

Climate Community and Biodiversity Standards

Project Design Document

April Salumei

East Sepik, Papua New Guinea



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Project Design Document
Prepared by:
Rainforest Project Management
Contact - Stephen Hooper
info@rainforestmanagementalliance.org
www.rainforestmanagementalliance.org

April Salumei Sustainable Forest Management Project

S. Hooper¹, C. Kaluwin², J. Duguman², G. Gowae², A. Asmann², E. Kwa^{3,4}, O. Gideon², S. Saulei⁵

¹ *Rainforest Project Management, PNG*

² *Environmental Science and Geography Department, with the School of Natural and Physical Sciences of the University of Papua New*

³ *Human Rights Centre, UPNG,*

⁴ *Biodiversity Law and Policy, Papua New Guinea Institute of Biodiversity (Government of PNG)*

⁵ *Papua New Guinea Forestry Research Institute, PNG*

With further contributions from:

- The landowners from the project area and the executive of Hunstein Range Holdings Limited,
- Papua New Guinea Vision 2050, the Prime Ministers Department and the NEC,
- University Papua New Guinea – Centre for Climate Change and Sustainable Development,
- Papua New Guinea Forest Research Institute,
- University of Technology
- Office Climate Change and Development
- Partners with Melanesians

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2000 Powell St, Suite 600, Emeryville, CA 94608 USA

Tel. 510.452.9092 • (Fax) 510.452.6895 • www.scscertified.com

| | |
|---|-----|
| Preface | 6 |
| Executive Summary..... | 10 |
| List of Acronyms..... | 15 |
| General Section..... | 17 |
| G1. Original Conditions in the Project Area | 17 |
| G1.1 Project Location and Physical Parameters | 17 |
| G1.2 Types and condition of vegetation within the project area..... | 22 |
| G1.3 Boundaries of the project area and the project zone | 29 |
| G1.4 Carbon Stocks within the Project Area..... | 35 |
| G1.5 Communities Located in the Project Zone | 39 |
| G1.6 Current Land Use and Land Tenure in the Project Zone | 42 |
| G1.7 Current Biodiversity within the Project Zone..... | 46 |
| Section G 2. Baseline Projections..... | 63 |
| G2.1 Baseline Land Use..... | 63 |
| G2.2 Project benefits in the absence of the project and Additionality | 64 |
| G2.3 Carbon stock change | 66 |
| G2.4 Baseline community | 83 |
| G2.5 Baseline biodiversity..... | 84 |
| G3. Project Design and Goals | 89 |
| G3.1 Major Climate, Community and Biodiversity Objectives | 89 |
| G3.2 Major Project Activities | 90 |
| G3.3 Location of Project Activities | 97 |
| G3.4 Time-frame and Project Accounting..... | 99 |
| G3.5 Project Risks and Mitigation Measures | 99 |
| G3.6 Maintenance of High Conservation Values | 110 |
| G3.7 Measures Taken to Enhance Climate, Community, Biodiversity Benefits | 110 |
| G3.8 Stakeholder Involvement | 112 |
| G3.9 Publicizing the Public Comment Period | 116 |
| G3.10 Conflict Resolution Tools..... | 116 |
| G3.11 Project Financial Support and Revenue | 117 |
| Section G4. Management Capacity and Best Practices..... | 118 |
| G4.1 Project Proponents..... | 118 |
| G4.2 Technical and Management Expertise | 121 |
| G4.3 Capacity Building | 127 |
| G4.4 Equal Employment Opportunities | 129 |
| G4.5 Employment Laws..... | 130 |
| G4.6 Employee Safety | 131 |
| G4.7 Financial Health of the Implementing Organizations..... | 131 |
| Section G5. Legal Status and Property Rights | 132 |
| G5.1 Local Laws and Regulations | 132 |
| G5.2 Documentation of legal approval..... | 135 |
| G5.3 Free, Prior, and Informed Consent | 136 |
| G5.4 Involuntary Relocations..... | 137 |
| G5.5 Illegal Activities | 137 |

| | |
|--|-----|
| G5.6 Carbon Rights | 138 |
| Climate Section CL1. Net Positive Climate Impacts | 139 |
| CL1.1 Net Change in Carbon Stocks | 139 |
| CL1.2 Net Change in Non-CO2 Gases..... | 144 |
| CL1.3 Other GHG Emissions from Project Activities | 144 |
| CL1.4 Positive Net Climate Impact..... | 145 |
| CL1.5 Avoid Double-Counting | 145 |
| CL2. Offsite Climate Impacts..... | 145 |
| CL2.1 Types of Leakage | 145 |
| CL2.2 Mitigation of Negative Offsite Impacts | 146 |
| CL2.3 Unmitigated Negative Offsite Climate Impacts | 146 |
| CL3 Climate Impact Monitoring..... | 147 |
| CL3.1 Carbon Pool Selection and Monitoring..... | 147 |
| CL3.2 Monitoring Plan..... | 148 |
| Community Section..... | 151 |
| CM 1 Net Positive Community Impacts | 151 |
| CM1.1 Community Benefits | 151 |
| CM1.2 Impact on High Conservation Values | 157 |
| CM2 Offsite Stakeholder Impacts..... | 157 |
| CM2.1 Potential Negative Offsite Stakeholder Impacts. | 158 |
| CM2.2 Plans to Mitigate Potential Offsite Impacts | 158 |
| CM2.3 Unmitigated Offsite Impacts | 159 |
| CM3 Community Impact Monitoring | 159 |
| CM3.1 Community Impact Monitoring Plan | 159 |
| CM3.2 Community Impact on High Conservation Values..... | 161 |
| CM3.3 Community Impact Monitoring Plan Development Commitment..... | 161 |
| Biodiversity Section..... | 164 |
| B1.1 Net Positive Biodiversity Impacts | 164 |
| B1.2 Impact on High Conservation Values..... | 164 |
| B1.3 Species Used by the Project..... | 166 |
| B1.4 Use of non native species by the Project..... | 166 |
| B1.5 Genetically Modified Organisms..... | 166 |
| B2. Offsite Biodiversity Impacts..... | 166 |
| B2.1 Potential Negative Offsite Biodiversity Impacts | 166 |
| B2.2 Mitigation of Potential Negative Offsite Biodiversity Impacts | 167 |
| B2.3 Evaluation of Potential Negative Offsite Biodiversity Impacts..... | 167 |
| B3. Biodiversity Impact Monitoring | 168 |
| B3.1 Biodiversity Impact Monitoring Plan | 168 |
| B3.2 Biodiversity Impact Monitoring Implementation | 169 |
| GOLD LEVEL SECTION..... | 171 |
| GL3.0 Exceptional Biodiversity Benefits..... | 171 |
| Additional Documentation used to support the April Salumei project..... | 172 |
| Policies and Procedures | 172 |
| Project Guiding Policies | 172 |

| | |
|--|-----|
| Environmental Policies..... | 172 |
| Project Funding Policy..... | 172 |
| Human Resource Policies..... | 172 |
| Finance Policies..... | 172 |
| Records and Books of Account | 173 |
| Awareness and Consultation Documentation | 174 |
| Project Approval Documents..... | 175 |
| Job Descriptions..... | 176 |
| Human Resource Forms..... | 176 |
| Additional documents..... | 177 |
| Cash-flow and Budget..... | 177 |
| Copy – Forestry Management Agreement | 177 |
| April Salumei Development Option Study | 177 |
| Tack Report | 177 |
| PNGFA – Forestry and Climate Change Framework for Action 2009- 2015..... | 177 |
| Project Timeline | 177 |
| Copy of letter | 177 |
| Copy, Press Statement - | 177 |
| Letter of Support..... | 177 |
| Copy, Press Statement..... | 177 |

Preface

In 1973 when Papua New Guinea became self governed the then Chief Minister Michael Somare commissioned the development of the “Eight Aims”. This was later renamed the *Eight Point Plan*.

The objectives were;

- Increased indigenous participation in the community
- Equality among ethnic groups, gender and between areas
- Greater attention to rural and village development , and
- Self reliance.

These same principles are reflected in the recently developed Vision 2050. Papua New Guinea Government officially launched “The Papua New Guinea Vision 2050” in October 2010.

The Papua New Guinea Vision 2050 is a long term strategy to map out the future directions of Papua New Guinea and its people.

The Papua New Guinea Vision 2050 is underpinned by seven strategic areas or ‘pillars’. They are;

- Human Capital Development, Gender, Youth and People Empowerment;
- Wealth Creation;
- Institutional Development and Service Delivery;
- Security and International Relations;
- Climate Change and Environmental Sustainability;
- Spiritual, Cultural and Community Development; and
- Strategic Planning, Integration and Control.

The implementation of these pillars will be a holistic approach through government sectors, provincial governments (their districts, local government and wards) non government organisations, donors and private sectors.

In developing the April Salumei Rainforest Preservation Project it became apparent the objectives of this vision are closely aligned with the potential of the project and furthermore some of the individual objectives in the Vision 2050 have been adopted for the April Salumei project.

When we look at the seven pillars we can distinguish were some of the key pillars will be positively enhanced by the April Salumei project.

Human capital development is addressed in the projects with local people empowered to manage their own project in the roles of community stewards. There is no discrimination between gender and youth roles have been designed to facilitate the development of the roles as people grow.

Wealth Creation is obvious with funds being delivered to the landowners and stakeholders in the area.

Improved service delivery is necessary to ensure the landowners receive the benefits they require and have planned for.

Pillar 4 which emphasis security, law and justice sector must be embraced as well as the society and communities face new challenges and models of rolling out economic development. It is important any social and cultural hiccups are managed urgently.

International relations will naturally be strengthened as more people 'invest' into the carbon sequestered in the forests of the projects that are developed.

Climate Change and Environmental Sustainability is most obviously the pillar under which this project fits directly.

Spiritual, Cultural and Community Development is addressed directly. Project funding is available for all of the community and this includes church groups. Local customs and beliefs along with special sites are recorded as part of the project. Plans are currently afoot to develop a curriculum to represent traditional beliefs of the local area and community development is the aim of the project funds.

Finally strategic planning integration and control need to compliment PNG Development Strategic Plan 2010-2030 which then further streamlined into Provincial and District and Ward plans. The Department of National Planning and Monitoring has been mandated to ensure the PNG Vision 2050 and projects like the April Salumei compliments the PNG Government and its communities.

When we examine the micro details of the "Papua New Guinea Vision 2050" (and the PNG Development Plan) we can see an alignment with specific objectives.

These include;

1.17.2 Education

1.17.2.1 Free and Universal education for all school-age children from Elementary to Grade 12.

The Landowner Company Chairman has requested to review the current education facilities and capacity with a view to providing free education to all children. This will be represented in the aims of our Education Superintendents for the respective project.

1.17.2.2 100% literacy for the adult population over 15 years of age.

Literacy levels will also be monitored to ensure continuous improvement in the community.

1.17.2.17 Establish public-private partnerships in the delivering of education.

1.17.2.18 Introduce Climate Change and Environmental sustainability as school subjects into the National Curriculum.

1.17.3 Health

1.17.3.2 Reduce tuberculosis prevalence from 51 per 100,000 to 10 per 100,000 of the population.

1.17.3.2 Reduce malaria deaths from 51 per 100,000 to 10 per 100,000 of the population.

1.17.3.5 Establish one aid post per ward area.

1.17.3.6 Provide two health workers per ward area

1.17.3.7 Establish one basic health service centre with two doctors and support personnel per district;

1.17.3.8 Improve the terms and conditions of employment of health officers.

These objectives have been integrated into our health outcomes.

1.17.7.3 Infrastructure and Utilities

1.17.7.3.1 Increase the national road network from the current 25,000 km to complete road networks throughout Papua New Guinea.

1.17.7.3.4 Increase the availability of rural electrification from 15% to 100%

1.17.7.3.5 Increase access to clean water from 39% to 100%

1.17.7.3.6 Increase communication access from 10% to 100% of the population.

Additionally these objectives reaffirm and support the Ambunti-Drekikir District Joint District Planning and Budget Priority Committee (JDP & BPC) as part of their 10 year plan.

The success of the implementation of the April Salumei Rainforest Preservation Project will depend on an holistic approach where the developer through the Papua New Guinea Vision 2050, engages all the stakeholders, from governments, non government organisations, private sectors, local communities, multilaterals, bilateral and others to ensure the REDD Pilot Project for the country is embraced by all.

Rainforest Project Management Limited is proud to have been involved in the development of the pilot project for Papua New Guinea. The landowners stand to gain significant benefits from the ongoing development of the project and these benefits to landowners have always been at the core of the projects design.

Finally we would like to thank our project development partners for their assistance;

- The landowners and the executive of Hunstein Range Holdings Limited,
- Papua New Guinea Vision 2050, the Prime Ministers Department and the NEC,

- University Papua New Guinea – Centre for Climate Change and Sustainable Development,
- Papua New Guinea Forest Research Institute,
- University of Technology
- Office Climate Change and Development
- Partners with Melanesians

Executive Summary

The April Salumei Sustainable Forest Management Project is located within the district of Ambunti in the province of East Sepik, Papua New Guinea. The Forest Management Agreement (FMA) encompasses a total area of 521,000ha with a total production area of 177,200ha for designated logging and a net production area of 150,620ha. (FMA and TACK Realty 2004)

The April Salumei Sustainable Forest Management Project is being submitted as the pilot project for REDD in Papua New Guinea.

The project is located in the Ambunti- Drekikier electorate in the East Sepik Province. This area is recognised as one of the least developed areas in Papua New Guinea and will avoid the emission of 98,441,367 tonnes of Carbon Dioxide equivalent (CO₂e) over the project life of 25 years.

All project assumptions and calculations will be made available to the validator.

The land is owned by 163 Incorporated Land groups (ILG's) who have all given Free Prior and Informed Consent consistent with the UN Rights of Indigenous People.

The Project Area is currently subject to a Forestry Management Agreement (FMA). The FMA is a legal agreement between the landowners and the government and gives the government, through the PNG Forest Authority, the right to identify a project partner to harvest timber contained in the project area.

Under the agreement landowners would receive royalties and infrastructure development as compensation for the harvesting of the timber in the FMA.

However it is generally understood that the key benefit to landowners from logging, is that of direct royalty or premium payments, which has done little to improve the quality of life for people in rural PNG as the funds are usually wasted or misused.¹

Logging projects in PNG do not deliver long term benefits to landowners². Forests are not being managed sustainably³ and "Some infrastructure is developed, but it is generally only planned around logging requirements and is not maintained after logging ceases. Lasting infrastructure that does accrue is off-set by the social and environmental cost borne primarily at the local level."⁴

¹ Eg. Filer and Sekhran (1998) ; Forest trends (2006)

² Forest Trends (2006)

³ Forest trends (2006)

⁴ Forest Trends (2006) p. 50, quoting the Independent Review Observations and Recommendations report.

As logging companies finish harvesting an area the landowners are left with serious environmental damage, high social costs and disillusioned rural populations with little sustainable infrastructure and few services.⁵

PNG's Forests

Forests are the dominant feature of the country's ecology extending over 33 million hectares.⁶ The country's forests provide vital ecological services that maintain the functioning of its land and coastal marine ecosystems. They also play a major role in the steady cycling of water and carbon dioxide, helping to regulate climatic stability.⁷

Deforestation

It was estimated that in 2002, 1.41% of Papua New Guinea's tropical forests were being deforested or degraded annually.⁸ It is also estimated that by 2021, 83% of Papua New Guinea's forests would have been cleared or degraded if the current rate of logging continues⁹. Approximately 16.3 million hectares of primary forests (roughly half of PNG's forests) is currently under threat of being selectively logged.¹⁰

Credible Threat

The approval of this project will stop the logging of the FMA which consists of 521,000 ha of which a net area of 150,620ha is harvested.

In addition to meeting the CCB Standards for approval we believe the project meets the Community and Biodiversity criterion for Gold Level Approval.

Biodiversity

Papua New Guinea probably harbours more than 6% of the world's most biologically diverse communities.¹¹ The lowland tropical and subtropical moist forests of New Guinea have been ranked among the world's ten most ecologically distinctive forest regions.¹²

⁵ Forest Trends (2006) ;Greenpeace 2008; Jipsy I (2009) Case Study Logging Operations Vailala Block 2 and Block 3 Ihu District, Gulf Province PNG B SC Hon Thesis (Unpublished)

⁶ Shearman, P.L., Bryan, J.E., Ash, J., Hunnam, P., Mackey, B. And Lokes, B., The State of the Forests of Papua New Guinea. Mapping the extent and conditions of forest cover and measuring the drivers of forest change in the period 1972-2002. University of Papua new Guinea, 2008

⁷ Hunt 2006

⁸ Shearman, P.L., Bryan, J.E., Ash, J., Hunnam, P., Mackey, B. And Lokes, B., The State of the Forests of Papua New Guinea. Mapping the extent and conditions of forest cover and measuring the drivers of forest change in the period 1972-2002 University of Papua new Guinea, 2008.

⁹ Shearman, P.L., Bryan, J.E., Ash, J., Hunnam, P., Mackey, B. And Lokes, B., The State of the Forests of Papua New Guinea. Mapping the extent and conditions of forest cover and measuring the drivers of forest change in the period 1972-2002 University of Papua New Guinea, 2008.

¹⁰ Greenpeace (2008)

¹¹ Davis et al, 1995; European Union, 2006

¹² Olsen and Dinerstein, 1998; Brooks et al, 2006; Bryant et al, 1997

PNG's forests contain at least 191 species of mammals (of which 80% are endemic), 750 bird species (greater than 50% are endemic), 300 species of reptiles, 197 species of amphibians, 3000 species of fish and an estimated 200,000 to 400,000 insect species most of which are yet to be described and classified.¹³

The International Union for the Conservation of Nature lists the most threatened animals in Papua New Guinea which includes 38 species of mammals, 22 species of birds, 8 species of reptiles, and 26 species of invertebrates¹⁴

Community

According to the 2000 Census the area had a population of just 7,696 people. Most of these villages are located along the mighty Sepik River. As you move away from the river population density decreases to approximately 4 persons per Km².

The people of the area have an average income as low as PNG K 20 – K40 per year up to a high of K100 to K200 per year where transport and infrastructure allow for the sale of Fish, Sago and some alluvial gold mining.

Education levels are very low, with the few schools that do exist, often lacking support such as teaching materials. The difficulty for parents to pay school fees also sees a number of students drop out of school.

Project Activities

Health services are minimal and villagers travel long distances walking for as long as eight hours to seek medical attention.¹⁵ First aid has largely been provided by the missionaries located in the area.

A total review and analysis of the health and education needs of the local communities will be undertaken at the request of the local people. Following this review the project representatives and the relevant government bodies will develop and implement an improvement plan to address any deficiencies found during the review. It is anticipated this will include the establishment of health centres and educational support programs through the provision of resources and infrastructure.

One of the key aims of the project is the building of a road to provide access generally and to provide river transport which will facilitate transportation of produce to market which will assist the local people to increase their income.

¹³ Sekhran and Miller, 1994

¹⁴ IUNC, 2006

¹⁵ Hanson et al 2001

Other priority projects to be implemented at the request of the project stakeholders include the establishment of four resource centres including the renovation of the “White House” at Ambunti which will become the project head office. Each resource centre will be equipped with V-Sat communications to allow local people communication through phone connection and internet. Training is planned for the operational staff.

Transparency

The landowners are able to apply for funds to establish sustainable projects in the area through a transparent and well supported process.

An independent governance committee comprising three independent and appropriately qualified people will be formed to ensure the landowner funds are not misused or unfairly allocated.

Funds will also be used to provide wages and training for the Community, Biodiversity and Climate Stewards.

VCS

It is the intention of the April Salumei Foundation to seek validation to the Verified Carbon Standard. This work will commence shortly following the project being approved to the Climate Community and Biodiversity Standard and will again involve the support of Papua New Guinea Forest Research Institute and University Papua New Guinea.

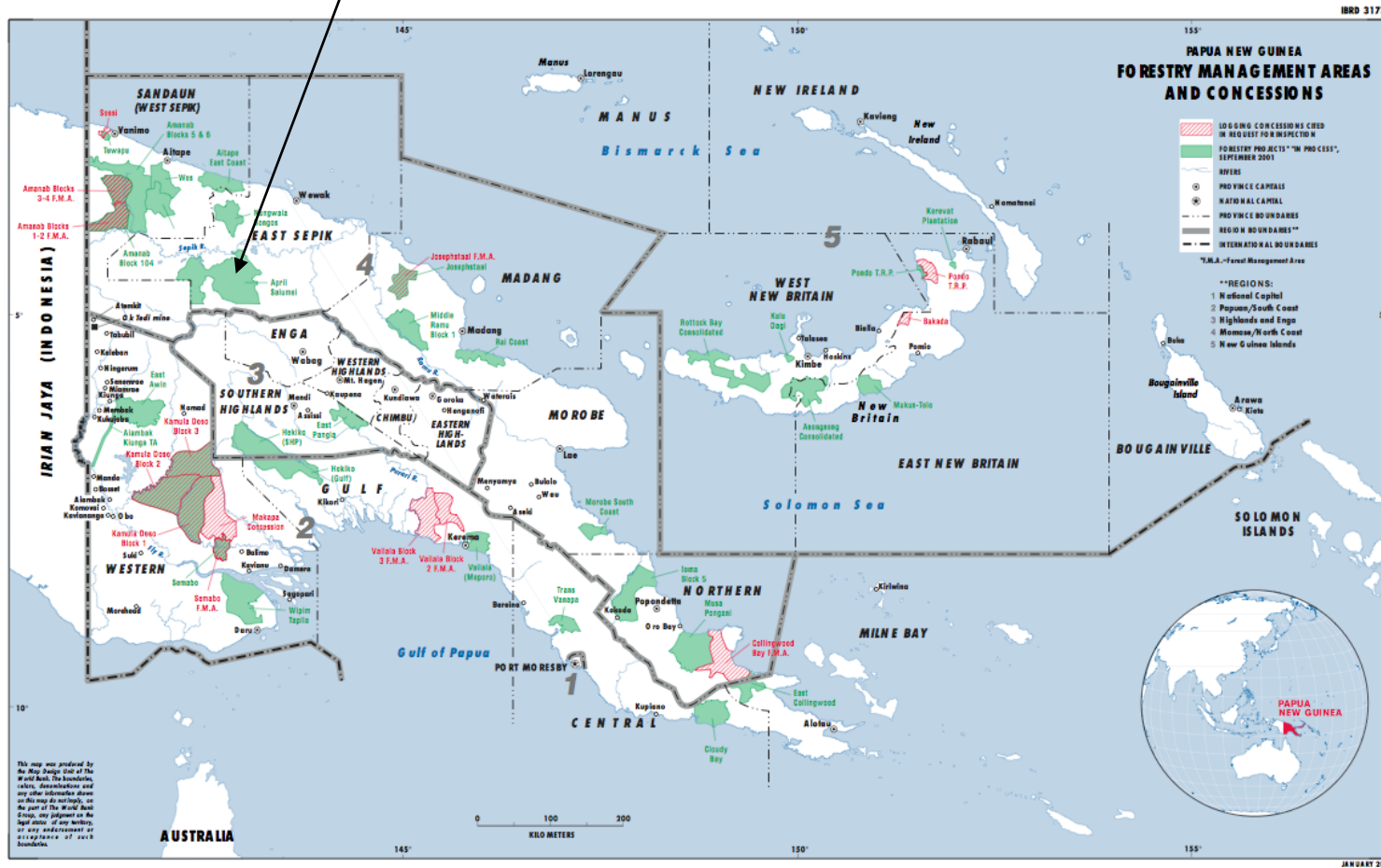
Summary

A key outcome from this project and other planned pilot projects will be to facilitate the building of capacity for Papua New Guinea to meet the requirements of international compliance.

