style-type: none"> <li>• The PNGFA shall identify training needs for eco forestry...</li> <li>• The PNGFA shall identify awareness needs in eco forestry in consultation with other stakeholders...</li> <li>• The PNGFA shall support partners in raising awareness about eco forestry options...</li> </ul>
National Forest Policy (1991)	Resource Ownership: <ul style="list-style-type: none"> <li>• The rights of the customary owners of a forest resource shall be fully recognized and respected in all transactions affecting the resource.</li> </ul>
	Participation: <ul style="list-style-type: none"> <li>• Meaningful participation and involvement in the forest and related industries for nationally owned enterprises and Papua New Guinean citizens, especially resource owners, will be promoted and encouraged at all level</li> </ul>

**Table 3:** Relevant national forest policy guidelines (continued).

Policy Document	Relevant Policies and Strategies
Forestry and Climate Change Framework for Action (2009-2015)	<p>Contains 17 relevant Outcomes (6 Principles):</p> <ul style="list-style-type: none"> <li>• 1.2: Landowners be empowered to participate and own REDD, REDD+ and AR CDM projects.</li> <li>• 1.3: Efforts be made to ensure that forest dependent people (rural communities) are not marginalized.</li> <li>• 2.3: Highly vulnerable forestry, priority areas, identified through site-specific baseline data, collection and interpretation and adaptive actions developed.</li> <li>• 3.1: Demonstration projects such as REDD or REDD+ and other initiatives coordinated and developed in the production forest areas with international partners and other Government agencies</li> <li>• 3.8: Bundling Approach established and implemented. (Bundling approach means facilitating and allowing multiple of smaller projects activities managed and amalgamated to form a single CDM project.</li> <li>• 3.9: Baseline data established for any climate change related activities under REDD and REDD-plus</li> <li>• 5.1: REDD or REDD-plus strategy developed and demonstrated.</li> <li>• 6.1: Strengthen human capacity to monitor and assess environmental, social and economic risks and effects of climate change through ARCDM and REDD initiatives.</li> <li>• 6.2: Strengthen human capacity to identify, analyse and implement cost effective adaptation and mitigation response measures.</li> <li>• 6.3: A pool of informed resource persons conversant with development of practical, steps in adaptation tools and methods created.</li> <li>• 6.4: Strengthen human capacity to identify and integrated scientific and traditional knowledge into adaptation and mitigation practices.</li> <li>• 6.5: Strengthen negotiation and advocacy skills of government and non-government organizations to effectively, engage in the international negotiations for adaptation and mitigation practices.</li> <li>• 7.1: Strengthen and established existing and emerging international partnerships (e.g. SPC, AusAid, FAO, ITTO, EU, ADB, JICA, UNDP, World Bank) with PNGFA on Climate Change.</li> <li>• 7.2: Funding mechanisms related to climate change instruments optimized by PNGFA.</li> <li>• 7.4: Enhanced partnerships to implement demonstration projects in the areas of REDD or REDD+ and other related initiatives.</li> <li>• 7.5: Increased participation by landowners and other civil society groups (NGO's) venturing into the ARCDM and REDD projects.</li> <li>• 7.6: Strengthen coordination of climate change and related issues.</li> </ul>
PNG's National Climate <b>Compatible</b> Development <b>Management</b> Policy	<p>Contains 2 relevant Strategies from Thematic Area 4 (Mitigation):</p> <ul style="list-style-type: none"> <li>• 1: Encourage investments in natural capital such as agriculture, forestry, fisheries, water and mineral resources that promotes sustainable development and respect for community rights and livelihood whilst safeguarding national interest.</li> <li>• 4: Coordinate the establishment of a nation-wide sustainable land use planning, starting bottom up at community - Ward-LLG level, to District-Provincial level and consolidated to the National level, whilst ensuring that all relevant Government Departments collaborate on this land use planning exercise, with the aim of considering climate change resilience and maximizing payment for ecosystem services under REDD+ management as a land use priority for the country.</li> </ul>

## 1.3 Target Area

### 1.3.1 Geographical Location

PNG is the largest country in the Pacific Islands Region, with a land area of around 463,000 km<sup>2</sup>. The landscape comprises islands, lowlands and highlands ranging from sea level to over 4,000 metres. The PNG Forest Authority invited 23 potential local partners from the government, non-government and private sectors to apply to become a local CFM partner to the project. The project management team then considered each application using the project's organizational assessment form and scoring sheet, together with the PNG Forest Authority's criteria for selection of REDD+ demonstration sites. The project coordinator and consultants next visited each short-listed partner to discuss the identification of pilot site(s) and landowner groups, leading to the final selection of 6 local CFM partners spread across the four regions of PNG (i.e. Highlands, Islands, Momase and Southern).

Figure 2 (page 6) shows the geographic location of each selected local CFM partner. Table 4 (below) presents each local partner alongside their selected pilot areas.

**Table 4:** Local CFM partners with their selected pilot sites.

Local Partner	Pilot Site
Foundation for People and Community Development (FPCD)	FPCD's Community Based Forest Monitoring Project works with 6 landowner groups (1 clan and 5 sub-clans) in the five districts of Madang Province. Their combined land area is around 9,177 ha. The Pre-project's baseline data was collected with the Awane Sub-clan (Rai Coast District) and the Yate Sub-clan (Usino Bundi District).
Research and Conservation Foundation (RCF)	RCF's Crater Mountain Wildlife Management Area covers three provincial boundaries and around 260,000 hectares of land owned by 17 clans / sub-clans from 2 ethno-linguistic tribes (one semi-nomadic) in Eastern Highlands and Gulf/Simbu Provinces. The Pre-project's baseline data was collected from Mengino and Abigarama villages (Eastern Highlands) and Haia village (Gulf/Simbu).
Milne Bay Provincial Administration (MBPA) with support from PNG Forest Authority (PNGFA)	The PNGFA's Central Suau REDD+ Pilot Site covers around over 60,000 hectares of land. This land area is owned by 110 clans and is located within the Suau and Huhu Local Level Government (LLG) areas of Alotau District in Milne Bay Province. The Pre-project's baseline data was collected from the 23 Wards located within the pilot site.
FORCERT (Forest Management and Product Certification Service)	FORCERT's Payment for Environmental Services (PES) Trial Project currently works with 5 village communities and their business groups selected from FORCERT's 23 producer members. This provides around 28,156 hectares of land owned by 32 clans in East New Britain (Pomio District) and West New Britain Provinces (Talasea District). The Pre-project's baseline data was collected from each village.
Tree Kangaroo Conservation Program (TKCP)	TKCP has selected two zones within the YUS Conservation Area as pilot sites for the Project. These are the YUS Nambis Zone (32,386 hectares) and the YUS Som Zone (26,162 hectares) in Morobe Province. The Pre-project's baseline data was collected from Wards 5 and 6 (Som Zone, Kabwum District) and Wards 10, 11 and 18 (Nambis Zone, Tewai Siassi District).
Wildlife Conservation Society (WCS)	WCS-PNG has selected 5 villages (83 clans / sub-clans) within the Village-REDD+ Area to work with the Project from 2 LLGs along the north coast and south coast of Manus Island (Manus Province). The Pre-project's baseline data was collected from Tulu 2 in the north.

### 1.3.2 Social, Cultural, Economic and Environmental Aspects

PNG has a very diverse natural environment due to large variations in landform, rainfall and altitude. It is also tectonically and volcanically active. These conditions often limit rural development, with over 50% of the land area being mountainous, and 20% being seasonally or permanently flooded. As a result, around 70% of land has very low to low potential for most food and cash crops, and people's ability to access markets and services is also often restricted (Hanson et al., 2001). The majority of land is held under customary ownership with only 27% occupied by people. PNG's social context is equally diverse, with over 800 tribal groups and languages. Each tribe comprises a number of distinct clans, with each clan sharing a common ancestor (either male or female). Important land-use decisions are usually made at the clan level. PNG has a population of around 7.8 million people with an annual growth rate of around 3%. There are three levels of government, namely: national, provincial and local.

PRA guidelines were assembled to assist local partners collect a set of disaggregated data on forest-livelihood interactions at each selected site with reference to 5 study tools: (i) village profile form; (ii) community sketch map, (iii) Venn institutional diagram, (iv) group discussion sheets, and (v) seasonal calendar. People living in the pilot areas are generally disadvantaged relative to those living in other parts of the country with regards to household income, local qualifications, and access to markets and government services. On the other hand, each local community appears well organized and self-reliant, with large areas of forest owned and managed by local clan groups (both patri- and matrilineal arrangements). Households are generally well-focused on feeding, housing and educating their family, as well as contributing to their various clan and village obligations. In this environment, the project's local partners provide an important link with the outside world; opening up new opportunities for enhancing rural livelihoods. These local partners are also diverse, with head offices in the USA, Port Moresby and Walindi. Whilst local partner resources and development strategies are quite varied, their overall objectives are similar. Tables 5-10 (below) provide a summary of the baseline data collected within each pilot site, with reference to the:

- **Resources** that are available for people to use (both strengths and weaknesses);
- **Structures and processes** that either help or restrict people's ability to use these resources (both institutional and cultural influences);
- **Strategies** that are now being used to realize people's short and long-term livelihood objectives (both short- and long-term).

**Table 5:** Social, cultural, economic and environmental context at FPCD's 2 sample villages in Madang Province.

<b>Local Partner</b>	Foundation for People and Community Development (FPCD)
<b>Target Community</b>	Awane Sub-clan (Rai Coast District)
<p><b>Financial resources:</b> The members of Awane Sub-clan have 3 main sources of income, namely (i) timber sales from community sawmill (60%), (ii) cocoa (30%) and (iii) garden produce (10%). There is no reliable access to credit.</p> <p><b>Human resources:</b> The Awane Sub-clan live in Erima village (population 300). Their population is around 26 (46% adults and 4 households). This includes one family from the inland Wanuma Tribe. One person has completed secondary education and another operates a trade store. The community sawmill operates on a part-time basis.</p> <p><b>Natural resources:</b> The Awane Sub-clan is responsible for around 650 ha of land, comprising natural (i) forest (73%), (ii) managed forest (18%) and (iii) agricultural land (9%).</p>	



**Table 5:** Social, cultural, economic and environmental context at FPCD's 2 sample villages in Madang Province (continued).


<p><b>Physical resources:</b> Local markets are accessed on foot (average 0.5 hours) and the district/provincial markets and services by bus (average 0.5 hours). There is no reliable mobile network, and each household is responsible for securing its own power and water supply. One household has a genset.</p>	
<p><b>External structures and processes:</b> FPCD has been working with the Awane Sub-clan since 2004. Extension activities are provided by FPCD's field staff in Madang (2 foresters and 1 driver). Its overall Community Forest Management Program (CFMP) has 3 activity phases, namely: (i) Community Entry, (ii) Training and Implementation, and (iii) Sustainability. The Awane Sub-clan is currently at the training and implementation stage.</p>	
<p><b>Internal structures and processes:</b> Internal structures and decision-making processes fall into 3 categories, namely: (i) Clan / sub-clan (patrilineal), (ii) Local Government, (iii) Church.</p>	
<p><b>Short-term strategies:</b> Yate clan members are generally able to meet their priority needs through subsistence activities (e.g. gardening, hunting, collecting firewood and wild fowl eggs), market sales (e.g. garden food), cash-cropping (cocoa), and FSC timber sales (local and international). Market access for their timber is sometimes restricting.</p>	
<p><b>Long-term strategies:</b> The Awane Sub-clan is keen to improve their standard of living through increased capacity to generate income from CFM.</p>	
<b>Target Community</b>	Yate Sub-clan (Usino Bundi District)
<p><b>Financial resources:</b> The members of Yate Sub-clan have 4 main sources of income, namely: (i) garden produce (60%), (ii) non-timber forest products such as wildfowl eggs and meat (25%), (iii) timber sales (10%) and cocoa (5%). The Catholic Mission provides some informal credit services.</p>	
<p><b>Human resources:</b> The Yate Sub-clan live in Mom 2 village. Their current population is around 57 (51% adults and 9 households). Education and employment levels are moderate. The community sawmill operates on a part-time basis.</p>	
<p><b>Natural resources:</b> The Yate Sub-clan is responsible for around 560 ha of land, comprising (i) managed forest (73%), (ii) natural forest (13%), (iii) agricultural (12%), and (iv) degraded grassland / scrub (2%).</p>	
<p><b>Physical resources:</b> Local markets are accessed on foot (average 0.25 hours), district markets by vehicle (average 0.5 hours), and provincial markets by vehicle (average 3.5 hours). People also have access to a reliable mobile network, and each household is responsible for securing its own power and water supply. One household has a genset.</p>	
<p><b>External structures and processes:</b> FPCD has been working with the Yate Sub-clan since 2006. Extension activities are provided by FPCD's field staff in Madang (2 foresters and 1 driver). Its overall Certified Community Forestry Program has 3 activity phases, namely: (i) Community Entry, (ii) Training and Implementation, and (iii) Sustainability. The Yate Sub-clan is currently at the training and implementation stage.</p>	
<p><b>Internal structures and processes:</b> Internal structures and decision-making processes fall into 3 categories: (i) Clan / sub-clan (patrilineal), (ii) Local Government and (iii) Church. Mom 2 village includes migrants from other areas, mainly Bundi (30%); Simbu (10%) and Goroka (5%).</p>	
<p><b>Short-term strategies:</b> Yate clan members are generally able to meet their priority needs through subsistence activities (e.g. gardening, hunting, collecting firewood and nuts), market sales (e.g. garden food and NTFPs), cash-cropping (cocoa), and timber sales (local and international markets).</p>	
<p><b>Long-term strategies:</b> The Yate Sub-clan is keen to develop their community forestry enterprise. Whilst FPCD provides adequate technical support, they would like to increase their income from CFM activities. They are also keen to be seen as a role model for surrounding clans, as well as other members of the Goni Clan. They are concerned that landowners may have unexpectedly high expectations about what CFM / REDD+ can deliver (especially in the short-term), and believe community awareness and empowerment to be key ingredients of any community development initiative.</p>	



**Table 6:** Social, cultural, economic and environmental context at RCF's 3 sample villages in Eastern Highlands and Gulf/Simbu Provinces.

<b>Local Partner</b>	Research and Conservation Foundation (RCF)
<b>Pilot Community</b>	Mengino and Abigarama villages (Lufa District, Eastern Highlands Province)
<p><b>Financial resources:</b> The residents of Mengino and Abigarama villages have 6 main sources of income, namely: (i) contract labour to oil/gas exploration (35%), (ii) coffee (35%), (iii) vanilla and peanuts (20%) and scientific-based tourism with support from RCF (10%). Around 50% of households have access to informal credit.</p> <p><b>Human resources:</b> Mengino and Abigarama villages were established in the early 1960s. The current population is around 730 (64% adults and 143 households) with a growth rate of around 2.4% per annum. Over the last 10 years, in-migration has been equal to out-migration. Education and employment levels are low. The Coffee Industry Corporation has provided training in organic coffee growing to around 250 farmers, and some people have worked on cash crop plantations in other parts of PNG. Ten people have a local business and 6 are employed locally.</p> <p><b>Natural resources:</b> The village has around 25,798 ha of land owned by 2 clans, comprising (i) natural forest (78%), agricultural land (8%), managed forest (8%) and grassland/scrub (6%).</p> <p><b>Physical resources:</b> Local markets are accessed on foot (average 0.5 hours) and district markets also (average 3 days). Provincial markets are accessible by aircraft (walk and 0.5 hours). Around 75% of people do not have access to a reliable mobile network, and each household is responsible for securing its own power and water supply.</p>	
<p><b>External structures and processes:</b> There are five airstrips in the project area, but there are no regular flights. Most of RCF's funding goes toward chartered flights, which are expensive so around 5 trips are scheduled per year. RCF's Strategy Paper (2012) explains that the history of RCF management experience was often a top down process where communities were included in passive forms of co-operation and consultation rather than as an active agent. This has led to mistrust, misunderstanding, disagreement and disengagement in its relationship with the communities.</p>  <p>Based on the lessons learnt, RCF is now applying a strategic community engagement process of undoing the past and re-engaging with the CMWMA communities as a way forward, through (i) sustainable livelihood activities; (ii) landowner boundary mapping; (iii) land use planning; (iv) conservation awareness; and (iv) formation of community based organisations</p> <p>The residents of Mengino and Abigarama villages also receive some support and extension services from the Coffee Industry Corporation. Anomaly Gold's Nevera Prospect is located just outside the eastern boundaries of the Crater Mountain WMA.</p> <p>The Eastern Highlands Provincial Administration has established a provincial climate change committee (RCF is a member) and is involved in several community-based projects working with local partners. This includes a reforestation project with the PNG Forest Authority, and a conservation project with PNG Institute of Biological Research.</p> <p><b>Internal structures and processes:</b> Internal structures and decision-making processes fall into 4 categories: (i) Clan (patrilineal), (ii) Local Government, (iii) Church. There are 2 clans. Neither clan has formed an ILG. There are ongoing land disputes with neighbouring landowner groups.</p>	
<p><b>Short-term strategies:</b> The residents of Mengino and Abigarama Villages are well focused on feeding, housing and educating their family, as well as contributing to their various clan and village obligations. Households are generally able to meet their priority needs through (i) subsistence activities (e.g. gardening, hunting, collecting firewood), (ii) formal employment (mostly oil/gas exploration), (iii) market sales (e.g. peanuts), (iv) cash-cropping for provincial markets (vanilla and coffee) and (v) scientific-based tourism (with support from RCF).</p> <p><b>Long-term strategies:</b> People are interested in conserving their resources. The Assny Wildlife &amp; Community Development Incorporation has been established as an umbrella CBO catering for the Mengino and Abigarama communities in the areas of (i) natural resource management, (ii) community development and (iii) income-generation (there are 2 sub-CBOs involved in the production and sale of coffee).</p>	

**Table 6:** Social, cultural, economic and environmental context at RCF's 3 sample villages in Eastern Highlands and Gulf/Simbu Provinces (continued).

Pilot Community	Haia village (Karimui District, Gulf/Simbu Provinces)
<p><b>Financial resources:</b> The residents of Haia have three main income sources, namely: (i) contract labour to oil/gas exploration (60%), (ii) vanilla and peanuts (20%) and timber royalties for some clans (20%). Village residents have no reliable access to credit.</p> <p><b>Human resources:</b> Haia village was established in the 1970s by the New Tribes Mission. Village residents are semi-nomadic, moving about their land in family groups. The current population is around 1,300 (62% adults and 145 households) with a growth rate of around 2.6% per annum. Over the last 10 years, in-migration has been far greater than out-migration (+280) with people who have retired and returned home, and non-resident spouses and their dependents. Education and employment levels are quite low. 5 people have a local business.</p> <p><b>Natural resources:</b> Haia village has around 255,149 ha of land owned by 14 landowner groups (i.e. clans and sub-clans), comprising (i) natural forest (79%), agricultural land (8%), managed forest (8%) and grassland/scrub (5%).</p> <p><b>Physical resources:</b> Local markets are accessed on foot (short walk) and district markets also (average 4 days). Provincial markets are accessible by aircraft (walk and 0.5 hours). Flights to Goroka and Kundiawa are expensive and irregular. Village residents do not have access to a reliable mobile network, and each household is responsible for securing its own power supply. There is a poorly maintained gravity-fed water supply system which leads to several tap outlets throughout the village.</p>	
<p><b>External structures and processes:</b> There are five airstrips in the project area, but there are no regular flights. Most of RCF's funding goes toward chartered flights, which are expensive so around 5 trips are scheduled per year. RCF's Strategy Paper (2012) explains that the history of RCF management experience was often a top down process where communities were included in passive forms of co-operation and consultation rather than as an active agent. This has led to mistrust, misunderstanding, disagreement and disengagement in its relationship with the communities.</p> <p>Based on the lessons learnt, RCF is now applying a strategic community engagement process of undoing the past and re-engaging with the CMWMA communities as a way forward, through (i) sustainable livelihood activities; (ii) landowner boundary mapping; (iii) land use planning; (iv) conservation awareness; and (iv) formation of community based organisations</p> <p>InterOil's drill site is near the southern end of the CMWMA. There are also 3 timber concessions within Gulf Province adjacent to the CMWMA.</p>	
<p><b>Internal structures and processes:</b> Internal structures and decision-making processes fall into 3 categories: (i) Clan / sub-clan (patrilineal), (ii) Local Government and (iii) Church. The Haia Clan owns land around the village. There are current land disputes along the 4 main border areas. Some clans are in the process of forming ILGs with assistance from their Member of Parliament in preparation / anticipation for major resource projects that may soon occur on their land (Inter Oil's Antelope Site is some kilometres to the south). Landowners are semi-nomadic, moving about their land in family groups.</p> <p><b>Short-term strategies:</b> The residents of Haia Village are well focused on feeding, housing and educating their family, as well as contributing to their various clan landowner group and village obligations. Households are generally able to meet their priority needs through (i) subsistence activities (e.g. gardening, hunting, collecting firewood), (ii) local and district market sales (e.g. peanuts), (iii) cash-crop production for provincial markets (e.g. vanilla), (iv) the supply of part-time labour to the nearby oil and gas project, and (v) royalties from logging (clans who have customary links to land under logging concessions on the southern banks of the Purari River).</p> <p><b>Long-term strategies:</b> People are interested in conserving their resources. Hasodosowe Investment Limited has been established as a business group looking after the production and sale of vanilla beans.</p>	

**Table 7:** Social, cultural, economic and environmental context at MBPA's 23 Wards in Milne Bay Prov.


<b>Local Partner</b>	Milne Bay Provincial Administration (MBPA) with PNG Forest Authority (PNGFA)
<b>Pilot Community</b>	23 Wards (Alotau District)
<p><b>Financial resources:</b> The 23 Wards have three main income sources, namely: (i) copra (54%), (ii) seafood sales (28%) and (iii) timber sales (18%). Village residents have no reliable access to credit.</p> <p><b>Human resources:</b> The current population is around 7,000 (60% adults).</p> <p><b>Natural resources:</b> The village has around 63,013 ha of land owned by 110 clans, comprising (i) natural forest (61%), (ii) agricultural land (29%), (iii) secondary forest (5%), (iii) and grassland (5%).</p> <p><b>Physical resources:</b> Local markets are accessed on foot (average 0.5 hours) and district markets by bus (average 3 hours). Provincial markets are accessible by boat (average 6 hours). Village residents have access to a reliable mobile network, as well as a government satellite receiver at Fife Bay Government Station and Suau Island. Some Wards have a gravity fed water supply system, and some households use solar power lamps or gensets. Most households have neither.</p>	
<p><b>External structures and processes:</b> The PNG Forest Authority's REDD project team, together with the Provincial Forestry Office in Alotau, are currently supervising the:</p> <ul style="list-style-type: none"> <li>• Establishment and monitoring of 12 permanent sampling plots to gather data to calculate carbon stocks and to record different plant species with a diameter over 10 cm. diameter (with the Forest Research Institute in Lae)</li> <li>• Formation of ILGs through preliminary sketch mapping to be followed by GPS tracking with Department of Lands in Port Moresby (field support is expensive).</li> </ul> <p>The Division of Agriculture and Livestock has provided some agricultural training (e.g. vanilla, cocoa, rice farming). However, there has been minimal follow-up training to sustain what was started.</p> <p><b>Internal structures and processes:</b> Internal structures and decision-making processes fall into 3 categories: (i) Clan (matrilineal), (ii) Local Government, (iii) Church. There are 110 clans from the Suau tribe. Each clan is being assisted by the PNG Forest Authority to establish their ILGs. There are some land disputes which will have to go through land mediation.</p>	
<p><b>Short-term strategies:</b> The 23 Wards are focused on feeding, housing and educating their family, as well as contributing to their various clan and village obligations. Households are generally able to meet their priority needs through subsistence activities (e.g. gardening, hunting, collecting firewood), local and district market sales (e.g. sea food), cash-cropping for provincial markets (copra), and timber sales (mostly rosewood) to provincial buyers.</p> <p><b>Long-term strategies:</b> People's long-term strategies relate to: (i) improving their current living standards (health, education), building local capacity to generate income using their available resources, and (iii) conserving and maintain the stability of the natural environment.</p>	



**Table 8:** Social, cultural, economic and environmental context at FORCERT's 5 sample villages in East and West New Britain Provinces.