Additional to this the management and continued engagement of all stakeholders will assist the government through its Papua New Guinea Vision 2050 in developing their policy and legislation in avoided deforestation opportunities.

Map 1: Project Location: (Source PNGRS 2007)

April Salumei Forest Management Area



List of Acronyms

| | |
|-------------------|---|
| ADCOW | Ambunti District Council of Women |
| ADLEF | Ambunti District Local Environment Foundation |
| A/R | Afforestation/Reforestation |
| AGB | Above Ground Biomass |
| AIDS | Acquired immunodeficiency syndrome |
| ASSFMP | April Salumei Sustainable Forest Management Project |
| BGB | Below Ground Biomass |
| CCB | Climate Community and Biodiversity |
| CCBA | Climate Community and Biodiversity Alliance |
| CDM | Clean Development Mechanism |
| CH ₄ | Methane |
| CIFOR | Centre for International Forestry Research |
| CITES | Convention on International Trade of Endangered Species |
| CO ₂ | Carbon Dioxide |
| CO ₂ e | Carbon Dioxide Equivalent |
| CWD | Coarse Wood Debris |
| DEC | Department of Environment and Conservation |
| d.m. | Dry mass |
| DNA | Designated National Authority |
| DOM | Dead Wood and Organic Matter |
| EEO | Equal Employment Opportunity |
| EL | Exploration License |
| EIS | Environmental Impact Statement |
| ESCOW | East Sepik Council of Women |
| FAO | Food and Agriculture Organization |
| FCES | Forest Carbon Environmental Services |
| FMA | Forest Management Agreement |
| FSC | Forest Stewardship Council |
| GHG | Green House Gas |
| GISRS | Geographical Information System and Remote Sensing |
| GoPNG | Government of Papua New Guinea |
| GPS | Geographical Positioning System |
| Ha | Hectare |
| HCV | High Conservation Value |
| HCVF | High Conservation Value Forest |
| HDI | Human Development Index |
| HELP | Health, Education, Livelihood and Participation |
| HIV | Human immunodeficiency virus |
| HRH | Hunstein Range Holdings Limited |
| ILG | Incorporated Land Group |
| IPAT | Impact Population Affluence and Technology |

| | |
|------------------|---|
| IPCC | Intergovernmental Panel for Climate Change |
| ICRAF | Individual Community Rights Advocacy Forum |
| ICT | Information Communication Technology |
| IT | Information Technology |
| ITTO | International Tropical Timber Organization |
| IUCN | International Union for the Conservation of Nature |
| LLG | Local Level Government |
| LULUCF | Land Use, Land-Use Change and Forestry |
| MDG | Millennium Development Goal |
| MOU | Memorandum of Understanding |
| N ₂ O | Nitrous Oxide |
| NEC | National Executive Council |
| NGO | Non Government Organization |
| OCCD | Office of Climate Change and Development |
| OCCES | Office of Climate Change and Environmental Sustainability |
| PNG | Papua New Guinea |
| PNGFA | Papua New Guinea Forest Authority |
| PNGFRI | Papua New Guinea Forest Research Institute |
| PNGRIS | Papua New Guinea Resource Information System |
| PPL | Petroleum Prospecting License |
| PM | Prime Minister |
| PSP | Permanent Sampling Plot |
| PWM | Partners With Melanesia |
| REDD | Reduced Emissions from Deforestation and Degradation |
| RPM | Rainforest Project Management Limited |
| SGS | Société de General Surveillance |
| SPREP | South Pacific Regional Environment Programme |
| TECM | Total Environmental Catchment Management |
| TRP | Timber Rights Purchase |
| UN | United Nations |
| UNCCD | United Nations Convention on Combating Desertification |
| UNCED | United Nations Conference for Environment and Development |
| UNFCCC | United Nations Framework on Convention of Climate Change |
| UNDP | United Nations Development Programme |
| UPNG | University of Papua New Guinea |
| USAID | United States Agency for International Development |
| VER | Verified Emission Reduction |
| WMA | Wildlife Management Area |
| WWF | World Wide Fund for Nature |

General Section

G1. Original Conditions in the Project Area

G1.1 Project Location and Physical Parameters

Location and Access

The April Salumei Forest Management Area (FMA) is located within the district of Ambunti in the province of East Sepik. The FMA encompasses a total area of 521,000 ha, with a total production area of 177,200 ha for designated logging and a net production area of 150,620 ha.

The FMA is located approximately 122 km south west of the provincial centre, Wewak.

The FMA is located within swamp associated forests, lowland and hill forests, lower and higher montane forests (Tack Realty 2004). Elevations range from 20 m in the Sepik valley up to 3000 m in the Central ranges (Hanson et al 2001). Wetlands and a few main rivers intersect the FMA including the Leonard Schultz, the April, the Salumei and the Korosameri River. The area is relatively flat to undulating yet tends to be more hilly and rugged within the vicinity of Hunstein range and the headwaters of Ario, April (Salumei and Korosameri rivers). The flatter areas comprise of back swamps, whilst higher grounds comprise the bulk of the FMA area.

Soil

The soil composition of the FMA includes *hydraquents* and *fluvaquents* which are largely associated with wetlands and river embankments whereas *humitropepts* and *dystropepts* soils dominant at higher elevations.

The detailed soil types are presented in Map 2. However, there are three dominant types of soil groups which are evident in the area. The first type is of *hydraquents* nature. These soils are found to be permanently saturated undifferentiated soil which tend to be soft underfoot and of mainly fine textures. Between 30-50% of the area is of this soil type with a soil depth greater than one meter.

Drainage is considered poor as the soil is always water-logged, being swampy in nature. The erodability of this soil is moderate with acid reaction depending on available water capacity; 0-25 cm is considered low, 0-50 cm is considered moderate and 0-100 cm is

considered high. Soil texture both on the surface and at the subsoil level tend to be very fine. Hence where this type of soil is found, less than 1% is stony or rocky in nature.

The second group of soil found in the area is of *fluvaquent* nature. Areas with this soil are normally poorly drained with undifferentiated soils with high variable carbon content. The extent of this soil type is between 20-40% of the area and is of moderate erodability and acid reaction. The depth of this soil type generally is normally greater than 1 meter. These areas are waterlogged, being swampy in nature.

The raised and high altitude areas comprise *dystropepts* soil types. These are well drained moderately weathered soils with finer textured sub-soils and altered B horizons and low (less than 50%) sub-soil base saturation values respectively. The creeks and the river systems comprise of rocks of various sizes.¹⁶

The rock formation of the April Salumei comprises mainly of alluvial deposits originating from the main tributaries of the Sepik, Wario, April, Salumei, Hunstein and Korosami Rivers. The area is also known for metamorphic rock formation and igneous intrusions. Mineral composition is found in the area allowing small scale alluvial mining continuing to this day in the FMA.

Hydrology

The main hydrological features of the FMA are the numerous tributaries of the Sepik River which traverse through the wetlands and the FMA, generally. The tributaries include the April, Silipa, Salumei, Wario and Korosameri rivers, they originate from the range extending to the south of the FMA.

There are four tributaries of the Sepik River within the April Salumei FMA. These tributaries are the main influences in terms of soil types, relief and forest types. Drinking water quality varies from location to location with better cleaner water found in the headwaters of Wario, April, Salumei and Korosameri rivers.

All of these rivers drain into the main Sepik River. Apart from these main rivers, there are numerous known and undiscovered creeks originating from the hinterlands of the southern parts of the FMA.

Climate

The annual average rainfall within the forest area is between 2500-3500 mm which is fairly high and characteristic of lowland humid climatic type. Rainfall is experienced all

¹⁶ Sources: Development Option Study (DOS) for April Salumei, 1996

year around. Seasonal averages vary from 100-200 mm to greater than 200 mm per month.

Owing to rainfall all year around water deficit is rarely experienced giving a moderate surplus of water in the area.

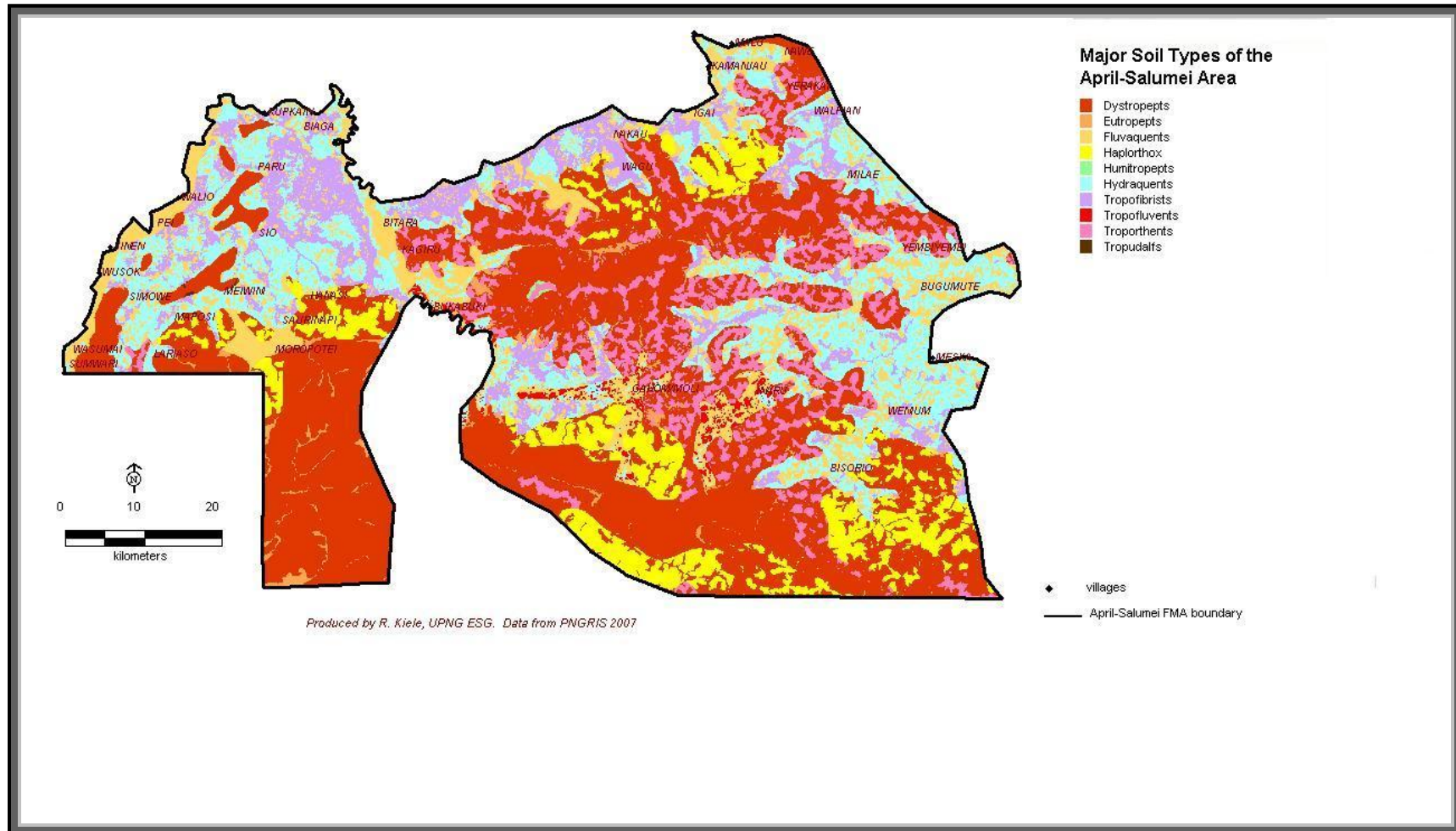
The maximum annual temperatures within the area rarely exceed 32⁰C. It is generally within the range of 30-32⁰C. The minimum annual average range from 19-23⁰C.¹⁷



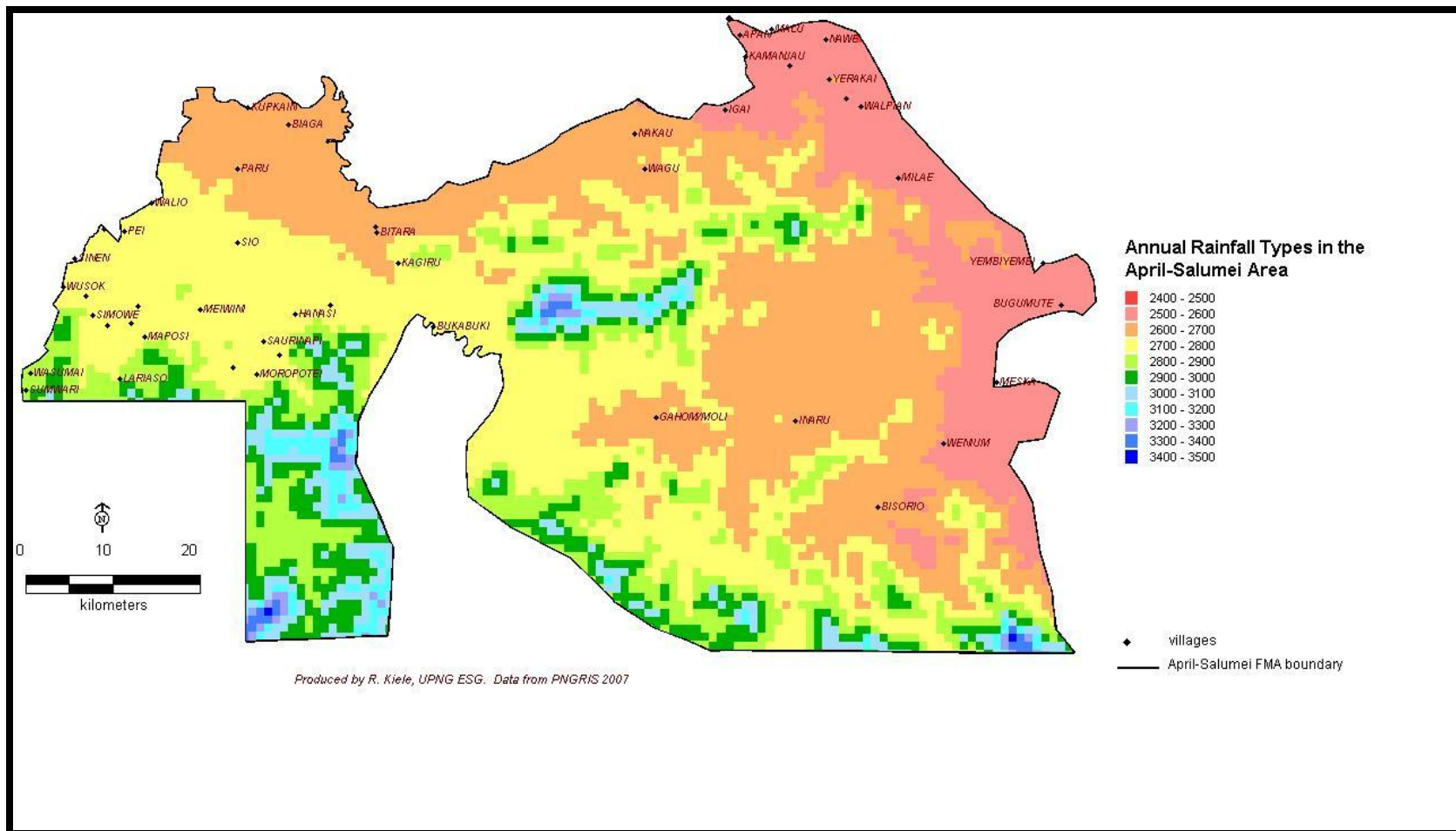
Photo: Preparing to travel - Awareness November 2009.

¹⁷ Sources: Bryan & Sherman 2008,; DOS 1996

Map 2: Soil map of April Salumei Project Area. (Source PNGRS 2007)



Map 3: Mean annual rainfall in project area (Source PNGRS 2007)



G1.2 Types and condition of vegetation within the project area

PNG in 2009 for UNFCCC REDD requirements agreed and adopted the forest definition of *land spanning more than 0.5 hectares with trees higher than 3 metres and a canopy cover of more than 10 percent or trees able to reach these thresholds in situ. It does not include land that is predominantly under agricultural or urban land use (FAO/FRA, 2005).*

For forest management purposes the forest and vegetation types classification in PNG are defined according to the features of structure and floristic of vegetation, as well as environmental factors such as topography, drainage and altitude which were used by Paijams (1975, 1976) and Saunders (1993).

The forest types are described by the crown classes based on the average crown diameter of canopy structure. The three main crown classes are:

1. Large-crowned: > 15 m
2. Medium-crowned: 8-15 m
3. Small-crowned: < 8 m

The floristic composition of most of New Guinea's vegetation types are closely allied to the region of Southeast Asia called Malesia (which include Malaysia, Indonesia and the Philippines), however, the montane vegetation types do show strong affinities to the Australian flora, e.g. the dominance of certain plant taxa (e.g. *Nothofagus* spp., *Araucariaceae*, *Cunnoniaceae*, etc.).

There were two main vegetation types identified in the FMA at the project commencement; *forest* and *woodland*. The forest vegetation comprises forest types of swamp and succession (seral) swamp forests up to the lower montane forest type while the woodland vegetation comprises successions dominated by woodlands. The only identified anthropogenic land use change at the project start was due to settlement expansion, mission stations, airstrips, aid posts and similar developments. Agricultural activity is subsistence based on the cultivation of localized small scale gardens.

The detailed vegetation and forest types found in the FMA are shown in Map 5 of which the forest vegetation types occupied over 80% of the total area. The swamp and woodland forests constitute much of the unproductive forest areas including the buffer zones, whilst the forest types constitute the most productive forest area of the FMA.¹⁸

The wetlands vegetation types cover much of the area along the main Sepik River and its tributaries, including April and Salumei rivers. Moving away from the Sepik River toward the east, the predominant vegetation type becomes medium crowned forest.

¹⁸ Sources: FIMS 1998

Interspersed with this medium crowned forest are patches of open forests that tend to be found at higher elevations. Small crowned forests are not common in the FMA and are evident in very few locations along the Sepik River.

The following is a brief description of the identified vegetation types which are based on descriptions provided by Hammermaster and Saunders¹⁹.

Seral and Swamp Forests (76,688 ha)

Seral and swamp forests include riverine mixed succession and swamp forests. The riverine mixed secession forest has an irregularly open to open irregularly uneven, medium to small crown canopy up to 30 m in height. Large crowned emergents, notably *Octomeles sumatrana*, may be present.

The forest is heterogeneous, comprising many seral changes, from low forest to original levee forest, following changes in the course of a river. Consequently species composition is highly variable ranging from a low stand of *Octomeles sumatrana* and/or *Artocarpus* to a mixed species mature forest similar to medium crown forest or the open forest on plains and fans. The forest is found on scroll arches of meandering rivers throughout PNG.

The swamp forest vegetation types comprises of mixed swamp forests of dense under storey of sago palms, to dense even canopy of predominant *Camptosperma* species with an open irregular uneven canopy of *Maleleuca leucadendron*, and dense, occasionally open, even to slightly uneven or undulating medium to large, woolly light-tone crowns of *Terminalia brasii* predominant in the canopy or co-dominant with *Camptosperma*. The crown height is 20-30 m. Other species likely to be found in the vegetation type include *Syzygium* and *Myristica*.

Swamp Grassland and Herbland (12,435 ha)

The swamp grassland is found on low altitude plains, in permanent to intermittently dry swamps, the community is dominated by *Phragmites karka*, *Saccharum robustum* and *Coix lachrymal-jobi*. In permanent swamps the main species are *Leersia hexandrndra*, *Oryza* spp. and *Hymenachne acutighuma*.

The herbaceous swamp is generally a darker tone of grey than the grass swamp and may have a mottled appearance.

Low Altitude Forest on Plains and Fans (45,132 ha)

This forest zone is found in the 500 m altitude but generally below 1000 m altitude, and comprises *Large to medium crown forest (Pl)*, *Open forest (Po)* and *Small crowned forest*

¹⁹ Hammermaster, E. T. and Saunders, J.C. and CSIRO and Australian Agency for International Development *Forest resources and vegetation mapping of Papua New Guinea*

(Ps). The two dominant types found in the area were *Large to medium crown forest and Open forest*.

Large to medium crowned forest (PI)

A tall forest with an average canopy height of 30-35m. Emergent trees often attain, and sometimes exceed, 50 m. The canopy is irregularly open and the profile is irregularly uneven. This forest type is similar to the open forest type as both are low altitude forest types occurring on plains and fans below 1000 m. However, the main difference is the species composition and dominance resulting in different average crown heights and sizes, which are useful in carbon stock change accounting purposes.

The Medium to Large Crowned forests are floristically of very mixed species compositions. In the more luxuriant forest types three tree layers can be easily observed. Taller trees forming the canopy include *Alstonia scholaris*, *Camposperma*, *Canarium*, *Celtis*, *Dysoxylum*, *Chisocheton*, *Endospermum*, *Garuga*, etc. In the sub-canopy layer common taxa include *Osmoxylon*, *Dillenia*, *Buchanania*, *Garcinia*, *Pimelioidendron amboinicum*, *Dysoxylum*, *Chisocheton*, *Diospyros*, etc. The lower stratum includes species like *Barringtonia*, *Maniltoa*, *Euodia*, *Aglaia*, *Clerodendrum*, and various species of *Rubiaceae*, *Euphorbiaceae*, *Monimiaceae*, *Myrsinaceae*, etc.

The species composition of the canopy is mixed and almost invariably includes *Pometia pinnata*, *Octomeles sumatrana*, *Ficus spp.*, *Alstonia scholaris* and *Terminalia spp.* Other commonly occurring genera include *Pterocarpus*, *Artocarpus*, *Planchonella*, *Canarium*, *Elaeocarpus*, *Cryptocarya*, *Celtis*, *Dracontomelum*, *Dysoxylum*, *Syzygium*, *Vitex*, *Spondias* and *Intsia*.

This forest type occurs on well to imperfectly drained alluvial plains and gently sloping un-dissected fans. Flooding rarely occurs and is of short duration being found on the foot slopes of volcanoes.

Open forest (Po)

The canopy of this forest can reach 30m in height with large crown emergent trees reaching up to 40 m. It is found mostly in swampy areas, which often dry up during the dry season. The irregular profile canopy is composed of mainly medium and some small crowns. The open canopy has many, often large, gaps revealing a lower tree stratum. The large crown emergent trees often include strangling figs, and *Octomeles sumatrana* and occur in frequently flooded areas. It occupies a total of 37,298 ha of the FMA area.

The floristic composition is very similar to the large to medium crowned forest with *Planchonia*, *Bischofia*, *Cananga*, *Intsia*, *Teymannia*, *odendron*, *Nauclea* and *Vitex* being the more commonly occurring genera. Deciduous trees are more common due to the marked dry season.

The forest occurs on the lower and middle courses of the larger rivers, on low levees, scrolls and plains subject to short duration flooding, on back plains subject to prolonged wet-season inundation and on fans where impeded drainage occurs. The water table remains at, or near, the surface for most of the year. The forest is of mixed species composition.