<b>Local Partner</b>	FORCERT (Forest Management and Certification Service)
<b>Pilot Community</b>	Bairaman, Lau, Mauna and Tavolo villages (Pomio District, ENB Province)
<p><b>Financial resources:</b> The residents of Bairaman, Lau, Mauna and Tavolo villages have 5 main income sources, namely: (i) garden produce sales (50%), (ii) cocoa sales (34%), (iii) timber sales from community sawmill (8%), (iv) seafood sales (7%) and (v) local businesses (2%). Most households have reliable access to credit through the informal sector.</p> <p><b>Human resources:</b> Bairaman, Lau, Mauna and Tavolo villages have a combined population of around 774 residents. One female has a tertiary qualification. Education levels are low, particularly for women.</p> <p><b>Natural resources:</b> Bairaman, Lau, Mauna and Tavolo villages have a combined land area of around 27,575 ha owned by 30 clans. This comprises (i) conservation forest for future development (52%), (ii) production forest for sawmilling (31%), (iii) agricultural land (10%) and (iv) conversion forest for future development (7%),</p> <p><b>Physical resources:</b> Bairaman, Lau, Mauna and Tavolo villages have access to (i) local markets (average 1.5 hours walk), (ii) district markets and services (average 1.5 hours by boat), and (ii) provincial markets and services (average 5 hours by boat and vehicle). Most village residents do not have access to a reliable phone network. Each household is responsible for securing its own power and water supply.</p>	

**Table 8:** Social, cultural, economic and environmental context at FORCERT's 5 sample villages in East and West New Britain Provinces (continued).

<p><b>External structures and processes:</b> FORCERT has been working with Bairaman, Lau, Mauna since 2004 and Tavolo since 2007 through their respective Business Groups, namely (i) Tavolo Business Group, (ii) Bairaman Timber Resource Ltd; (iii) Gogomate (Lau) Timber Resource Ltd, and (iv) Suli Timbers (Mauna). These groups comprise members from each village clan. Extension activities are provided by FORCERT's field staff in Kokopo (1 extension forester, 1 PES forester and 1 business development officer) using participatory awareness, training and decision-making tools and techniques. The Forest Resource Institute for provides data collection forms for forest assessment and planning. FORCERT have their own Socio Economic and Environmental Baseline (SEEB) data collection forms.</p> <p>The 4 villages lie within 2 Special Agricultural Business Lease (SABL) areas which have been involved in a National Commission of Enquiry. The enquiry's recommendations have not yet been released to the public nor acted upon by the national government.</p> <p><b>Internal structures and processes:</b> Internal structures and decision-making processes fall into 3 categories: (i) Clan (matrilineal), (ii) Business Group: (iii) Local Government and (iv) Church.</p>	
<p><b>Short-term strategies:</b> Bairaman, Lau, Mauna and Tavolo village residents are focused on feeding, housing and educating their family, as well as contributing to their various clan and village obligations. Households are generally able to meet their priority needs through subsistence activities (e.g. gardening, hunting, collecting firewood), local and district market sales (e.g. garden crops and seafood), cash-cropping for provincial markets (cocoa), and occasional timber sales.</p> <p><b>Long-term strategies:</b> Data needs to be collected on people's long term goals and strategies.</p>	
<p><b>Pilot Community</b></p>	<p>Minda village (Talasea District, WNB Province)</p>
<p><b>Financial resources:</b> The residents of Minda village have 3 main sources of income, namely: (i) garden sales (50%), (ii) cocoa and copra (30%), and (iii) seafood sales (20%). Most households have reliable access to credit through the informal sector.</p> <p><b>Human resources:</b> Minda village has a population of around 774 residents (187 households). Education levels are low, particularly for women.</p> <p><b>Natural resources:</b> Minda village has a land area of around 581 ha owned by 2 clans. This comprises (i) agricultural land (66%), (ii) conservation forest (13%), (iii) production forest for sawmilling (8%), (iv) residential land (8%), and (v) conservation forest for future development (5%).</p> <p><b>Physical resources:</b> Minda village has access to (i) local markets (average 3.5 hours walk), (ii) district markets and services (average 0.75 hours by boat), and (iii) provincial markets and services (average 2.5 hours by boat and vehicle). Around 70% of village residents do not have access to a reliable phone network. All households have access to piped water from a gravity-fed system. Each household is responsible for securing its own power. Four households have a genset.</p>	
<p><b>External structures and processes:</b> FORCERT has been working with Minda village since 2006. Extension activities are provided by FORCERT's field staff in Kimbe (1 extension forester, 2 PES foresters and 1 business development officer) using participatory awareness, training and decision-making tools and techniques. The Forest Resource Institute for provides data collection forms for forest assessment and planning. FORCERT have their own Socio Economic and Environmental Baseline (SEEB) data collection forms.</p> <p>The Provincial Division of Forestry, Environment &amp; Climate Change is based in Kimbe with 2 provincial climate change projects at the proposal stage.</p> <p><b>Internal structures and processes:</b> Internal structures and decision-making processes fall into 3 categories: (i) Clan (patrilineal), (ii) Local Government, (iii) Church.</p>	
<p><b>Short-term strategies:</b> Mauna village residents are focused on feeding, housing and educating their family, as well as contributing to their various clan and village obligations. Households are generally able to meet their priority needs through subsistence activities (e.g. gardening, hunting, collecting firewood), market sales (e.g. seafood, betel nut and tobacco) and cash-cropping for provincial markets (cocoa and copra).</p> <p><b>Long-term strategies:</b> Data needs to be collected on people's long term goals and strategies.</p>	

**Table 9:** Social, cultural, economic and environmental context at TKCP's 5 sample Wards in Morobe Province.


<b>Local Partner</b>	Tree Kangaroo Conservation Program (TKCP)
<b>Pilot Community</b>	Wards 10, 11 and 18 (Wasu LLG, Tewai Siassi District)
<p><b>Financial resources:</b> The residents of Wards 10, 11 and 18 Wasu LLG (11 villages) have 2 main income sources, namely: (i) copra and cocoa (60%) and (ii) garden sales (40%). Village residents have no reliable access to credit.</p> <p><b>Human resources:</b> Wards 10, 11 and 18 Wasu LLG have a current population of around 1,684 (56% adults) with a 2.4% annual growth rate. Over the last 10 years, in-migration has been similar to out-migration (+1). Education and employment levels are low. There are 8 people employed locally and 17 with a local business.</p> <p><b>Natural resources:</b> Wards 10, 11 and 18 Wasu LLG have around 32,449 ha of land owned by 17 clans. This comprises (i) natural forest (76%), (ii) grassland (26%) and (iii) agricultural land (1%).</p> <p><b>Physical resources:</b> Wards 10, 11 and 18 have access to (i) local markets (average 1 hours walk), (ii) district markets and services (average 2 hours by boat), and (iii) provincial markets and services (average 6 hours by boat). Village residents do not have access to a reliable mobile network, and each household is responsible for securing its own power supply. There are 5 with solar power and 2 with a genset.</p>	
<p><b>External structures and processes:</b> TKCP has 17 YUS-based field staff (2 Mapping officers; 12 YUS Rangers; 3 Conservation Officers). Lae-based staff travel out to one of the 3 project zones each month. Field Conservation Officers, based in each of the 3 zones, travel to Lae quarterly. TKCP staff communicate via VHF radio. Mapping staff collect field data using GPS units.</p> <p>The Forest Research Institute (Branch of the PNG Forest Authority) has developed community based forest assessment and planning tools under ACIAR project FST/2004/061. The Philippines government has funded a Population, Health and Environment program that encouraged women to consider population growth in their land use planning. TKCP are interested in pursuing this program in the future.</p> <p><b>Internal structures and processes:</b> Internal structures and decision-making processes fall into 3 categories: (i) Clan (patrilineal), (ii) Local Government, (iii) Church and (iv) YUS Conservation Organisation (CO). The YUS CO is a local body of 48 landowners (local leaders) who serve as a board of advisors to TKCP. The YUS CO therefore guides local priorities and seeks assistance from their local development partner - TKCP. The YUS Conservation Area also has a set of bylaws.</p>	
<p><b>Short-term strategies:</b> The residents of Wards 10, 11 and 18 are focused on feeding, housing and educating their family, as well as contributing to their various clan and village obligations. Households are generally able to meet their priority needs through subsistence activities (e.g. gardening, hunting, collecting firewood), local and district market sales (e.g. garden crops and betelnut), and cash-cropping for provincial markets (cocoa and copra)</p> <p><b>Long-term strategies:</b> Community development strategies relate to building local capacity to maximize their forest and grassland resources for present and future generations.</p>	
<b>Pilot Community</b>	Wards 5 and 6 (YUS LLG, Kabwum District)
<p><b>Financial resources:</b> The residents of Wards 5 and 6 YUS LLG (5 villages) have 2 main income sources, namely: (i) tobacco and coffee (60%) and (ii) betelnut and livestock (40%). Village residents have no reliable access to credit.</p> <p><b>Human resources:</b> Wards 5 and 6 YUS LLG have a current population of around 1,322 (39% adults) with an 8.7% annual growth rate. Over the last 10 years, in-migration has been stable. Education and employment levels are low. There are 13 people employed locally and 5 with a local business.</p> <p><b>Natural resources:</b> The village has around 26,162 ha of land managed by 14 clans. This comprises (i) natural forest (57%), (ii) grassland (34%) and (iii) agricultural land (9%).</p> <p><b>Physical resources:</b> Wards 5 and 6 YUS LLG have access to (i) local markets (short walk), (ii) district markets and services (average 3 days walk), and (iii) provincial markets and services (walk and 30 minute flight). Weekly flights to Lae are expensive (there are 5 airstrips with the YUS CA). Village residents do not have access to a reliable mobile network, and each household is responsible for securing its own power supply. There are 6 household with solar power and 1 with a genset.</p>	



**Table 9:** Social, cultural, economic and environmental context at TKCP's 5 sample Wards in Morobe Province (continued).

<p><b>External structures and processes:</b> TKCP has 17 YUS-based field staff (2 Mapping officers; 12 YUS Rangers; 3 Conservation Officers). Lae-based staff travel out to one of the 3 project zones each month. Field Conservation Officers, based in each of the 3 zones, travel to Lae quarterly. TKCP staff communicate via VHF radio.</p> <p>The Forest Research Institute of the PNG Forest Authority has developed community based forest assessment and planning tools under ACIAR project FST/2004/061. The Philippines government has funded a Population, Health and Environment program that encouraged women to consider population growth in their land use planning. TKCP are interested in pursuing this program in the future.</p> <p><b>Internal structures and processes:</b> Internal structures and decision-making processes fall into 3 categories: (i) Clan (patrilineal), (ii) Local Government, (iii) Church and (iv) YUS Conservation Organisation (CO). The YUS CO is a local body of 48 landowners (local leaders) who serve as a board of advisors to TKCP. The YUS CO therefore guides local priorities and seeks assistance from their local development partner - TKCP. The YUS Conservation Area also has a set of bylaws.</p>
<p><b>Short-term strategies:</b> The residents of Wards 5 and 6 are focused on feeding, housing and educating their family, as well as contributing to their various clan and village obligations. Households are generally able to meet their priority needs through subsistence activities (e.g. gardening, hunting, collecting firewood), and provincial market sales (e.g. tobacco, coffee, betelnut and livestock).</p> <p><b>Long-term strategies:</b> Community development strategies relate to building local capacity to maximize their forest and grassland resources for present and future generations.</p>

**Table 10:** Social, cultural, economic and environmental context at WCS's sample village in Manus Province.

<b>Local Partner</b>	Wildlife Conservation Society (WCS)
<b>Pilot Community</b>	Tulu 2 village (Manus District)
<p><b>Financial resources:</b> Coconut and cocoa plantations are grown on a small scale and were the first two cash crops in Tulu 2. Marketing is all year around - sago, coconut, coconut oil, betelnut, fish, ferns, and tuna fish are common things sold within the village. Betelnut season is from January to May which provides good income for the people. Betelnut yield is low beginning June to October which also reduces their cash flow.</p> <p><b>Human resources:</b> The ancestral settlement area was on Mt. Posawen but people migrated down to the coast in 1950 due to an outbreak of typhoid.</p> <p><b>Natural resources:</b> The village has around 2,862 ha of land owned by 3 clans. There is both primary forest and secondary forest. Virgin forest dominated the mountain area until the El Nino related drought in 1997, when a terrible bush fire blazed across the virgin forest vegetation; completely burning a third of it. People then started making gardens in these areas. The infestation of taro beetle and leaf blight are year around issues for farmers. Wild pigs are also a problem.</p>	
<p><b>Physical resources:</b> Transportation to access local and provincial markets is expensive. Boat fare is K50 one way and a return trip is K100. To access health service they have to walk or paddle to Bundralis which takes them about an hour to reach. There is widespread mobile phone usage in 12-13 of the 16 villages involved in the project (including Tulu 2).</p>	

**Table 10:** Social, cultural, economic and environmental context at WCS's sample village in Manus Province (continued).

**External structures and processes:**



WCS is the only organization that has on-going direct contact with the people. WCS mostly communicates through Community Facilitators (field visits generally last 2-4 weeks and are planned on a 3-month basis) who are trained by WCS field staff. For example, WCS and its community facilitators work to engage women in the project while also being sensitive to and respectful of local cultures.

Provincial Division of Primary Industries has introduced food crops (e.g. rice and African yam) and cash crops (e.g. vanilla, rubber, cocoa, coconut, and eagle wood) to the people of Tulu 2. However, none of their projects lasted due to lack of market, lack of facilities and lack of monitoring and technical skills provided to the community to keep the projects going.

Provincial Disaster Office communicates through the Catholic Mission at Bundralis and has helped the community to move to their safe location.

AusAID assisted 2 years ago with the new classrooms at Tulu 2 primary school.

Mining exploration is happening outside the Tulu 2 border, about 10 km away from the village.

Logging and rubber activities are happening outside Tulu 2. A road is currently being built from Bundralis and going through Tulu 2 to Tulu 1 village.

**Internal structures and processes:** Internal structures and decision-making processes fall into 3 categories: (i) Clan, (ii) Local Government, and (iii) Church. There is also the Pihi Group (women's group supported by local government). Villagers mentioned that the current clan boundaries are not traditional or customary as they were set by the patrol officers during the colonial era.

**Short-term strategies:** The residents of Tulu 2 are focused on feeding, housing and educating their family, as well as contributing to their various clan and village obligations. Households are generally able to meet their priority needs through subsistence activities (e.g. fishing, gardening, hunting, collecting firewood), and local market sales (garden food, sea food).

**Long-term strategies:** Some common goals include (i) new / improved school buildings, (ii) improved water supply, and (iii) permanent housing (local durable timber is becoming harder to access).



## 1.4 Expected Outcomes at Project Completion

The Project will create a “model community-based land ownership mapping and forest resource assessment system” that supports CFM schemes (including PES and REDD+) and increases landowner understanding about the goods and services that forests provide. Table 11 (below) highlights the role that project participants will play after project completion, as well as the ongoing benefits they are expected to receive.

**Table 11:** Project participant roles and ongoing benefits.

Project Participant	Ongoing Activities	Ongoing Benefits
Participating landowner groups	<p>Assess and monitor their forest resources using participatory data collection tools with support from their local CFM partners.</p> <p>Share and receive relevant CFM data and information through their local CFM partners.</p> <p>Develop their land-use plans to maximize the goods and services their forests provide.</p> <p>Collaborate with the National Land Development Program as required by specific clan groups.</p>	<p>Increased understanding about the goods and services their forests provide.</p> <p>Increased capacity to participate in feasible CFM schemes</p> <p>Improved forest management practices and security over their resources in the long-term.</p> <p>Formalised landownership arrangements as and when required by specific clan groups.</p>
Local CFM partners	<p>Utilise their CFM forest resource assessment and land group incorporation training resources with participating landowner groups and other pilot communities.</p> <p>Share and receive relevant CFM data and information through the PNGFA's web-based platform.</p> <p>Disseminate relevant CFM data and information to participating landowner groups and other target communities.</p>	<p>Improved forest management practices and long-term resource security within their target areas.</p> <p>Increased access to CFM tools, services and opportunities.</p>
PNG Forest Authority	<p>Manage PNG's CFM data management system.</p> <p>Operate the web-based platform for registered local, national and international users.</p> <p>Promote PNG's policy and planning guidelines for CFM amongst its institutional partners.</p>	<p>Improved coordination with other government agencies responsible for CFM activities.</p> <p>Increased information flows from the forest that will support policy implementation, including forest planning processes.</p>
Private sector markets for environmental goods and services	<p>Register with PNG's CFM data management system.</p>	<p>Improved access to information and networks on landownership and forest resources in PNG.</p>

## Part 2: Project Rationale and Objectives

### 2.1 Rationale

#### 2.1.1 Institutional Set-Up and Organisational Issues

The PNG Forest Authority's *Forestry and Climate Change Framework for Action (2009-2015)* emphasises the need for a multi-stakeholder approach to CFM programming that engages customary landowners at the local level and enhances the capacity of government institutions at the national level. In the project context, the 6 local CFM partners provide the project's pilot communities with an important link with the outside world; opening up new opportunities for enhancing rural livelihoods. Annex 4 (page 68) provides some background information on each local CFM partner's organizational capacity and development objectives. Table 12 (below) summarises the project's organizational arrangements at national, local and community levels.

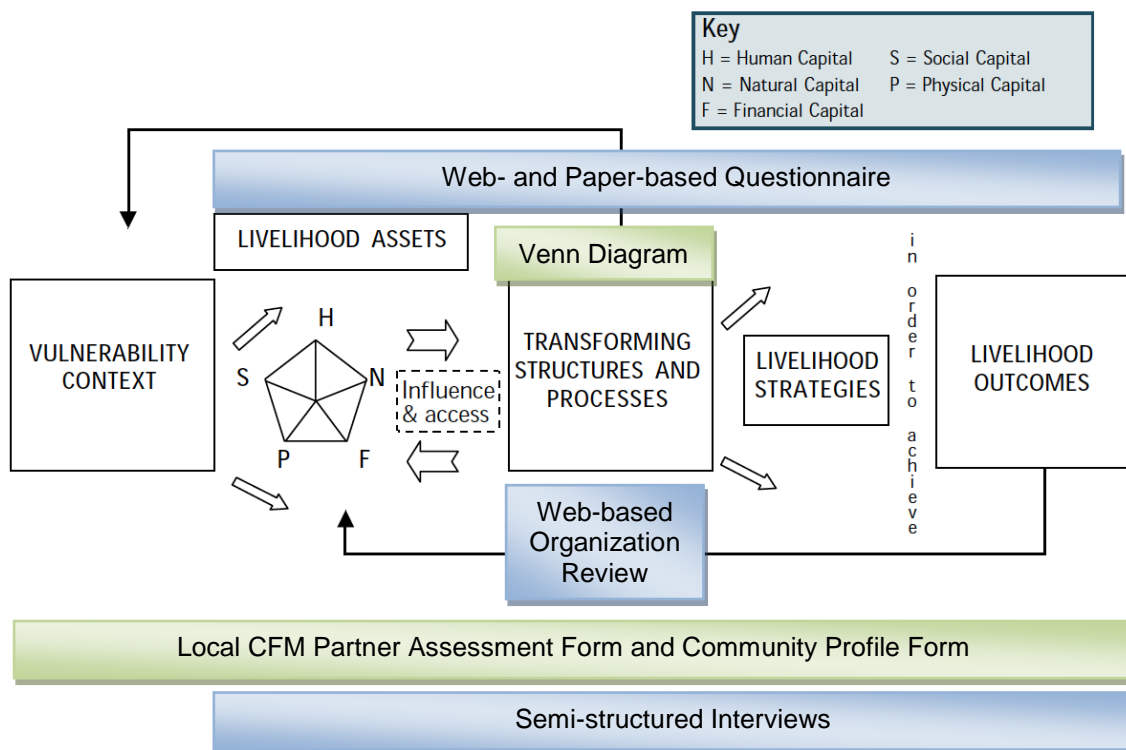
**Table 12:** Organisational arrangements at national, local and community levels.

Organisation	Responsibility	Terms of Reference
PNG Forest Authority	To coordinate all project activities (national and local) from the PNGFA's national headquarters in Port Moresby; working through its network of regional and provincial forestry offices.	Project document and annual work plans  Signed working agreements (PNGFA / local CFM partner)
	To implement all national activities in consultation with key stakeholders (with support from project consultants)	
	To outsource all local activities to the project's local CFM partners (except field monitoring)	
	To monitor all local activities on a quarterly basis in consultation with key stakeholders (using the NFS project field officer)	
Local CFM partners	To implement all local activities in consultation with key stakeholders (with support from project consultants)	Project document and annual work plans  Signed working agreements (PNGFA / local CFM partner)
Pilot landowner groups	To participate in all relevant local activities	Signed working agreements (local CFM partner / pilot landowner group)

## 2.1.2 Stakeholder Analysis

Figure 3 (below) highlights the 6 tools that were developed to identify and analyse the project's primary, secondary and tertiary stakeholders during the first<sup>1</sup> and second round of project design activities with reference to the Sustainable Livelihoods Framework. The second round of activities included:

- **A web-based organization review** that identified government and non-governmental institutions as well as multi-institution initiatives that address CFM, PES, REDD+ or other aspects of forest conservation. This contact list has been consolidated with the project's email list to foster an inclusive dialogue for project development, and at a later stage, project expansion.
- **A web- and paper-based questionnaire** that gathered more up-to-date information from the project's local CFM partners and other stakeholders regarding existing CFM activities, as well as assessed the technical needs and resources associated with these activities. The survey results form an initial part of the requirements for the CFM data management system.
- **Semi-structured interviews** that completed the livelihoods profiles for the pilot landowner groups in consultation with local partners and stakeholders, as well as the assessment of local CFM partner strengths and weaknesses. These assets, as well as the processes and strategies for leveraging the local and institutional knowledge have informed the technical specification and procedural strategies for the CFM data management system.



**Figure 3:** Sustainable Livelihoods Framework (source DFID, 1999) with data collection tools in green boxes (first round of activities) and blue boxes (second round of activities).

Table 13 (page 25) presents the results of the stakeholder identification and analysis process.

<sup>1</sup> Refer Section 1.3.2 (page 13) for information on the first round of research activities.

**Table 13:** Analysis of primary, secondary and tertiary stakeholders.

Stakeholder Group	Characteristics	Problems, Needs, Interests	Potentials	Project Involvement
Primary Stakeholders				
Participating landowner groups	<p>Have similar livelihoods strengths and weaknesses, including:</p> <ul style="list-style-type: none"> <li>• Limited income sources and access to credit;</li> <li>• Limited qualifications and work experience;</li> <li>• Extensive areas of primary and secondary forest held under customary ownership;</li> <li>• Limited access to markets and services.</li> </ul> <hr/> <p>Utilise similar organizational structures and processes, namely:</p> <ul style="list-style-type: none"> <li>• Local CFM partners (generally limited contact with other external organizations);</li> <li>• Internal organizations (mostly clan, local government and church groups).</li> </ul> <hr/> <p>Have similar livelihoods objectives and strategies:</p> <ul style="list-style-type: none"> <li>• Well-focused on feeding, housing and educating their families in the short-term, through subsistence agriculture supplemented by part-time income generation activities (mostly market sales with some cash-cropping and sawmilling);</li> <li>• Less-focused on their long-term goals which relate to improved capacity to generate income that will enhance their rural livelihoods, as well as sustain their natural resource base for future generations.</li> </ul>	<p>Have limited access to tools, services and opportunities that will:</p> <ul style="list-style-type: none"> <li>• Improve their forest management practices and security over their resources in the long-term;</li> <li>• Increase their participation in feasible CFM schemes;</li> <li>• Formalise their landownership arrangements as and when required by specific clan groups.</li> </ul>	<p>CFM skills and experience (mostly local knowledge);</p> <p>Willingness to learn new techniques that have the potential to enhance and sustain their rural livelihoods.</p>	<p>Participate in the design, testing, implementation and monitoring of the data collection tools with support from their local CFM partners.</p> <p>Develop their land-use plans to maximize the goods and services their forests provide with support from their local CFM partners.</p> <p>Collaborate with the National Land Development Program with support from their local CFM partners (as and when required by specific clan groups).</p>

**Table 13:** Analysis of primary, secondary and tertiary stakeholders (continued).

Stakeholder Group	Characteristics	Problems, Needs, Interests	Potentials	Project Involvement
Secondary Stakeholders				
Local CFM partners	<p>Have different organizational strengths and weaknesses, including:</p> <ul style="list-style-type: none"> <li>• Limited / good financial resources available for CFM;</li> <li>• Limited / good human resources available for CFM;</li> <li>• Limited / good physical resources available for CFM.</li> </ul> <hr/> <p>Utilise different organizational structures and processes, including:</p> <ul style="list-style-type: none"> <li>• CFM networks at local, national and international levels for exchanging information and resources;</li> <li>• Clan groups, sub-clan groups, business groups and local government groups at the community level.</li> </ul> <hr/> <p>Have different CFM strategies, including:</p> <ul style="list-style-type: none"> <li>• Strengthening landowner capacity to manage forest conservation areas;</li> <li>• Strengthening landowner capacity to monitor their forest resources;</li> <li>• Engaging landowner groups in FSC certified timber production.</li> <li>• Engaging landowner groups in PES and REDD+ initiatives;</li> </ul> <hr/> <p>Have similar organisational objectives which relate to:</p> <ul style="list-style-type: none"> <li>• Improving sustainable forest management practices and long-term resource security within their pilot areas;</li> <li>• Promoting the benefits of community forestry within their pilot areas.</li> </ul>	<p>Have limited access to tools, services and opportunities that will empower their pilot landowner groups to:</p> <ul style="list-style-type: none"> <li>• Improve their forest management practices and security over their resources in the long-term;</li> <li>• Increase their participation in feasible CFM schemes;</li> <li>• Formalise their landownership arrangements as and when required by specific clan groups.</li> </ul>	<p>CFM skills and experience;</p> <p>Willingness to learn new techniques that have the potential to promote CFM within their pilot areas.</p> <p>Willingness to share data with PNGFA, <b>PNGCCDA</b> and other stakeholders, coupled with a desire to receive data such as satellite imagery, forest ecosystem services information and socio-economic data.</p>	<p>Participate in the design, testing, implementation and monitoring of the CFM data management system with their pilot landowner groups.</p> <p>Facilitate land-use planning and land group incorporation (as and when required by specific clans) with their pilot landowner groups.</p> <p>Participate in the development of policy and planning guidelines for CFM</p>

**Table 13:** Analysis of primary, secondary and tertiary stakeholders (continued).

Stakeholder Group	Characteristics	Problems, Needs, Interests	Potentials	Project Involvement
Secondary Stakeholders				
<p>PNG Forest Authority (PNGFA)</p>	<p>Has organisational strengths and weaknesses, including:</p> <ul style="list-style-type: none"> <li>Limited financial resources available for CFM;</li> <li>Limited human resources available for CFM (regional offices have a CFM officer in place);</li> </ul> <p>Good physical resources available for CFM, including a network of regional and provincial forestry offices, together with a Forest Inventory Mapping System which is being upgraded through the Capacity Development for <b><u>Operationalization of PNG Forest Resource Information Management System for Addressing Climate Change</u></b> (currently funded by JICA and the Multi-Purpose National Forest Inventory Project (currently funded by EU and UN-REDD)).</p> <p>The Climate Change and REDD Branch collaborates with:</p> <ul style="list-style-type: none"> <li>National networks that exchange CFM information and resources (mostly through regular meetings with the Technical Working Group for MRV coordinated by the Office for Climate Change &amp; Development).</li> <li>International networks that exchange CFM information and resources (mostly through the <b><u>PNG Climate Change Development Authority</u></b>).</li> </ul> <p>The Climate Change and REDD Branch is coordinating the implementation of the PNGFA's <i>Forestry and Climate Change Framework for Action (2009-2015)</i> which highlights the need for a multi-stakeholder approach to CFM programming that engages customary landowners at the local level and enhances the capacity of government institutions at the national level (refer Table 3, page 11).</p>	<p>Limited coordination with other government agencies responsible for forestry such as <b><u>Conservation, Environment and Protection Authority</u></b> and Department of Lands &amp; Physical Planning .</p> <p>Limited social safeguards in place, such as Free, Prior and Informed Consent (FPIC) processes.</p> <p>Limited information flows from the forest that will support policy implementation, including forest planning processes.</p>	<p>Forestry skills, experience and resources.</p> <p>Climate Change and REDD Branch willing to develop new techniques that have the potential to promote CFM within their pilot areas using available resources.</p> <p>Inventory and Mapping Branch currently developing their Geographic Information Systems with technical and financial support from development partners overseas.</p>	<p>Manage the project through the project management team</p> <p>Coordinate technical committee meetings that engage key stakeholders.</p> <p>Coordinate the development of policy and planning guidelines for CFM with key stakeholders.</p> <p>Supervise the design, testing and overall management of the CFM data management system (including web-based platform).</p>

**Table 13:** Analysis of primary, secondary and tertiary stakeholders (continued).

Stakeholder Group	Characteristics	Problems, Needs, Interests	Potentials	Project Involvement
Secondary Stakeholders				
<b><u>PNG Climate Change Development Authority (PNGCCDA)</u></b>	Coordinates PNG's <i>National Climate Compatible Development Management Policy</i> refer Table 3, page 11) using a phased approach to REDD+ that comprises 3 main steps, namely: <ul style="list-style-type: none"> <li>• Readiness;</li> <li>• Development of prototypes and demonstration activities;</li> <li>• Operation of systems and safeguards</li> </ul> Focal point for the United Nations Framework Convention on Climate Change (UNFCCC).	Have limited: <ul style="list-style-type: none"> <li>• Coordination with other government agencies responsible for CFM related activities.</li> <li>• Social safeguards in place, such as Free, Prior and Informed Consent (FPIC) processes.</li> <li>• Information flows from the forest that will support policy implementation, including planning processes.</li> </ul>	Currently coordinates: <ul style="list-style-type: none"> <li>• PNG's Technical Working Group for MRV with the participation of all the country relevant stakeholders;</li> <li>• PNG's Information, Monitoring &amp; MRV Action Plan</li> <li>• PNG's prototype for a Satellite Land Monitoring System with support from FAO and UN-REDD.</li> </ul>	Participate in the design of the CFM data management system (including web-based platform).  Participate in the development of policy and planning guidelines for CFM.  Participate in technical committee meetings that engage key stakeholders.
Department of Lands and Physical Planning (DLPP)	Coordinates PNG's Land Development Program with support from the National Research Institute.		Currently coordinates the establishment of a framework for customary land tenure that enables landowner groups to: <ul style="list-style-type: none"> <li>• Have proper control of their customary land;</li> <li>• Do business with their chosen development partners using a non-transferable land title.</li> </ul>	
Provincial and District Governments	Have a network of provincial and district offices with limited financial and human resources available for the delivery of local extension services.		Significant development funds are available from the national government for priority projects that improve the delivery of local level services through the Provincial and District Planning Committees.	Local partners will involve the relevant provincial and district government agencies in their project activities.
Private sector markets for environmental goods and services	Have supply specifications that relate to quality, quantity and time.	Limited access to information and networks on landownership and forest resources in PNG.	Gradually increasing demand for environmental goods and services.	Registered markets will participate in the design of the CFM data management system.

**Table 13:** Analysis of primary, secondary and tertiary stakeholders (continued).

Stakeholder Group	Project Involvement
Tertiary Stakeholders	
<p>International development partners with an office in PNG:</p> <ul style="list-style-type: none"> <li>• Japan International Cooperation Agency (JICA)</li> <li>• PNG Lowering Emissions in Asia's Forests (LEAF) Program <b>(the program has ended in country, lessons learnt)</b></li> <li>• United Nations Development Program (PNG)</li> <li>• Mangrove Rehabilitation for Sustainably-Managed, Healthy Forests (MARSH) Program</li> </ul>	<p>These organizations:</p> <ul style="list-style-type: none"> <li>• Have participated constructively in the pre-project and are keen to promote practical community forestry schemes in PNG that make an effective contribution to sustainable forest management in PNG.</li> <li>• Will be invited to participate in the full-project through project meetings and workshops.</li> </ul>
<p>National NGOs:</p> <ul style="list-style-type: none"> <li>• PNG Eco Forestry Forum (EFF)</li> <li>• World Wide Fund for Nature (WWF)</li> <li>• The Nature Conservancy (TNC)</li> <li>• Partners with Melanesians (PWM)</li> </ul>	
<p>Government institutions:</p> <ul style="list-style-type: none"> <li>• PNGFA Forest Research Institute (FRI)</li> <li>• University of PNG (UPNG)</li> </ul>	



	<b>1. Financial resources:</b> income and access to credit		<b>2. Human resources:</b> qualifications and experience		<b>3. Natural resources:</b> land area, cover and ownership		<b>4. Physical resources:</b> access to markets and services		<b>5. External resources:</b> government, NGO, private sector		<b>6. External structures:</b> government, NGO, private sector		<b>7. Internal resources:</b> local organisations		<b>8. Internal processes:</b> local customs and protocols		<b>9. Long-term strategies:</b> that lead to desired outcomes		<b>10. Short-term strategies:</b> that lead to desired outcomes	
TARGET COMMUNITY	COMMUNITY ASSETS				TRANSFORMING STRUCTURES AND PROCESSES				COMMUNITY STRATEGIES		ASSUMPTIONS									
1. FPCD's pilot area in Madang	3	2	4	3	3	4	4	4	2	3	Point 3 assumes participating Sub-clans are supported by all Clan members									
2. RCF's pilot area in Eastern Highlands and Gulf/Simbu	2	2	4	1	3	3	4	4	2	3										
3. MBPA and PNGFA's pilot area in Milne Bay	2	2	4	2	3	2	4	4	1	2										
4. FORCERT's pilot area in East and West New Britain	2	2	4	2	3	4	5	4	2	3	Point 3 assumes the SABL issue is resolved									
5. TKCP's pilot area in Morobe	2	2	4	1	3	3	4	4	2	3										
6. WCS-PNG's pilot area in Manus	2	2	4	2	3	4	3	3	2	3										
Overall Assessment	2	2	4	2	3	3	4	4	2	3	Overall Assessment									
Community Weakness	1		2		3		4		5		Community Strength									

Figure 4: Assessment of pilot community strengths and weaknesses using scores from 1 (major weakness) to 5 (major strength).

### 2.1.3 Problem Analysis

The baseline data collection activities revealed a diverse project context with some significant similarities. People living in the pilot areas are generally disadvantaged relative to those living in other parts of the country with regards to household income, local qualifications, and access to markets and services. On the other hand, each local community appears well organized and self-reliant, with large areas of forest owned and managed by local clan groups. Households are generally well-focused on feeding, housing and educating their family, as well as contributing to their various clan and village obligations. In this environment, the project's local partners provide an important link with the outside world; opening up new opportunities for enhancing rural livelihoods for present and future generations. Whilst local partner resources and development strategies are quite varied, their overall objectives are similar.

Figure 4 (page 30) provides an overall assessment of pilot community strengths and weaknesses with reference to the Sustainable Livelihood Framework (Figure 3, page 24). Table 14 (below) highlights some potential entry-points that enable the full-project to build on shared strengths, address similar weaknesses, and learn from the diverse skills and experiences of local project partners and pilot communities.

**Table 14:** Potential project entry points with reference to the Sustainable Livelihood Framework (Figure 3, page 24) and Figure 4 (page 30).

Livelihood Elements		Project Entry Point
Community Assets	1. Financial resources	Develop income generation opportunities and benefit sharing mechanisms.
	2. Human resources	Raise awareness of CFM opportunities and challenges. Strengthen local capacity for land tenure mapping, forest monitoring and land-use planning.
	3. Natural resources	Collect data on forest biomass, land cover, land tenure and biodiversity.
	4. Physical resources	Improve access to appropriate technology and support services.
Structures and Processes	5. External structures	Strengthen strategic linkages between local partners and key district, provincial, national and international stakeholders to increase flow of information that will support: <ul style="list-style-type: none"> <li>Local land use planning and land tenure documentation;</li> <li>National and sub-national carbon MRV;</li> <li>Forest and climate change policy implementation;</li> <li>Recognition of clan landownership in forestry and other project types.</li> </ul>
	6. External processes	
	7. Internal structures	Work through selected community groups (e.g. clan, business, church, local level government) to strengthen local capacity for forest management decision making, communication and partnership building.  Collect data on clan membership, Free Prior and Informed Consent (FPIC) processes, and socio-economic changes.
	8. Internal processes	
Community Strategies	9. Long-term strategies	Use entry-points above to strengthen local capacity to develop appropriate livelihood strategies that realize their desired outcomes
	10. Short-term strategies	

The PNG Forest Authority hosted a 3-day project planning workshop in Port Moresby to finalize the project framework. During day one, local CFM partners and key stakeholders discussed the project context with reference to the baseline research findings, leading to the:

- **Identification of a key problem** that highlights the need to focus on strategies that enhance landowner awareness, as well as technical capacity.
- **Identification of four direct causes of the key problem** that relate to external structures and processes, as well as local resources and capabilities.
- **Creation of a problem tree** that links root causes with the current social, economic and environmental issues facing the project’s pilot communities.
- **Creation of an objective tree** that defines the project activities, outputs and specific objective; leading to three positive and achievable social, economic and environmental outcomes.

Tables 14 and 15 highlight the project’s key problem and its four direct causes. Figures 5 and 6 (pages 33 and 34) present the project’s problem and objective trees.

**Table 15:** Key problem to be addressed by the project.

<b>Key Problem:</b>	<b>1. Landowners have limited technical capacity to participate effectively in community forestry <u>schemes</u></b>
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**Table 16:** Direct causes of the project’s key problem.

<b>Direct Causes:</b>	<ol style="list-style-type: none"> <li><b>1. Limited institutional capacity to formalize landownership at all levels</b> because the PNG Forest Authority and the Department of Lands and Physical Planning have limited tools and staff to support landownership mapping and registration, combined with limited formal mapping / zoning capacity and processes at the provincial, district and local levels.</li> <li><b>2. Landowners have limited involvement in community forestry programs</b> because the PNG Forest Authority has no central information on landowners’ forest resources, as well as limited capacity to effectively engage with landowner groups.</li> <li><b>3. Poor community forest management practices and often high community expectations</b> because landowners have limited access to community forest management training and support, as well as limited capacity to take detailed inventories of their land forest resources and map the land areas under their management.</li> <li><b>4. Inadequate policies, strategies and plans for promoting and supporting community forest management</b> because there is limited coordination between key government agencies (e.g. PNG Forest Authority, <u>PNG Climate Change Development Authority, Conservation, Environment and Protection Authority</u>, Department of Lands and Physical Planning, and Department of Agriculture and Livestock), as well as limited co-ordination between the national, provincial and local levels of government</li> </ol>
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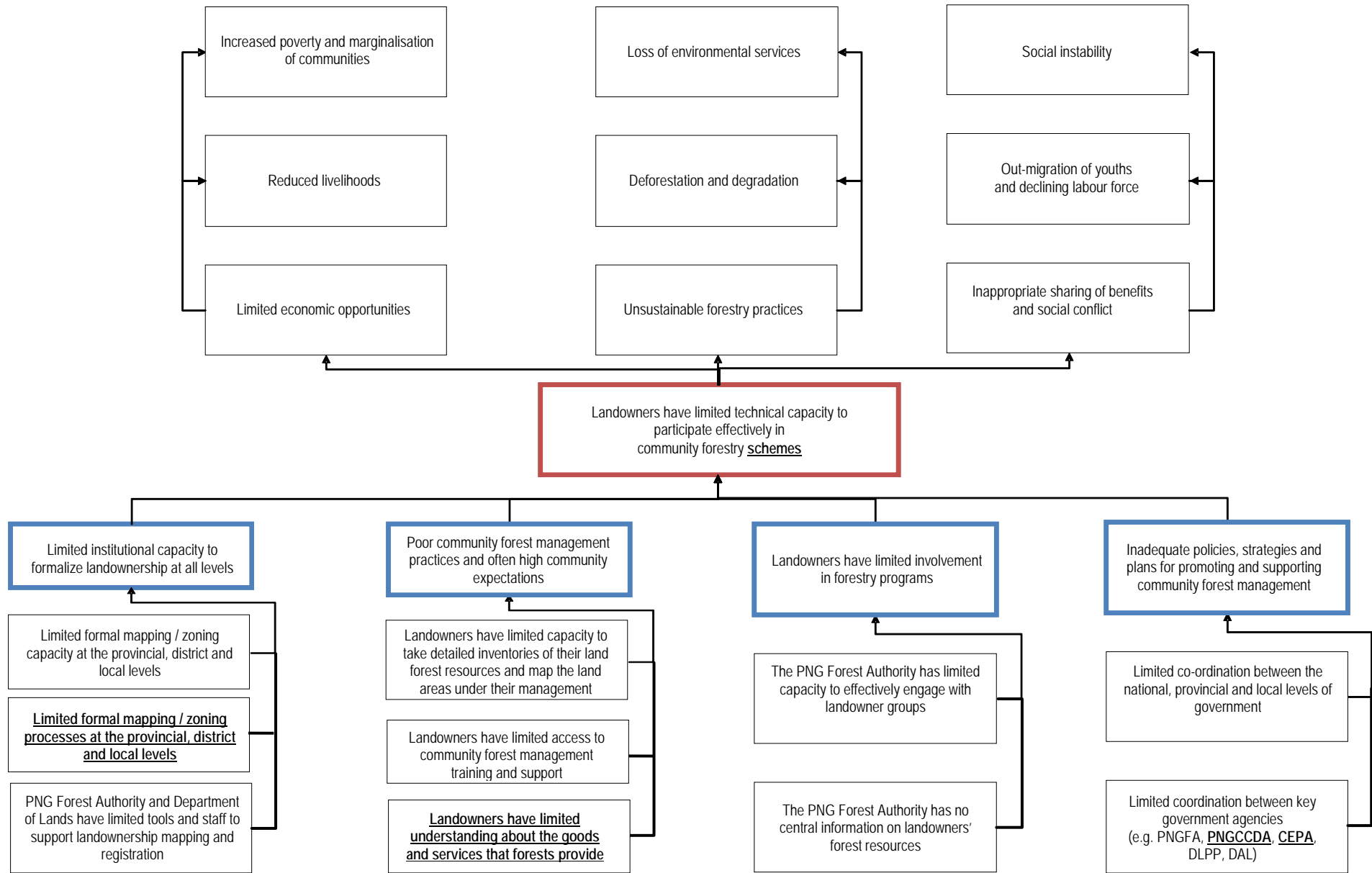


Figure 5: The Project Problem Tree

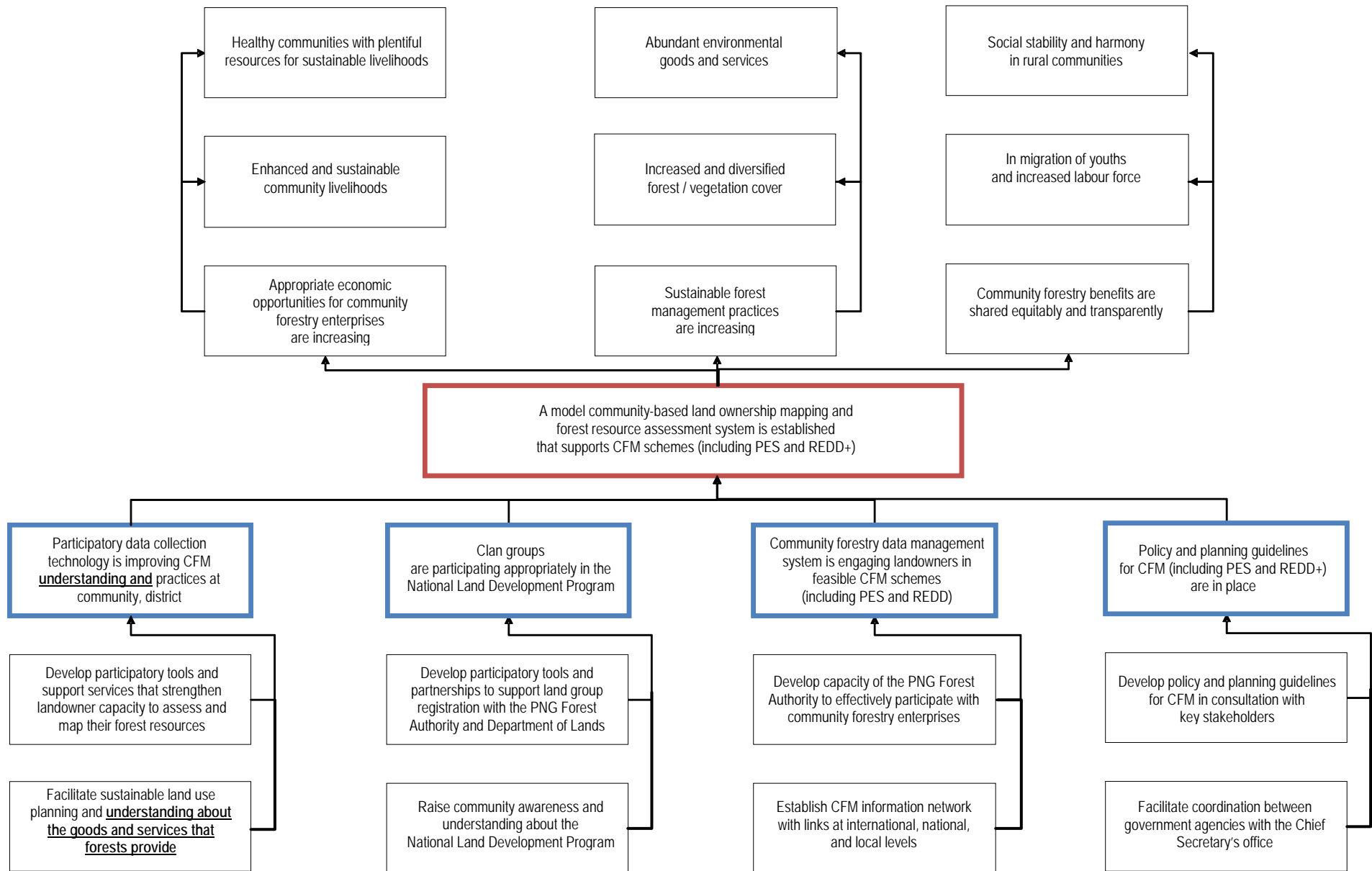


Figure 6: The Project Objective Tree

## 2.1.4 Logical Framework Matrix

Intervention Strategy	Measurable Indicators	Means of Verification	Key Assumptions
<p><b>Development Objective:</b> CFM schemes in PNG are demonstrating <b><u>sustainable forest management practices, as well as enhanced community livelihoods and social stability.</u></b></p>	<p>Appropriate economic opportunities for community forestry enterprises are increasing.</p> <p>Sustainable forest management practices are increasing.</p> <p>Community forestry benefits are shared equitably and transparently.</p>	<p>Local CFM partner reports comparing baseline social, economic and environmental data with present situation.</p> <p>Site visits to confirm report findings.</p>	<p>Adequate demand for environmental goods and services</p>
<p><b>Specific Objective:</b> A model community-based land ownership mapping and forest resource assessment system is established that supports CFM schemes (including PES and REDD+).</p>	<p>Participating landowner groups have increased understanding about the goods and services their forests provide, increased capacity to participate in feasible CFM schemes, and improved forest management practices and security over their resources in the long-term.</p> <p>Local CFM partners have increased access to CFM tools, services and opportunities</p> <p>PNG Forest Authority has improved coordination with other government agencies responsible for CFM activities, and increased information flows from the forest that will support policy implementation, including forest planning processes.</p> <p>Private sector markets for environmental goods and services have improved access to information and networks on landownership and forest resources in PNG.</p>	<p>Project technical reports</p> <p>Local CFM partner reports</p> <p>Site visits to confirm report findings.</p>	<p>Adequate political support for CFM at local, provincial and national levels.</p>
<p><b>Output 1:</b> Participatory data collection technology is improving CFM <b><u>understanding and</u></b> practices at community, district and provincial levels.</p>	<p>By the end of year 1, each local CFM partner has received a set of participatory data collection devices with customized ODK software and accessories for forest resource assessment and clan land boundary mapping</p>	<p>Approved Participatory GIS (PGIS) hardware and software specifications for forest resource assessment and clan land boundary mapping.</p> <p>Delivery documents and site visits</p>	<p>Landowner groups are willing and able to collaborate with the project.</p>
<p>By the end of year 2, each local CFM partner has produced a set of forest resource and clan land boundary data for their pilot area(s) with their landowner groups using the participatory data collection devices</p>	<p>PGIS training reports and training materials</p> <p>Current PGIS reports for each pilot area</p>		
<p>By the end of year 3, each participating landowner group within each pilot area has an improved land-use plan in place that maximizes the goods and services their forests provide</p>	<p>Current land use plans for each pilot area</p> <p>Project monitoring reports and site visits.</p>		