Low Altitude Forest on Uplands (297,260 ha)

This forest zone is found at 700 m but generally below 1000 m. The common forest types found in the area were *Medium crowned forest (Hm)* and *Medium crown forest with Araucaria (HmAr)*.

Medium crowned forest (Hm)

This is the predominant forest type in the FMA and occupies nearly 43% of the total FMA. The canopy height of this forest is 25-30 m, the height is generally even and the canopy is typically 60-80% closed. Broadleaf emergent trees rarely exceed 40 m in height.

This forest type is found on a wide range of landforms, slopes, soil, rock types, climates up to an altitude of 1000 m. While there is no perceptible break in the air photo pattern over this range in altitude, there is a gradual change in floristic composition with increasing altitude. Below approximately 500m altitude, the species present are similar to those found in the forests of the low altitude plains and fans. Frequently occurring genera are *Pometia*, *Canarium*, *Anisoptera*, *Cryptocarya*, *Terminalia*, *Syzygium*, *Ficus*, *Celtis*, *Dysoxylum* and *Buchanania*. Some trees, such as *Koompassia*, *Dillenia* and *Eucalyptopsis* and the dipterocarps *Hopea* and *Vatica* are common to abundant in certain regions but are absent from others. *Homalium* is frequently occurring, but may be rare to occasional elsewhere.

Above 500m altitude, the species composition is similar to the lower montane forests, with *Elmerrillia*, *Flindersia*, *Castanopsis*, *Lithocarpus*, *Syzygium*, *Cryptocarya*, *Litsea*, *Cinnamomum*, *Gallulimima*, *Dryadodaphne*, *Garcinia*, *Neuburgia*, *Planchonella*, *Sterculia*, *Elaeocarpus* and *Sloanea* mixing with the elements of the low altitude forest on uplands. Broadleaf emergents are rare, but scattered trees and small stands of *Araucaria species* may reach 70 m in height. On steep and unstable slopes the canopy is more open, more uneven and has smaller crowns.

Medium crowned forest with Araucaria common (HmAr)

This forest has a canopy 25-30 m high. The canopy is slightly uneven and has a 60-80% closure. *Araucaria emergent's* rise above the canopy to a height of up to 70 m

Stands of this forest type occur sporadically throughout the country, and are generally above 500 m altitude, on a variety of landform, soils and rock types. Canopy species are mixed and are similar to those found in the upper zone of the low altitude forests on uplands.

Araucaria species, particularly *Agathis* (Kauri pine) is an important valuable species found in spotted areas comprising 22% of the total productive forest area of the FMA. These spotted areas of Kauri have been the subject of conservation and hence are mostly proliferant in the previous Hunstein Range Wildlife Management Area.

Lower Montane Forest (9,279 ha)

This forest type within the FMA comprised mainly *Small-crowned forest (L)* above 1000 m altitude.

This forest has an even to slightly undulating canopy 20-30 m in height. Canopy closure varies from dense to almost closed canopy. Emergents are rare, but scattered Araucaria may be present and can reach a height of 40 m.

The forest occurs throughout the mountain ranges on a wide range of parent material. The species composition is mixed, with oaks well represented at lower altitudes with beech and conifers more frequent at higher altitudes. Frequently occurring canopy trees are *Lithocarpus*, *Castanopsis*, *Alphitonia*, *Astronia*, *Caldcluvia*, *Casearia*, *Cinnamomum*, *Cryptocarya*, *Litsea*, *Dryadodaphne*, *Elaeocarpus*, *Sloanea*, *Elmerrillia*, *Calbulimima*, *Garcinia*, *Gordonia*, *Neuburgia*, *Platea*, *Planchonella*, *Schizomeria*, *Mischocarpus*, *Syzygium*, and the conifer *Podocarpus*.

With increasing altitude the height of the canopy becomes lower, the crowns become smaller and the floristic composition gradually changes to include *Ascarina*, *Claoxylon*, *Euodia*, *Halfordia*, *Ilex*, *Nothofagus*, *Pygeium*, *Quintinia*, *Timonius*, *Weinmannia*, *Xanthomyrtus*, *Zanthozylum*, and the conifers *Podocarpus*, *Dacrycarpus*, *Phyllocadus* and *Libocedrus*.

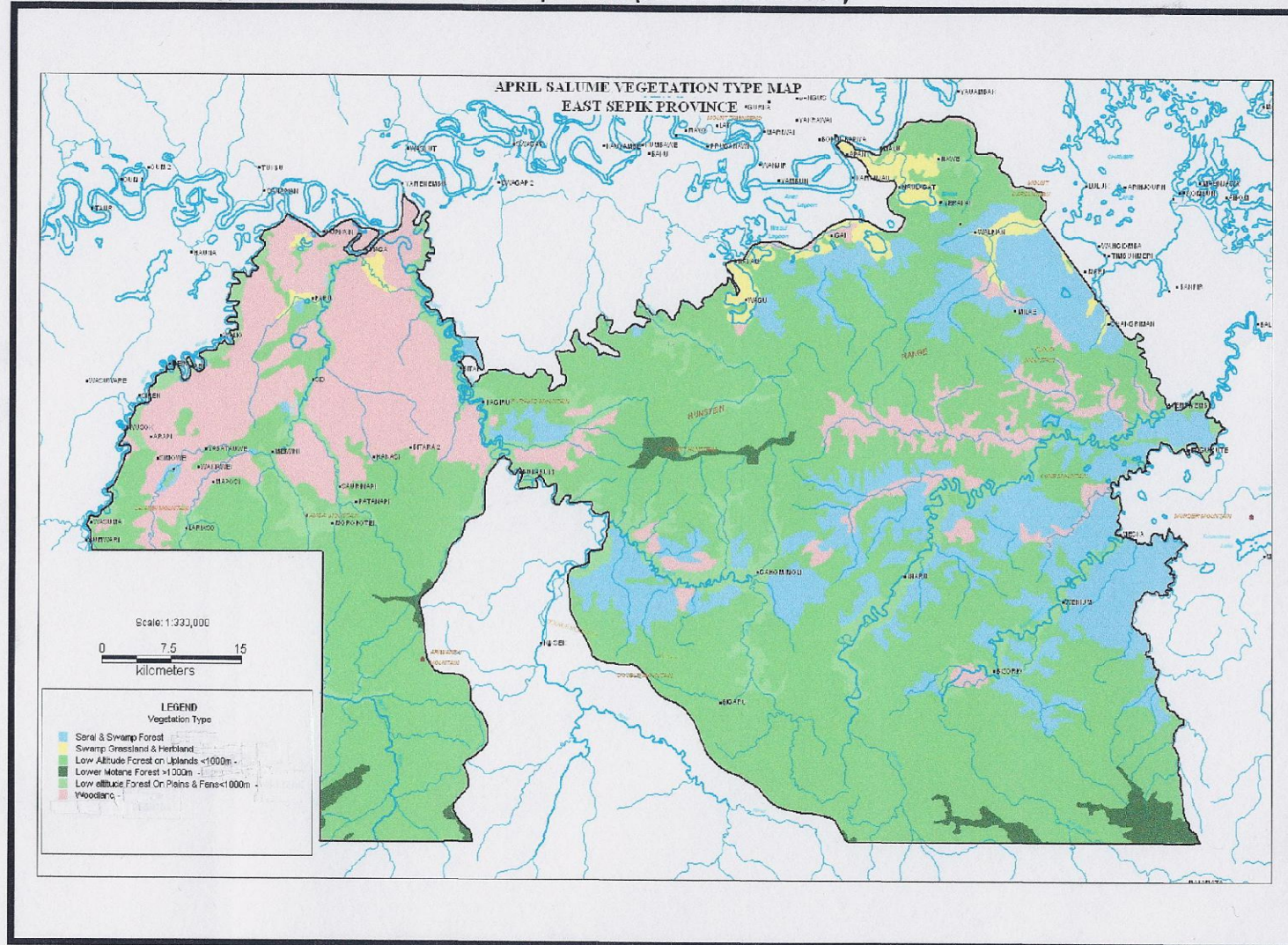
Woodland (80,206 ha)

The tree layer is low and open with the ground layer usually dense which may include shrubs, herbs or grasses, or any combination of these.

Woodland occurs on permanently dry to periodically inundated terrain, mainly in seasonally dry coastal areas. It is largely an impoverished form of low altitude forest on uplands, dry evergreen forest or littoral forest, and species composition reflects this relationship. On periodically inundated sites *Carallia*, *Nauclea*, *Melaleuca* and *Acacia* may be present. Beach woodland may include the species *Calophyllum inophyllum*, *Barringtonia asiatica*, *Terminalia catapa* and *Pandanus tectoris*.



Map 4: Vegetation types identified in the Salumei April FMA (Source PNGRS 2007)



G1.3 Boundaries of the project area and the project zone

Project Area.

The project area is the original area described in the Forestry Management Agreement. This is a total area of 521,000ha.

We have continued with the pre existing boundary as this is the area represented by the Landowner Company Hunstein Range Holdings Limited (HRH). There are significant cultural ties between the tribes that have formed the landowner companies and ultimately HRH.

The project boundary is the same as the boundary defined by the original Forestry Management Area boundary. See Map 5 and the description on page 24 taken directly from the Forest Management Agreement.

There are four main cultural groups within the project area that have formed Landowner Companies to represent themselves. They are;

1. Salumei Investments Ltd consisting of 37 Incorporated Land Groups
2. Sio Walio Investments Ltd consisting of 54 Incorporated Land Groups
3. Nom Investments Ltd consisting of 28 Incorporated Land Groups
4. Niksek Samsai Resources Ltd consisting of 44 Incorporated Land Groups

They represent ILGs from the Gawi, Ambunti, Ama/May and Hunstein Tunap LLG areas.

The 163 Incorporated Land Groups and the 4 Landowner Companies have an umbrella landowner company, Hunstein Range Holdings Limited representing all landowners within the Forestry Management Area.

Tack Realty (2004) stated that 30 ILG groups from the April River LLG refused to give their consent during the structuring of the FMA. Those thirty ILGs have now signed an agreement as individual ILG's consenting to the landowner company Niksek Samsai Resources Limited acting on their behalf with respect to the project.

We believe it is very important to acknowledge the cultural and family ties between the groups keeping the project boundary consistent with these traditional boundaries.

The April Salumei region is located in the Ambunti District of East Sepik Province, located between the Sepik River and the border or Enga – East Sepik and Southern Highlands.

River access is from Pagwi or Ambunti traversing the main Sepik River and turning south into the river ways, the main ones being April River at Kubkain and the Chambri Lake.

There are no reliable roads which provide access to the area. River Barges deliver goods on a charter basis from Madang district.

Description of the FMA and the Project Boundary

The northern most boundary of the FMA area is the Sepik River, whilst the western boundary is bounded by the Wario River. The south western boundary crosses an unknown boundary from the southern tip of Wario River thence going southerly until it again reaches the Wario River, thence, going further south, thence, eastward, thence, northward again, thence, north eastward until it reaches Yosua, thence, zigzagging south eastward again until it gets to the Salumei River and continues eastward crossing Korosarneri River to a high altitude Forest Area.

The boundary then zigzags northwards through Gigantok, Watanatavi, Meska, Wimat Mission, thence, northwest, all the way to Ambunti the sub-district headquarters. From Ambunti the boundary zigzags south east, thence, south west through Wasui Lagoon, crossing the hills of the Hunstein Wildlife Management Area to the end of the north eastern boundary of the said Hunstein Conservation Area.

The boundary follows an inundated area (April River) north-west again through Bitara until it reaches the mighty Sepik River going westward to the starting point which is the Wario River confluence with the Sepik River.

Project Zone

The April Salumei project zone provides for a buffer of approximately 5 km away from the project area (See Map 5).

In determining this boundary the semi nomadic lifestyle allow for members of the community to travel long distances to forage for wild meat and sago has been taken into account. Tomware village, in the south west of the project zone has a large population (403) and acts as a transit area where people stop over when travelling to Niksek and Gahom, within the upper reaches of the April – Salumei rivers. The buffering of 5 kms is also practiced for mine planning at the Ok Tedi mine as it affects the distribution of benefits. Similarly, this practice is applied elsewhere with the agriculture, forestry and marine sectors.

Additional consideration has been given for traditional boundaries that extend outside the project area and into the project zone. This occurs in the northern section of the project zone where traditional boundaries have utilised the Sepik River and in the Southern Boundary which has used the mountain ranges as a physical identifier for traditional boundaries.

This definition takes into consideration the semi nomadic communities that reside in the vicinity of the FMA as they search and forage for protein, sago and other material within the wetlands and forest areas.²⁰

²⁰ Saulei & Kaluwin 2009

The family groups are also closely linked through marriage and clan kinships. Relationships go as far back as those at Gahom linking the Yambun, Malu or Wagu communities. With these relationships also comes communal rights to resources such as fish and the staple food – sago, hence their willingness to travel longer distances within the FMA and surrounding areas. Those further up at the April River, Ouna and those at Hotmin or Frieda strip may be distant relatives but still have an affinity with the Telefomin, Oksapmin and upper Ok Tedi communities.²¹

Further considerations in determining the project zone were the ‘traditional users’ of the area. These people have land use rights not land ownership rights. A priority project (see section G3.2) is for the mapping of ILG boundaries and genealogy which will assist with determining land use rights. This will serve the dual purpose of demarcating the physical boundaries of traditional land ownership and user rights but will also serve as a management tool in mitigating the risk of people moving into the area without a legitimate right to be there.

The CCBA (2008) defines the ‘project area’ as the land within the carbon project boundary and under the control of the project proponent. All Incorporated Land groups from within the project boundary have freely consented to the projects development (see G5.3). As discussed further in G5 Legal Status the property rights of the Incorporated Land Groups are the legally recognised and traditional owners of the land.

In addition, the ‘project zone’ is defined as the project area and the land within the boundaries of the adjacent communities potentially affected by the project (ibid). Noting these definition, the zone of impact is estimated to be 15, 520 km². This figure is based on GIS calculations during the production and updating of the maps at UPNG.

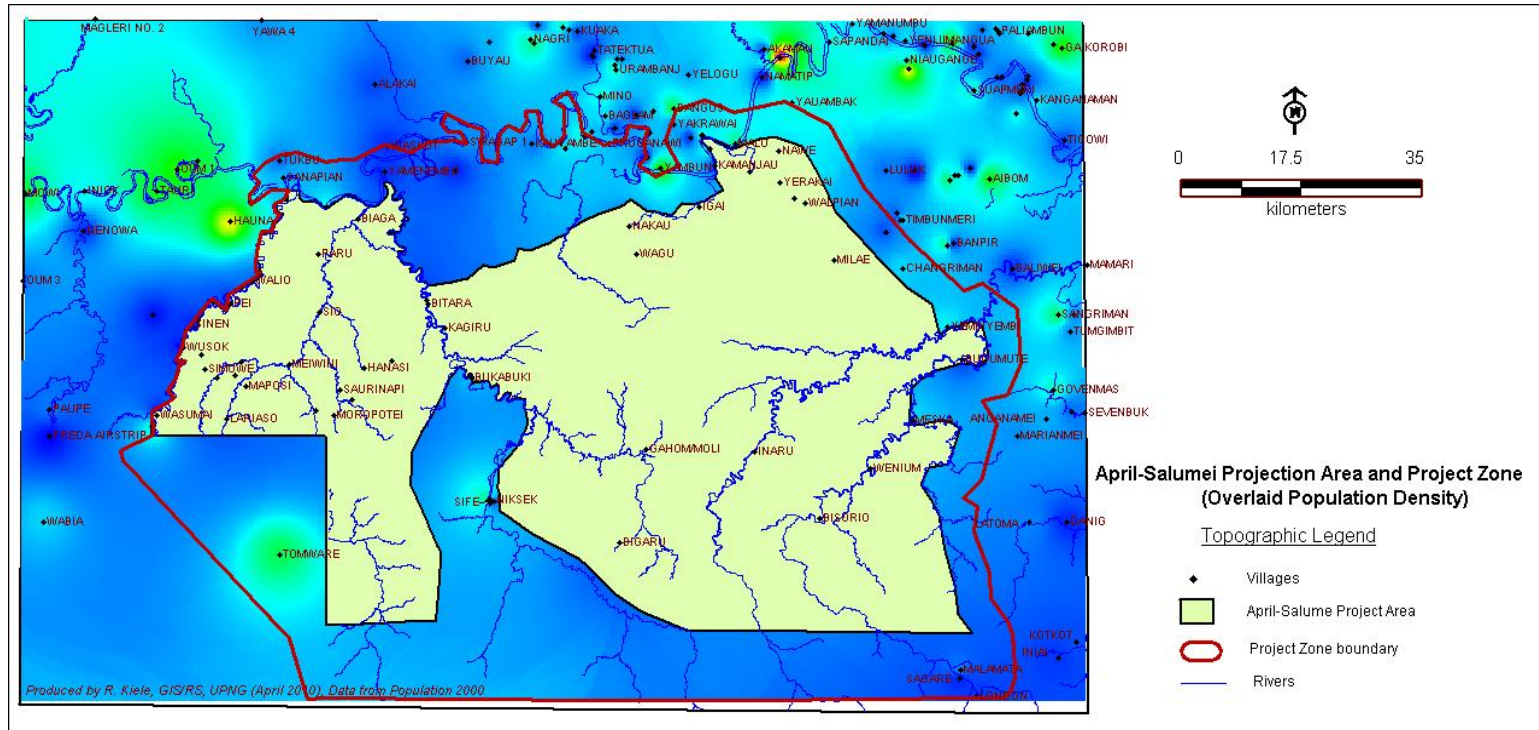
The whole area inside the project zone boundary will be monitored.

²¹ 2010, Duguman, pers comm., 8 April 2010



Photo. Typical village in April Salumei project area.

Map 5. Project Area and Project Zone (Source UPNG)



Description taken from the April Salumei FMA documentation

BOUNDARY DESCRIPTION OF REVISED APRIL SALUMEI FMA

An area of approximately 521,500 hectares known as April Salumei Forest Management Area situated in the mlinches of Wogamush and Walawsi and Ambunti and Double and Chambri and Kuvenmas in the Fourmils of Mianmin and Ambunti all in the Ambunti subdistrict of East Sepik Province commencing at the levee bank along the Sepik River opposite Ambunti Station bouncing southeasterly and northeasterly downstream Sepik River for 9,000 meters thence bounces generally easterly following the 40 meter contour along the foot hills for 9,000 meters thence bounces southerly and southeasterly for 6,000 meters thence bounces generally southeasterly along the foot hills along the edge of the swamp partly around Mount Garamambu for 11,000 meters to the left bank of an unnamed river tributary to Chambri Lake southeast of the said Mount Geramambu thence bounces southeasterly on an un-surveyed line bearing of 145 degrees for 16,000 meters to Mensuat Village thence follows the lowest elevation where the swamp ends and rain forest begins generally southeasterly to Yambi Yambi Village for 11,000 meters thence bounces generally northeasterly and southeasterly downstream Salumei River for 8,000 meters to the confluence with Korosameri river west of Wimat Mission station thence bounces generally southerly and southwesterly and southerly upstream the said Korosameri river for 41,000 to the confluence with Weisas river at Meska Village thence continues upstream the said Weisas river for 40,000 meters to the confluence with an un-named tributary 2000 meters southeast of Gigantok village thence continues upstream the said Weisas river to its source and over the un-named ridge to the confluence of two un-named tributaries of Korosameri river for 14,000 meters thence bounces westerly on an un-surveyed line bearing of 270 degrees for 40,000 meters to the top of an un-named mountain north northeast of Bikaru village thence bounces generally northwesterly along the dividing range parallel April river crossing Double Mountain Range for 50,000 meters to the confluence of April river with Shumagon creek thence bounces generally northerly downstream the said April river for 8,000 meters to the confluence with Sitipa river thence continues downstream the said April river for 25,000 meters to the confluence with Miegi river at Nago village thence bounces generally southeasterly upstream the said Miegi river for 18,000 meters to the top of Camel Back mountain thence bounces generally southerly and southeasterly and south southeasterly and generally southwesterly and southeasterly all along the dividing range for 37,000 meters thence bounces westerly on an unsurveyed line bearing of 270 degrees for 27,000 meters to the Provincial Administrative boundary with West Sepik Province thence follows the said boundary northerly and westerly for 55,000 meters to the intersection with Leonard Schultze river thence follows the said Leonard Schultze river downstream for 95,000 meters to the confluence with Sepik river thence bounces generally easterly downstream the said Sepik river for 20,000 meters to the confluence with April river thence bounces generally southerly upstream April river for 45,000 meters 2000 meters downstream from Kagiru village thence bounces generally northeasterly along the foot hills of Pyramid Mountain and Hunstein Range generally following the 40 meter contours for 70,000 meters to the top left edge of Wagu Lake thence bounces generally easterly downstream an un-named river South of Wasiu Lagoon passing Yigei village for 17,000 meters to the confluence with a barat or conce passage

A .

G1.4. Carbon Stocks within the Project Area

To determine the carbon stocks in the project area we have used the methodology described in the 2006 Intergovernmental Panel on Climate Change Guidelines for Agriculture Forestry and Other Land Use.

We have agreed to determine the carbon stocks in the project area based on Tier 1 default values. A review of available data (see G2.3) determined there are a number of credible reports that determine conflicting values. In the absence of consistent country specific data and to be conservative and provide a reliable and acceptable estimation of carbon stocks for the project area we have utilised the IPCC default values.

Please note as the pilot project for PNG the April Salumei project will be used to assist with the determination of country specific carbon values. As these values are developed the project has a commitment to increasing the assessment levels to Tier 2 and then progressing to Tier 3.

PNG is currently developing a monitoring, verification and reporting policy that will assist with development to higher tiers. As the capacity is developed in both this project and through Government and Provincial sectors it will be coordinated to achieve PNG's REDD objectives. For further information please refer to Papua New Guinea Vision 2050 and Office Climate Change and Development and Papua New Guinea Forest Authority policies.

Firstly we determined the Carbon Pools to be included. These were above-ground biomass, below-ground. For the sake of being conservative and given we are estimating the carbon values to a Tier 1 level we have excluded dead organic matter and Soil Carbon.

Assumptions

Sector: Agriculture, Forestry and Other Land Use.

Category: Forest Land Remaining Forest Land

Climate Domain: Tropical

Ecological Zone: Tropical Rainforest

Continent: Asia (insular)

Source of data.

Tier 1 estimated above-ground biomass (Table 4.7) 350 tonnes d.m. /ha²²

Ratio below-ground biomass to above-ground biomass (Table 4.4) 0.37

Carbon Fraction default value (Table 4.3) 0.47

In determining the current carbon stocks (see Table 1 on the following page) we have omitted grassland strata from the calculations. This is to be conservative and although according to FAO PNG fits the ecological zone of tropical rainforest we have determined the grasslands would not have the same carbon value.

The area currently holds 114,612,751 tonnes of Carbon or 420,284,957 tonnes of CO₂e.