Intervention Strategy	Measurable Indicators	Means of Verification	Key Assumptions
<b>Output 2:</b> Clan groups are participating appropriately in the National Land Development Program	By the end of year 1, participating landowner groups from each pilot area have actively participated in the National Land Development Program's (NLDP) awareness program	NLDP training reports and training materials with participating landowner groups in each pilot area.	National Land Development Program staff are willing and able to collaborate with the project.
	By the end of year 2, each local CFM partner has received the customized ODK software for land group incorporation	Approved PGIS software specifications for land group incorporation <b>developed in accordance with ILG formation processes.</b>	
	By the end of year 3, each local CFM partner has assisted interested clan groups from their pilot area(s) to form their Incorporated Land Groups (ILG) using the participatory data collection devices	PGIS reports from interested clan groups showing ILG formation data as per specifications.  Incorporated Land Group certificates.	
<b>Output 3:</b> A data management system is engaging landowners in feasible CFM schemes (including PES and REDD+)	By the end of year 1, data management system with web-based platform is established at PNGFA headquarters using existing data management structures and resources.	Approved data management system diagram with hardware and software specifications.  Web-based platform functioning as per specifications.	PNGFA data management staff are willing and able to collaborate with the project.
	By the end of year 2, data management staff are facilitating the dissemination of relevant data and information amongst the project's primary stakeholders at local, national and international levels	Data management system operating manual.  Current data management system report showing information disseminated to registered users as per system specifications.	
	By the end of year 3, there are increased CFM opportunities for the local CFM partners and landowner groups	Project reports highlighting increased CFM opportunities in each pilot area.  Site visits to confirm report findings.	
<b>Output 4:</b> Policy and planning guidelines for CFM in place	By the end of year 2, key government agencies have actively participated in the Chief Secretary's agency coordination program	Correspondence formalising coordination program and mechanisms  Project reports  Site visits to confirm reports findings	Government agencies responsible for CFM are willing and able to collaborate with the project.
	By the end of year 3, policy and planning guidelines for CFM are delivered and launched	Approved policy and planning guidelines for CFM  Project reports outlining consultation process and the launch of the CFM policy and planning guidelines  Media articles	

## 2.2 Objectives

### 2.2.1 Development Objective and Impact Indicators

<b>Objective:</b>	<b>CFM schemes in PNG are demonstrating <u>sustainable forest management practices, as well as enhanced community livelihoods and social stability.</u></b>
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Indicators:

- Appropriate economic opportunities for community forestry enterprises are increasing
- Sustainable forest management practices are increasing
- Community forestry benefits are shared equitably and transparently

### 2.2.2 Specific objective and Outcome Indicators

<b>Objective:</b>	<b>A model community-based land ownership mapping and forest resource assessment system is established that supports CFM schemes (including PES and REDD+).</b>
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Indicators:

- Participating landowner groups have increased understanding about the goods and services their forests provide, increased capacity to participate in feasible CFM schemes, and improved forest management practices and security over their resources in the long-term.
- Local CFM partners have increased access to CFM tools, services and opportunities
- PNG Forest Authority has improved coordination with other government agencies responsible for CFM activities, and increased information flows from the forest that will support policy implementation, including forest planning processes.
- Private sector markets for environmental goods and services have improved access to information and networks on landownership and forest resources in PNG.



## **Part 3: Description of Project Interventions**

### **3.1 Outputs and Activities**

#### **3.1.1 Outputs**

<b>Output 1:</b>	<b>Participatory data collection technology is improving CFM <u>understanding and practices</u> at community, district and provincial levels</b>
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Indicators:

- By the end of year 1, each local CFM partner has received a set of participatory data collection devices with customized ODK software and accessories for forest resource assessment & clan land boundary mapping
- By the end of year 3, each participating landowner group within each pilot area has an improved land-use plan in place that maximizes the goods and services their forests provide
- By the end of year 2, each local CFM partner has produced a set of forest resource and clan land boundary data for their pilot area(s) with their landowner groups using the participatory data collection devices

<b>Output 2:</b>	<b>Clan groups are participating appropriately in the National Land Development Program</b>
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Indicators:

- By the end of year 1, participating landowner groups from each pilot area have actively participated in the National Land Development Program's (NLDP) awareness program
- By the end of year 2, each local CFM partner has received the customized ODK software for land group incorporation
- By the end of year 3, each local CFM partner has assisted interested clan groups from their pilot area(s) to form their Incorporated Land Groups (ILG) using the participatory data collection devices

<b>Output 3:</b>	<b>A data management system is engaging landowners in feasible CFM schemes (including PES and REDD+)</b>
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Indicators:

- By the end of year 1, data management system with web-based platform is established at PNGFA headquarters using existing data management structures and resources.
- By the end of year 2, data management staff are facilitating the dissemination of relevant data and information amongst the project's primary stakeholders at local, national and international levels
- By the end of year 3, there are increased CFM opportunities for the local CFM partners and landowner groups

<b>Output 4:</b>	<b>Policy and planning guidelines for CFM in place</b>
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Indicators:

- By the end of year 2, key government agencies have actively participated in the Chief Secretary's agency coordination program
- By the end of year 3, policy and planning guidelines for CFM are delivered and launched

### 3.1.2 Activities

<b>Output 1:</b>	<b>Participatory data collection technology is improving CFM <u>understanding and practices at community, district and provincial levels</u></b>
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**Activity 1.1:** Develop participatory data collection hardware and software for forest resource assessment and clan land boundary mapping through working sessions with local CFM partners and pilot landowner groups, followed by a national workshop.

**Activity 1.2:** Provide local CFM partners and pilot landowner groups with participatory training sessions and user-friendly training materials for collecting and monitoring their forest resource and clan land boundary data.

**Activity 1.3:** Facilitate sustainable land-use planning and understanding about the goods and services forests provide through working sessions with pilot landowner groups using participatory data collection outputs.

**Activity 1.4:** Monitor progress with reference to logical framework indicators, activity milestones and community baseline data.

<b>Output 2:</b>	<b>Clan groups are participating appropriately in the National Land Development Program</b>
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**Activity 2.1:** Strengthen institutional partnerships at all levels in consultation with PNG Forest Authority and Department of Lands through regular meetings and working sessions, followed by a national workshop.

**Activity 2.2:** Raise pilot community awareness about the National Land Development Program in consultation with PNG Forest Authority and Department of Lands through meetings with local organisations and social groups (e.g. government, church, clan, youth and women)

**Activity 2.3:** Develop participatory data collection software for land group incorporation through working sessions with local CFM partners, pilot landowner groups and institutional partners, followed by a national workshop.

**Activity 2.4:** Provide local CFM partners and pilot landowner groups with participatory training sessions and user-friendly training materials for collecting their land group incorporation data.

**Activity 2.5:** Monitor progress with reference to logical framework indicators, activity milestones and community baseline data.

<b>Output 3:</b>	<b>A data management system is engaging landowners in feasible CFM schemes (including PES and REDD+)</b>
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**Activity 3.1:** Develop data management system and web-based platform in consultation with user groups for facilitating the dissemination of relevant information at local, national and international levels.

**Activity 3.2:** Provide data management staff with the participatory training sessions and user-friendly training materials for managing and disseminating relevant information.

**Activity 3.3:** Facilitate CFM opportunities for local CFM partners and landowner groups using the data management system.

**Activity 3.4:** Monitor progress with reference to logical framework and activity milestones.

<b>Output 4:</b>	<b>Policy and planning guidelines for CFM are in place</b>
<b>Activity 4.1:</b>	Facilitate coordination between government agencies with the Chief Secretary's office.
<b>Activity 4.2:</b>	Develop policy and planning guidelines for CFM in consultation with key stakeholders and with reference to data management system and tools <b><u>through regular meetings and working sessions, followed by a national workshop.</u></b>
<b>Activity 4.3:</b>	Launch policy and planning guidelines for CFM.
<b>Activity 4.4:</b>	Monitor progress with reference to logical framework and activity milestones.

### 3.2 Implementation Approaches and Methods

The baseline data collection and stakeholder analysis activities have enabled the preparation of technical and functional specifications for the community-based data collection system and the online platform. A literature review was also conducted; targeting resources that helped contextualize the project amongst broader forest conservation initiatives and resources that could improve project implementation or expose project partners to CFM components that they may not yet address. Assets such as technical capacity, land tenure and environmental data, equipment for recording information, software for analyzing data, and internet connectivity are relevant to the objectives of the project. These assets, as well as the processes and strategies for leveraging the local and institutional knowledge have informed the project's technical specifications and procedural strategies.

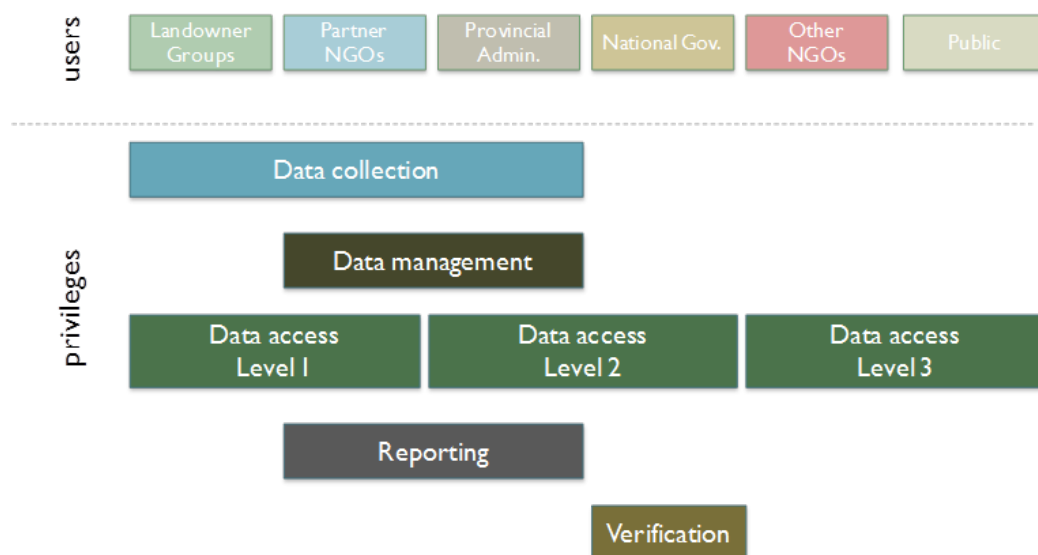
The PNG Forest Authority hosted a 3-day project planning workshop in Port Moresby to finalize the framework for the full-project. During day two, local CFM partners and key stakeholders discussed the project's implementation strategy with reference to the problem and objective trees and the study findings. Table 17 presents the agreed implementation strategies as they relate to each project partner. **Table 17: Implementation strategies and software users by project partner.**

All Partners	PNG Forest Authority
<p><b><u>The project will:</u></b></p> <ul style="list-style-type: none"> <li>Develop efficient data sharing mechanisms that encourage participation and collaboration from the national level down.</li> <li>Focus on 7 priority data fields, namely: (i) land-use and land tenure, (ii) forest biomass, (iii) land cover, (iv) clan membership, (v) Free Prior and Informed Consent (FPIC); (vi) socio-economic monitoring, and (vii) biodiversity.</li> </ul>	<p><b><u>The project will</u></b> integrate the data management system and web-based platform with existing forest management systems and projects, including the (i) <b><u>Capacity Development for Operationalization of PNG Forest Resource Information Management System for Addressing Climate Change</u></b> in PNG Project (currently funded by JICA, (ii) Multi-Purpose National Forest Inventory Project (currently funded by EU and UN-REDD), and (iii) Decision Support System Project (currently funded by AusAID)</p> <p><b><u>The PNG Forest Authority will use</u></b> open source software for collecting_data that can be exported in a compatible format to each system.</p>
Pilot Communities	Local CFM Partners
<p><b><u>The project will</u></b> build landowner capacity to become as autonomous as possible over time (using a phased approach that suits each <b><u>pilot</u></b> group);</p> <p><b><u>Pilot Communities will use</u></b> open source software <b><u>to:</u></b></p> <ul style="list-style-type: none"> <li><b><u>Collect</u></b> data and viewing summary findings offline using simple, available technology (e.g. Android smart-phones) with the necessary extras (e.g. rugged casings and solar powered battery chargers);</li> <li><b><u>Export</u></b> data offline (to be uploaded later online by each local CFM partner).</li> </ul>	<p><b><u>The project will</u></b> use a phased approach that suits each local partner, <b><u>builds</u></b> on local partner strengths and encourages <b><u>dialogue</u></b> between partners.</p> <p><b><u>Local CFM Partners will use</u></b> open source software <b><u>to:</u></b></p> <ul style="list-style-type: none"> <li><b><u>Collect</u></b> and exporting data that can be operated using simple and readily available technology (e.g. Android smart-phones and tablets).</li> <li><b><u>Export</u></b> data in a compatible format for each local system, including Excel and KML (e.g. for ArcGIS and Google).</li> </ul>

Project partners have identified 3 cross-cutting strategies that will shape the technical components of the project, namely:

- **Participatory Geographic Information Systems (PGIS)** will be used to promote community empowerment through involving local people in gathering data as well as determining the variables that are to be measured, mapped and interpreted. Through PGIS, the project will generate original data regarding land tenure, land use and forest resources; providing a framework for documenting traditional forms of knowledge in a format that is accessible and easily utilized by formal scientists and other professionals. PGIS also provides the tools to efficiently and accurately amalgamate data from a wide variety of sources and automatically identify overlaps and potential areas of conflict.
- **Two-way communication** will foster knowledge sharing between pilot communities, local CFM partners and government agencies during the design, implementation, monitoring and evaluation phases. Data collection software will be designed with reference to language, perceptions and priorities of the communities involved in the project. Some data collection requirements, such as those associated with measuring forest carbon stocks, are prescribed at a national and international level. On the other hand, data related to land use and land tenure should draw upon locally defined land categories. In both instances, the ultimate aim is to bridge the gap between new technology and traditional spatial knowledge through the online platform mechanism.
- **Capacity building** is a core strategy for promoting sustainability. Participating landowner groups will learn more about the National Land Development Program, CFM and REDD+. They will also improve their skills to effectively engage in these endeavours. Through PGIS, the project will help landowner groups to become as autonomous as possible in terms of their level of community engagement. Capacity building is also required at provincial and national levels, since the data management platform will be designed to enable landowner groups, local CFM partners and government agencies to achieve shared resource management goals.

The project's proposed technical specifications and information mobilization processes have been prepared with reference to the available technology. Figure 5 (below) outlines the proposed data management system which uses a web-based platform to facilitate the dissemination of data, maps and summary documents. Caution will be exercised with regards to sensitive information. Overall, project partners and other organizations in PNG are willing to share data with PNGFA, **PNGCCDA** and other stakeholders. There is also a wide spread desire to receive data such as satellite imagery, forest ecosystem services information and socio-economic data. All CFM partners have internet access.



**Figure 7:** Data management system users and technical components

### (a) Data collection software

The project partners have considered a variety of open source and proprietary software options including Open Data Kit, Cyber Tracker, Helveta CI World, ArcPad, and EpiCollect. Open Data Kit (ODK) was selected as the best suited data collection software for the following reasons:

- Open source software is freely available and can be downloaded from the internet.
- ODK software can run on almost any device with an Android operating system and the capacity to store data (e.g. microSD).
- ODK software has customizable data collection prompts that support different forms of data capture such as text or number entry, multiple choices questions, GPS coordinates, images, audio and video.
- ODK software allows for multi-language data collection and the use of image-based prompts and multi-language text prompts to record geo-referenced data.
- ODK software has efficient data entry and convenient data export options, such as KML (Google Earth compatible) and Excel formats. Data collected in the field using android devices can be uploaded to a private space online, where ODK web-based software aggregates and organizing the information. Data can also be uploaded and saved on a computer without the use of internet. Later, when internet is available, data can be uploaded directly from the computer without further need of the original device used for data collection.

Figure 8 (below) presents the proposed data collection software.

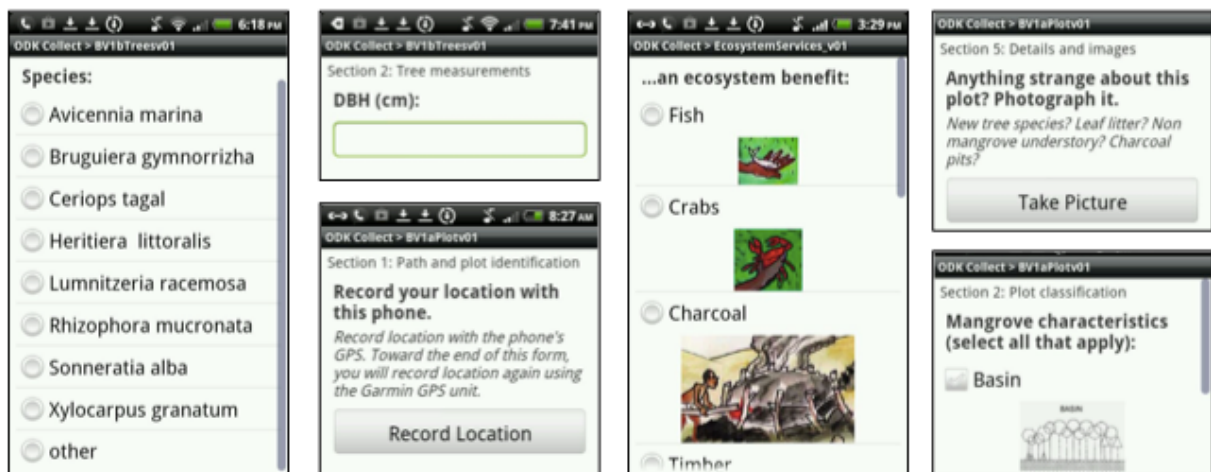


Figure 8: Sample Open Data Kit data collection screens

### (b) Data collection hardware

The project partners have agreed that the ideal device for the project would be rugged (e.g. shock and water resistant) with a long battery life, excellent GPS reception (even under forest canopy), and a large screen size with good screen resolution and clarity. Balancing these specifications with price and PNG availability, will include field testing of Android devices during the initial phase of the Full-project. Many project partners already possess an android device, some of which were purchased locally. After compiling information on locally available devices and comparing the price and specifications with those of other accessible phones (e.g. sold in Australia), the project management team will choose with most suitable device for the project. Solar powered battery chargers and waterproof casing for the phones will most likely be essential equipment for the project. Figure 9 (page 43) presents some data collection hardware options for the project.



**Figure 9:** Sample data collection hardware options

**(c) Data management**

While participating landowner groups will record data on their customary lands, their local partners will serve a critical role in linking data collection with local and national processes through data management. Figure 10 (below) shows that the key processes associated with the project goals are ILG registration, land use planning and PES/REDD.

<i>Format</i>	<i>Digital forms</i>	<i>Process</i>
Image	▶ Land tenure	ILG Registration
Text	▶ Forest biomass	REDD
Image	▶ Land use and and cover	Land use planning & REDD
Text	▶ Clan membership	ILG Registration
Image	▶ Video FPIC	REDD
Text	▶ Socio-economic	Land use planning & REDD
Video	▶ Biodiversity	Land use planning & REDD

**Figure 10:** Digital data collection forms and formats

**(d) Data access**

The project will establish a web-based platform to facilitate the dissemination of data, maps and summary documents. Caution will be exercised with regards to sensitive information. Overall, project partners and other organizations in PNG are willing to share data with the PNG Forest Authority, **PNGCCDA** and other stakeholders. There is also a wide spread desire to receive data such as satellite imagery, forest ecosystem services information and socio-economic data. During the project, local partners will inform participating landowner groups of the potential risks and benefits of sharing data, before members document their consent to share some or all of the data collected. Efficient data sharing mechanisms need to be developed from national level down. Project partners have indicated that data sharing overseas needs to be carefully discussed and managed during the design of the data management system. The data generated by this project will be disseminated in kml and xls formats compatible with the preferred software. However, data management capacity building for landowner groups will focus on Google Earth, free open source software for visualizing spatial information. After downloading background imagery, Google Earth can be used on- or off-line to make basic maps. Google Earth software is relatively easy to learn and it has been used (in conjunction with Open Data Kit) for participatory GIS in other parts of the world. More complex software such as Excel and ArcGIS can be incorporated into training as and when needed.

### 3.3 Work Plan

Outputs and Activities	Responsible Party	Year 1				Year 2				Year 3			
		1	2	3	4	1	2	3	4	1	2	3	4
<b>Output 1: Participatory data collection technology is improving CFM practices at community, district and provincial levels</b>													
1.1 Develop participatory data collection hardware and software for forest resource assessment and clan land boundary mapping in consultation	PNGFA												
1.2 Provide local CFM partners and landowner groups with the necessary training sessions / materials for collecting and monitoring their forest	PNGFA												
1.3 Facilitate sustainable land-use planning and understanding about the goods and services forests provide using participatory data collection	PNGFA												
1.4 Monitor progress with reference to logical framework indicators, activity milestones and baseline data.	PNGFA												
<b>Output 2: Clan groups are participating appropriately in the National Land Development Program</b>													
2.1 Strengthen institutional partnerships at all levels in consultation with PNG Forest Authority and Department of Lands.	PNGFA												
2.2 Raise target community awareness about the National Land Development Program in consultation with PNG Forest Authority and	PNGFA												
2.3 Develop participatory data collection software for land group incorporation in consultation with local CFM partners, landowner groups	PNGFA												
2.4 Provide local CFM partners and landowner groups with the necessary training sessions / materials for collecting their land group incorporation	PNGFA												
2.5 Monitor progress with reference to logical framework indicators, activity milestones and baseline data.	PNGFA												
<b>Output 3: A data management system is engaging landowners in feasible CFM schemes (including PES and REDD+)</b>													
3.1 Develop data management system and web-based platform in consultation with user groups for facilitating the dissemination of relevant	PNGFA												
3.2 Provide data management staff with the necessary training sessions / materials for managing and disseminating relevant information.	PNGFA												
3.3 Facilitate CFM opportunities for local CFM partners and landowner groups using the data management system.	PNGFA												
3.4 Monitor progress with reference to logical framework and activity milestones.	PNGFA												
<b>Output 4: Policy and planning guidelines for CFM are in place</b>													
4.1 Facilitate coordination between government agencies with the Chief Secretary's office.	PNGFA												
4.2 Develop policy and planning guidelines for CFM in consultation with key stakeholders and with reference to data management system and	PNGFA												
4.3 Launch policy and planning guidelines for CFM.	PNGFA												
4.4 Monitor progress with reference to logical framework and activity milestones.	PNGFA												

### 3.4 Budget

#### 3.4.1 Master Budget Schedule

Outputs and Activities	Inputs		Unit Costs	Source (I or E)	Year	Budget Component	TOTAL
	Units and Quality	No.					
<b>Output 1: Participatory data collection technology is improving CFM practices at community, district and provincial levels</b>							
1.1 Develop participatory data collection hardware and software for forest resource assessment and clan land boundary mapping in consultation with local CFM partners and landowner groups.	Software developer / daily fee	10	500	I	Y1	12.1	\$ 5,000.00
	Data collection hardware / devices (laptops)	8	460	I	Y1	42.1	\$ 3,680.00
	Data collection hardware / devices (tablets)	8	460	I	Y1	42.1	\$ 3,680.00
	Data collection hardware / devices (smart phones)	14	460	I	Y1	42.1	\$ 6,440.00
	Data collection hardware / accessories (solar battery chargers)	14	400	I	Y1	42.2	\$ 5,600.00
	Data collection hardware / accessories (USB hubs / chargers)	14	400	I	Y1	42.2	\$ 5,600.00
	Data collection hardware / accessories (waterproof casings)	25	40	I	Y1	42.2	\$ 1,000.00
	Data collection software / lump sum	1	1549	I	Y1	42.3	\$ 1,549.00
	DSA / meeting days	240	24	I	Y1	31.2	\$ 5,760.00
	Airfares / meetings	24	480	I	Y1	33.1	\$ 11,520.00
	Local transport / meetings	24	150	I	Y1	33.2	\$ 3,600.00
	Workshop / lump sum	1	960	I	Y1	51.1	\$ 960.00
	DSA / workshop	24	80	I	Y1	31.1	\$ 1,920.00
	Airfares / workshop	6	480	I	Y1	33.1	\$ 2,880.00
1.2 Provide local CFM partners and landowner groups with the necessary training sessions / materials for collecting and monitoring their forest resource and clan land boundary data.	Training resource developer / daily fee	10	500	I	Y2	12.2	\$ 5,000.00
	Training resources / set	30	80	I	Y2	51.3	\$ 2,400.00
	Meeting / lump sum	24	240	I	Y2	51.2	\$ 5,760.00
	DSA / meeting days	120	24	I	Y2	31.2	\$ 2,880.00
	Airfares / meetings	24	480	I	Y2	33.1	\$ 11,520.00
1.3 Facilitate sustainable land-use planning and understanding about the goods and services forests provide	Local transport / meetings	24	150	I	Y2	33.2	\$ 3,600.00
	DSA / meeting days	120	24	I	Y3	31.2	\$ 2,880.00
	Airfares / meetings	24	480	I	Y3	33.1	\$ 11,520.00
1.4 Monitor progress with reference to logical framework indicators, activity milestones and baseline data.	Local transport / meetings	24	160	I	Y3	33.2	\$ 3,840.00
	DSA / meeting days	120	24	I	Y1	31.2	\$ 2,880.00
	Airfares / meetings	24	480	I	Y1	33.1	\$ 11,520.00
	Local transport / meetings	24	160	I	Y1	33.2	\$ 3,840.00
	DSA / meeting days	120	24	I	Y2	31.2	\$ 2,880.00
	Airfares / meetings	24	480	I	Y2	33.1	\$ 11,520.00
	Local transport / meetings	24	160	I	Y2	33.2	\$ 3,840.00
	DSA / meeting days	120	24	I	Y3	31.2	\$ 2,880.00
	Airfares / meetings	24	480	I	Y3	33.1	\$ 11,520.00
Local transport / meetings	24	160	I	Y3	33.2	\$ 3,840.00	
<b>Activity Total (USD)</b>							<b>\$ 163,309.00</b>



<b>Output 2: Clan groups are engaged in the National Land Development Program</b>							
2.1 Strengthen institutional partnerships at all levels in consultation with PNG Forest Authority and Department of Lands.	Workshop / lump sum	1	960	I	Y1	51.1	\$ 960.00
	Meeting / lump sum	4	240	I	Y1	51.2	\$ 960.00
	Local transport / meetings	4	160	I	Y1	33.2	\$ 640.00
	Meeting / lump sum	4	240	I	Y2	51.2	\$ 960.00
	Local transport / meetings	4	160	I	Y2	33.2	\$ 640.00
	Meeting / lump sum	4	240	I	Y3	51.2	\$ 960.00
	Local transport / meetings	4	160	I	Y3	33.2	\$ 640.00
2.2 Raise target community awareness about the National Land Development Program in consultation with PNG Forest Authority and Department of Lands.	Training resource developer / daily fee	5	500	I	Y1	12.2	\$ 2,500.00
	Meetings / lump sum	24	240	I	Y2	51.2	\$ 5,760.00
	DSA/ meeting days	60	24	I	Y2	31.2	\$ 1,440.00
	Airfares / meetings	12	480	I	Y2	33.1	\$ 5,760.00
	Local transport / meetings	12	160	I	Y2	33.2	\$ 1,920.00
2.3 Develop participatory data collection software for land group	Software developer / daily fee	5	500	I	Y2	12.1	\$ 2,500.00
	DSA/ meeting days	120	24	I	Y1	31.2	\$ 2,880.00
2.4 Provide local CFM partners and landowner groups with the necessary training sessions / materials for collecting their land group	Training resource developer / daily fee	10	500	I	Y2	12.2	\$ 5,000.00
	Training resources / set	30	80	I	Y2	51.3	\$ 2,400.00
	Meeting / lump sum	24	240	I	Y2	51.2	\$ 5,760.00
	DSA/ workshop	60	24	I	Y2	31.2	\$ 1,440.00
2.5 Monitor progress with reference to logical framework indicators, activity milestones and baseline data.	DSA/ meeting days	48	24	I	Y1	31.2	\$ 1,152.00
	Local transport / meetings	24	160	I	Y1	33.2	\$ 3,840.00
	DSA/ meeting days	48	24	I	Y2	31.2	\$ 1,152.00
	Local transport / meetings	24	160	I	Y2	33.2	\$ 3,840.00
	DSA/ meeting days	48	24	I	Y3	31.2	\$ 1,152.00
	Local transport / meetings	24	160	I	Y3	33.2	\$ 3,840.00
<b>Activity Total (USD)</b>							<b>\$ 58,096.00</b>

<b>Output 3: A data management system is engaging landowners in appropriate CFM schemes (including PES and REDD+)</b>							
<b>3.1</b> Develop data management system and web-based platform in consultation with user groups for facilitating the dissemination of	Software developer / daily fee	10	500	I	Y1	12.1	\$ 5,000.00
	Data management hardware / devices	2	800	I	Y1	42.1	\$ 1,600.00
	Data management hardware / accessories	2	800	I	Y1	42.2	\$ 1,600.00
	Data management software / sets	1	1500	I	Y1	42.3	\$ 1,500.00
<b>3.2</b> Provide data management staff with the necessary training sessions / materials for managing and	Training resource developer / daily fee	5	500	I	Y2	12.2	\$ 2,500.00
	Training resources / set	10	80	I	Y2	51.3	\$ 800.00
	Workshop / lump sum	1	960	I	Y2	51.1	\$ 960.00
<b>3.3</b> Facilitate CFM opportunities for local CFM partners and landowner groups using the data management	DSA / meetings	60	24	I	Y3	31.2	\$ 1,440.00
	Airfares / meetings	12	480	I	Y3	33.1	\$ 5,760.00
	Local transport / meetings	12	160	I	Y3	33.2	\$ 1,920.00
<b>3.4</b> Monitor progress with reference to logical framework and activity milestones.	DSA / meetings	48	24	I	Y1	31.2	\$ 1,152.00
	Local transport / meetings	24	160	I	Y1	33.2	\$ 3,840.00
	DSA / meetings	48	24	I	Y2	31.2	\$ 1,152.00
	Local transport / meetings	24	160	I	Y2	33.2	\$ 3,840.00
	DSA / meetings	48	24	I	Y3	31.2	\$ 1,152.00
	Local transport / meetings	24	160	I	Y3	33.2	\$ 3,840.00
<b>Activity Total (USD)</b>							<b>\$ 38,056.00</b>

<b>Output 4: Policy and planning guidelines for CFM are in place</b>							
<b>4.1</b> Facilitate coordination between government agencies with the Chief Secretary's office.	Meeting / lump sum	4	240	I	Y1	51.2	\$ 960.00
	Local transport / meetings	4	160	I	Y1	33.2	\$ 640.00
	Meeting / lump sum	4	240	I	Y2	51.2	\$ 960.00
	Local transport / meetings	4	160	I	Y2	33.2	\$ 640.00
<b>4.2</b> Develop policy and planning guidelines for CFM in consultation with key stakeholders and with	Workshop / lump sum	1	960	I	Y3	51.1	\$ 960.00
	Meeting / lump sum	4	240	I	Y3	51.2	\$ 960.00
	Local transport / meetings	4	160	I	Y3	33.2	\$ 640.00
<b>4.3</b> Launch policy and planning guidelines for CFM.	Workshop / lump sum	1	960	I	Y3	51.1	\$ 960.00
	DSA / workshop	6	80	I	Y3		\$ 480.00
	Airfares / workshop	6	480	I	Y3	33.1	\$ 2,880.00
	Local transport / workshop	10	160	I	Y3	33.2	\$ 1,600.00
<b>4.4</b> Monitor progress with reference to logical framework and activity milestones.	DSA / meetings	120	24	I	Y1	31.2	\$ 2,880.00
	Local transport / meetings	24	160	I	Y1	33.2	\$ 3,840.00
	DSA / meetings	120	24	I	Y2	31.2	\$ 2,880.00
	Local transport / meetings	24	160	I	Y2	33.2	\$ 3,840.00
	DSA / meetings	120	24	I	Y3	31.2	\$ 2,880.00
	Local transport / meetings	24	160	I	Y3	33.2	\$ 3,840.00
<b>Activity Total (USD)</b>							<b>\$ 31,840.00</b>

Non-activity Based Expenses							
Project Personnel	Project coordinator / monthly salary	8	1250	E	Y1	11.1	\$ 10,000.00
	Project secretary / monthly salary	12	278	I	Y1	11.2	\$ 3,336.00
	Project field officer / monthly salary	12	389	I	Y1	11.3	\$ 4,668.00
	Project manager / monthly salary	12	1080	I	Y1	11.4	\$ 12,960.00
	Project coordinator / monthly salary	8	1250	E	Y2	11.1	\$ 10,000.00
	Project secretary / monthly salary	12	278	I	Y2	11.2	\$ 3,336.00
	Project field officer / monthly salary	12	389	I	Y2	11.3	\$ 4,668.00
	Project manager / monthly salary	12	1080	I	Y1	11.4	\$ 12,960.00
	Project coordinator / monthly salary	8	1250	E	Y3	11.1	\$ 10,000.00
	Project secretary / monthly salary	12	278	I	Y3	11.2	\$ 3,336.00
	Project field officer / monthly salary	12	389	I	Y3	11.3	\$ 4,668.00
	Project manager / monthly salary	12	1080	I	Y1	11.4	\$ 12,960.00
Travel	DSA/ technical committee meetings	12	80	I	Y1	31.1	\$ 960.00
	DSA/ technical committee meetings	12	80	I	Y2	31.1	\$ 960.00
	DSA/ technical committee meetings	12	80	I	Y3	31.1	\$ 960.00
Capital Items	Desk top computer with monitor	2	1000	I	Y1	42.4	\$ 2,000.00
	Laptop computer	2	1000	I	Y1	42.5	\$ 2,000.00
Consumable Items	Office materials / monthly	12	500	I	Y1	54	\$ 6,000.00
	Office materials / monthly	12	500	I	Y2	54	\$ 6,000.00
	Office materials / monthly	12	500	I	Y3	54	\$ 6,000.00
	Mobile phone (user group) / monthly	12	450	I	Y1	53	\$ 5,400.00
	Mobile phone (user group) / monthly	12	450	I	Y2	53	\$ 5,400.00
	Mobile phone (user group) / monthly	12	450	I	Y3	53	\$ 5,400.00
<b>Activity Total (USD)</b>							<b>\$ 133,972.00</b>

### 3.4.2 Consolidated Budget by Component

Budget Components	Input	Unit	Unit Cost	TOTAL	YEAR 1	YEAR 2	YEAR 3
<b>10 Project Personnel</b>							
11. National Experts							
11.1. NFS project coordinator (part-time)	24	Person	\$ 1,250.00	\$ 30,000.00	\$ 10,000.00	\$ 10,000.00	\$ 10,000.00
11.2. NFS project secretary (full-time)	18	Person	\$ 550.00	\$ 10,008.00	\$ 3,336.00	\$ 3,336.00	\$ 3,336.00
11.3. NFS project field officer (full-time)	18	Person	\$ 800.00	\$ 14,004.00	\$ 4,668.00	\$ 4,668.00	\$ 4,668.00
11.4. NFS project manager (full-time)	36	Person	\$ 1,078.00	\$ 38,880.00	\$ 12,960.00	\$ 12,960.00	\$ 12,960.00
12. National Consultants							
12.1 Software developer	25	Person day	\$ 500.00	\$ 12,500.00	\$ 10,000.00	\$ 2,500.00	\$ -
12.2 Training resource developer	30	Person day	\$ 500.00	\$ 15,000.00	\$ 2,500.00	\$ 12,500.00	\$ -
19. Component Total				\$ 120,392.00	\$ 43,464.00	\$ 45,964.00	\$ 30,964.00
<b>20 Sub-contracts</b>							
29. Component Total	-		\$ -	\$ -	\$ -	\$ -	\$ -
<b>30 Travel</b>							
31. DSA							
31.1. Town DSA	66	Person day	\$ 80.00	\$ 5,280.00	\$ 2,880.00	\$ 960.00	\$ 1,440.00
31.2. Field DSA	1,788	Person day	\$ 24.00	\$ 42,912.00	\$ 16,704.00	\$ 13,824.00	\$ 12,384.00
33. Local Transport Costs							
33.1. Air Fares	180	Return trip	\$ 480.00	\$ 86,400.00	\$ 25,920.00	\$ 28,800.00	\$ 31,680.00
33.2. Vehicle costs	415	Return trip	\$ 160.00	\$ 66,400.00	\$ 20,240.00	\$ 22,160.00	\$ 24,000.00
39. Component Total				\$ 200,992.00	\$ 65,744.00	\$ 65,744.00	\$ 69,504.00
<b>40 Capital Items</b>							
42. Computer / IT Equipment							
42.1. Data collection devices	39	Unit	\$ 400.00	\$ 15,400.00	\$ 15,400.00	\$ -	\$ -
42.2. Data collection accessories	35	Unit	\$ 400.00	\$ 13,800.00	\$ 13,800.00	\$ -	\$ -
42.3. Data collection software	2	Unit	\$ 2,000.00	\$ 3,049.00	\$ 3,049.00	\$ -	\$ -
42.4. Desk top computer with monitor	2	Unit	\$ 1,200.00	\$ 2,000.00	\$ 2,000.00	\$ -	\$ -
42.5. Laptop computer	2	Unit	\$ 1,200.00	\$ 2,000.00	\$ 2,000.00	\$ -	\$ -
49. Component Total				\$ 36,249.00	\$ 36,249.00	\$ -	\$ -
<b>50 Consumable Items</b>							
51. Raw materials	-						
51.1. Workshops	5	Lump sum	\$ 960.00	\$ 4,800.00	\$ 1,920.00	\$ 960.00	\$ 1,920.00
51.2. Meetings	96	Lump sum	\$ 240.00	\$ 23,040.00	\$ 1,920.00	\$ 19,200.00	\$ 1,920.00
51.3. Training resources	70	Set	\$ 80.00	\$ 5,600.00	\$ -	\$ 5,600.00	\$ -
52. Spares				\$ -			
53. Utilities	36	Month	\$ 400.00	\$ 16,200.00	\$ 5,400.00	\$ 5,400.00	\$ 5,400.00
54. Office Supplies	36	Month	\$ 400.00	\$ 18,000.00	\$ 6,000.00	\$ 6,000.00	\$ 6,000.00
59. Component Total				\$ 67,640.00	\$ 15,240.00	\$ 37,160.00	\$ 15,240.00
<b>60 Miscellaneous</b>							
61. Sundry				\$ 16,000.00	\$ 8,000.00	\$ 4,000.00	\$ 4,000.00
62. Auditing				\$ 8,000.00	\$ 2,000.00	\$ 2,000.00	\$ 4,000.00
63. Contingencies	-			\$ 16,000.00	\$ 8,000.00	\$ 4,000.00	\$ 4,000.00
69. Component Total				\$ 40,000.00	\$ 18,000.00	\$ 10,000.00	\$ 12,000.00
<b>70 National Management Costs</b>							
71. Executing Agency Management Costs				\$ -	\$ -	\$ -	\$ -
79. Component Total				\$ -	\$ -	\$ -	\$ -
<b>SUBTOTAL</b>				\$ 465,273.00	\$ 178,697.00	\$ 158,868.00	\$ 127,708.00
<b>80 Project Monitoring and Administration</b>							
81. ITTO Monitoring and Review				\$ 19,114.00		\$ 9,557.00	\$ 9,557.00
82. ITTO midterm, final, ex-post Evaluation				\$ 10,000.00			\$ 10,000.00
83. ITTO Programme Support Costs (12%)				\$ 51,886.00			
89. Component Total				\$ 81,000.00	\$ 22,000.00	\$ 26,500.00	\$ 32,500.00
<b>90 Refund of Pre-Project Costs</b>				122,040			
<b>100 GRAND TOTAL</b>				\$ 668,313.00			

### 3.4.3 ITTO Budget by Component

Annual Disbursements				
	Total	Year 1	Year 2	Year 3
<b>Budget Components</b>				
<b>10. Project personnel</b>	<b>\$ 90,392.00</b>	<b>\$ 33,464.00</b>	<b>\$ 35,964.00</b>	<b>\$ 20,964.00</b>
11.2. NFS project secretary (full-time)	\$ 10,008.00	\$ 3,336.00	\$ 3,336.00	\$ 3,336.00
11.3. NFS project field officer (full-time)	\$ 14,004.00	\$ 4,668.00	\$ 4,668.00	\$ 4,668.00
11.4. NFS project manager (full-time)	\$ 38,880.00	\$ 12,960.00	\$ 12,960.00	\$ 12,960.00
12.1 Software developer	\$ 12,500.00	\$ 10,000.00	\$ 2,500.00	\$ -
12.2 Training resource developer	\$ 15,000.00	\$ 2,500.00	\$ 12,500.00	\$ -
<b>20. Sub-contracts</b>	<b>\$ -</b>	<b>\$ -</b>	<b>\$ -</b>	<b>\$ -</b>
<b>30. Duty travel</b>	<b>\$ 200,992.00</b>	<b>\$ 65,744.00</b>	<b>\$ 65,744.00</b>	<b>\$ 69,504.00</b>
31.1. Town DSA	\$ 5,280.00	\$ 2,880.00	\$ 960.00	\$ 1,440.00
31.2. Field DSA	\$ 42,912.00	\$ 16,704.00	\$ 13,824.00	\$ 12,384.00
33.1. Air Fares	\$ 86,400.00	\$ 25,920.00	\$ 28,800.00	\$ 31,680.00
33.2. Vehicle costs	\$ 66,400.00	\$ 20,240.00	\$ 22,160.00	\$ 24,000.00
<b>40. Capital items</b>	<b>\$ 36,249.00</b>	<b>\$ 36,249.00</b>	<b>\$ -</b>	<b>\$ -</b>
42.1. Data collection devices	\$ 15,400.00	\$ 15,400.00	\$ -	\$ -
42.2. Data collection accessories	\$ 13,800.00	\$ 13,800.00	\$ -	\$ -
42.3. Data collection software	\$ 3,049.00	\$ 3,049.00	\$ -	\$ -
42.4. Desk top computer with monitor	\$ 2,000.00	\$ 2,000.00	\$ -	\$ -
42.5. Laptop computer	\$ 2,000.00	\$ 2,000.00	\$ -	\$ -
<b>50. Consumable items</b>	<b>\$ 67,640.00</b>	<b>\$ 15,240.00</b>	<b>\$ 37,160.00</b>	<b>\$ 15,240.00</b>
51.1. Workshops	\$ 4,800.00	\$ 1,920.00	\$ 960.00	\$ 1,920.00
51.2. Meetings	\$ 23,040.00	\$ 1,920.00	\$ 19,200.00	\$ 1,920.00
51.3. Training resources	\$ 5,600.00	\$ -	\$ 5,600.00	\$ -
53. Utilities	\$ 16,200.00	\$ 5,400.00	\$ 5,400.00	\$ 5,400.00
54. Office Supplies	\$ 18,000.00	\$ 6,000.00	\$ 6,000.00	\$ 6,000.00
<b>60. Miscellaneous</b>	<b>\$ 8,000.00</b>	<b>\$ 2,000.00</b>	<b>\$ 2,000.00</b>	<b>\$ 4,000.00</b>
62. Auditing	\$ 8,000.00	\$ 2,000.00	\$ 2,000.00	\$ 4,000.00
<b>Subtotal 1</b>	<b>\$ 403,273.00</b>	<b>\$ 152,697.00</b>	<b>\$ 140,868.00</b>	<b>\$ 109,708.00</b>
<b>80. ITTO Monitor. Evaluation. Costs</b>				
81. Monitoring and Review Costs (effective estimation)	\$ 19,114.00			
82. Evaluation Costs (effective estimation)	\$ 10,000.00			
<b>Subtotal 2</b>	<b>\$ 29,114.00</b>			
83. Program Support Costs (12% of Overall Budget)	\$ 51,886.00			
<b>90. Refund of Pre-Project Costs</b>	<b>\$ 122,040.00</b>			
<b>ITTO TOTAL</b>	<b>\$ 606,313.00</b>			

### 3.4.4 Executing Agency Budget by Component

Annual Disbursements				
	Total	Year 1	Year 2	Year 3
<b>Budget Components</b>				
<b>10. Project personnel</b>	<b>\$ 30,000.00</b>	<b>\$ 10,000.00</b>	<b>\$ 10,000.00</b>	<b>\$ 10,000.00</b>
11.1. NFS project <u>coordinator</u>	\$ 30,000.00	\$ 10,000.00	\$ 10,000.00	\$ 10,000.00
<b>20. Sub-contracts</b>	<b>\$ -</b>	<b>\$ -</b>	<b>\$ -</b>	<b>\$ -</b>
<b>30. Duty travel</b>	<b>\$ -</b>	<b>\$ -</b>	<b>\$ -</b>	<b>\$ -</b>
<b>40. Capital items</b>	<b>\$ -</b>	<b>\$ -</b>	<b>\$ -</b>	<b>\$ -</b>
<b>50. Consumable items</b>	<b>\$ -</b>	<b>\$ -</b>	<b>\$ -</b>	<b>\$ -</b>
<b>60. Miscellaneous</b>	<b>\$ 32,000.00</b>	<b>\$ 16,000.00</b>	<b>\$ 8,000.00</b>	<b>\$ 8,000.00</b>
61. Sundry	\$ 16,000.00	\$ 8,000.00	\$ 4,000.00	\$ 4,000.00
63. Contingencies	\$ 16,000.00	\$ 8,000.00	\$ 4,000.00	\$ 4,000.00
<b>70. Executing Agency Management Costs</b>	<b>\$ -</b>	<b>\$ -</b>	<b>\$ -</b>	<b>\$ -</b>
<b>EXECUTING AGENCY/HOST GOVT. TOTAL</b>	<b>\$ 62,000.00</b>	<b>\$ 26,000.00</b>	<b>\$ 18,000.00</b>	<b>\$ 18,000.00</b>

## 3.5 Assumptions, Risks and Sustainability

### 3.5.1 Assumptions and Risks

Table 18 (below) presents the mitigation measures **and tasks** that will be taken to ensure the assumptions stated in the logical framework matrix (pages 35-36) remain valid.