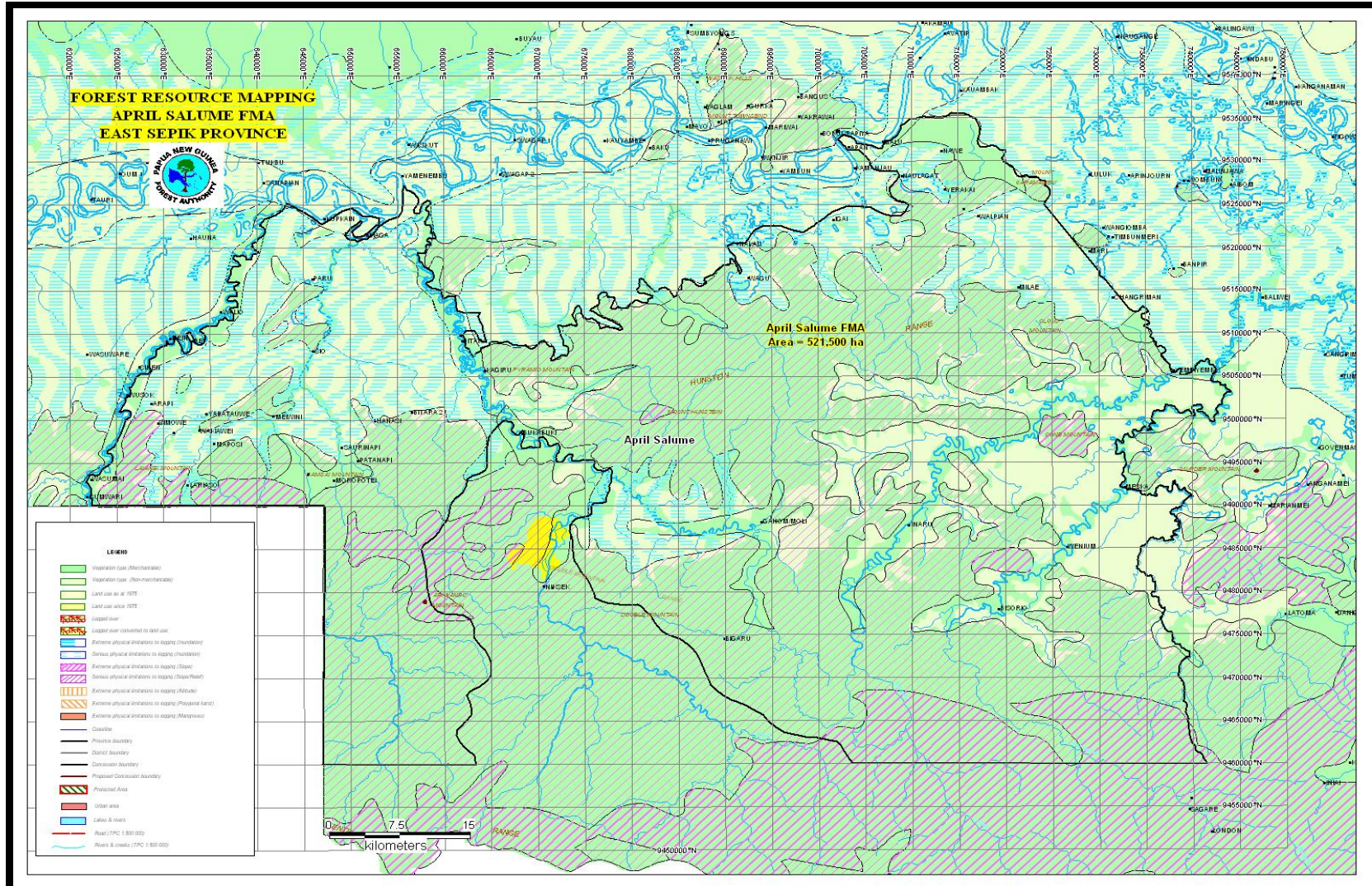
²² We have used the default value in table 4.7 of 350 tonnes d.m. ha of Tropical rainforest, Asia (insular) as we can determine the ecological zone and continent.

Please refer to Table 1, for the calculations of carbon stock estimations. Supporting documents include Map 6, the “Forest Resource Map” which shows the vegetation types as defined by the Papua New Guinea Forest Authority. Please refer to section G2.3 for further discussion on the calculations.

Table 1 : Estimate of Carbon Stocks in April Salumei Project Area.

| IPCC LU/LC classes | FAO Ecological Zone | Land type | Description | Hectares | Above ground biomass content tonnes dm /ha | Below ground biomass content tonnes dm /ha | Total biomass tonnes dm/ha | Total carbon (C) | Project Area Total tC |
|--------------------|---------------------|---------------------------------------|---------------------------------|----------------|--|--|----------------------------|------------------|-----------------------|
| Forest land | Tropical rainforest | Seral (Succession) & Swamp Forest | Not accessible for logging | 76,688 | 350.00 | 129.50 | 479.50 | 225.37 | 17,282,791 |
| Grass land | Tropical rainforest | Swamp Forest | Not Forest | 12,435 | | 0.00 | 0.00 | 0.00 | Excluded |
| Forest land | Tropical rainforest | Low altitude forest on uplands | Forest | 297,260 | 350.00 | 129.50 | 479.50 | 225.37 | 66,992,000 |
| Forest land | Tropical rainforest | Lower Montane Forest | Forest | 9,279 | 350.00 | 129.50 | 479.50 | 225.37 | 2,091,162 |
| Forest land | Tropical rainforest | Low altitude forests on plains & fans | Forest | 45,132 | 350.00 | 129.50 | 479.50 | 225.37 | 10,171,173 |
| Forest land | Tropical rainforest | Woodland | also meets definition of forest | 80,206 | 350.00 | 129.50 | 479.50 | 225.37 | 18,075,625 |
| | | TOTAL | | 521,000 | | | | | 114,612,751 |

Map 6: Forest Resource Map April Salumei FMA (Source PNGFA)



G1.5. Communities Located in the Project Zone

Population

The Population within the April – Salumei FMA area is a total of 7,696.²³ Most of the population reside in the villages located along the major tributaries of the Sepik River. Gender is equally represented in the population.

Map 7 shows the population distribution within the FMA and surrounding areas. Land in the upper reaches of the April – Salumei Rivers is sparsely inhabited with population densities of 4 persons per km² and moderate to high densities (242 – 480 & 718 – 956 persons per km²) centered around the main villages of Akamau, Yerakai, Tomware and Hauna to the west of the FMA adjacent to the main Sepik river. These figures reflect the villager's preference to be in the proximity of transportation and possible business opportunities (ibid).

As discussed in G1.3 there are four main cultural groups within the project area and they have formed the following Landowner Companies to represent themselves:

Salumei Investments Ltd consisting of 37 Incorporated Land Groups

Sio Walio Investments Ltd consisting of 54 Incorporated Land Groups

Nom Investments Ltd consisting of 28 Incorporated Land Groups

Niksek Samsai Resources Ltd consisting of 44 Incorporated Land Groups

They represent ILGs from the Gawi, Ambunti, Ama/May and Hunstein Tunap LLG areas.

The 163 Incorporated Land Groups that make up the Landowner Group Companies have an umbrella Landowner Company, Hunstein Range Holdings Ltd representing their interests in the project.

Services

Access to services is reflective of transport capability. The communities at the southern edge of the April – Salumei such as Gahom close to the April river are able to travel by air to Ambunti or Wewak in 15 or 45 minutes respectively. An outboard motor journey takes up to 8 hours down to Ambunti. Access to market is a major impediment for most local commercial activities.

Income

Income generation is also restricted for those at the southern Wosera Gawi districts who have very low incomes ranging from PNG K20 – K40 per person per year, while those closer to Ambunti such as Malu may have moderate to high incomes (PNGK100 – 200 per person per year). The higher incomes are derived from the sale of fish, sago and alluvial gold. There is also other sales potential from agarwood/*gaharu*, crocodile skins

²³ Census 2000

and meat although these would be sporadic at times. This income could be higher than the figures estimated by Hanson et al (2001).

Education

The levels of education within the FMA is minimal with fifteen listed community schools in the 2000 Census. The support to these schools is minimal and often teachers struggle with very basic and poor teaching materials to give to students. The students continue their education at Ambunti after grade 8. There is a higher percentage of student dropping out after grade 8 when school fees are not met.

Health

The level of health services is minimal and villagers walk long distances for up to eight hours to seek medical attention (Hanson et al 2001). Ambunti has improved levels of health care while Hauna is an American Missionary run health centre that has the best health care in the area. Individual communities within the FMA have little or no health centre or aid post in their communities.

Language

Almost a third of the 800 languages of Papua New Guinea are found in the Sepik region. Language is important here as it not only is a means of communication, but also is a signifier of group identity and place. Each local language reveals land boundaries and geneology²⁴. The Sepik Community Landcare project in the 1990s noted within its project area about 150 villages and 30 language groups. From those, the project worked with three language groups from Wagu, Yegai and Gahom communities. Language groups were of the Bahinemo and Yerekai groups together with Wutmid, Kotamb and Andept, as well as Pidgin and English²⁵.

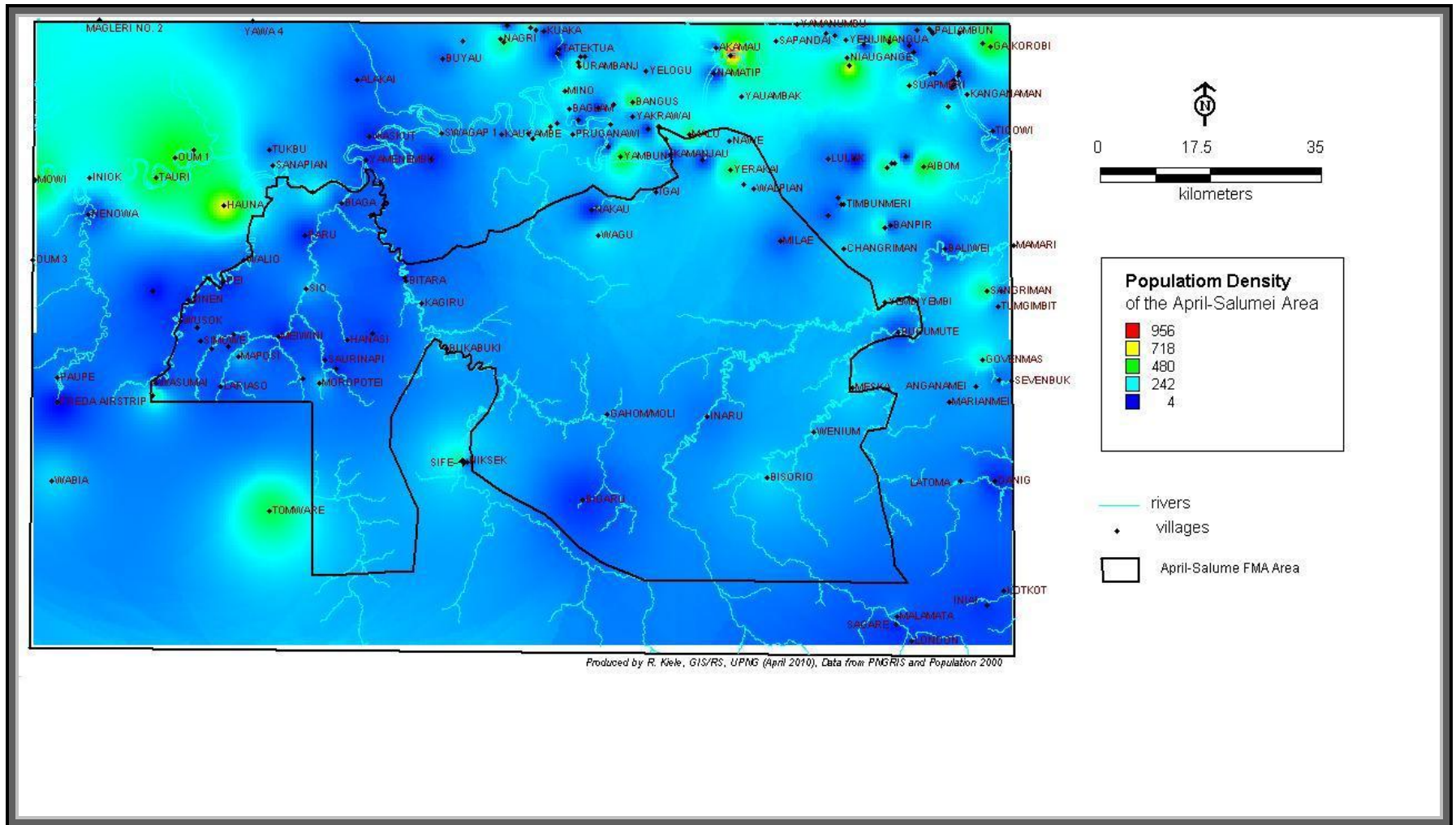
Communities associate fiercely with their language or “tokples”. The language group is the largest unit of political organisation in the Sepik and the most important unifying principle. Within this unit, communities are further divided by village, clan and residence. This is also the basis for the formation of the Integrated Land Groups.

Within the East Sepik province, the people in the April – Salumei area are among the most disadvantaged with low income potential, poor access to health and educational services and continue to live in low potential environments. In addition, they have limited opportunities to improve themselves (ibid). Previous conservation and community development initiatives by the WWF from 1998 – 2003 did improve some of these opportunities but that improvement was not sustainable after the project ceased (Duguman 2004).

²⁴ Extracts from Sepik Community Land Care project from <http://www.pngbd.com.forum>: Accessed 20 6 10.

²⁵ Kalit, K, 2002, Lessons from the field: the Sepik Community Landcare Project, Development Bull. 58, Accessed from <http://www.anu.edu.au>.

Map 7: Population Distribution and Density in the FMA. (Source UPNG, Census 2000)



G1.6. Current Land Use and Land Tenure in the Project Zone

Land ownership in PNG is based on traditional and customary ownership of the land by tribal groups and clans. The ownership of the land gave automatic rights to the ownership of the forest. This is evidenced by the process used in establishing Forestry Management Agreements.

At present around 97% of the total land area in Papua New Guinea is owned and controlled by indigenous communities²⁶. Further to this over 80% of PNGs' population is directly dependent on the local environment for their subsistence livelihoods²⁷.

Along with ownership of the land comes ownership of the biodiversity on the said land. The Incorporated Land Group (ILG) or clans are legally in control of and responsible for the management of their land²⁸ and this right is secured through the PNG Constitution.

Following independence and the development of the PNG Constitution (1975) the traditional system of land ownership evolved to the creation of Incorporated Land Groups (ILG's) recognized under the Lands Group Incorporation Act (1974)

Incorporated Land Groups (ILGs) from the April Salumei FMA area are registered at the Lands Department and have been formerly Gazetted formalising their landowner groups, by issuing a public notice which is held open for three months to allow for any objections to the proposed ILG registration to be recorded. If there are no objections then the ILGs are official recorded and an ILG identity registration number is issued.

Further evidence of the customary ownership system is the state solicitors in 2004 where they confirmed that the enormity of the land would make it impractical to demarcate individual land ownership through a comprehensive land survey. They also confirmed that PNG law recognizes customary ownership even without written proof.²⁹

As industries such as mining, forestry and petroleum developed so did the registration of Incorporated Land Groups in their respective areas.³⁰ ILGs are now used throughout the country to prove and secure title to land. Projects can be implemented by formally gaining the consent of the ILGs to distribute royalties and compensation.

²⁶ 2008, R-PIN

²⁷ 2000 NSO Census Data

²⁸ 2008, R-PIN

²⁹ Tack Realty (2004) Report. Further, each land group signing the FMA agreement, confirmed on page 13 that (a) its members are customary owners of the land areas identified as their land in Schedule 2 item 3;

³⁰ Landowners in the April Salumei Project have been registered for the purposes of the proposed logging project.

Joint ventures, lease schemes and other joint equity arrangements are among the business models that are now being used to enable local people to benefit from incoming investment. A key feature from some of these arrangements is secure resource tenure, giving local people an asset with which to negotiate in dealings with government or the private sector, and providing the basis for business models that provide local benefits.

Forest Management Agreement Area

In Papua New Guinea, the government owns less than 3% of the land³¹. As discussed traditional or customary landowners have formed Incorporated Land Groups (ILGs) and Landowner Companies registered through PNG's Investment Promotion Authority, in order to form a joint representative body to negotiate with the government or with third party players. In the case of the April Salumei FMA, the Hunstein Range Holdings was formed to be the legal representative body for the 4 landowner companies.

On 20th December 1996 the landowners (Hunstein Range Holdings) and the Government (PNG Forest Authority) entered into a Forestry Management Agreement. Before the parties could enter into this agreement the PNGFA had to undertake an extensive awareness and consent program.

This includes a Development Option Study (DOS) after the customary landowners indicate their interest to the PNGFA to explore the possibility of developing their forest resources. PNGFA or their agents then conduct the DOS to ascertain the potential of the area (see copy of the DOS attached with Tack Realty report).

In order to sign a legally valid Forest Management Agreement (FMA), the landowners must also reach an agreement with the PNGFA concerning the forestry inventory. The forest inventory outlines the amount of extractable timber, protected areas, population areas and transportation possibilities. This has also been completed as evidenced by the inventory survey included in the FMA.

For the FMA to be legally binding all ILG's must sign the agreement. This is evidenced by the individual ILG signatures in the FMA.

This process of establishing a FMA is of course legislated (See Forestry Act 1991) and has not been challenged when followed correctly. It also ensures free prior and informed consent has been obtained by the PNGFA.

Once the FMA has been executed the PNGFA have the rights to award the concession to a developer that extends for 50 years. It is important to note section 16.1 (a) of the FMA allows the agreement to be terminated "by agreement at any time by all parties". This is the clause that will be used to terminate the agreement on the validation of the project.

³¹ SLM Final Report (2000)

Although negotiations were held over the concession it was never awarded to a third party.

Wildlife Management Area

On 13 September 1997, the PNG government intervened and stopped further development on the logging concession by declaring the a Wildlife Management Area (See Map 8), an overlapping boundary to the FMA, supposedly accordance with the Fauna (and Flora) Act 1978.

These government declarations was announced without any formal consultation with the Land owners, yet neither was there any attempt revoke nor cancel the FMA.

This deprived the landowners, who had the legal right to the FMA area, of a considerable source of income in the form of concession payments the very motivation for them seeking the establishment of the FMA in the first instance.

These concession payments were estimated to have a total timber value of “\$188,749,700 USD (present value discounted at 6% annual rate based on US\$50/m³ export price.) (K23 per m³ of extracted timber this rate was a timber royalty which was not included in the above calculation”. Tack Realty 2004 report (Page 9).

The ILG’s sued the national government for compensation for the lost revenue. Finally on 5 August 2008, the landowners won the court case (WS 536/2007) confirming their full land use rights and this supports their dedication and rights to go ahead with FMA.

Note that this compensation payment of K 58,317,000 awarded to the landowners is not linked to any relinquishment of the logging rights of the landowners. The landowners have continued to seek settlement of the payment of K 58,317,000 from the PNG government.

This decision further evidences that customary landowners have the right over the biodiversity including the extractable timber on ‘their’ land.

April Salumei REDD Project

As the landowners became optimistic that the developing carbon market could provide a more sustainable option to logging their land they commenced discussions with the Office Climate Change and Sustainability. Starting in 2008, these negotiations were held between the OCCES, HRHL and the landowner groups concerning the potential of the April Salumei FMA area being recognised as a pilot REDD project for Papua New Guinea.

The parties subsequently agreed to the April Salumei FMA area becoming the pilot REDD project for Papua New Guinea as evidenced by the letter from the Prime Minister,

letters from the Office Climate Change and letters from the Forestry Minister as further discussed in G5.2.

Following this identification and confirmation of the April Salumei area becoming Papua New Guineas pilot project a comprehensive awareness program was commenced by the project developer.

All documents references above are available for inspection by the validator.

There are no other known disputes in the project area. Every one of the 163 ILG's have signed an agreement acknowledging HRH has entered into an agreement with the project developer to have the area converted from an FMA to the countries pilot REDD project.

Please refer to section G3.2 which further describes current land use and demonstrates with land use maps (1975 and 1996) that subsistence agriculture is the only major land use in the area, allowing the project area to support significant amounts of natural rainforest.

G1.7. Current Biodiversity within the Project Zone

Biodiversity Assessment

New Guinea is one of the four remaining major tropical wilderness areas on the planet, and it is one of the world's centres of biological diversity. This is probably attributed to its great environmental variety, ranging from sea level to over 4,000 m altitude. PNG holds about 5-7% of the world's biodiversity in less than 1% of the land area (Sekharan and Miller 1995). This conservatively equates to some 700,000 species as data on certain environments (e.g. marine) and organisms (invertebrates, plants, etc.) remain very limited.

Flagships species of the area includes the Birds of Paradise, and various endemic species of birds, mammals, reptiles and invertebrates. Also within the area are unique stands of *Agathis* species, etc. There are many suitable candidates, e.g. species listed in CITES or IUCN

More detailed information for the FMA area is scarce. NGOs groups working in this area are contributing to improving understanding by working with communities to conserve their resources and cultural sites. The WWF (South Pacific Program) is doing its best to devise, monitor and manage PNG's natural heritage through various conservation programs like the IRBM, WMA, SWMI, and SCLCP. On-the-ground NGOs also support and/or promote such important activities in partnership with the WWF. This is apart from the National Government initiative of TCEM through the DEC Office.

The following tables summaries a local biodiversity study which was conducted by Forest Carbon Environmental Services (FCES) consultancy in 2009.