**Table 18:** Project risks, mitigation measures and **responsibilities**

Project Risk	Mitigation Measure	Mitigation Responsibilities
Inadequate political support for CFM at local, provincial and national levels.	Political representatives at local, provincial and national levels will be encouraged to play an active role in the development of the policy and planning guidelines for CFM.	<p><b><u>Under Activity 4.1, the project coordinator will ensure that coordination between government agencies (e.g. Forests and Climate Change, Lands and Physical Planning, Community Development) is facilitated through the Chief Secretary's office.</u></b></p> <p><b><u>Under Activities 4.2 and 4.3, the project coordinator will invite relevant government ministers and their administrative staff to participate in the national 'CFM policy and planning guidelines' workshop and the subsequent launch in Port Moresby.</u></b></p> <p><b><u>Under Activities 4.2 and 4.4, the project field officer and local CFM partners will maintain ongoing dialogue with local-level councillors and their ward development committee members (including women's representatives) from the pilot areas through regular meetings and working sessions. District and Provincial Members and their administrative staff will also be encouraged to participate in these tasks.</u></b></p>

**Table 18:** Project risks, mitigation measures and **responsibilities (continued)**

<b>Project Risk</b>	<b>Mitigation Measure</b>	<b>Mitigation Responsibilities</b>
Landowner groups are unwilling and/or unable to collaborate with the project.	<p>Participating landowner groups will be encouraged to play an active role in the design, testing, implementation and monitoring of the CFM data management system with support from their local CFM partners.</p> <p>Appropriate training and awareness resources will be developed for Outputs 1 (data collection) and 2 (National Land Development Program).</p> <p>Local CFM partners will ensure that participating sub-clans have the full support of all clan members.</p>	<p><b><u>Under Activities 1.1-1.3 and 2.2-2.4, the project field officer and local CFM partners will maintain ongoing dialogue with local organisations and social groups (e.g. government, church, clan, youth and women) through regular local meetings and working sessions.</u></b></p> <p><b><u>Under Activities 1.4 and 2.5, the project field officer will ensure that the quarterly monitoring visits identify local issues and appropriate corrective actions.</u></b></p>
National Land Development Program staff are unwilling and/or unable to collaborate with the project.	National Land Development Program staff will be encouraged to play an active role in the preparation of awareness resources for the National Land Development Program.	<p><b><u>Under Activity 2.1, the project coordinator will maintain ongoing dialogue with key staff from the PNG Forest Authority and Department of Lands through regular meetings and working sessions.</u></b></p> <p><b><u>Under Activity 2.3, the project coordinator will invite decision-makers from the PNG Forest Authority and Department of Lands to participate in the national workshop in Port Moresby.</u></b></p>
PNGFA data management staff are unwilling and/or unable to collaborate with the project.	<p>The PNGFA's data management staff will be encouraged to play an active role in the design, testing, implementation and monitoring of the CFM data management system with support from the Climate Change and REDD Branch and the project management team.</p> <p>Appropriate training resources will be developed for Output 3.</p>	<p><b><u>Under Activity 3.1, the software developer will use face-to-face meetings and email/internet to collaborate with data management staff</u></b></p> <p><b><u>Under Activity 3.2, the training resources developer will provide data management staff with participatory training sessions and user-friendly training materials for managing and disseminating relevant information.</u></b></p>
Government agencies responsible for CFM are unwilling and/or unable to collaborate with the project.	The project's key institutional partners will be a member of the project's technical committee. They will also be encouraged to participate in the development of the policy and guidelines for CFM.	<b><u>During the project implementation phase, the project coordinator will organise regular technical committee meetings that will enable members to receive information and provide timely technical recommendations to project management.</u></b>

### 3.5.2 Sustainability

The "model community-based land ownership mapping and forest resource assessment system" will be managed by the PNG Forest Authority at the national level; working in collaboration with the project's selected CFM partners at the local level. This arrangement has the potential for ongoing replication through other local partners and their pilot landowner groups in the future. Table 19 (page 54) shows how the project has been designed to be sustainable in financial, technical, social, economic, institutional and political terms.



**Table 19:** Project sustainability strategy.

Project Aspect	Exit Strategy
Financial Sustainability	<p>The PNG Forest Authority is responsible for ensuring the data management system has adequate financial resources at the national level to operate and expand its operations over time.</p> <p><b><u>The local CFM partners are responsible for ensuring they have adequate financial resources to operate and maintain their data collection technology, as well as expand their operations over time.</u></b></p> <p><b><u>Other mechanisms</u></b> for ensuring financial sustainability at national, provincial and local levels <b><u>will be discussed</u></b> with project partners (e.g. <b><u>PNG Climate Change Development Authority, Department of Lands and Physical Planning, and Provincial and District Governments</u></b> during the design of the data management system.</p>
Technical Sustainability	<p>Use tried-and-tested open source software which is freely available, regularly up-dated and can be downloaded from the internet (refer Section 3.2, page 42).</p> <p>Use reliable smart phone and tablet data collection devices with an Android operating system for easy operation and maintenance / replacement together with rugged casings and solar chargers / battery packs (refer Section 3.2, page 42).</p> <p>Integrate the web-based platform with existing national forest management systems and projects using open source software for collecting data that can be exported in a compatible format for each national system.</p>
Social Sustainability	<p>Use a phased approach that suits each participating landowner group.</p> <p>Build landowner capacity to become as autonomous as possible over time using Participatory GIS (PGIS) as a framework for documenting traditional forms of knowledge in a format that is accessible and easily utilized by professional organizations, together with appropriate training and awareness sessions / materials (refer Section 3.2, page 41).</p> <p>Develop high-priority data collection forms, namely: (i) land-use and land tenure, (ii) forest biomass, (iii) land cover, (iv) clan membership, (v) Free Prior and Informed Consent (FPIC); (vi) socio-economic monitoring, and (vii) biodiversity.</p>
Economic Sustainability	<p>The data management system provides a framework for providing local CFM partners and their landowner groups with improved access private sector markets for environmental goods and services.</p> <p>Encourage registered markets for environmental goods and services to participate in the design of the CFM data management system.</p>
Institutional Sustainability	<p>Encourage dialogue between all project partners during the design, testing, implementation and monitoring phases; using a phased approach that suits each partner. This includes the development of efficient and acceptable data sharing protocols.</p> <p>Develop data collection tools that suit local user requirements, and are easy to operate and maintain / replace. Prepare local training materials and provide on-site training sessions</p> <p>Develop a data management system that maximizes the PNG Forest Authority's physical assets, and addresses its financial and human resource limitations in the field. Prepare an operations manual for data management staff and provide on-site training sessions</p>
Political Sustainability	<p>Encourage political representatives at local, provincial and national levels to play an active role in the development of the policy and planning guidelines for CFM.</p>

## Part 4: Implementation Arrangements

### 4.1 *Organisational Structure and Stakeholder Involvement Mechanisms*

Figure 11 (below) outlines the project's organizational structure.

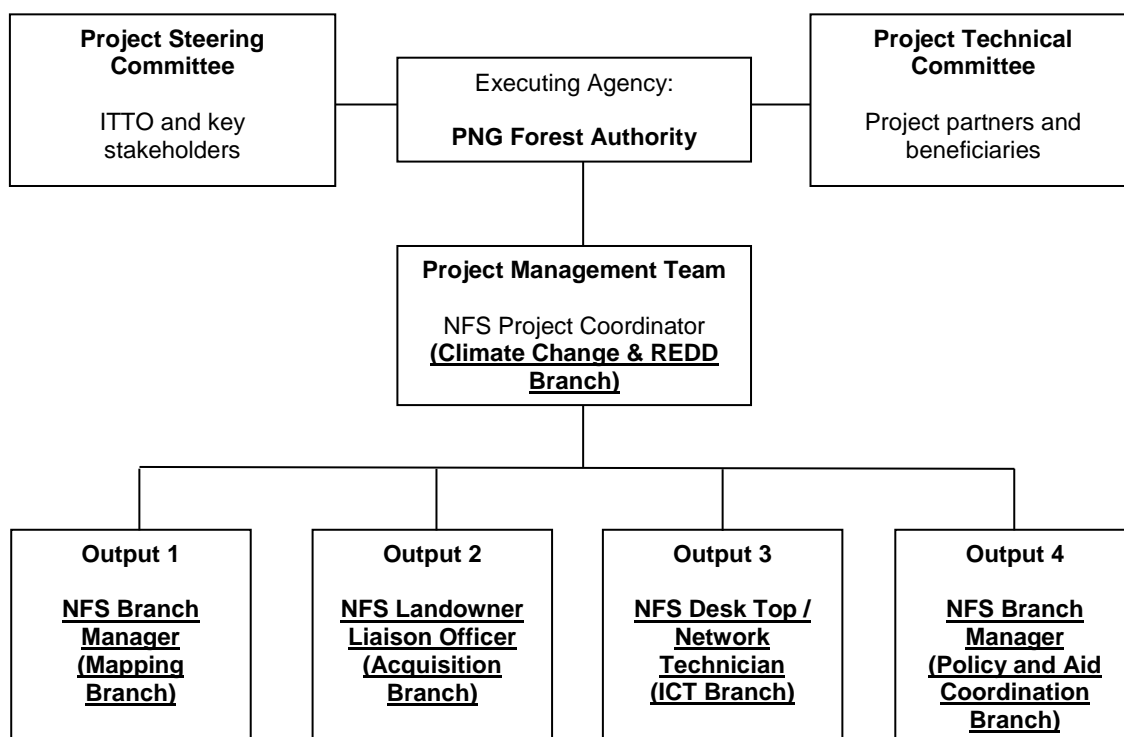


Figure 11: Project organisational structure

#### 4.1.1 Executing Agency and Partners

The PNG Forest Authority will execute the project through the project management team that was established during the pre-project. The PNG Forest Authority has appointed a project coordinator from in its Climate Change and REDD Branch office in Port Moresby (refer Table 21, page 56). The project will also recruit a full-time project secretary and field officer to be based at the PNGFA headquarters in Port Moresby.

Field operations will be undertaken in collaboration with the project's 6 local CFM partners. Each collaborating partner will be sub-contracted to the project with reference to a working agreement. Annex 4 (page 68) introduces each local partner. Table 20 (page 56) presents their appointed project leaders.

**Table 20:** Local CFM partners and appointed project leaders.

<b>Local CFM Partner</b>	<b>Appointed Leader</b>
Foundation for People and Community Development (FPCD)	Mr. Stewart Serawe (Integrated Community Development Program Manager) has over 12 years experience working with NGOs in PNG. He has a BA in Environment Science and Physical Geography, and a Diploma in Project Management.
Research and Conservation Foundation (RCF)	Mr. Robert Bino (Natural Resource Management Program Manager) has nearly 20 years of experience in the conservation sector in PNG. He has a Master of Environmental Management and Development from the Australian National University and is currently finishing off his PhD studies in Environmental Management.
Milne Bay Provincial Administration (MBPA) with PNG Forest Authority (PNGFA)	Mr. Noel Dibela (Provincial Forest Officer) has 28 years of work experience in the forestry sector, both within and outside Milne Bay Province.
FORCERT (Forest Management and Product Certification Service)	Mr. Peter Dam (Technical Advisor/PES Trial Project Coordinator) has 19 years of experience working on community eco-forestry in PNG, 16 years on FSC certification, and 7 years on PES.
Tree Kangaroo Conservation Program (TKCP)	Mr. Benjamin Sipa (Community Services & Livelihoods Manager) has worked for 12 years in PNG's community development sector, including 5 years with TKCP where he specializes in land-use planning and landowner group marketing.
Wildlife Conservation Society (WCS)	Mr. Bensolo Ken (Forestry & REDD Policy Officer) has worked for the PNG Office of Climate for Change, as well as WCS where he specializes in the development of policies relating to forestry, climate change & REDD.

#### 4.1.2 Project Management Team

The project management team will comprise representatives from the relevant branches of the PNG Forest Authority and the Office for Climate Change and Development. Table 21 (below) presents their appointed representatives **and responsibilities**.

**Table 21:** Project management team members and appointed representatives **with their roles**

<b>PM Team Members</b>	<b>Appointed Representatives</b>	<b>Appointed Role</b>
Climate Change & REDD Branch, PNGFA	Mr. Goodwill Amos (Climate Change and REDD Branch Manager) has 37 years' work experience in the forestry sector.	<b><u>Project Manager</u></b>
	Mr. Gewa Gamoga (Senior Climate Change Officer) has over 20 years work experience in the forestry sector.	<b><u>Project Coordinator</u></b>
	<b><u>Ms. Elizabeth Kaidong, (Adaptation and Mitigation Officer) has 3 years of experience in forestry and climate change activities.</u></b>	<b><u>Project Facilitator (Women's Development)</u></b>
	<b><u>Mrs. Posa Tera (Administrative Assistant) has experience in coordinating and facilitating donor funded projects.</u></b>	<b><u>Project Facilitator (Administration)</u></b>

**Table 21:**Project management team members and appointed representatives **with their roles** (continued)

<b>PM Team Members</b>	<b>Appointed Representatives</b>	<b>Appointed Role</b>
Policy & Aid Coordination Branch, PNGFA	Mr. Dambis Kaip (Policy & Aid Coordination Branch Manager) has 26 years' work experience in the forestry sector.	<b><u>Team Leader (Output 4)</u></b>
	<b><u>Mrs. Gerly Kila (Administrative Assistant) has experience facilitating donor funded projects</u></b>	<b><u>Project Facilitator (Administration)</u></b>
	<b><u>Mr. Frank Agaru (Aid Coordinator) has a long history of facilitating Aid Projects</u></b>	<b><u>Project Facilitator (ITTO Liaison)</u></b>
Inventory & Mapping Branch, PNGFA	<b><u>Mr. Samuel Gibson (Mapping Branch Manager) has 10 years work experience in the forestry sector.</u></b>	<b><u>Team Leader (Output 1)</u></b>
Acquisition Branch, PNGFA	<b><u>Mr. Cedric Tumbai (Landowner Liaison Officer) has 20years work experience in the forestry sector.</u></b>	<b><u>Team Leader (Output 2)</u></b>
Information and Communication Technology Branch, PNGFA	Mr. Jason Sigamata (Desktop/Network Technician) has over 20 years work experience in the forestry sector.	<b><u>Team Leader (Output 3)</u></b>
Finance Branch, PNGFA	Mr. Ray Saprak (Accounts Officer) is qualified in data processing, bank reconciliations, management reporting, internal and external audits, and general ledger management of donor accounts.	<b><u>Project Facilitator (Finance)</u></b>
MRV and National Communication, OCCD	Mr. Joe Pokana (Manager <b>REDD+</b> ) is an experienced research scientist with 6 years working for the Office of Climate Change and Development.	<b><u>Resource Person (PNG Climate Change Development Authority)</u></b>

#### 4.1.3 Project Steering Committee

The Project Steering Committee will comprise representatives from the:

- Donor agency (International Tropical Timber Organisation)
- Executing agency (PNG Forest Authority)
- Key stakeholders (**PNG Climate Change Development Authority; Conservation, Environment and Protection Authority**, Department of Lands and Physical Planning)
- Project partners (local CFM partners and landowner groups)

#### 4.1.4 Stakeholder Involvement Mechanisms

The project technical committee will provide key stakeholders with a platform for receiving information and giving technical advice to the project management team and the project steering committee. There will be regular meetings to maintain stakeholder involvement and support. The project technical committee will comprise representatives from:

- Participating landowner groups
- Local CFM partners
- Participating provincial and district governments

#### 4.2 Reporting, Review, Monitoring and Evaluation

At project start-up, the project coordinator will establish the project monitoring framework in consultation with local CFM partners, including:

- **Project database** containing stakeholder data, baseline data, logical framework indicators, activity milestones and means of verification.
- **Project monitoring schedule** containing internal and external monitoring, review and evaluation dates.
- **Project monitoring forms** prepared field and office use with reference to logical framework, activity milestones and baseline data.
- **Project monitoring guidelines** for field and office use

Table 22 (below) presents the proposed project reporting and disbursement schedule.

**Table 22:** Proposed reporting and disbursement schedule

Description	Date
1 <sup>st</sup> disbursement request	Quarter 1, Year 1
1 <sup>st</sup> project progress report	Quarter 2, Year 1
2 <sup>nd</sup> project progress report	Quarter 4, Year 1
1 <sup>st</sup> monitoring mission	Quarter 1, Year 2
3 <sup>rd</sup> project progress report	Quarter 2, Year 2
4 <sup>th</sup> project progress report	Quarter 4, Year 2
2 <sup>nd</sup> monitoring mission	Quarter 1, Year 3
5 <sup>th</sup> project progress report	Quarter 2, Year 3
6 <sup>th</sup> project progress report	Quarter 4, Year 3
Project completion report	Quarter 1, Year 4

## 4.3 Dissemination and Mainstreaming of Project Learning

### 4.3.1 Dissemination of Project Results

Table 23 (below) summarises the project's communication strategy.

**Table 23:** Information dissemination mechanisms for the 3 stakeholder groups.

Stakeholder Group	Dissemination Mechanism
Primary stakeholders	<p>The NFS project secretary will provide local CFM partners with attractive and informative project newsletters for distribution amongst the project's pilot communities.</p> <p>The NFS project field officer will conduct face-to-face meetings with pilot community representatives to exchange project information during the project's quarterly field monitoring trips.</p> <p>Local CFM partners will encourage their pilot community groups to play an active role in the design, testing, implementation and monitoring of the CFM data management system.</p> <p>The training resource developer will provide local CFM partners with the necessary training resources for the project's pilot communities to learn from.</p>
Secondary stakeholders	<p>The NFS project coordinator will:</p> <ul style="list-style-type: none"> <li>• Disseminate the project's bi-annual and annual reports via email amongst the project's secondary stakeholders</li> </ul> <p>Conduct regular face-to-face meetings with key stakeholder in Port Moresby (e.g. <b><u>PNG Climate Change Development Authority</u></b>; Department of Lands and Physical Planning).</p> <ul style="list-style-type: none"> <li>• Facilitate the project's annual technical committee meetings with participating landowner groups, local CFM partners, and participating provincial and district governments.</li> <li>• Facilitate the project's planning workshops and the launch of the Policy and Planning Guidelines for CFM.</li> </ul> <p>The NFS project secretary will distribute attractive and informative bulletins via email amongst the project's secondary stakeholders.</p> <p>The NFS project field officer will conduct face-to-face meetings with local stakeholders to exchange project information during the project's quarterly field monitoring trips.</p>
Tertiary stakeholders	<p>The NFS project coordinator will invite tertiary stakeholders to participate in project workshops and meetings.</p> <p>The NFS project secretary will distribute attractive and informative bulletins via email amongst the project's tertiary stakeholders.</p>
Wider community (domestic and overseas)	<p>The NFS project secretary will:</p> <ul style="list-style-type: none"> <li>• Liaise with the NFS public relations officer to promote the project's activities and results (including technical reports) through the PNGFA website</li> <li>• Liaise with the NFS public relations officer to promote the project's activities and results through the national newspapers.</li> </ul> <p><b><u>The NFS project coordinator – in collaboration with local CFM partners and participating landowner groups - will prepare a Summary of Lessons Learned during the Project. This will include a set of recommendations for ensuring effective customary landowner participation in future CFM schemes in PNG. The Summary of Lessons Learned should be readily available after project completion from both PNGFA and ITTO websites.</u></b></p>

### 4.3.2 Mainstreaming of Project Learning

The PNG Forest Authority will launch the Policy and Planning Guidelines for CFM together with the data management system and tools, **and the Summary of Lessons Learned**. This activity will be used to promote the results of the project across PNG, as well as initiate the integration of community forestry into PNG's national, provincial and local level policies and plans **with reference to project learning**. During the launching process, the PNG Forest Authority, local CFM partners and pilot landowner groups will set a new standard for improved forest management and land use decision making.

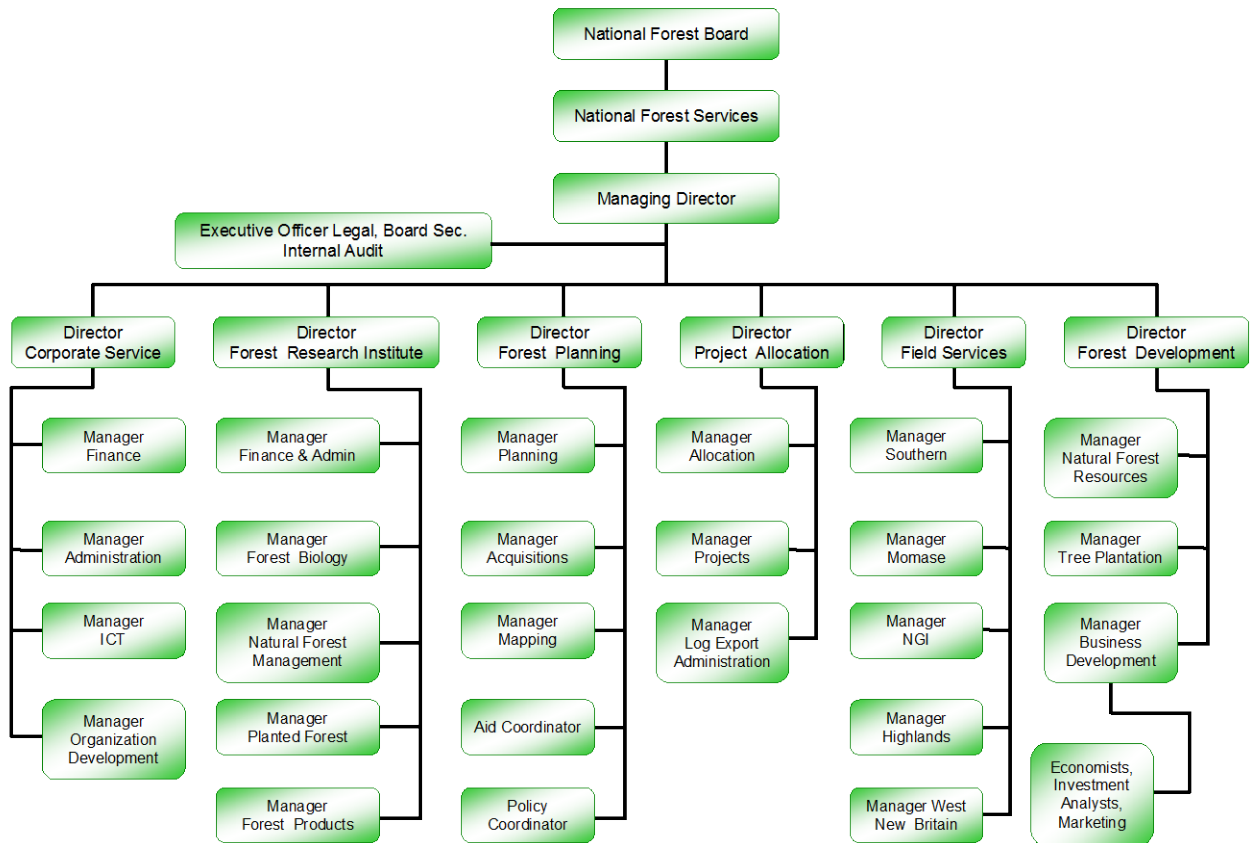
PNG's Policy and Planning Guidelines for CFM will be launched through:

- **National workshop** hosted by PNG Forest Authority
- **National media articles and broadcasts** by PNG Forest Authority, **PNG Climate Change Development Authority** and Department of Lands and Physical Planning
- **Open day events** hosted by local CFM partners, local government agencies and pilot communities

## ANNEX 1: Profiles of the Executing Agency and Collaborating Agencies

### (a) Background

The PNGFA has been established under Section 5 of the Forestry Act 1993 and its powers and functions are also defined under the said Act. The over-arching objective is to facilitate the management, conservation and wise use of the forest resources of PNG in a sustainable manner. The organizational structure of the National Forest Service is shown below:



### (b) Recent Projects

Table 23 (below) provides a summary of the main projects implemented by the PNG Forest Authority during the last three years.