Table 2: Generic names of higher floral species sighted in Yembi Yembi and Yerakai along River corridors and surrounding forests (FCES, 2009)

| Genus | Local/Common Names | Uses | Status/Focal Species (according to HCVF Toolkit) |
|----------------------------------|---------------------|---|--|
| <i>Macaranga spp.</i> | Macaranga | Housing/Firewood | common re-growth species |
| <i>Saccharum spontaneum</i> | Tiktik | Fishing | Common |
| <i>Dysoxylum spp.</i> | Dysox | House | Common |
| <i>Litsea spp.</i> | Litsea | House | Common |
| <i>Syzygium spp.</i> | Laulau | Fruit | Common |
| <i>Pittosporum sp.</i> | | Housing | Few spp., widespread |
| <i>Ficus spp.</i> | Pikus | Fruits, housing | Common |
| <i>Lamarkia cadamba</i> | Labula | Housing | Common in advance regrowth |
| <i>Hibiscus spp.</i> | Hibiscus | Housing | Rare |
| <i>Neonauclea spp.</i> | Yellow hardwood | Housing | Common |
| <i>Sterculia spp.</i> | Sterculia | Housing, canoes | Common |
| <i>Euodia spp.</i> | Euodia | housing | Common |
| <i>Trema orientalis</i> | | Housing | Common re-growth species |
| <i>Terminalia spp.</i> | Terminalia or Talis | Food plants, housing | Common |
| <i>Pandanus spp.</i> | Pandanus | Food plants, | Common |
| <i>Artocarpus altilis</i> | Kapiak | Canoes, food plant | Common |
| <i>Octomeles sumtrana</i> | Erima or Kanu | Canoes | Common in alluvial forests |
| <i>Endospermum spp.</i> | Basswood | housing | Common in advance re-growth |
| <i>Caryota rumphiana</i> | Limbang | Housing | Common and widespread |
| <i>Pometia pinnata</i> | Taun | Medicine/Housing/Fruits | Common and widespread |
| <i>Maniltoa spp.</i> | Maniltoa | Housing (posts etc.) | Common |
| <i>Vitex cofassus</i> | Garamut | Housing – Posts, Garamut, Kundu drums, etc. | Common and widespread |
| <i>Instia bijuga</i> | Kwila | Housing – Posts/Bearers | Common and widespread |
| <i>Paraserianthes falcataria</i> | Albizia | Housing, canoes | Common |
| <i>Adenanthera pavonina</i> | | | Common |
| <i>Glochidion spp.</i> | | Housing (posts) | Common understory trees |
| <i>Pouteria spp.</i> | Pencil cedar | Housing, canoes | Common with many species |
| <i>Pterocarpus indicus</i> | Rosewood | Housing (posts etc.) | Widespread |
| <i>Horsefieldia spp.</i> | Nutmeg | | DATA DEFICIENCY |
| <i>Melanolepsis</i> | | Garden fencing/housing/Medicine | Widespread |
| <i>Areca calyptrocalyx</i> | Kavivi | Buai (substitute) | Widespread |

| Genus | Local/Common Names | Uses | Status/Focal Species (according to HCVF Toolkit) |
|---------------------------|--------------------|----------------------|--|
| <i>Cocos nucifera</i> | Coconas | Food | Widespread, cultivated |
| <i>Metroxylon sagu</i> | Saksak | Food | Common |
| <i>Calamus spp.</i> | Ratan | Housing | Common |
| <i>Cebera spp.</i> | | Medicine | Rare |
| <i>Harpulia spp.</i> | | | Rare |
| <i>Chisocheton spp.</i> | Kiso | Housing | Common with many species |
| <i>Musa spp.</i> | Banana | Food/Household needs | Widespread |
| <i>Homalium foetidum</i> | Malas | House (posts etc.) | Common and widespread |
| <i>Myristica spp.</i> | Nutmeg | Medicine | Common under storey trees, many species |
| <i>Planchonia papuana</i> | | Housing | Widespread |
| <i>Calophyllum spp.</i> | Kalapulim | Housing | Common with many species |
| <i>Bischofia javanica</i> | Javanese cedar | Housing | Widespread |

Table 3 : Checklist of Bird species recorded in Yembiyembi and Yerakai. (FCES, 2009)

| Family | Genus | Species | Common Name | Status/Focal Species |
|----------------------|-------------------|---------------------|----------------------------|----------------------|
| Apodidae | <i>Collocalia</i> | <i>caudacuta</i> | Spine-tailed Swift | |
| Hemiprocnidae | <i>Hemiprocne</i> | <i>mystacea</i> | Moustached Tree Swift | |
| Ahningidae | <i>Ahninga</i> | <i>melanogaster</i> | Darter | |
| Alcedinidae | <i>Alcedo</i> | <i>azurea</i> | Azure Kingfisher | |
| | <i>Bacelo</i> | <i>leachii</i> | Blue Winged Kookaburra | |
| | <i>Ceyx</i> | <i>lepidus</i> | Dwarf Kingfisher | |
| | <i>Dacelo</i> | <i>gaudichaudi</i> | Rufous-bellied Kookaburra | |
| | <i>Halcyon</i> | <i>macleayii</i> | Forest Kingfisher | |
| | <i>Halcyon</i> | <i>negrocyanea</i> | Blue Black Kingfisher | |
| | <i>Tanyiptera</i> | <i>danae</i> | Brown Headed Kingfisher | |
| | <i>Tanyiptera</i> | <i>galatea</i> | Common Paradise Kingfisher | |

| Family | Genus | Species | Common Name | Status/Focal Species |
|------------------------|-----------------------|------------------------|-----------------------------|------------------------------|
| | <i>Tanysiptera</i> | <i>hydrocharis</i> | Little Paradise Kingfisher | |
| Cuculidae | <i>Centropus</i> | <i>bernsteini</i> | Lesser Coucal | |
| | <i>Centropus</i> | <i>phasianinusi</i> | Pheasant Coucal | |
| Accipitridae | <i>Accipiter</i> | <i>meyerianus</i> | Meyer's Goshawk | CITES II (all Falconiformes) |
| | <i>Accipiter</i> | <i>solensis</i> | Chinese Goshawk | CITES II (all Falconiformes) |
| | <i>Haliastur</i> | <i>indus</i> | Brahminy Kite | CITES II (all Falconiformes) |
| Megapodiidae | <i>Megapodius</i> | <i>reinwadt</i> | Common Scrub fowl | |
| | <i>Talegalla</i> | <i>jobiensis</i> | Brown-collared Brush-Turkey | |
| Dicaeidae | <i>Paramythia</i> | <i>montium</i> | Crested Berrypecker | |
| Dicruridae | <i>Chaetorhynchus</i> | <i>papuensis</i> | Mountain Drongo | New Guinea Endemic |
| | <i>Dicrurus</i> | <i>hottentottus</i> | Spangled Drongo | |
| Meliphagidae | <i>Toxorhamphus</i> | <i>noboguineae</i> | Yellow-bellied Longbill | |
| Myiagridae | <i>Arses</i> | <i>telescopthalmus</i> | Frilled Monarch | New Guinea Endemic |
| | <i>Myiagra</i> | <i>cyanoleuca</i> | Santin Flycatcher | |
| Cracticidae | <i>Peltops</i> | <i>blainvillii</i> | Lowland Peltops | |
| | <i>Peltops</i> | <i>montanus</i> | Mountain Peltops | |
| Rhipiduridae | <i>Rhipidura</i> | <i>atra</i> | Black Fantail | |
| | <i>Rhipidura</i> | <i>leucothorax</i> | White-bellied Thick Fantail | |
| Pachycephalidae | <i>Pachycephala</i> | <i>aurea</i> | Golden-backed Whistler | |
| | <i>Pitohui</i> | <i>ferruginous</i> | Rusty Pitohui | |

| Family | Genus | Species | Common Name | Status/Focal Species |
|----------------------|----------------------|-------------------------|---------------------------|------------------------------|
| Paradisaeidae | <i>Cicinnurus</i> | <i>regius</i> | King Bird of Paradise | CITES II (all Paradisaeidae) |
| | <i>Paradisaea</i> | <i>raggiana</i> | Raggiana Bird of Paradise | CITES II (all Paradisaeidae) |
| Covidae | <i>Gymnocorvus</i> | <i>tristis</i> | Grey Crow | New Guinea Endemic |
| Psittacidae | <i>Charmosyna</i> | <i>rubronotata</i> | Red Fronted Lorikeet | |
| | <i>Charmosyna</i> | <i>papou</i> | Papuan Lorikeet | |
| | <i>Electus</i> | <i>roratus</i> | Electus Parrot | |
| | <i>Micropsitta</i> | <i>bruijnii</i> | Red Breasted Pygmy Parrot | |
| | <i>Oreopsittacus</i> | <i>arfaki</i> | Plum Faced Lorikeet | |
| Cacatuidae | <i>Cacatua</i> | <i>ophthalmica</i> | Blue eyed cockatoo | |
| | <i>Probosciger</i> | <i>aterrinus</i> | Palm Cockatoo | CITES I, near Threatened |
| Casuariidae | <i>Casuaris</i> | <i>unappendiculatus</i> | Northern Cassowary | |
| Sturnidae | <i>Mino</i> | <i>dumontii</i> | Yellow Faced Myna | |
| Bucerotidae | <i>Rhyniceros</i> | <i>plicatus</i> | Blyth's Hornbill | |
| Rallidae | <i>Porphyrio</i> | <i>porphyrio</i> | Purple swamphen | |
| Eopsaltriidae | <i>Poecilodryas</i> | <i>brachyura</i> | Black-chinned Robin | |
| | <i>Poecilodryas</i> | <i>plicatus</i> | Banned Yellow Robin | |
| Pelecanidae | <i>Zonerodius</i> | <i>heliosylus</i> | Forest Bittern | |
| Ardeidae | <i>Egretta</i> | <i>intemedia</i> | Cattle Egret | |
| | <i>Egretta</i> | <i>picata</i> | White-necked heron | |
| | <i>Nycticorax</i> | <i>caledonicus</i> | Rufous night heron | |
| Anatidae | <i>Anas</i> | <i>superciliosa</i> | Pacific Black | |

| Family | Genus | Species | Common Name | Status/Focal Species |
|--------------------------|----------------------|------------------------|-------------------------|----------------------------------|
| | | | Duck | |
| Scolopacidae | <i>Calidris</i> | <i>Acuminata</i> | Sharp-tailed sandpiper | |
| Meropidae | <i>Merops</i> | <i>ornatus</i> | Rainbow Bee Eater | |
| Podargidae | <i>Podargus</i> | <i>papuensis</i> | Papuan Frogmouth | |
| Strigidae | <i>Uroglayx</i> | <i>dimorpha</i> | Papuan Hawk Owl | |
| Aegothelidae | <i>Aegotheles</i> | <i>insignis</i> | Feline Owlet Nightjar | |
| Estrildidae | <i>Lonchura</i> | <i>tristissima</i> | Streak Headed Maumkin | |
| Collumpidae | <i>Ducula</i> | <i>pinon</i> | Pinon imperial | |
| | <i>Reinwardtoena</i> | <i>reinwardtii</i> | Great cuckoo-dove | |
| | <i>Henicophaps</i> | <i>albifrons</i> | New Guinea bronzewing | |
| | <i>Otidiphaps</i> | <i>nobilis</i> | Pheasant pigeon | |
| | <i>Goura</i> | <i>scheepmakeri</i> | Southern crown pigeon | CITES II (all <i>Goura</i> spp.) |
| Procellariidae | <i>Tachybaptus</i> | <i>novaehollandiae</i> | Australasian Grebe | |
| Phalacrocoracidae | <i>Phalacrocorax</i> | <i>sulcirostris</i> | Little black cormorants | |
| Laridae | <i>Chlidonias</i> | <i>hybridus</i> | Whiskered tern | |
| | <i>Anous</i> | <i>stolidus</i> | Brown noddy | |

The area clearly qualifies as a High Conservation Value Forest (HCVF), characterized by its high biodiversity and endemism, and also by the fact that it is home to a number of species of fauna and flora that are listed in either the IUCN Red List or in the CITES Appendices (I, II & III).

Fauna species are classified in nine groups by the IUCN, set through criteria such as rate of decline, population size, area of geographic distribution and the degree of population

and distribution fragmentation. The avifauna and birds are listed in Red List which further groups them into Threatened, Vulnerable and Least Concern.

When discussing the IUCN Red List, the official term “threatened” is a grouping of three categories: critically Endangered, Endangered and Vulnerable where endangered refers to a specific category imperilment rather than as a general term so endangered species is between critically endangered and vulnerable. Threatened species covers vulnerable, endangered and critically endangered species.

None of the 67 bird species (Table 3) are on the IUCN Red List because no detailed studies have been carried out within the area (see G 1.7), although 725 species are known on the island of New Guinea which covers the Papuan province of Indonesia. Out of these, 387 species have been found in the Sepik area indicating their endemism (Shearman et al 1999).

However seven species are on the Convention for the International Trading of Endangered Species (CITES) listing. One species – Palm Cockatoo (*Probosciger aterrinus*) is on the most threatened list (I) while six are on the CITES II and two have insufficient data for their classification. The species classification are based on the different levels or types of protection from over-exploitation where Appendix I or CITES I lists species that are the most endangered among CITES- listed animals and plants. They are threatened with extinction and CITES prohibits international trade in specimens of these species except where the purpose of the import is not commercial, for instance for scientific research. Appendix II lists species that are not necessarily now threatened with extinction but may become so unless trade is closely controlled³². The remaining 58 species have not been determined by CITES and these are not traded commercially nor are by IUCN classification.

The Palm Cockatoo (*Probosciger aterrinus*) is near threatened as it is hunted for its feathers while the three hawks are threatened where there is increased trading between the communities. This includes the two birds of Paradise species and the Southern Crow Pigeon (*Goura scheepmakeri*). These birds are also endemic in the Sepik area, besides being listed as threatened in the IUCN classification (Sekran & Miller 1995). The IUCN Red List continues to be updated annually to reflect the status of the bird species in the wild.

Appendix III is a list of species included at the request of a party that already regulates trade in the species and that needs the cooperation of other countries to prevent unsustainable or illegal exploitation. Species may be added to or removed from Appendix I and II, or moved between them, only by the Conference of the Parties, either at its regular meetings or through postal procedures (CITES 2010).

³² It also include so called “look-alike species”, ie species of which the specimens in trade look like those of species listed for conservation reasons. International trade in specimens of Appendix II species may be authorised by the granting of an export permit or re-export certificate.

For plants, all the Orchidaceae species are listed in Appendix II, while the genus Paphiopedilum are listed in Appendix I. One of the most spectacular New Guinea orchids is the Sepik Blue (*Dendrobium lasianthera*), though not endemic it is quite common along the Sepik River.

Another economically important plant present in the area, which was recently listed in CITES Appendix II, is the Eaglewood or Agarwood producing tree *Gyrinops ledermanii*. From about the mid 1990s PNG joined other Asian countries as a significant producer and exporter of Eaglewood, with most of the wood initially coming from the two Sepik Provinces. The Hunstein Range was initially one of the main Eaglewood producing areas.

Identified threats to biodiversity

The key identified threats to biodiversity in the FMA area include the following: i) subsistence and community land use agriculture, ii) community logging for housing and infrastructure development, iii) climate variability (flooding, El Niño, and strong winds), iv) bushfires, v) introduction of invasive species, vi) potential mining operations. Please refer to the projects “Risk Register” for further analysis.

Population

Increasing the human population with its demand on finite natural resources is a real threat to biodiversity in PNG. The overall PNG growth rate is estimated at 3.2% and if this trend continues will promote unsustainable development (Mowbray and Numbasa, 2006). The situation is worsened when coupled with a low mortality rate and longer life expectancy. Population increase in the East Sepik Province, however, is not a concern. The population projection is less than 1% for the April Salumei project area. The impact due to current resource use is negligible when one applies the ‘IPAT’ equation (Impact, Population, Affluence and Technology).

Invasive Species

Threats from introduced invasive species are often under-estimated in PNG. The Sepik flood-plain wetlands is quite a vulnerable ecosystem, where introduced flora and fauna can thrive and cause serious ecological problems as well as possible health problems to its people. Not too long ago the area experienced a biological invasion by *Salvinia molesta*, a free-floating aquatic plant (fern) from South America. The species more or less clogged up the Sepik River, impacting on the native species as well as the river transport systems. Fortunately, the problem was contained through biological control. There are several invasive plant species with similar ecological preferences to *Salvinia molesta* (e.g. water Hyacinth (*Eichornia crassipes*), *Mimosa pigra* etc.), all these pose a real possible threat to this eco-region.

Logging

Logging machinery has been linked to the introduction of many invasive plant species, and should logging take place in the area, introduction of new invasive species to the area are a very likely possibility. Furthermore, should any development take place in the area the influx of people is likely to result in the introduction of invasive species to the area, unless strict controls are established.

The key threats appear to be the destruction and degradation of tropical forest prompted by government policies which encourage logging. The April Salumei tropical rainforest resource is poised for commercial logging at this point in time. It is a declared FMA comprising a total area of 521, 500 ha and has an extractable timber volume of 5,831,705 m³. With its imposing estimated timber value of US\$278.11 million, the area is potentially lucrative for current timber markets.

Commercial logging can also effect seed distribution in tropical forests. Birds, which are important seed dispersal agents are known to be remarkably reticent to cross even small cleared areas³³ and their natural habitat is obviously disturbed by the logging activities. The potential absence of birds as an important seed dispersal agent would likely affect the natural recruitment.

“In the Golgol valley most of the valuable trees like Kwila and New Guinea Walnut have not returned to sites that were clearfelled as there is no seed source nearby. Instead a disclimax of kuni grassland has developed in many areas.”³⁴

Regular Burning

Regular burning also occurs which besides a hunting technique also improves soil fertility for fresh pasture for fauna, however continuous burning will increase the growth of nuisance grass, most likely kunai (*Imperia cylindrica*) and other grass species such as *Themada australias* together with minor shrubs (Sherman et al 1999).

Mining

Open Cut Mines are also responsible for deforestation and the Frieda Copper Mine was a huge ecological disaster whose effects are still perceptible in the environment. Another threat to the biodiversity is the Mining and Petroleum Tenements which facilitate the issuing of ELs (Exploration Licenses) and PPLs (Petroleum Prospecting Licenses). A petroleum prospecting license (PPL) has been issued to Scotia Petroleum (a Canadian proponent). Designated as ‘PPL 245’, the license covers the East Sepik coast and as well as the Sepik River basin as far as the foothills of adjacent mountains to the

³³ Diamond 1972

³⁴ The Sepik River : A Natural History, Threats to the Sepik River

Hunstein range. It is generally accepted, however, that the threat to biodiversity from PPLs are minimal compared to the type associated with that of ELs.

These activities are resulting in the over harvesting of timber and consequently serious pollution problems. These problems are aside from soil erosion and siltation in river systems. Also, to be seriously considered is the loss of habitat from this deforestation.

G1.8 Project Site High Conservation Area

“The High Conservation Value Forest Toolkit” (Pro Forest, 2003) states that ‘all forests contain environmental and social values’. Where these values are considered to be of outstanding significance or critical importance, the forest can be defined as a High Conservation Value Forest (HCVF)’.

The April Salumei FMA Area is considered to be a High Conservation Value Forest HCVF for its global significance as a carbon sequestration site, numerous cultural or sacred sites, presence of rare, threatened and/or endangered species. These are supported by additional information in the following sections.

8.1. Globally, regionally or nationally significant concentrations of biodiversity values; a. protected areas

The Hunstein Range WMA of 220,000 has existed within the project area and supported the FMA. With no activity in the area, the whole area contains immense biodiversity (G 1.6) representing this area to be known globally, regionally and nationally through WWF and earlier Conservation Needs Assessment³⁵ work.

b. threatened species

Aside from its general high biodiversity (G 1.7), the area is home to a number of species of fauna and flora that are listed in either the IUCN Red List or in the CITES Appendices I, II & III. One species Palm Cockatoo (*Proboscigar aterrinus*) is near threatened, listed on CITES I while three hawks and two bird of paradise and the Southern Crown pigeon are threatened due to increased trading in the area (See G 1.7)

c. endemic species

The northern part of New Guinea (from Memberamo in West Papua to Morobe in PNG) is known to have the highest concentration of endemic plant species (van Welzen 1997). This is attributed to its geological history as well the general instability of the area, i.e.

³⁵ Beehler,B, Mitchell, A, Hiltz,T, 1993 Biodiversity Conservation Needs Assessment Biodiversity Support Program Papua New Guinea. Dept. of Environment and Conservation, Vol 1 & 2 Papua New Guinea.

continuously creating new niches for species to evolve and occupy them. In addition, the upper Sepik tributaries (April, May, Frieda, etc.) are well known for high floristic diversity and endemism (e.g. *Begoni*, *Freycineti*, etc.) (Gideon pers. comm.) A single collection trip to Hunstein Range in 1989, described six new species of *Freycinetia*.³⁶ This area holds the key to New Guinea botany, as original specimens (Type specimens) for many New Guinea (and Sepik) endemic species were collected there in the early 20th century³⁷. A total of 387 birds found in the Sepik region from 725 species known on the island of New Guinea, indicates over 50% which is a higher concentration in this area. A survey during the earlier PDD noted 5 endemic bird species from the 67 recorded, although the extensive area is likely to yield more endemic species (Table 3). This is generally the transition zone of the mixing of lowland and montane species. The mountain areas of the April – Salumei and the lower slopes of the central New Guinea Cordillera to the south are no doubt some of New Guinea's important centres of species diversity and endemism

d. areas that support significant concentrations of a species during any time in their lifecycle (e.g. migrations, feeding grounds, breeding areas).

The 67 species of bird recorded in the area indicate various birds that have different feeding and breeding areas, although no additional studies have been undertaken to be able to establish that.

8.2. Globally, regionally or nationally significant large landscape level areas where viable populations of most if not all naturally occurring species exist in natural patterns of distribution and abundance;

The area is contained within the Northern New Guinea lowland rain and freshwater swamp forest ecoregion which extends from the Papuan province of Indonesia down to the Sepik and Ramu river basins. The lowland forests and freshwater swamps of this ecoregion contain diverse habitats, including lowland and hill forest, grass swamps, swamp forests, savannas, and woodlands³⁸ (see G 1.2). Within these habitats are known abundance of Goura ground pigeons (*Goura spp*), Northern cassowaries (*Casuarius spp*) and Tree kangaroo (*Dendrolagus spp*) together with the common spotted cuscus (*Spilocuscus maculatus*), wild pig (*Sus scrofa*) and common scrub fowl (*Megapodius reinwadt*) (Table 3). Incidentally, these fauna are noted within the PNG HCVF toolkit³⁹.

8.3. Threatened or rare ecosystems;

³⁶ Takeuchi, W. and M. Golman. (2001). Floristic documentation imperatives: some conclusions from contemporary surveys in Papua New Guinea. Sida 19(3): 445 – 468

³⁷ *ibid.*

³⁸ http://www.worldwildlife.org/wildworld/profiles/terrestrial_aa.html Accessed 22 7 10.

³⁹ FPCD & WWF 2005, High Conservation Value Forest Toolkit for Papua New Guinea, Final Draft, November 2005, Port Moresby.

The Northern New Guinea lowland rain and freshwater swamp forest is classified as a critically endangered ecoregion⁴⁰ because of the potential threats within the catchment area. Also among the April Salumei area are remnant strands of Kauri pine (*Agathis Labillardieri*) which was the reason for the Hunstein Range Wildlife Management Area declaration. 8.4. Areas that provide critical ecosystem services (e.g., hydrological services, erosion control, fire control);

As in section 8.3, the April Salumei area provides essential ecosystem services where a large area is poorly drained and forests have wetter understorey⁴¹. The soil hence is not easily erodible and also forest fires are very unlikely.

8.5. Areas that are fundamental for meeting the basic needs of local communities (e.g., for essential food, fuel, fodder, medicines or building materials without readily available alternatives); and

Communities within the April Salumei area rely totally on the forests for meeting their basic needs and do not have alternative options for sustainable livelihoods. The removal of forests will impact greatly on the community livelihood. The permanently inundated areas are habitats for sago, crocodile and aquatic fisheries that are often sold to obtain cash for other social transaction and to purchase western goods. All along the Sepik river and tributaries serve as avenues for transport and business transaction.

8.6. Areas that are critical for the traditional cultural identity of communities (e.g., areas of cultural, ecological, economic or religious significance identified in collaboration with the communities).

Sixty-one taboo or sacred sites are recorded within the April Salumei FMA area and is an important feature of the HCVF assessment (Table 4) (FCES 2009). There are potentially more cultural and social sites in the area than communicated by the communities and the exact locations will be documented and protected when the project is implemented. See proposed monitoring plan. There are also areas for sago harvesting which is dominant among the sago (*Metroxylon sagu*) swamp forests which are found along sections of the main river and tributaries and identified in permanently inundated areas. In addition are areas for crocodile and wild duck hatcheries. These provide an abundance source of food for the local communities and will be documented in the monitoring plan.

⁴⁰ *ibid.*

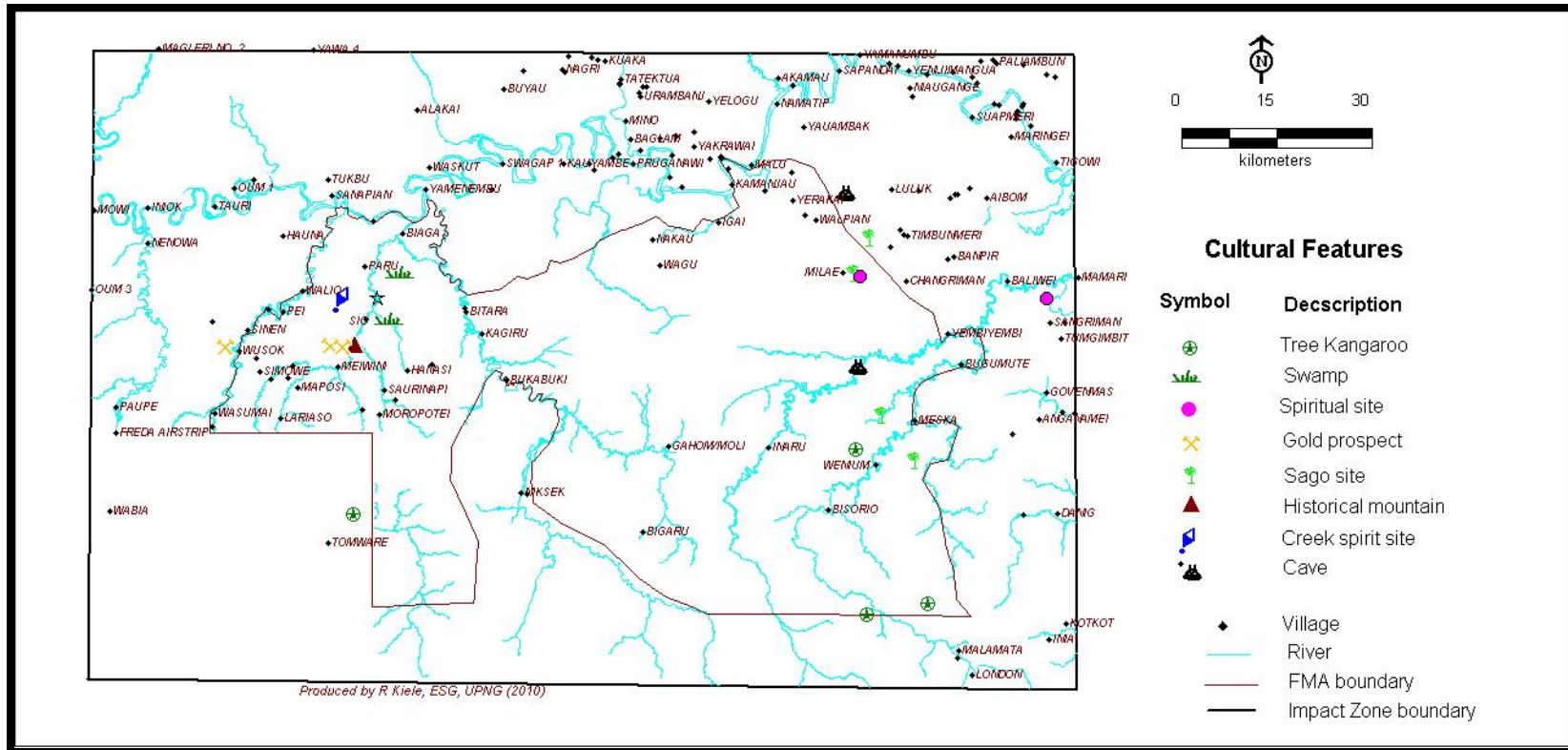
⁴¹ Teak Realty 2004, Compensation Assessment and Development Option Study for Commercial Forest Resources for April Salumei Forest Area –ESP,

| VILLAGE NAME | NO. | NAME OF MASALAI OR SACRED/TABOO SITE | DEFINITION OF THE MASALAI OR SACRED/TABOO SITE | LOCATION OF THE MASALAI OR SACRED/TABOO SITE | HISTORY OF THE MASALAI OR SACRED/TABOO SITE |
|--------------|-----|--------------------------------------|--|--|---|
| Yembiyembi | 4 | Naigemalil & Naagepas | Humanlike figures - Husband & Wife | where Salumei and Korosimeri Rivers meet | they are friendly to the locals as their habitat has been respected |
| Yembiyembi | 5 | Bakwayopol | Humanlike figure | Basebale - swamp | changes into a pig or snake if people trespass its habitat |
| Yembiyembi | 6 | Sugeyak | Womanlike figure | Balemedak - creek | changes into a cassowary if it sees men within its habitat |
| Yembiyembi | 7 | Maulapak - Hubak | A rock | Waksadok - creek | touching this stone by foot or hands will cause a thunder storm |
| Changriman | 8 | Suombea | hot spring | Suombea - creek | a small hot spring |
| Changriman | 9 | Kamalalil | site full of spirit | Kamalalil | the spirits changes into stone when locals are around |
| Changriman | 10 | Sikintua | spirit | Takabale - creek | a spirit that is found in a river. It is friendly to the locals |
| Changriman | 11 | Satabal | spirit | Satobok | Locals do not go close to the site. If they do then they will have visual difficulties |
| Changriman | 12 | Nomboba Kandaba | lake | Wanglatok | People have to wash once a day and not twice as they could get skin disease |
| Changriman | 13 | Bangamalil | spirit | Bamasok | friendly and heals sicknesses |
| Changriman | 14 | Bale Wanas | flying fox | Baglap Ontoul | believed to be killing human if they go near its habitat |
| Changriman | 15 | Houl | crocodile | No permanent site | breaks canoes, kill and eats humans |
| Changriman | 16 | Kakiambegil | crocodile | No permanent site | breaks canoes, kill and eats humans |
| Changriman | 17 | Wongomalil | snake | No permanent site | kills and feed on humans |
| Changriman | 18 | | Garamut (<i>Vitex coffassus</i>) | Yanobaul | A giant Garamut (<i>Vitex coffassus</i>) tree locals are afraid to go near |
| Changriman | 19 | Yaubegil | dog | No permanent site | chases humans |
| Changriman | 20 | Nambayohoi | spirit | Komobol | kills humans |
| Changriman | 21 | Kimbiyopon | spirit | Kimbil | causes thunder storms when anyone intrudes its habitat |
| Changriman | 22 | Nimeyomoof | Rock | Nimes | changes into spirit but not harmful to the locals |
| Changriman | 23 | Maulapak | Rock | Komombol | the rock cracks if someone dies in the village |
| Changriman | 24 | Huwabau & Kalabau | Two waterfalls | Duguemalis | the two waterfalls are termed as two brothers and it heals sickness if bathing with aromatic leaves and vines |
| Changriman | 25 | Monglayelekal | spirit - fire | Dugutok | Spirit in the form of fire. A local intending to kill another must get a twig and throw it into the fire for the killing to take place smoothly without any suspicion. But has to catch the spirit before committing. |
| Changriman | 26 | Keblegis | Garamut (<i>Vitex coffassus</i>) | Nongomakel | this tree grows in the mountain. Where it grows is a hole going underground to a river called 'men'. The site where the tree grows has been respected |
| Garamumbu | 27 | Gilkawat | Bird | Komombo | its shouting indicates someone dying or about to die |

| VILLAGE NAME | NO. | NAME OF MASALAI OR SACRED/TABOO SITE | DEFINITION OF THE MASALAI OR SACRED/TABOO SITE | LOCATION OF THE MASALAI OR SACRED/TABOO SITE | HISTORY OF THE MASALAI OR SACRED/TABOO SITE |
|--------------|-----|--------------------------------------|--|--|--|
| Garamumbu | 28 | Migiysamad | Rock | Budaung | this rock has been respected by the ancestors and is still today |
| Garamumbu | 29 | Senginam and Awiaboni | Rock | Dengilman | the two rocks represents two clans 1. Mael, 2. Sinmalel |
| Garamumbu | 30 | Awebonid | Rock | Kekyemud | digging up this causes lightning |
| Garamumbu | 31 | Wanda & Baban | Rock | Imbanakuan | the two rocks were spies during ancestral conflicts |
| Garamumbu | 32 | Kolowi & Imbanam | two crocodiles | Bamugup | whenever the crocodiles appear, it indicates someone is dead or dying |
| Yerakai | 33 | Colbis | Womanlike figure | Agibam - water hole | the woman lives in a water hole in Agibam and if a stone is thrown into the water hole it will cause a thunderstorm |
| Yerakai | 34 | Mandakobur | Man-like figure | Nailawas lagoon | helped grandfathers during tribal conflicts in the past |
| Yerakai | 35 | Mai-gainambol | Sanguma' site | Bamblung | a site where 'sungumas' practice |
| Yerakai | 36 | Kibomud | a hill | Mt Buluwai | the mountain was made by the forefathers' from fire ashes taken out from the haus tumbuna (men's haus) continuously. A place for traditional dancing ceremonies. Currently being respected |
| Yerakai | 37 | Kuatabus | Rock | Mt Buluwai | the rock has a hole that the forefathers put their head into. It had some powers |
| Yerakai | 38 | Komte | spirit | Watwas | fierce spirits that do not want to be disturbed |
| Yerakai | 39 | Wambon | spirit | Yerakai | appears as a man and then vanished |
| Yerakai | 40 | Mantukobur | Ancestral site | Yerakai | a Garamut (Vitex) that had a vine on it was about to be chopped and when the vine broke, the man responsible died and turned into stone. |
| Walifian | 41 | Isi kaiwalop | water pool | Walifian | a man bathing in the water will change into a woman. The same applies for a woman. Site is still being respected |
| Walifian | 42 | Wahayewur | spirit | Walifian | The spirit took down a mans haus. The men's haus was the best in the area. |
| Walifian | 43 | Bilendumud | Human like figure | Walifian | a human like figure spirit that interacted with the ancestors. Due to changes to the environment, it had fled and hid in the bush of Walifian |
| Walifian | 44 | Moiyehei kambud | Rock | Walifian | the rock lives in the mountain. Any visitor to its site wishing for luck or gift has to give him a present and talk to the stone. |
| Banakot | 45 | Bamugup | spirit | Banakot | the spirit once pulled down a canoe together with the paddlers sometime ago. Whenever the canoe is seen surfacing and then disappearing, its indicating that someone will die or a conflict will arise |

| VILLAGE NAME | NO. | NAME OF MASALAI OR SACRED/TABOO SITE | DEFINITION OF THE MASALAI OR SACRED/TABOO SITE | LOCATION OF THE MASALAI OR SACRED/TABOO SITE | HISTORY OF THE MASALAI OR SACRED/TABOO SITE |
|--------------|-----|--------------------------------------|--|--|---|
| Nawei | 46 | Luweibor | man-like figure/spirit | Nawei | sometime becomes like a real man |
| Nawei | 47 | Nimger | human spirit | Nawei | Found in sago swamps. The spirit normally meets women who are on their way to make sago. |
| Nawei | 48 | Ambagalai | snake | Ambang | sometimes changes into a fish if locals go near its habitat |
| Nawei | 49 | Bibinid | Totoise | Nembeleng | sometimes changes into a fish if locals go near its habitat |
| Nawei | 50 | Yamkalei | site full of spirit | Yamkalei | any visit to this site will result in heavy thunder storm |
| Nawei | 51 | Dafnamed | site full of spirit | Dafnamed | no noise around this area. If there are then demons will be seen roaming |
| Nawei | 52 | Singep | snake | Ambaung Dukop | touching the snake will cause it to have spines on its back similar to the sago fronges |
| Nawei | 53 | Bangawam | Ancestral site | Lukayamaied | ancestral ritual site |
| Nalom | 54 | Wainguandir | water pool | Nalom | stone thrown into the pool will result in thunderstorm |
| Nalom | 55 | Kulam | Rock | Mt Dafnamed | rocks are not supposed to be thrown anywhere on this mountain during gold panning |
| Nalom | 56 | Maindau | lightning | Mt Dafnamed | name given to the lightning that occurs when stones or rocks are thrown during gold panning |
| Nalom | 57 | Nogonbo | pig | Mt Dafnamed | a pig that lives in the area that locals fear |
| Nalom | 58 | Ambanganden | Womanlike spirit | Ambang creek | Here lives a woman like figure/spirit. No one roams around the site |
| Nalom | 59 | Malunepel | Waterfall | Dafnamed point | Woman spirit found around the waterfall. Under the waterfall are artefacts |
| Nalom | 60 | Bolofei | Manlike spirit | Dafnamed point | Here lives a man like figure/spirit. No one roams around the site |
| Nalom | 61 | Litapwahanap | snake | Nalom | a sago stand has this particular snake that the locals are afraid of going into |

Map 9: Cultural, Social and Spiritual Sites identified and mapped in Project Area



Please note: When meeting with the stakeholders from the project area not all culturally significant sites were able to be identified on a map. The landowners have agreed to show us where the sites are and there will be mapped with a GPS when we are mapping the boundaries of the ILG's.

Section G 2. Baseline Projections

G2.1. Baseline Land Use

The Project Area is currently subject to a Forestry Management Agreement (FMA).

The FMA transfers the rights to develop the timber project from the landowners to the Papua New Guinea Forest Authority (PNGFA). Before the PNGFA allocate the timber concession to a registered developer they must undergo a development option study (DOS). The DOS is used to determine the most appropriate use of the land in the FMA.

As stated in section 5.6 of the DOS “large scale land uses in the (FMA) area is absent except for areas allocated for Mission stations, airstrips, aid posts and so forth”. The area exists much the same today as then, with the only real land use being hunting, fishing and gathering to sustain the daily provisions.

Development has been largely restricted due to financial constraints. Landowners do not have funds or access to funds to assist with the development of land use. Limited technical skills⁴² have also restricted development of the area.

Whilst the report takes into account “Fragile Forest Areas”, the Development Option Study recommended approving the area for commercial timber harvesting. The area to be commercially harvested was 177,000 ha. This is discounted under the PNG Logging Code of practice to 150,620 ha.

Based on this it is most likely without the proposed REDD project the area 150,620ha of the project area would be harvested.

Following logging the increased accessibility to the logged areas will normally support secondary land use. This secondary use will continue the degradation of the forest resource. Increased accessibility will result in increased population pressure. Land is cleared to allow for settlements and gardens.

The DOS also outlines potential projects such as:

- The development of ecotourism projects,
- Construction of bridges over the Sepik River to facilitate direct access to Ambunti,
- Plantations established in areas where the natural forest has been cleared,

The DOS also discussed the clearing of land that can be leased by the landowners to a company for the development of agriculture projects. These projects are planned to “provide expected food shortages in the Asian region, particularly China”.

⁴² Development Option Study

This information indicates there were specific plans to further develop and clear large sections of the harvested or degraded land further into agricultural leases.

Furthermore pure stands of Kauri Pine were identified for commercialisation. This would have seen areas effectively clear felled. When combined with the common logging practice known as “creaming” which refers to the selective logging of species with a higher commercial value the forest would most likely have been deforested and degraded.

Greenhouse gas emissions would have occurred as a result of the commercial logging. Primarily these would have originated in the harvesting and subsequent degradation of the forest. Emissions would also result from the logging activities and most likely from the subsequent clearing of some of the harvested area as outlined in the development option study for the creation of agricultural land.

ITTO (1992) showed that generally 20% of the area following conventional selective timber harvesting is converted into other land uses activities including shifting cultivation (subsistence farming), agricultural and forestry plantations, fire, and human settlement.

G2.2 Project benefits in the absence of the project and Additionality

Without the validation of this project the FMA will be awarded to a developer to harvest the area as this was the motivation behind the creation of the FMA in the first instance. Landowners were hoping to receive royalties from the aforementioned harvesting.

Forest Trends (2006) analyzed the logging practices of the companies of 14 selected FMA's around Papua New Guinea. The conclusions indicated what would happen to the April Salumei FMA area if it is logged.

The review demonstrates that operators are not achieving compliance in key areas that define a “lawful” logging operation from an unlawful one, and that current commercial forest management is ecologically and economically unsustainable and illegal. Logging is also not serving the long-term interests of landowners or the State.

Selective logging was also unsustainable, leading to permanent forest degradation or deforestation and partial conversion to grassland. This non-obedience to the specification of the Forest Management Plans was usually the result of poor policing and corruption⁴³.

⁴³ State of the forests in PNG (2007)

It can be concluded that the Forest Management Agreement, which are government approved, show a “best case” scenario with regard to carbon stock development and sustainable development and in practice are typically not respected. It is therefore a conservative estimation to assume that if the planned logging activities according to the FMA are implemented then more often than not these established limits will be well exceeded.

The April Salumei FMA has an estimated volume per hectare of 55.312 m³/ha and a net volume per hectare of 38.718 m³/ha (in terms of commercially interesting wood species). The April Salumei FMA project area has an estimated total volume of 5,831 700 m³ of extractable timber with an average density of 38.72 m³/ha.

These assessments have been compiled for the sole purpose of harvesting the 150,620ha within the project area comprising a total of 521,000 hectares. In accordance with 2006 IPCC GL AFLOU this area is classified into the Land use category of “Forest Land” (see Table 1, Carbon Stock Estimations G1.4 and G2.3). This area has been surveyed by the PNGFA and designated as “merchantable” or approved for harvesting.

The benefits the Landowners will receive from the April Salumei Rainforest Preservation Project are additional.

If you look at the land use intensity, Maps 10 Land Use Intensity 1975 and Map 11 Land Use Intensity 2006 (See G2.3 Carbon stock change) you will see little change to the area from traditional land use. See also Map 13 Landsat image.

Therefore it would be fair to assume if the logging project went ahead there would be large scale destruction of habitats and loss of valuable ecosystems that house HCV flora and fauna that would be directly attributable to logging.

Without the April Salumei Rainforest Preservation Project the most likely scenario is the logging would go ahead. The area has been legally designated as a timber concession.

Evidence from other logging concessions in PNG suggest the landowners would receive little or no positive impact on living standards, continuation of miniscule incomes that barely affect living standards and unsustainable management of forest resources⁴⁴.

As tabled in the Forest Trends (2006) report the commercial logging of similar areas of primary rain forest in Papua New Guinea has resulted in:

1. Lack of delivery of long term benefits to landowners
2. Generation of local incomes that are too small to impact on living standards
3. Unsustainable management of forest resources.

⁴⁴ Logging, Legality and Livelihoods in PNG: Synthesis of Official Assessments of the Large-Scale Logging Industry, Volume I © 2006 Forest Trends

Proposed benefits to the area following commercial harvesting, as outlined in the Forestry Management Agreement, was to be 450 ha of proposed Oil Palm plantations, 200 ha of coffee and 180 ha of cocoa plantations, however in the same paragraph it states the agricultural land development would mainly take place outside the project area (based on other projects one would assume if they were to be implemented clear felling of the affected land would occur.)

G 2.3 Carbon stock change

Over the last 30 years the drivers of deforestation in Papua New Guinea were industrial logging, and substance related agriculture with minor contributions from forest fires, industrial agriculture and mining⁴⁵.

The PNG R PIN (2009) goes further to determine the specific percentage of each driver,

Plantations 1%

Forest fires – 4.4%

Agriculture – 45.6%

Logging – 48.2%

Mining 0.6%

Additionally threats for deforestation can include the following;

1. *Anthropogenic sources*

- Shifting cultivation
- Commercial Logging
- Large-scale commercial agriculture
- Forest Fires
- Mining and petroleum exploration and development
- Infrastructure development
- Settlements and urbanisation

2. *Natural sources*

- Earth quakes
- Volcanic eruptions
- Tectonic movements
- Landslips
- Flooding

⁴⁵Bryan, J., et al., Estimating rainforest biomass stocks and carbon loss from deforestation and degradation..., Journal of Environmental Management (2010), doi:10.1016/j.jenvman.2009.12.006

- Climate Variability

Maps 10 and 11 indicate little change in land use from traditional land usage or subsistence agriculture in the project area between 1975 and 1996. The Landsat image (Map 13) also indicates little or no changes to the project area as a result of subsistence agriculture.

There is no indication of scaring from forest fires or anecdotal evidence of forest fires and there are currently no large scale mining currently in the project area.

To assess baseline emissions, a reference area (Vanimo FMA, West Sepik or Sandaun province) was selected with similar ecological characteristics which are also a Forest Management Area, where selective logging was and is still taking place.⁴⁶

As discussed in G2.1.the most likely ‘without project’ scenario is the commercial harvesting of the carbon accounting area.

Based on the “without” project scenario, that is the logging project going ahead would create significant reductions in the carbon stocks of the area.

Further development of these degraded lands would most likely result in conversion to Agricultural leases as evidenced by the DOS.

To determine the extent of the change in carbon stocks in the project area we must determine the total carbon value of the project area (see G 1.4) and estimate the residual carbon in the project area following commercial logging. We must also consider other factors that influence levels of carbon stocks in the project area as discussed in G2.1.

These are;

1. The carbon lost due to the degradation of the forest during logging.
2. GHG emissions from the machinery used in the logging operation
3. Carbon stocks lost as a result from the conversion of degraded land to agriculture projects post logging.
4. The regeneration of the degraded land.

Assumptions

Sector: Agriculture, Forestry and Other Land Use.

⁴⁶ Logging conditions are similar to those in the project FMA as raw logs and sawn timber are exported. The original logging permit was issued in 2001 and runs until 2011. Ecological similarity is shown by the fact that the areas lies geographical close to East Sepik FMA, has similar geomorphologic conditions and climatic conditions, and the main land usage and drivers to deforestation are similar (for the last point see Shearman at al 2008).

Category: Forest Land Remaining Forest Land
Climate Domain: Tropical
Ecological Zone: Tropical Rainforest
Continent: Asia (insular)

Carbon Pools

Firstly we determined the Carbon Pools to be included. These were Above-ground Biomass and below-ground biomass. For the sake of being conservative and given we are estimating the carbon values to a Tier 1 level we have not included Dead Organic Matter (Dead Wood and Litter and Soil Carbon).

Source of data

Tier 1 estimated above-ground biomass (Table 4.7) 350 tonnes d.m. /ha⁴⁷
Ratio below-ground biomass to above-ground biomass (Table 4.4) 0.37
Carbon Fraction default value (table 4.3) 0.47

Carbon Accounting Area

As discussed the April Salumei FMA is a total area of 521,000 ha, with a gross forest area of 177,200 ha. This area of 177,200ha has been determined by PNG Forest Authority as 'merchantable' and therefore is the area we are avoiding the deforestation.

Furthermore, in accordance with the Forestry Management Guidelines 15% buffer zone has been applied to determine a net production area of 150,620 ha.⁴⁸

We are therefore avoiding the deforestation of the 150,620 ha (See Map 14) that would have been harvested as further evidenced by Map 15 that delineates the harvestable area as determined by the PNG Forest Authority.

1. The carbon lost due to the degradation of the forest during logging.

The carbon accounting area is 150,620 ha. The FMA document approved harvesting of 155,620 ha or 6,871 ha per annum (as evidenced in the DOS) of the area. It is common practice in PNG for the actual area harvested to be greater than the allowable cut⁴⁹ and also for the harvestable area to be increased following a request from the developer.

The project lifetime has been determined as 25 years. For the purpose of the carbon accounting and to remain conservative the project will claim avoided deforestation and degradation for 21 years at a rate of 6,871 ha per year and year 22 will claim the remaining 6329 ha. This will sum to 150,620ha and there will be no claim for years 23, 24 and 25.

⁴⁷ We have used the value given in table 4.7 of 350 tonnes d.m. ha of Tropical rainforest, Asia (insular).

⁴⁸ Tack Reality Report (2004) Determination of value of harvestable timber.

⁴⁹ PNG FA data Amanab and Vanimo logging concessions.

To determine the above ground biomass we have selected the default value. Tropical Rainforest – Asia (insular) (Table 4.7 - Tier 1) of 350 tonnes d.m. /ha. Table 4.12 lists Tropical Rainforest at 300 tonnes d.m./ha, and Bryan et al. (2010) has reported the biomass of unlogged forests to be 358 tonnes d.m./ha. We have used Table 4.7 value of 350 tonnes d.m./ha.