**Table 23:** Main projects implemented by the PNGFA during the last three years.

Project	Donor	Status
PD-449-07-R1- M.I: Enhancing forest law enforcement in PNG.	ITTO	Completed
PD-552-09-R1-F: Encouraging customary landowners in the lowlands of Central Province to reforest their grasslands with high-value trees.	ITTO	Underway
CFM-PPD-006-10-R1: Enabling customary landowners to participate effectively in CFM and REDD schemes within four pilot areas of PNG.	ITTO	Underway



**(c) Infrastructure**

The PNG Forest Authority has a network of forest management infrastructure across Papua New Guinea, comprising:

- National Headquarters in Port Moresby, National Capital District
- Forest Research Institute in Lae, Morobe Province
- 5 regional offices
- 18 provincial offices

**(d) Budget**

The PNGFA has an annual budget of PGK 30 million (2014).

**(e) Personnel**

Table 24 (below) presents the relevant personnel from the National Forest Service of the PNG Forest Authority.

**Table 24:** Relevant NFS staff positions, qualifications and numbers.

Branch of National Forest Service	Post graduate	Graduate	
		Bachelor	Diploma
Policy & Aid Coordination	1	2	1
Climate Change & REDD	1	2	0
Information and Communication Technology	0	2	3
Acquisition	0	1	3
Finance	0	4	11
Inventory & Mapping	0	2	5
Natural and Plantation Forest Management	0	1	6
<b>Total</b>	<b>2</b>	<b>14</b>	<b>29</b>

## **ANNEX 2: Tasks and Responsibilities of Key Experts Provided by the Executive Agency**

### **(a) Project Coordinator (part-time)**

#### **Responsibilities:**

The Project Coordinator will be responsible for **overseeing the Project, as well as ensuring its activities are well-coordinated with other sustainable forest management interventions in PNG and the Pacific Islands Region.**

#### **Tasks:**

The Project Coordinator will:

1. **Endorse** detailed annual work plans and budgets
2. **Discuss** project tasks and activities with the project team and technical partners
3. **Participate in** project steering committee meetings
4. **Participate in** monitoring and evaluation missions
5. **Endorse** financial expenditures, accounts and replenishments
6. **Oversee** the implementation of project tasks
7. **Oversee** the monitoring of project progress and implementation of corrective actions as required
8. **Endorse** project reports as required
9. **Liaise directly with key stakeholders including ITTO**

#### **Reporting:**

The Project Coordinator will report to the Manager of the Climate Change and REDD Branch.

## **ANNEX 3: Terms of Reference of Personnel and Consultants and Sub-contracts Funded by ITTO**

### **(a) Project Manager (full-time)**

#### **Responsibilities:**

The Project Manager will be responsible for managing the Project's day-to-day activities, and ensuring the Project's limited financial resources are utilized in a cost-effective and sustainable manner at all level of operation.

#### **Tasks:**

The Project Manager will:

10. Prepare detailed annual work plans and budgets
11. Coordinate project tasks and activities with the project team and technical partners
12. Organise effective project steering committee meetings
13. Organize monitoring and evaluation missions
14. Organise financial expenditures, accounts and replenishments
15. Implement project tasks
16. Monitor progress and implement corrective actions as required
17. Provide project reports as required

#### **Reporting:**

The Project Manager will report to the Project Coordinator.

**(b) Project Secretary (full-time personnel)**

**Responsibilities:**

The Project Secretary will be responsible for facilitating the implementation of the project's planned activities at the national level.

**Tasks:**

The Project Secretary will:

1. Administer the project database, monitoring schedule and monitoring forms
2. File project documents and correspondence
3. Compile and distribute project newsletters for the project's pilot communities
4. Compile and distribute project e-bulletins amongst the project's stakeholders.
5. Liaise with the NFS public relations officer to promote the project's activities and results through the PNGFA website and the national newspapers
6. Liaise with the NFS public relations officer to promote the project's activities and results through the national newspapers
7. Liaise with NFS accounts officer to facilitate project expenditures and replenishments

**Reporting:**

The Project Secretary will report to the Project Manager.

**Qualifications and Experience:**

The Project Secretary will possess the following minimum qualifications and experience:

1. Relevant diploma
2. At least 5 years of working experience in a related field
3. At least 5 years of working experience typing and processing documents using MS Word and Excel

**(c) Project Field Officer (full-time personnel)**

The Project Field Officer will be responsible for facilitating the implementation of the project's planned activities at the local level.

**Tasks:**

The Project Field Officer will:

1. Liaise with local CFM partners to ensure pilot community groups play an active role in the design, testing, implementation and monitoring of the CFM data management system.
2. Conduct quarterly field monitoring trips in accordance with the project's field monitoring guidelines
3. Conduct face-to-face meetings with pilot community representatives to exchange project information during the project's quarterly field monitoring trips.
4. Conduct face-to-face meetings with local stakeholders to exchange project information during the project's quarterly field monitoring trips.
5. Prepare quarterly reports using the project monitoring forms

**Reporting:**

The Project Field Officer will report to the Project Manager.

**Qualifications and Experience:**

The Project Field Officer will possess the following minimum qualifications and experience:

1. Relevant diploma
2. At least 5 years of working experience in the community forestry sector
3. At least 5 years of working experience typing and processing documents using MS Word and Excel

**(d) Software Developer (short-term consultant)**

The PNG Forest Authority will recruit a Software Developer with the following Terms-of-Reference:

**Purpose:**

The Software Developer will ensure the project's software development activities contribute as planned towards the realization of project outputs 2 and 3.

**Duties:**

The Software Developer will assist the Project Manager to:

1. Select participatory data collection hardware and accessories for forest resource assessment and clan land boundary mapping in consultation with local CFM partners and landowner groups.
2. Develop participatory data collection software for forest resource assessment and clan land boundary mapping in consultation with local CFM partners and landowner groups
3. Develop participatory data collection software for land group incorporation in consultation with local CFM partners, landowner groups and institutional partners.
4. Develop data management system and web-based platform in consultation with user groups for facilitating the dissemination of relevant information at local, national and international levels.

**Reporting:**

The Software Developer will report to the Project Coordinator.

**Qualifications and Experience:**

The Community Technology Specialist will possess the following minimum qualifications and experience:

1. Relevant university degree
2. Extensive skills and experience developing open source software applications and data management systems that meet the needs of local, national and international users
3. Extensive skills and experience delivering appropriate technology for rural communities.

**(e) Training Resource Developer (short-term consultant)**

The PNG Forest Authority will recruit a Training Resource Developer with the following Terms-of-Reference:

**Purpose:**

The Training Resource Developer will ensure the project's capacity building activities contribute as planned towards the realization of project outputs 2 and 3.

**Duties:**

The Training Resource Developer will assist the Project Manager to:

1. Provide local CFM partners and landowner groups with the necessary training materials for collecting and monitoring their forest resource and clan land boundary data.
2. Raise pilot community awareness about the National Land Development Program in consultation with PNG Forest Authority and Department of Lands.
3. Provide local CFM partners and landowner groups with the necessary training materials for collecting their land group incorporation data.
4. Provide data management staff with the necessary training materials for managing and disseminating relevant information.

**Reporting:**

The Training Resource Developer will report to the Project Coordinator.

**Qualifications and Experience:**

The Training Resource Developer will possess the following minimum qualifications and experience:

1. Relevant university degree
2. Extensive skills and experience developing training resources for local and national users
3. Extensive skills and experience delivering appropriate capacity building strategies for rural communities.

## **ANNEX 4: Local CFM partner organizational arrangements and objectives**

<b>Local Partner</b>	<b>Organisational Arrangements and Objectives</b>
Foundation for People and Community Development (FPCD)	<p>FPCD is a national, non-government, not-for-profit organization that was established in 1993 to assist Papua New Guineans develop and manage their own forest resources towards environmental, economic and social benefits. FPCD's head office is in Port Moresby. Its Certified Community Forestry Program (CCFP) works with 6 clans in Madang Province under an FSC Group Certificate that was awarded in 2007 (expired in 2012).</p> <p>FPCD's Community Based Forest Monitoring Project has been set-up with the Institute for Global and Environmental Studies in Japan to complement FPCD's community forestry program. The CBFM Project plans to:</p> <ul style="list-style-type: none"> <li>• Develop and implement a cost-effective approach to community-based forest monitoring;</li> <li>• Analyse the data gathered by the communities and assist the communities in interpreting the results;</li> <li>• Assess the feasibility of REDD+ to provide an additional incentive for community-based management at project sites.</li> </ul>
Research and Conservation Foundation (RCF)	<p>RCF is one of the longest-serving national NGOs in PNG, incorporated on the 28 July 1986. The Foundation is based in Goroka and administers two core programs, namely: the Conservation Education Program (CEP) and the Natural Resource Management Program (NRMP).</p> <p>The NRMP aims to ensure the communities from the Crater Mountain Wildlife Management Area sustainably use their natural resource to maintain their livelihoods. The NRMP has 4 objectives:</p> <ul style="list-style-type: none"> <li>• To develop the local's capacity to sustainably manage their livelihoods through transfer of technical skills and knowledge</li> <li>• To enable the local's to sustainably manage their natural source through clan land boundary mapping and land use planning.</li> <li>• To increase the local's environmental knowledge and information base through conservation training and awareness</li> <li>• To maintain a shared and common conservation and development goals between the organisation and Crater's local communities</li> </ul>
Milne Bay Provincial Administration (MBPA) with PNG Forest Authority (PNGFA)	<p>The Central Suau REDD+ is one of five national REDD+ pilot sites selected through a multi-institutional assessment led by the PNG Forest Authority through its Provincial Forestry Office in Alotau. The German Agency for International Development (GIZ) and the Secretariat of the Pacific Community (SPC) have been supporting PNG's efforts to establish REDD+ mechanisms that will reduce emissions while providing alternative revenue options for rural areas.</p> <p>As part of this support, GIZ has committed to developing a Project Design Document (PDD) for the Central Suau REDD+ Pilot Site in Milne Bay Province. The following activities have been carried out to-date:</p> <ul style="list-style-type: none"> <li>• GIZ have undertaken a feasibility study, which indicated a VCS logged-to-protected project type could provide significant income for landowners, while still maintaining vital ecosystem services.</li> <li>• The PNGFA have conducted a vulnerability and adaptation assessment that focused agriculture, forestry, health, education, water and transport.</li> <li>• The PNGFA is currently collaborating with the Department of Lands to assist each participating clan form their Incorporated Land Group.</li> </ul>

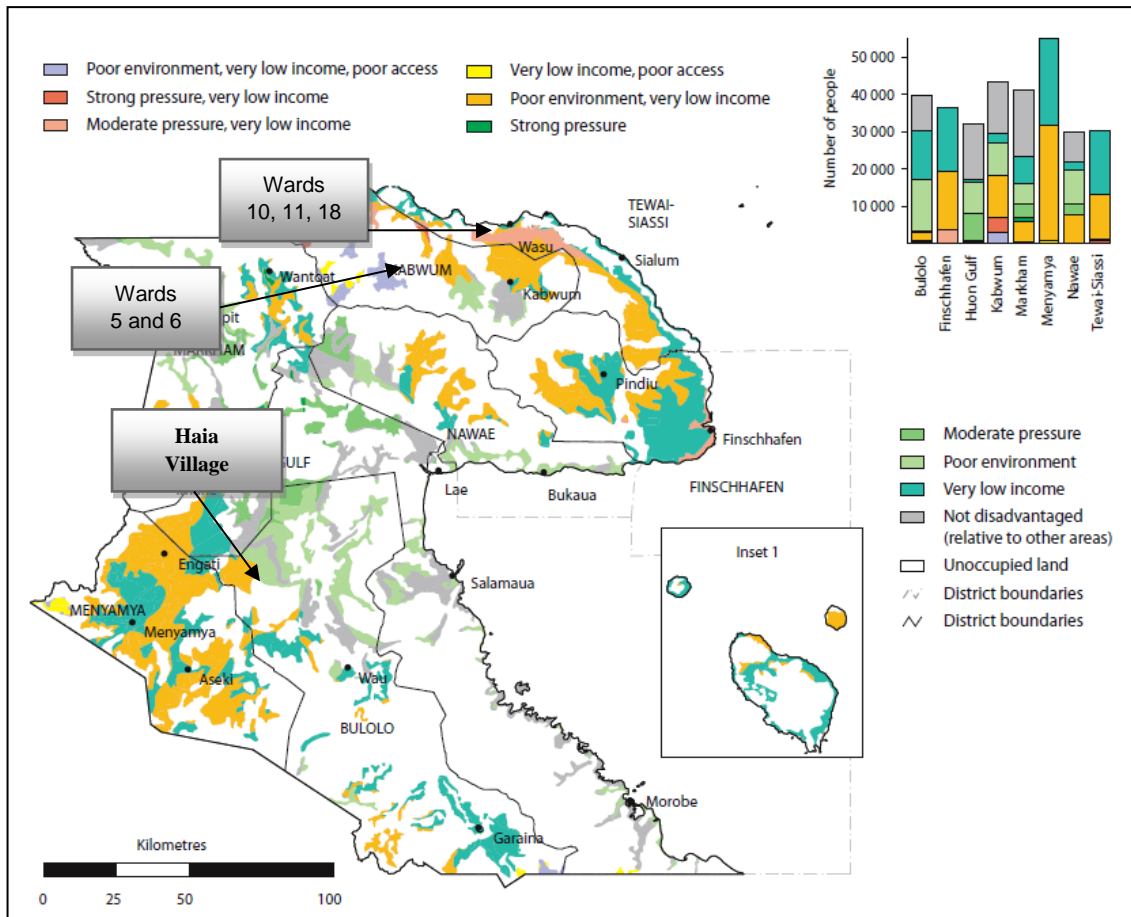


Local Partner	Organisational Arrangements and Objectives
<p>FORCERT (Forest Management and Product Certification Service)</p>	<p>FORCERT is a national, not-for-profit company that promotes sustainable forest management through providing certification and marketing services of forests and products for local small-scale producers and timber yards. FORCERT was established in 2004. The organisation has a head office outside Kimbe (West New Britain) and a field office in Kokopo (East New Britain). In 2005, FORCERT achieved FSC certification for its Group Certification System and in 2006 was certified by the World Fair Trade Federation as a Fair Trade Support Organisation.</p> <p>FORCERT started the PES Trial Project in 2010, aiming to develop PES as a management option for FSC certified forests through:</p> <ul style="list-style-type: none"> <li>• Providing climate change awareness and training on community carbon forestry;</li> <li>• Establishing and monitoring permanent sample plots</li> <li>• Encouraging landowners to take ownership of carbon inventory and monitoring;</li> <li>• Providing essential business training to communities to manage their sawmill enterprise.</li> </ul>
<p>Tree Kangaroo Conservation Program (TKCP)</p>	<p>TKCP fosters wildlife and habitat conservation and supports local community livelihoods in PNG through global partnerships, land protection and scientific research. The program has offices in Seattle (USA), Cairns (Australia) and Lae (PNG).</p> <p>In 2009, the PNG National Government officially declared the gazettal of the Yopno-Uruwa-Som (YUS) Conservation Area which forms part of the Huon Peninsular. This protected area encompasses core land parcels pledged by clans to conservation and buffer areas of mixed use, covering an area of over 161,573 ha in and around the YUS Local Level Government. The protected area also extends from sea level to 4,000-metre mountain ranges, thus preserving a complete altitudinal spectrum of Huon Peninsula habitats.</p> <p>TKCP is guided by the YUS Landscape Plan. The Plan is a threat abatement strategy developed in partnership with YUS stakeholders (communities, scientists and government) to ensure protection of environmental and cultural values in the long term, but also to maximise and enhance development opportunities for communities. The Plan is guided by five strategies:</p> <ul style="list-style-type: none"> <li>• YUS Conservation Area management;</li> <li>• Research to inform resource and landscape management;</li> <li>• Sustainable resource use and environmental services;</li> <li>• Community services, livelihoods and healthy families;</li> <li>• Implementation and management.</li> </ul>

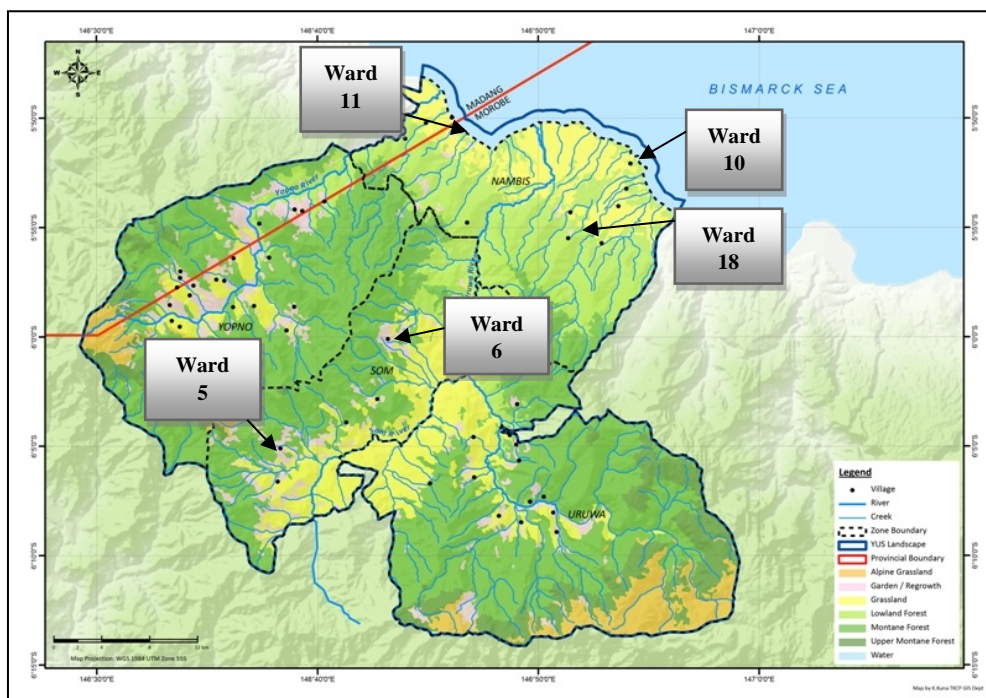
Local Partner	Organisational Arrangements and Objectives
Wildlife Conservation Society (WCS)	<p>WCS is a global conservation organisation with head offices in New York (USA) and country programs in more than sixty countries and fifteen global priority regions. The WCS-PNG Program is based in Goroka (Eastern Highlands Province) with field offices in Lorengau (Manus Province) and Kavieng (New Ireland Province) and Port Moresby. WCS was the first international conservation organization to work in PNG and has had a full-time presence there since the late 1980s. The goals of the WCS program in PNG are to promote the sustainable use of terrestrial and coastal marine ecosystems, and to identify and implement measures to address the effects of climate change while protecting landscapes (and seascapes in a 'reef-to-ridge' approach.</p> <p>WCS-PNG has initiated Village-REDD+ demonstration activity on central Manus Island, the largest remaining area of forest in the Admiralty Islands. 'Village-REDD+' is an approach to forest management that minimizes disputes and maximizes equitable distribution of benefits by operating at appropriate social scales. It follows a 10-step process that allows social groups to organise themselves and plan their participation in REDD+ activities while developing and strengthening social and environmental safeguards.</p> <p>It has the following features:</p> <ul style="list-style-type: none"> <li>• Landowner control and responsibility for project - the design allows relatively small parcels of land (1,000 hectares or more) to be bundled into a larger REDD+ scheme.</li> <li>• Local distribution of benefits - with a focus on education and employment-generating activities.</li> <li>• Capacity building and employment -the scheme seeks to build capacity within local communities and sub-national governments to carry out monitoring and reporting.</li> <li>• Bundling forests and/or carbon - creating a sub-national mechanism called a 'Carbon Bank' to provide management and technical services to landowners and act as the focal point for buying and selling carbon – a mechanism that is yet to be developed at some point in future, and</li> <li>• Informing government policy development on climate change and REDD+ through field-testing and learning experiences.</li> </ul>

## ANNEX 5: Location of Project Sites

### (a) TKCP's Pilot Sites

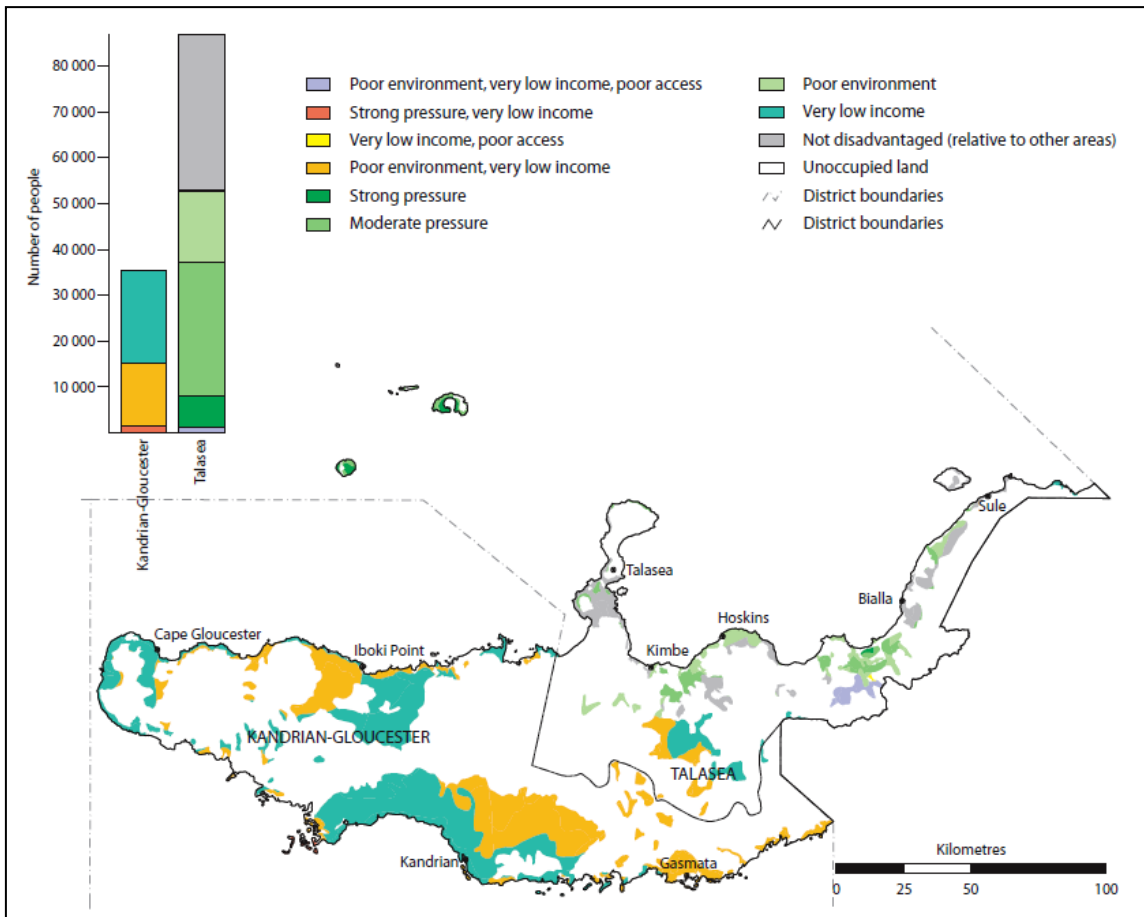
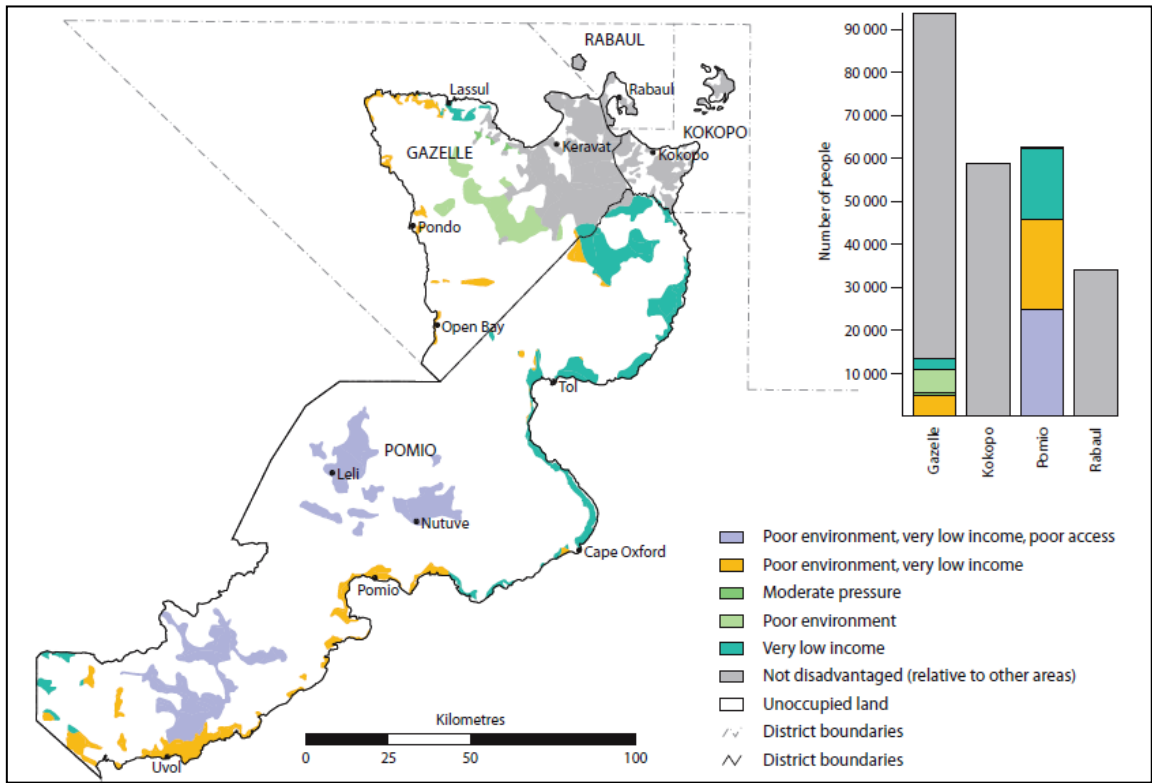