To determine the below ground biomass we multiply the above ground biomass value (350 tonnes d.m./ha) by 1.37 (the ratio given in table 4.4) to determine the combined above-ground and below-ground biomass is 479.5 tonnes d.m./ha.

We have then applied a carbon factor of 0.47 (table 4.3) to determine 225.365 tonnes Carbon per hectare.

To determine the carbon pool remaining following the area being logged we have used work from Fox et al. (2006) using PNGFRI permanent sampling plots from East Sepik Province recorded an average of 59 tC/ha for logged over forest areas.

Having determined the carbon content per logging is 225.365 t C/ha and post logging is 56 t C/ha we can conclude 166 t C/ha is lost when the area is selectively harvested or degraded.

We can then determine 25,147,310 tonnes of carbon would be emitted by the project.

When applying the global warming potential we can conclude 92,215,187 t CO₂e are avoided by the project in stopping the initial selective logging of the project.

We have also assumed the Forestry Management Agreement conditions are followed and no illegal activities are undertaken by the harvesting contractor.

2. GHG emissions from the machinery used in the logging operation

Radomir Klvac and Alois Skoupy (2009) of the Department of Forest and Forest Products Technology of Mendel University of Agriculture and Forestry in Czech Republic calculated the exhaust emissions from logging machines on the basis of the average fuel consumption; found that CO₂ emissions amounted to 9.63kg/m³ for delivered timber for diesel fuel for every 1 cubic metre of timber produced.

The FMA lists the volume to be harvested to be 5,831,705m³ as outlined in the Tack Reality Report and the FMA. (Gross Volume per ha of 55.312 m³/ha, discounted 30% for defect allowance to 38.718 m³/ha.)

Consequently the harvesting of 5,831,705m³ and an emission rate of 9.63 Kg/m³ we can determine the initial logging of the area would produce 56,159,319 kg CO₂ or 56,156 t CO₂.

3. Carbon stocks lost as a result from the conversion of degraded land to agriculture projects post logging.

Reports including ITTO (1992) showed that generally 20% of the area following conventional selective timber harvesting is converted into other land uses activities including shifting cultivation (subsistence farming), agricultural and forestry plantations, fire, and human settlement.

The Development Options Study (DOS, 1996) of April Salumei discusses the options available to the landowners following the commercial logging. This study suggests conversion of land for agricultural leases (See G2.1) and other alternative land uses.

Therefore it is reasonable to assume that 20% of the area or 30,232ha would be converted to other land use.

Given we have already accounted for the initial degradation from harvesting the remaining carbon (59 t/C/ha) from the above ground and below ground carbon pools would be lost.

Assuming the 20% of the land would be converted to agriculture as suggested the ITTO, this would equate to 30,232 ha of land being converted to agriculture and releasing the remaining carbon (59 t C/ha) contained in the above ground and below ground biomass or 1,844,164 t C being released

Again when we apply the global warming potential (3.66) of carbon we can determine a further 6,762,550 t CO₂e would be released.

4. The regeneration of the degraded land.

Fox et al. (2008)⁵⁰ also estimated that about 1.4 t of Carbon is sequestered per ha per annum from disturbed forest as a result of logging in PNG.

For the sake of clarity and accounting this regeneration will commence in year two of the project calculations. This is because it is assumed the area is being harvested in year 1.

Please note the area to be considered for regeneration of forests is only the area that has not been converted to other land use. Again for the sake of clarity we have assumed

⁵⁰ Julian C. Fox, Rodney J. Keenan, Cossey K. Yosi, Joe Pokana, Kunsey Lavong, "Estimating standing forest carbon in Papua New Guinea from permanent sample plots".

this will be a 'straight line average' based on the original area less the 20% reduction as this area has been deemed to have been converted to agriculture.
per the annual harvest amount.

Table 5. GHG emissions and sequestration.

| Year | Annual Harvestable Area (ha) | Emissions from Degradable area (tCO ₂) | Emissions from other land use conversion (tCO ₂) | Emissions from harvesting Activities (tCO ₂) | Sequestration from Degradable forests (tCO ₂) | Net CO ₂ Emissions (tCO ₂) |
|------|------------------------------|--|--|--|---|---|
| (A) | (B) | (C) | (D) | (E) | (F) | (G) |
| 1 | 6871 | 4,191,599 | 2,552.39 | 297,269 | | 4,491,421 |
| 2 | 13742 | 8,383,199 | 5,104.78 | 594,581 | 28,215 | 8,954,670 |
| 3 | 20613 | 12,574,798 | 7,657.16 | 891,894 | 56,431 | 13,417,918 |
| 4 | 27484 | 16,766,398 | 10,209.55 | 1,189,206 | 84,646 | 17,881,167 |
| 5 | 34355 | 20,957,997 | 12,761.94 | 1,486,518 | 112,861 | 22,344,416 |
| 6 | 41226 | 25,149,596 | 15,314.33 | 1,783,830 | 141,077 | 26,807,664 |
| 7 | 48097 | 29,341,196 | 17,866.71 | 2,081,143 | 169,292 | 31,270,913 |
| 8 | 54968 | 33,532,795 | 20,419.10 | 2,378,455 | 197,508 | 35,734,162 |
| 9 | 61839 | 37,724,395 | 22,971.49 | 2,675,767 | 225,723 | 40,197,411 |
| 10 | 68710 | 41,915,994 | 25,523.88 | 2,973,080 | 253,938 | 44,660,659 |
| 11 | 75581 | 46,107,593 | 28,076.27 | 3,270,392 | 282,154 | 49,123,908 |
| 12 | 82452 | 50,299,193 | 30,628.65 | 3,567,704 | 310,369 | 53,587,157 |
| 13 | 89323 | 54,490,792 | 33,181.04 | 3,865,017 | 338,584 | 58,050,405 |
| 14 | 96194 | 58,682,392 | 35,733.43 | 4,162,329 | 366,800 | 62,513,654 |
| 15 | 103065 | 62,873,991 | 38,285.82 | 4,459,641 | 395,015 | 66,976,903 |
| 16 | 109936 | 67,065,591 | 40,838.20 | 4,756,953 | 423,230 | 71,440,152 |
| 17 | 116807 | 71,257,190 | 43,390.59 | 5,054,266 | 451,446 | 75,903,400 |
| 18 | 123678 | 75,448,789 | 45,942.98 | 5,351,578 | 479,661 | 80,366,649 |
| 19 | 130549 | 79,640,389 | 48,495.37 | 5,648,890 | 507,877 | 84,829,898 |
| 20 | 137420 | 83,831,988 | 51,047.75 | 5,946,203 | 536,092 | 89,293,147 |
| 21 | 144291 | 88,023,588 | 53,600.14 | 6,349,337 | 564,307 | 93,862,218 |
| 22 | 150620 | 92,215,187 | 56,152.53 | 6,762,550 | 592,523 | 98,441,367 |
| 23 | No Claim | | | | | |
| 24 | No Claim | | | | | |
| 25 | No Claim | | | | | |

The developer believes this to be conservative based on the existence of a 15% buffer already existing in the total area harvested in accordance with the PNG Logging Code of Practice.

The developer wishes to note they reserve their right to revise this estimate as a more robust data and increased capacity is established to allow the assessment of this project to move to a “Tier 3” level.

The developer will then allocate a further 10% or 9,844,136 t CO₂e to a pool in the case it needs to be used to mitigate any potential project activity.

This will reduce the emissions being avoided to 88,597,230 tonnes of CO₂.

The carbon pools selected are listed in the following table.

Table 6: Carbon Pools included or excluded within the boundary of the proposed REDD project activity

| Carbon Pools | Selected (answer with yes or no) | Justification / Explanation |
|---------------------|----------------------------------|---|
| Above-ground | Yes | Major carbon pool subjected to the project activity |
| Below-ground | Yes | Major carbon pool subjected to the project activity |
| Dead wood | No | Not Selected |
| Litter | No | Not Selected |
| Soil organic carbon | No | Little change expected |

The table below represents our findings in relation to determining the non-CO₂ GHG emissions for the project.

Table 7: Sources and GHG`s included or excluded within the boundary of the proposed April Salumei REDD project

| Sources | GHG | Included/Excluded | Comment/Justification |
|--|------------------|-------------------|---|
| Biomass burning | CO ₂ | Excluded | Counted as carbon stock change |
| | CH ₄ | Excluded | Assumed negligible |
| | N ₂ O | Excluded | Assumed negligible |
| Combustion of fossil fuels by vehicles | CO ₂ | Excluded | Assumed negligible in the project case. This is conservative. |
| | CH ₄ | Excluded | Not a significant source |
| | N ₂ O | Excluded | Not a significant source |
| Use of fertilizer | CO ₂ | Excluded | Not a significant source |
| | CH ₄ | Excluded | Not a significant source |
| | N ₂ O | Excluded | No significant fertilizer use in this project |

| | | | |
|---------------------|------------------|----------|---|
| Livestock emissions | CO ₂ | Excluded | Not a significant source |
| | CH ₄ | Excluded | No significant livestock use in the project case. This is conservative. |
| | N ₂ O | Excluded | No significant livestock use in the project case. This is conservative. |

We believe emissions from non-CO₂ gasses and will not account for more than 5% of the projects overall GHG avoided emissions.

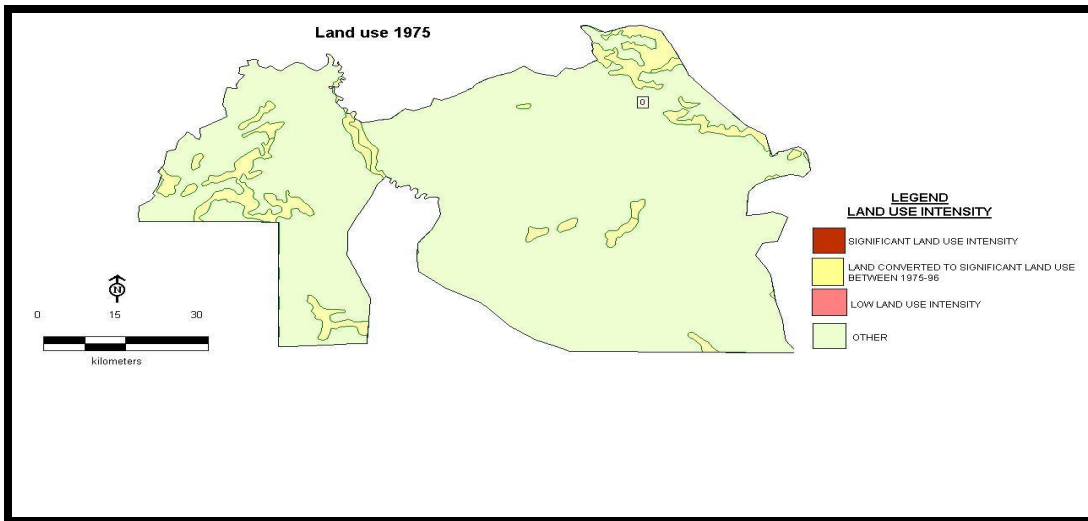
Whilst a major infrastructure project of building the Ambunti – Drekiker road will occur outside of the project area it is nevertheless a project activity and as such needs to be considered in terms of its potential carbon emissions.

Please refer to our project funding policy and guidelines to determine how the project will deal with this.

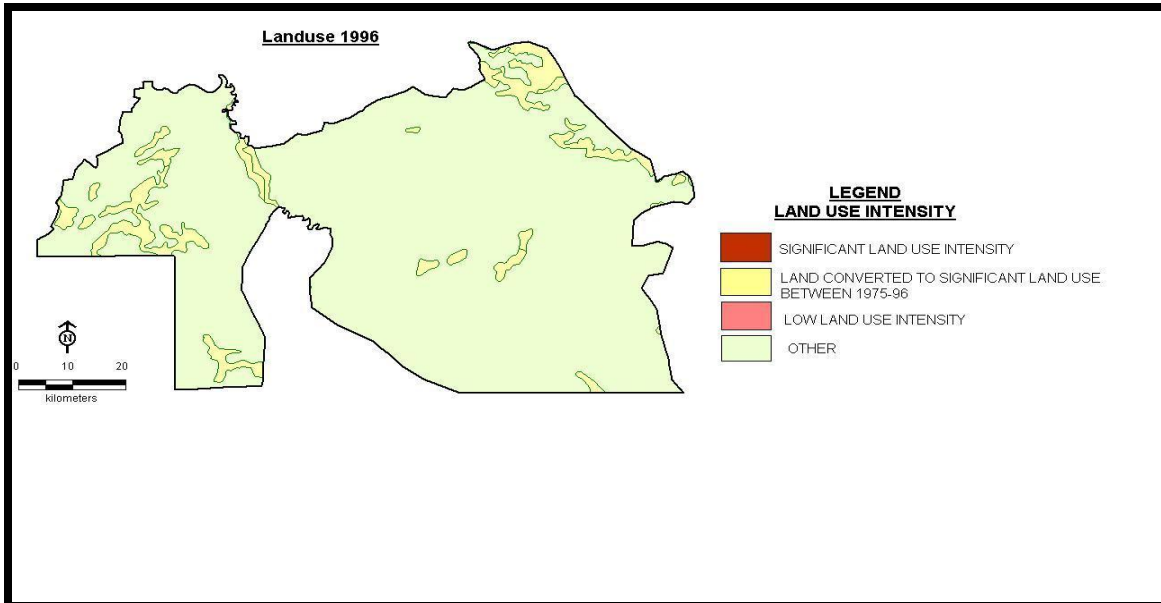
Should we identify any changes to our estimations in our monitoring of the project it will be documented and addressed immediately.

As identified in Map 10 and 11 comparing the land use change 1975 to 1996 changes to land use in the project area due to subsistence agriculture have been minimal. The sporadic distribution and low density of the population within the FMA suggests that although there were no considerable changes to the land use regime, there were definitely smaller changes occurring resulting from traditional subsistence agriculture (slash and burn) and the annual flooding of the river following heavy rains.

Map 10: Land use in the FMA with land use change indications from 1975



Map 11: Land use intensity in the FMA from 1975 to 1996



Planned Forest Degradation and Deforestation in the Region

Forest degradation continues to occur in the country and regions due to timber harvesting activities. Within the West Sepik Provinces adjacent to April Salumei FMA, Amanab FMA and Vanimo TRP, there is much degradation.

Tables 3a and 3b below show the current forest degradation rates as a result of timber harvesting from the two nearby FMA's Amanab and Vanimo. These harvesting concessions are in the same ecological zone and IPCC classification as the April Salumei

FMA. Both have also been demarcated by the PNGFA as logging concessions so therefore the developer feels they are representative of the April Salumei area.

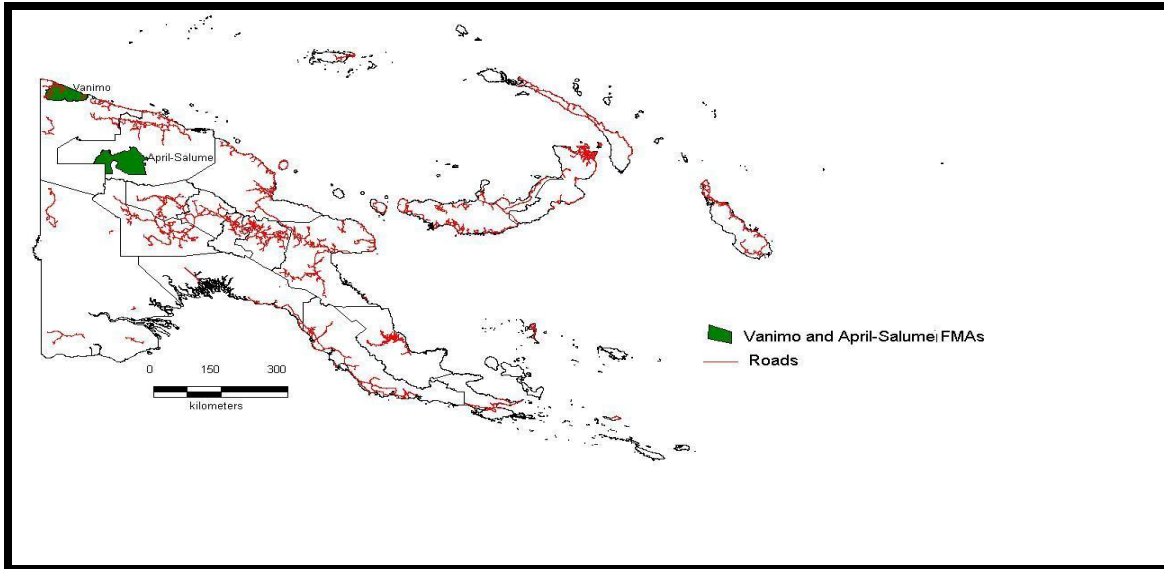
Table 8 AMANAB FMA (BLOCKS 1-6): Total Area – 403,131 ha

| Year | Annual Allowable Harvestable Area (ha) | Actual Harvested Area (ha) | % harvested of the annual allowable | % harvested from the total area |
|------|--|----------------------------|-------------------------------------|---------------------------------|
| 2005 | 3,133.3 | Nil | Nil | |
| 2006 | 3,133.3 | Nil | Nil | |
| 2007 | 3,133.3 | 5,800 | 185% | 1.44% |
| 2008 | 3,133.3 | 4,868 | 155% | 1.21% |
| 2009 | 3,133.3 | Yet to be produced | | |
| 2010 | 3,133.3 | | | |
| | | 10,668 | | 2.65% |

Table 9 VANIMO TRP (BLOCKS 1-6): TOTAL AREA – 287,428 ha

| Year | Annual Allowable Harvest (ha) | Actual Annual Harvest Area (ha) | % of annual allowable harvest | % of total harvestable area |
|------|-------------------------------|---------------------------------|-------------------------------|-----------------------------|
| 1991 | 12,423 | 11,196 | 90% | 3.90% |
| 1992 | 12,423 | 10,248 | 82% | 3.57% |
| 1993 | 12,423 | 10,000 | 80% | 3.48% |
| 1994 | 12,423 | 9,375 | 75% | 3.26% |
| 1995 | 12,423 | 9,375 | 75% | 3.26% |
| 1996 | 12,423 | 13,667 | 110% | 4.75% |
| 1997 | 12,423 | 15,712 | 126% | 5.47% |
| 1998 | 12,423 | 8,095 | 65% | 2.82% |
| 1999 | 12,423 | 17,510 | 141% | 6.09% |
| 2000 | 12,423 | 13,740 | 111% | 4.78% |
| 2001 | 12,423 | 17,740 | 143% | 6.17% |
| 2002 | 12,423 | 19,026 | 153% | 6.62% |
| 2003 | 17,391 | 12,262 | 71% | 4.27% |
| | | | | |
| 2004 | 17,391 | 1,676 | 10% | 0.58% |
| 2005 | 17,391 | 10,531 | 61% | 3.66% |
| 2006 | 17,391 | 26,500 | 152% | 9.22% |
| 2007 | 17,391 | 16,200 | 93% | 5.64% |
| 2008 | 17,391 | 10,074 | 58% | 3.50% |
| 2009 | 17,391 | Yet to produce | | |
| 2010 | | 232,927 | | |

Map 12: Location and Project Boundaries of April Salumei and the Vanimo FMA areas.



Amanab FMA was recently developed therefore the timber harvesting has not been intensively undertaken thus showing an average degradation rate of 1.3% annually. In comparison Vanimo TRP (see map 12 above) has been intensively harvested at the rate of 4.4% annually. The degradation rate of Vanimo TRP would be the more realistic measure to make an assumption with regard to April Salumei FMA. The great difference between these two projects in the annual allowable harvestable areas is mainly due the management agreements. The TRP's allowable cut was mainly determined by the projected revenue whereas under the FMA the allowable cuts are determined by the rotation periods.

However, considering land use changes for the province, then at least there is some existing available data. For instance, using the work of Sanders (1993) on agricultural land use in PNG, we can use the provincial land-use and land-use change data which indicated that the East Sepik Province experienced a 37% change to its land use regime whereas the West Sepik Province experienced a 26% change, mostly extremely low (<10%) to low intensity (20-50%) land use for food production by a moderate to low and dispersed population in these provinces.

Furthermore, McAlpine and Quigley (1998) noted that between 1975-1996 the areas converted to other land use for East Sepik Province was 3.51% of the total provincial forest area, while that of the West Sepik Province was 7.79%. Much of these land use changes in the province of East Sepik were the result of logging and traditional shifting agriculture together with some small to medium scale agriculture projects, especially rubber, cocoa and coconut plantations.

In reviewing the deforestation rates of similar Forest Management Areas (not TRP's as they are different styles of concessions) deforestation rates of up to 26,500ha per annum have been documented (Table 7, Ref 2006). This FMA is located relatively close to the April Salumei project and has similar access where the current operators have documented an average deforestation rate of 12,940 ha harvested annually. This data establishes the total area of 150,000ha would be deforested within the 25 year project life that has been established.

Planned Forest Degradation and Deforestation – Nationally

Before gaining independence in 1976, PNG boasted some 33 million hectares of natural forests. It was understood by the then Department of Forests that the sustainable allowable cut for the country was 3 million m³ / year.

However, since independence, the total forested area has been reduced to about 29 million hectares. Moreover, three million hectares is considered degraded forest, which leaves the country with some 26 million hectares of intact forests. These 26 million hectares are under continuous threat from being deforested and / or degraded through logging, commercial agriculture, shifting cultivation, mining and petroleum activities. The PNG government recognizes that economic growth will be largely driven by the exploitation of natural resources. This brings a risk of increasingly unsustainable activities to satisfy the medium term development goal of the country. Thus, although these activities are economically important for PNG, they pose a direct threat to the existence of natural forests and its associated biodiversity.