Map of Morobe Province showing district development constraints, together with the location of the sample Wards in Kabwum and Tewai Siassi Districts. Sourced from Hanson et al. (2001)

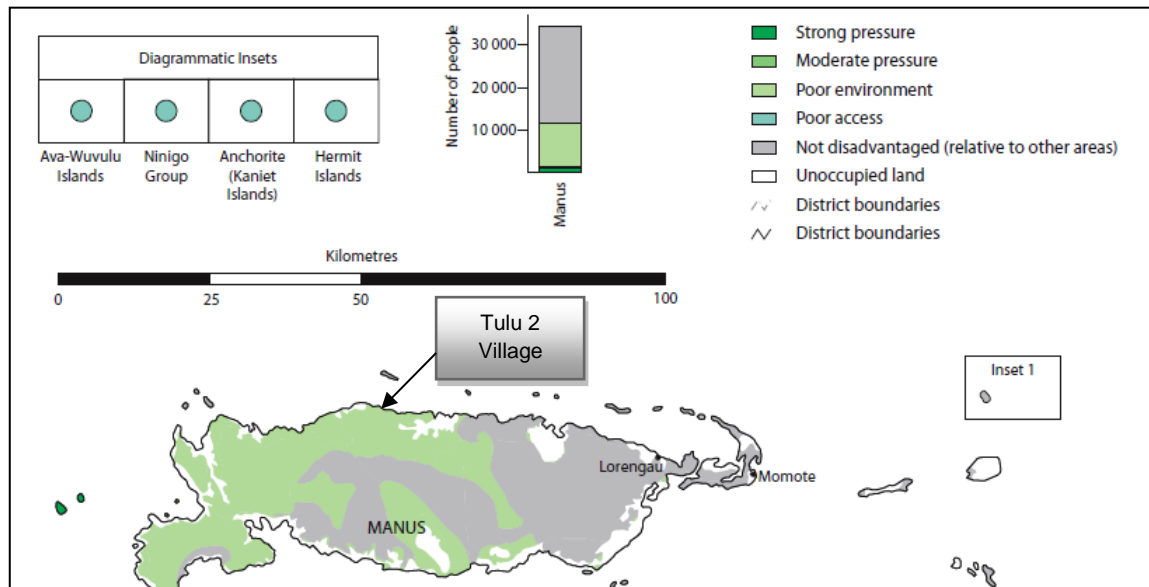


Map of YUS landscape management zones, vegetation types and sample wards

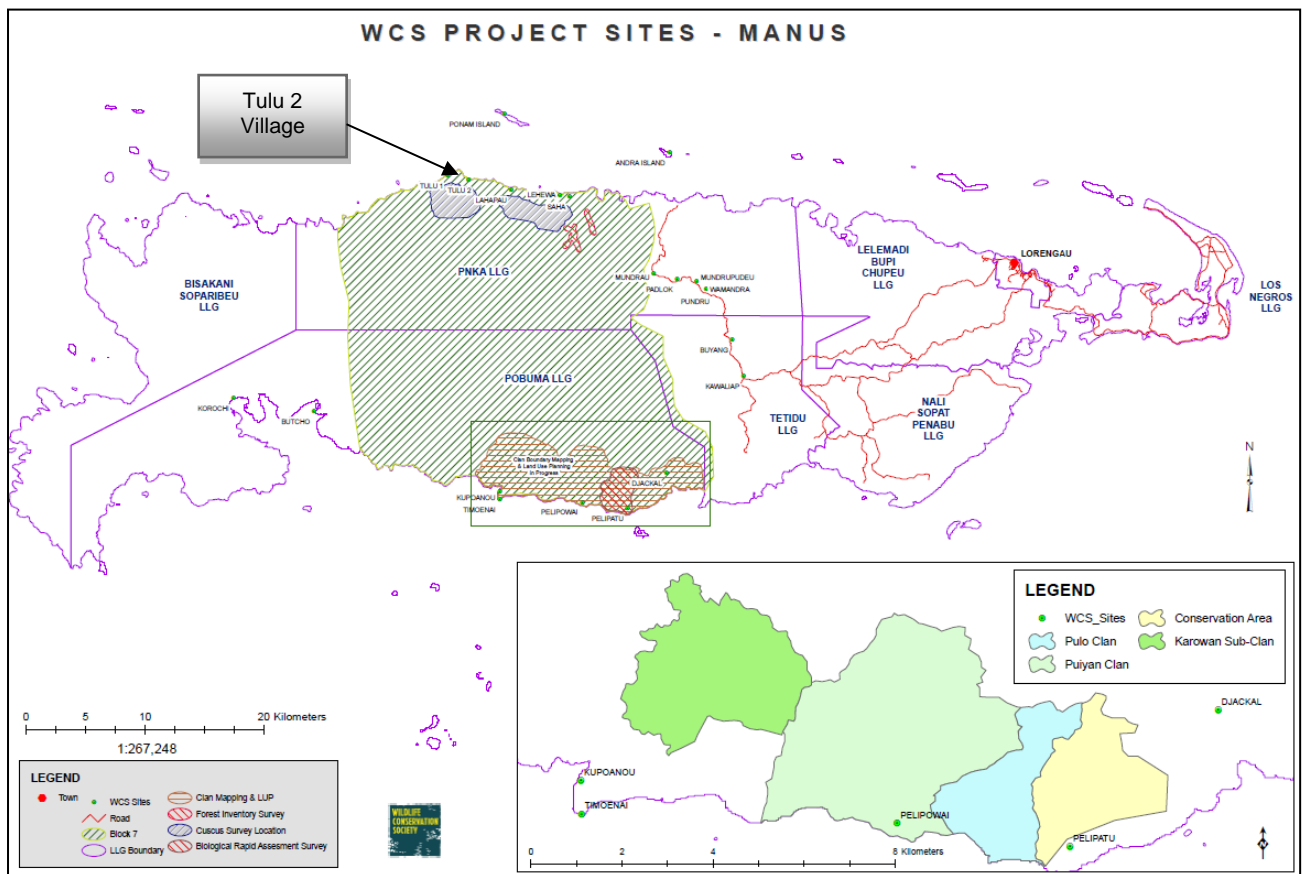
(b)



(c) **WCS-PNG's Pilot Sites**

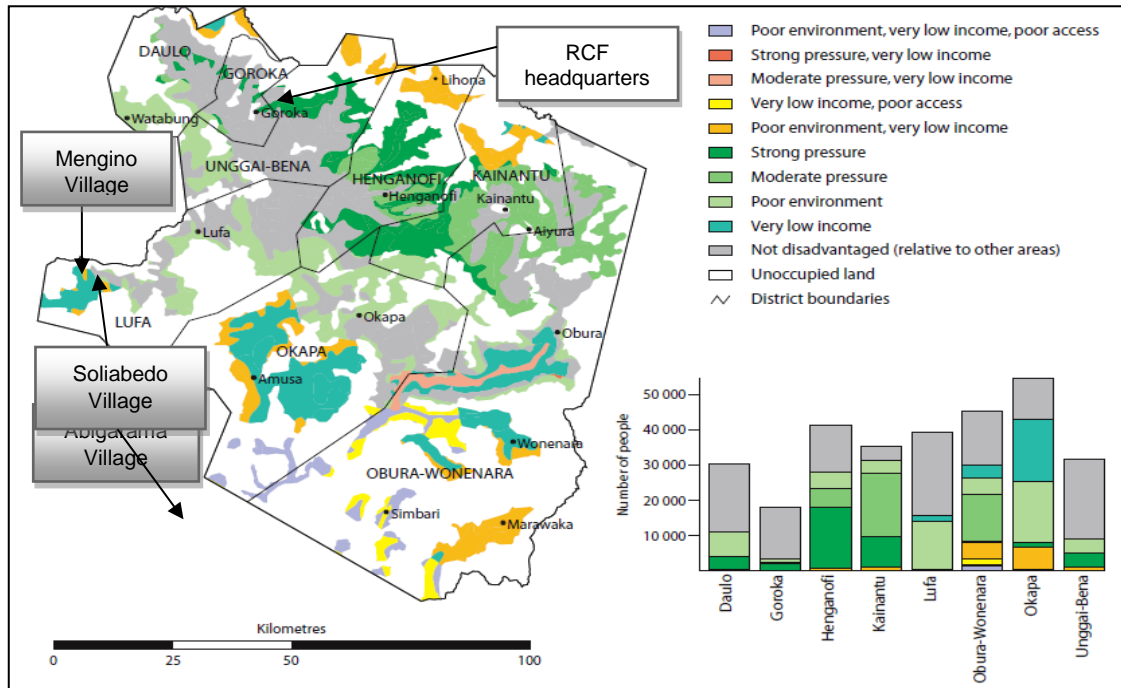


Map of Manus Province showing district development constraints, together with the location of the sample Village-REDD+ site. Sourced from Hanson et al. (2001)

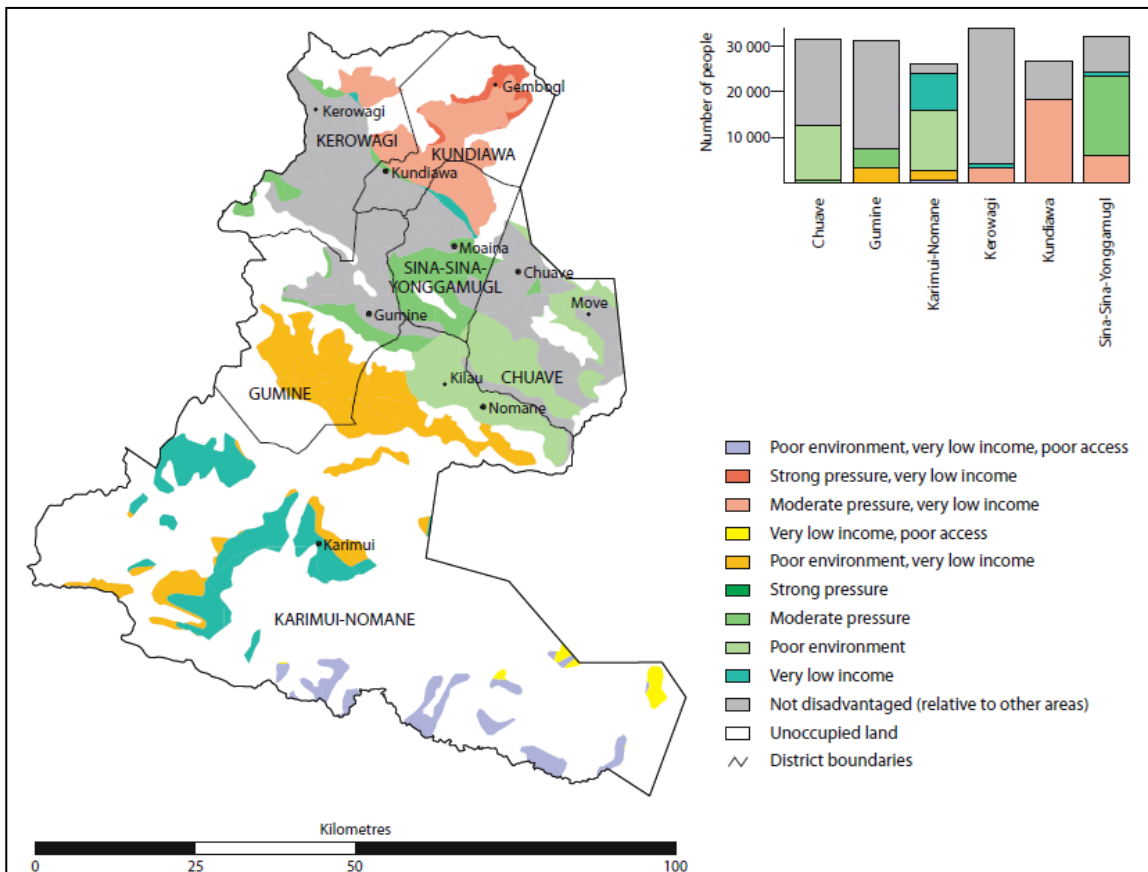


Map of Village-REDD Project area, Local Level Government boundaries and selected clan and boundaries

(d) **RCF's Pilot Sites**

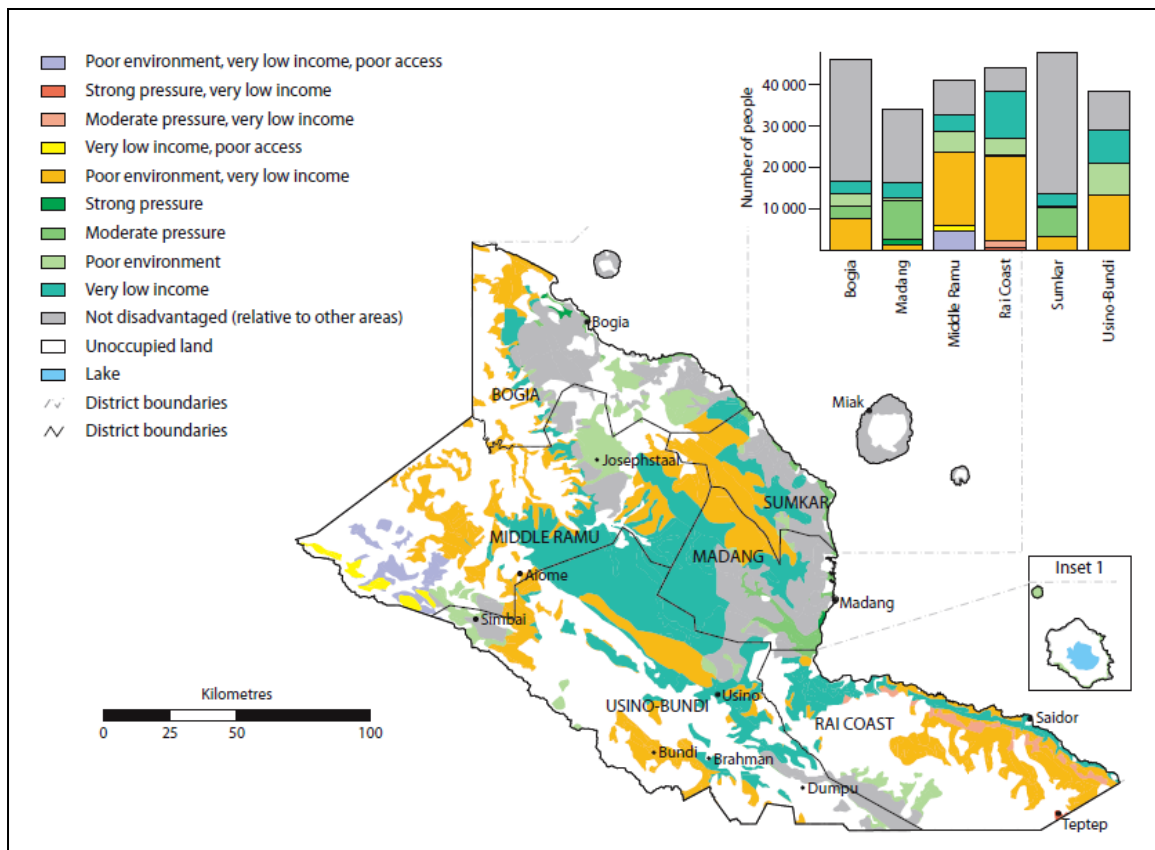


Map of Eastern Highlands Province showing district development constraints, together with the location of the 2 sample villages. Sourced from Hanson et al. (2001)



Map of Simbu Province showing district development constraints, together with the location of the sample village. Sourced from Hanson et al. (2001)

(e) **FPCD's Pilot Sites**



Map of Madang Province showing district development constraints, together with the location of the 6 clans (2 sample clans highlighted grey). Sourced from Hanson et al. (2001)





## **ANNEX 6: 48th Expert Panel Recommendations and Resulting Modifications**

<b>Recommendations</b>	<b>Modifications</b>
1. Improve the project brief by concisely describing the key messages of the proposal including the existing situation and the problems to be addressed by the project;	<ul style="list-style-type: none"> <li>• The Project Brief has been improved (see Project Brief, page 1).</li> </ul>
2. Provide a better map showing the location of the project's pilot sites;	<ul style="list-style-type: none"> <li>• Maps have been added to show the location of the project sites (refer Annex 5, pages 71-76).</li> </ul>
3. Improve Section 1.1 (Origin) by providing more information on the pre-project CFM-PPD-006-10 with its title and by describing how the project will build on the outcomes of the pre-project;	<ul style="list-style-type: none"> <li>• The Project Origin has been improved (see Section 1.1, pages 7-8).</li> </ul>
4. Refine the key problem by focusing on the limited technical capacity of landowners without mixing their limited understanding of forest goods and services as the latter is a sub-cause. Based on the refinement of the key problem, adjust the problem tree. In the first sub-cause of the first cause, separate the process of formal mapping and zoning at the provincial, district and local levels as another sub-cause since it requires a long-term intervention;	<ul style="list-style-type: none"> <li>• "Limited understanding of forest goods and services" has been transferred from the Key Problem to a sub-cause of the second cause (see Problem and Objective Trees, pages 33-34).</li> <li>• "The process of formal mapping and zoning at the provincial, district and local levels" has become another sub-cause of the first cause (see Problem and Objective Trees, pages 33-34).</li> </ul>
5. Refine the statements of the development and specific objectives, and outputs in the logical framework matrix to enhance the logical designing of the key elements of the proposal;	<ul style="list-style-type: none"> <li>• The Development Objective has been refined (see Logical Framework, page 35)</li> <li>• "Increased landowner understanding about the goods and services that forests provide" has been removed from the Specific Objective (see Logical Framework, page 35)</li> <li>• Output 1 includes a reference to "Increased landowner understanding" (see Logical Framework, page 35)</li> <li>• The Means of Verification for Output 2 includes a reference to "The process of formal mapping and zoning" (see Logical Framework, page 36)</li> </ul>
6. Improve the statements of project activities by specifying the expected participation of targeted local communities in the implementation of community-related project activities;	<ul style="list-style-type: none"> <li>• The statements of Project Activities contain additional information about target community participation (see Section 3.1.2, pages 39-40).</li> </ul>

Recommendations	Modifications
7. Specify who will use the data collection software in the implementation approaches and methods;	<ul style="list-style-type: none"> <li>Table 17 has been improved so as to highlight the software users (see Section 3.2, page 40)</li> </ul>
8. Revise the project budget in the following ways: a) provide further details of the proposed data collection hardware/devices and Activity 4.4; b) break down the ITTO Budget by Component and the Executing Agency Budget by Component by showing relevant sub-budget items; c) increase the counter part's contribution so as to enhance the project's sustainability in the long term; and d) recalculate the ITTO's Programme Support Costs so as to conform the standard of 12% of total project costs;	<ul style="list-style-type: none"> <li>Further details of the data collection hardware devices and accessories have been added to the Master Budget Schedule (see Section 3.4.1, page 45)</li> <li>Sub-budget items have been added to the ITTO and Executing Agency Budget by Components (see Sections 3.4.3, page 51 and 3.4.4, page 52)</li> <li>The counterpart's contribution has been increased to 70,000 USD (see Section 3.4.4, page 52)</li> <li>The ITTO's Programme Support Costs have been increased to 12% of total project costs (see Section 3.4.2, page 50)</li> </ul>
9. Further elaborate the risk mitigation measures to be employed by showing how such measures should be implemented;	<ul style="list-style-type: none"> <li>Risk mitigation responsibilities have been added to Table 18 (see Section 3.5.1, pages 52-53)</li> </ul>
10. Improve the sustainability of the project by specifying the extended work to be implemented by key stakeholders beside the Executing Agency;	<ul style="list-style-type: none"> <li>Local partner responsibilities have been added to the financial sustainability section of Table 19 (see Section 3.5.2, page 54)</li> </ul>
11. Improve the organizational chart to clearly show the functional and hierarchical relationships within the project structure. The project steering committee and project technical committee should be appeared as an advisory group to the Executing Agency. In the bottom line of the organizational chart, it is necessary to specify a responsible person/expert to achieve each output under the overall guidance of the NFS project coordinator;	<ul style="list-style-type: none"> <li>The Organizational Chart has been improved and output leaders added (see Section 4.1, page 55)</li> </ul>
12. Specify the respective role of the project team members in project implementation. It is advised that the project team should pay its attention to the role and needs of women in project implementation by specifying such a task within the project team members as one of the important project implantation strategies and approaches;	<ul style="list-style-type: none"> <li>The role of each Project Management Team member has been added to Table 21, together with some new positions including Women's Development Facilitator (see Section 4.1.2, pages 56-57)</li> </ul>
13. Improve the dissemination and main streaming of project learning by specifying the synthesization of lessons learned from customary landowners' based forest management schemes in PNG and their wider dissemination in the context of enhancing knowledge management strategies;	<ul style="list-style-type: none"> <li>The Dissemination and Mainstreaming of Project Learning has been improved (see Section 4.3.1, page 59 and 4.3.2, page 60)</li> </ul>

## ANNEX 7: 52<sup>nd</sup> Council Session Decision 6 (LII) and Resulting Modifications

Decision	Modifications
<p>1. Reduce original ITTO budget from \$663,829 to \$550,978</p>	<p><b>a)</b> The original ITTO budget has been reduced to \$550,760 (see ITTO Budget by Component, page 51). The following budget categories have been modified:</p> <ul style="list-style-type: none"> <li>• Project personnel</li> <li>• Duty travel</li> <li>• Capital items</li> <li>• Consumable items</li> <li>• Program support costs</li> </ul> <p><b>b)</b> A Project Manager has been added to the Project personnel budget category. The Project Manager will be responsible for managing the Project 's day-today activities, and ensuring the Project's limited financial resources are utilized in a cost-effective and sustainable manner at all level of operation.</p>