Papua New Guinea's forest industry is predominantly focused on the harvesting of natural forest areas for round log exports. The sector is dominated by Malaysian-owned interests and their primary markets for raw logs are China, Japan and Korea. Very few wood products are manufactured in PNG itself⁵¹

It has been estimated in 2002 that 1.41% of Papua New Guinea's tropical forests were being deforested or degraded annually. Furthermore, primary forests accessible to mechanized logging were being degraded or cleared at the rate of 2.6% annually and if current trends continue it is estimated 83% of the commercially accessible forest areas will have been degraded or cleared by 2021.⁵²

Under the Papua New Guinea Forest Development Plan there are in total 14 FMA's and only 10 of them are regarded as government impact projects. April Salumei (see maps 1 reproduced below) is one of the ten because of its magnitude. Under the FMA, timber

⁵¹ Logging, Legality and Livelihoods in PNG: Synthesis of Official Assessments of the Large-Scale Logging Industry, Volume I © 2006 Forest Trends

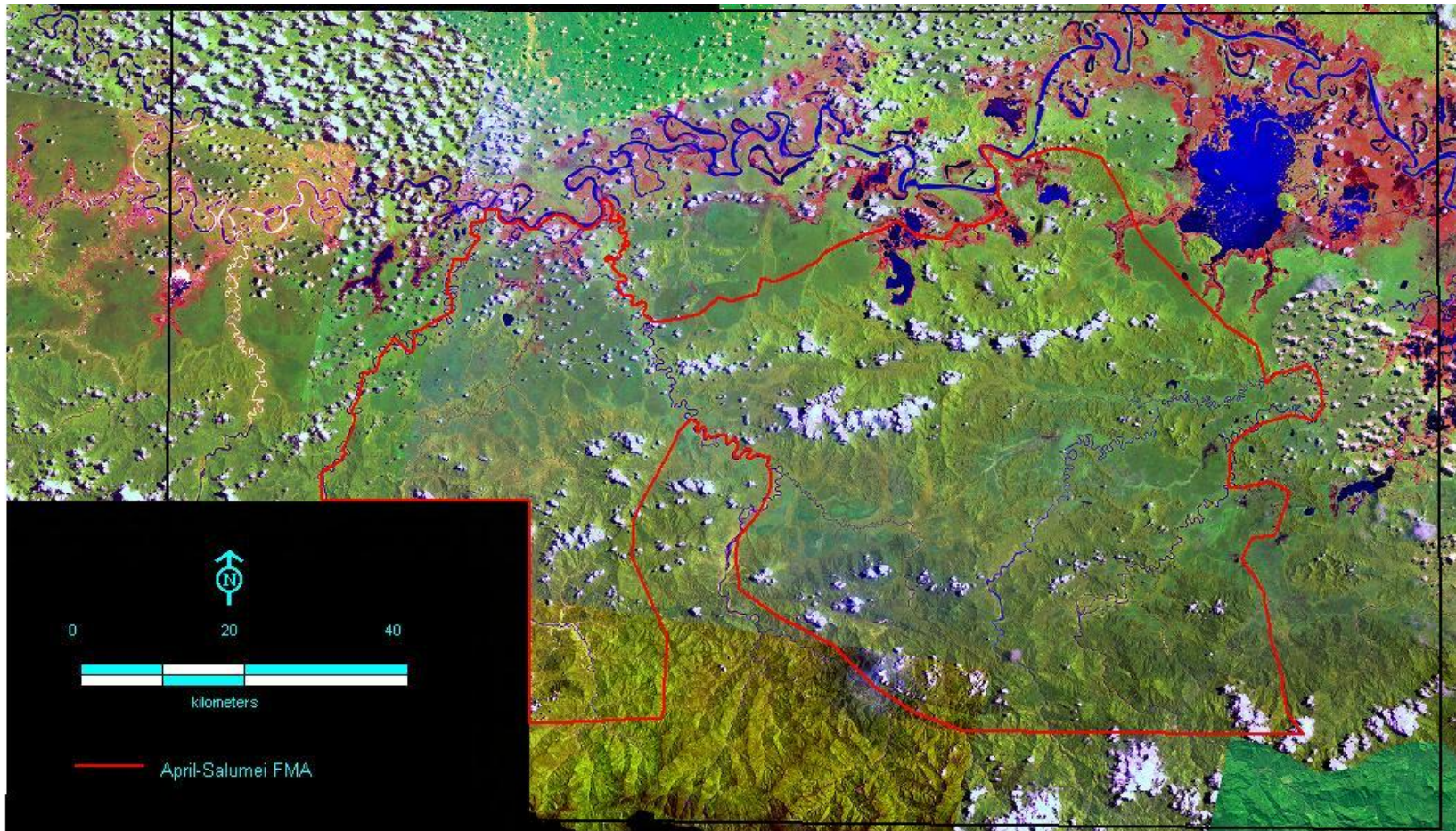
⁵² Shearman, P.L., Bryan, J.E., Ash, J., Hunnam, P., Mackey, B. And Lokes, B., The State of the Forests of Papua New Guinea. Mapping the extent and conditions of forest cover and measuring the drivers of forest change in the period 1972-2002. University of Papua New Guinea, 2008

permits/logging licenses are issued to the Landowner Groups who contract out by way of concessions to a commercial timber company that meets all the requirements and processes of logging according to the Forest Act to carry out logging activities in the area.

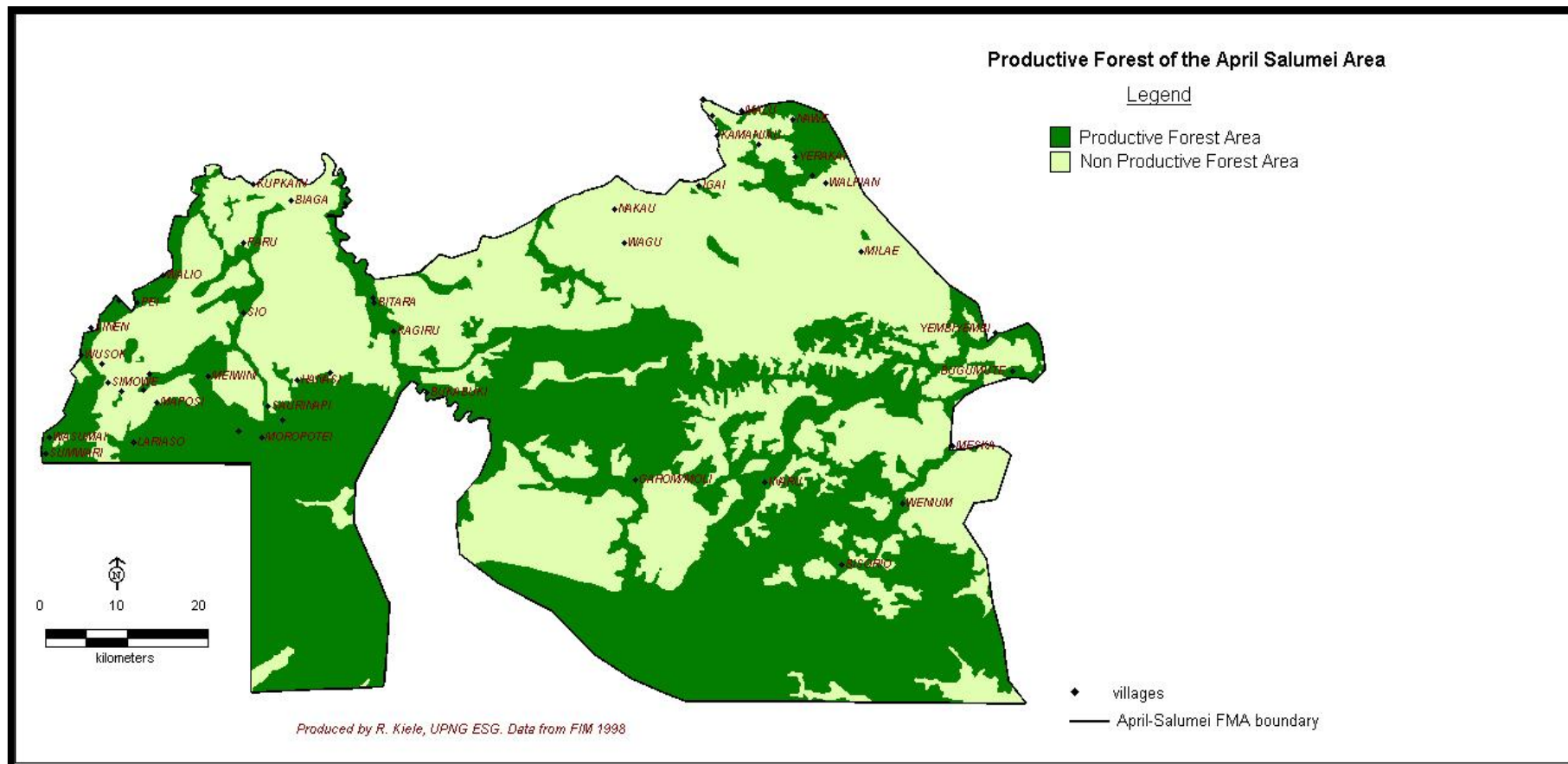
Table 10: Change in Forest Cover in Papua New Guinea (ibid)

| TOTAL FOREST COVER | | | PRIMARY FOREST COVER | | |
|---|-------------|-------|-------------------------|-------------|--------|
| | Ha | % | | Ha | % |
| Forest 1990 | 31,523,000 | | Primary 1990 | 29,210,000 | |
| Forest 2000 | 30,132,000 | | Primary 2000 | 26,462,000 | |
| Forest 2005 | 29,437,000 | | Primary 2005 | 25,211,000 | |
| Annual change 1990-2000 | (139,100) | 0.44% | Annual change 1990-2000 | (274,800) | 0.94% |
| Annual change 2000-2005 | (139,000) | 0.46% | Annual change 2000-2005 | (250,200) | 0.95% |
| Total change 1990-2005 | (2,086,000) | 6.62% | Total change 1990-2005 | (3,999,000) | 13.69% |
| Change in rate | | 4.54% | Change in rate | 0.50% | |
| OTHER WOODED LAND | | | PLANTATIONS | | |
| | Ha | % | | Ha | % |
| Other 1990 | 31,523,000 | | Other 1990 | 63,000 | |
| Other 2000 | 30,132,000 | | Other 2000 | 82,000 | |
| Other 2005 | 29,437,000 | | Other 2005 | 92,000 | |
| Annual change | - | - | Annual change | 1,900 | 3.02% |
| 1990-2000 | | | 1990-2000 | | |
| Annual change 2000-2005 | - | - | Annual change 2000-2005 | 2,000 | 2.44% |
| Total change 1990-2005 | - | - | Total change 1990-2005 | 29,000 | 46.03% |
| Change in rate | - | - | Change in rate | 0.50% | |
| TOTAL DEGRADATION/CONSERVATION (=Forest area + Wooded Area- Plantations) | | | | | |
| | Ha | | % | | |
| Forest 1990 | 35,934,000 | | | | |
| Forest 2000 | 34,524,000 | | | | |
| Forest 2005 | 33,819,000 | | | | |
| Annual Change 1990-2000 | (141,000) | | -0.39% | | |
| Annual change 2000-2005 | (141,000) | | -0.41% | | |
| Total change 1990-2005 | (2,115,000) | | -5.89% | | |
| Change in rate | | | 4.08% | | |

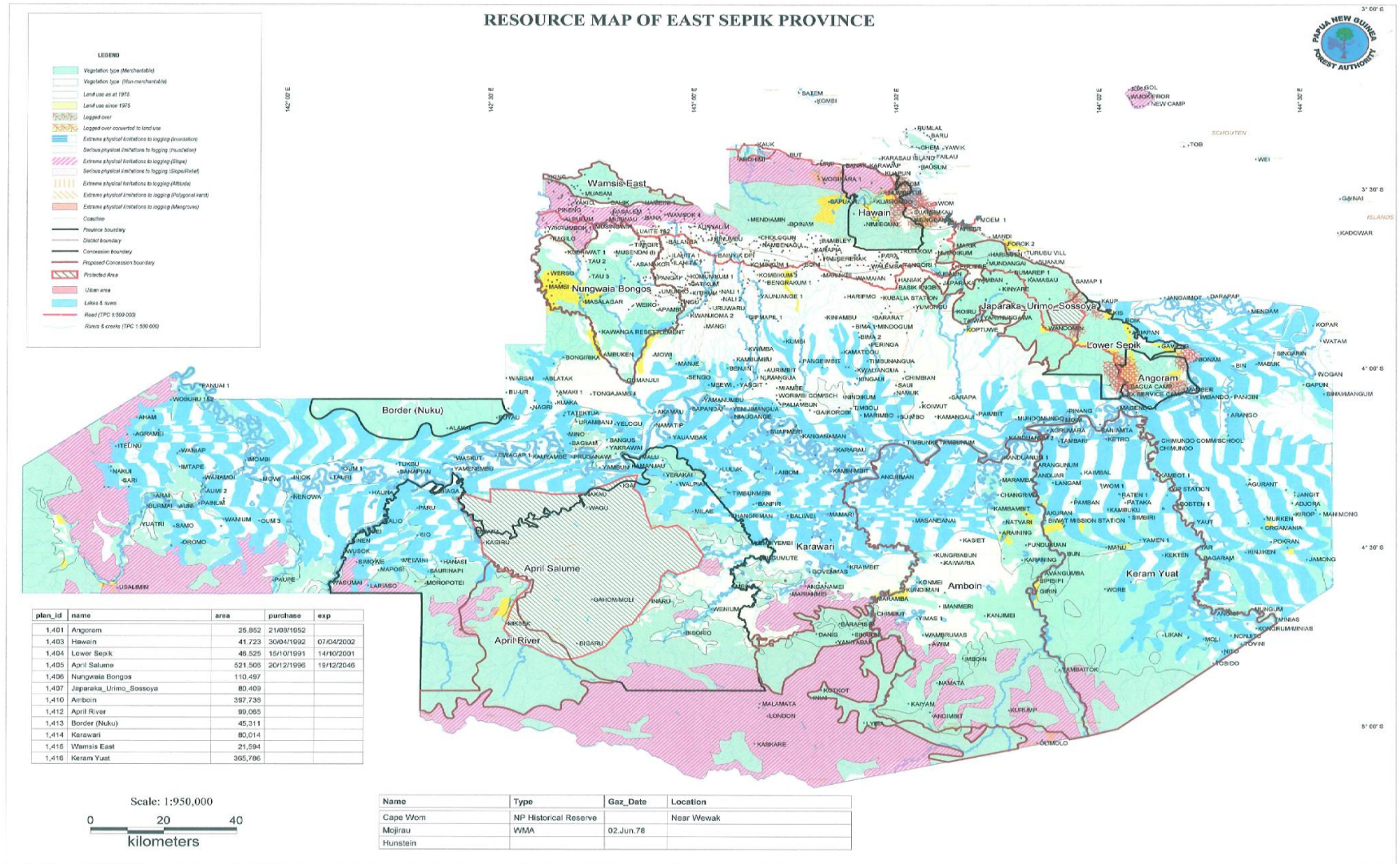
MAP 13: Landsat Map showing Project Boundary (Source PNGRIS 2009)



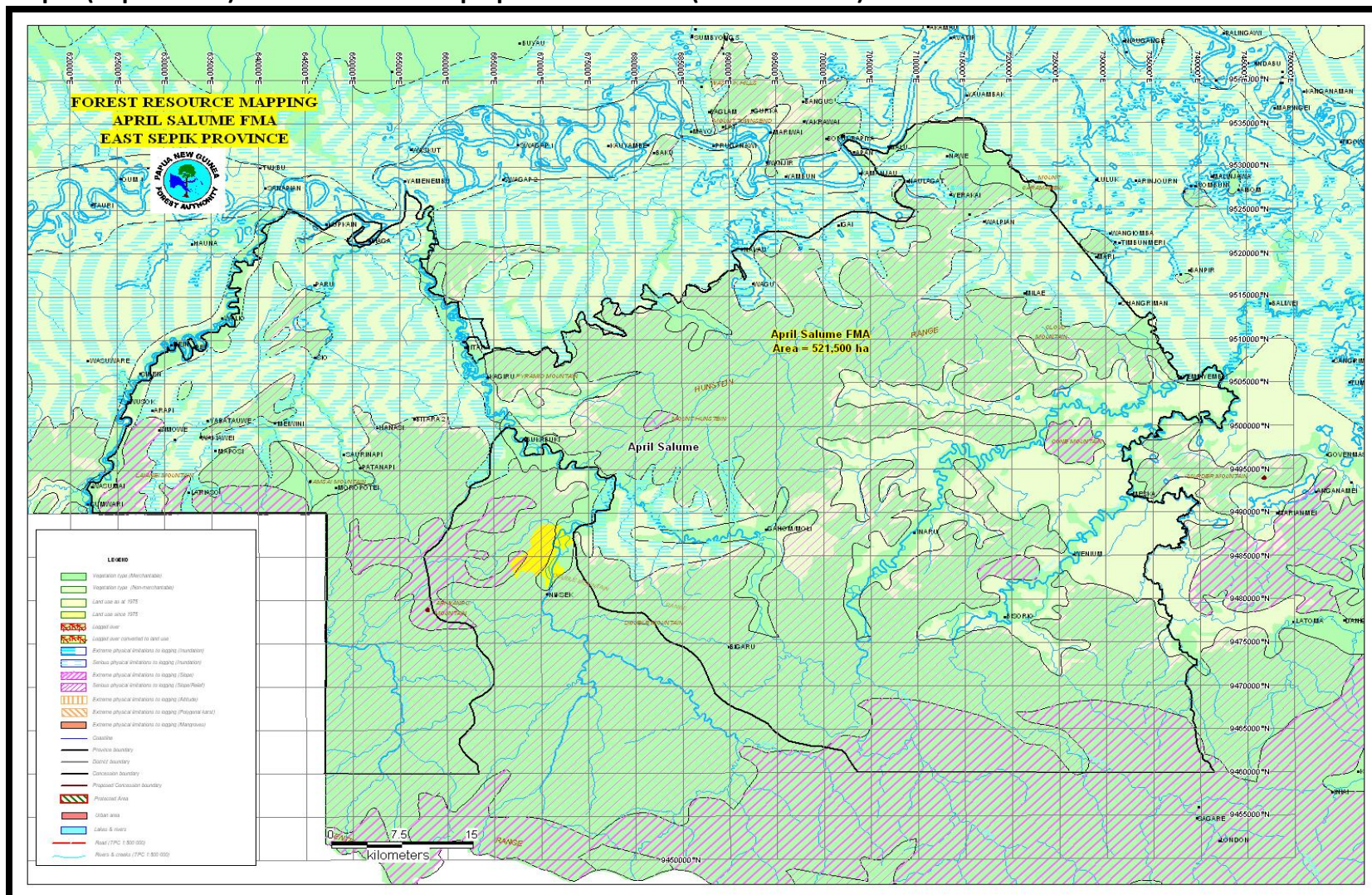
Map 14: April Salumei FMA Productive Forest Areas Vs Non-Productive Forest areas (Source PNGRIS 2007)



Map 15 : Forestry Resource Map East Sepik Province (Source PNGFA)



Map 6: (Reproduced) Forest Resource Map April Salumei FMA (Source PNGFA)



G2.4 Baseline community

If REDD does not become the preferred developmental option for the area, thus the baseline scenario, the area will most likely follow the path taken by most forest resource owners, i.e. down the logging route. The area will witness major forest habitat destruction and fragmentation, posing immediate threat to the viability of many species in the area. The loss of forest cover implies a loss of habitat, biodiversity and the environmental services that the forest provides. Massive degradation of forest cover will affect the conservation of the soils and also disturbs the ecological processes on a larger scale. The impacts on the communities within the area will also be massive, as it has been a rather isolated, close-knit community.

It is generally understood that the key benefit to landowners from logging, that of direct royalties or premium payments, has done little to improve the quality of life for people in rural PNG as the funds are usually wasted or misused⁵³. Unfortunately, the more indirect benefits of infrastructure development on rural life have been little studied, especially quantitatively.

An additional evaluation of the Independent Review Team assessments of the large-scale logging industry found that fulfilment of infrastructure obligations was generally poor⁵⁴. Examples of failures in infrastructure obligations include:

- Roads constructed only to a standard to support logging and not the correct standard for long term vehicle usage i.e. permanent bridges or culverts;
- Substandard construction of buildings, such as health clinics and school class rooms;
- Water supplies not provided.

It was also concluded that some infrastructure has been developed, but it is generally only planned around logging requirements and is not maintained after logging ceases. Lasting infrastructure that does accrue is off-set by the social and environmental cost borne primarily at the local level. This supports our assumptions that the Landowners would likely to have received little or no positive benefits from the logging project.

⁵³ Forest Trends (2006)

⁵⁴ Greenpeace Preserving Paradise (2008)

Additionally, the Wildlife Management Area (WMA) has shown little or no benefits to the Landowners. The commercial sale of the carbon benefits will allow for infrastructure to be built that will allow for the development of sustainable projects within the project zone. This has seen the landowners mount a legal challenge to the WMA recently with a view to reconsider logging in a desperate attempt to provide income.

The Development Option Study (DOS) discusses possible development following the commercial logging of the area. Whilst it can be assumed the impacts of the development of agricultural leases could be positive with increased revenue to the area there are potentially a lot of negative impacts on the community.

1. Displacement of people could occur if lands where villages are situated are cleared for agriculture.
2. Depending on the distribution method for income you may see specific landowners become quite wealthy and other landowners receive little or no income. This is a common occurrence with mining royalties in PNG.
3. There is the potential of large scale degradation of wetlands that communities are dependent on for food production.
4. The introduction of invasive and exotic species may also damage these wetlands further.

G2.5 Baseline biodiversity

Net Positive Biodiversity Impacts

Should the logging project go ahead, the impact on biodiversity in the area would be devastating.

Papua New Guinea is clearly one of the last biological frontiers, and PNG is privileged to have much of its natural ecosystems still in very pristine condition. As such, we have excellent opportunities to preserve some of the planets remaining natural habitats and the biological diversity that they harbour.

The April-Salumei area is a perfect choice for conservation for the reasons outlined below:

- (i) It is isolated and the area is generally sparsely populated.

- (ii) It comprises a broad range of habitats, from the wetland areas of the Sepik flood-plains to the montane forests on the lower slopes of the New Guinea Central Cordillera.
- (iii) The various ecological zones within the area are generally still intact, but under threat from various activities in the nearby areas and also from other competing land uses, e.g. logging.
- (iv) The area lies within one of New Guinea's important centres of biological diversity and endemism, as shown by plants (van Welzen 1997), freshwater fish (Heads 2002) and other groups of fauna. The Sepik, Ramu and Markham rivers form a large basin, more or less separating the coastal Mountain Ranges to the North and the Central Mountain Cordillera in the south, all three represent important areas of endemism of New Guinea's biodiversity.
- (v) Conserving the April-Salumei area is conserving a significant portion of PNG's biological diversity.

The establishment of this and other potential REDD projects will save a significant portion of PNG's biological wealth from loss through logging and other follow-up land developments, e.g. agriculture (especially Palm Oil). This development option for the April-Salumei Area has clear and compelling biodiversity benefits, compared to other options.

The area qualifies as a High Conservation Value Forest (HCVF), characterized by its high biodiversity and endemism, and also by the fact that it is home to a number of species of fauna and flora that are listed in either the IUCN Red List or in the CITES Appendices (I, II & III).

As discussed in G 1.7, of the species listed in Table 3, six species of birds are listed in Appendix II of CITES and one species in Appendix I (Palm Cockatoo: *Proposciger aterrinus*). For plants, all the Orchidaceae species are listed in Appendix II, while the genus *Paphiopedilum* are listed in Appendix I. One of the most spectacular New Guinea orchids is the Sepik Blue (*Dendrobium lasianthera*), though not endemic it is quite common along the Sepik River.

Another economically important plant present in the area, which was recently listed in CITES Appendix II, is the Eaglewood or Agarwood producing tree *Gyrinops ledermanii*. From about the mid 1990s PNG joined other Asian countries as a significant producer and exporter of Eaglewood, with most of the wood initially coming from the two Sepik Provinces. The Hunstein Range was initially one of the main Eaglewood

producing areas. The listing of the above species of flora and fauna certainly elevates the area as a high conservation priority, thus adding to the net positive biodiversity impacts of the proposed project. Further justifications for priority conservation of this area are discussed in G 1.7 – Current Biodiversity within the Project Zone.

The baseline scenario “without project” is not difficult to imagine, as the evidence of logging impacts can be seen throughout the country. In some Provinces e.g. West New Britain, West Sepik, Morobe, Gulf, Western where large areas of forests have been logged with promises of improved living standards and infrastructural developments, the reality is that all that is left after the timber has been extracted is misery, poorer living standards (very often worse than pre-logging days), degraded environment and loss of biodiversity. For comparison, we don't need to look far, just over the border to the West Sepik Province where large areas of pristine forest were trashed by logging with part of this being converted to Palm Oil plantations. The Bewani Mountains were known for high species diversity and endemism of certain groups of flora and fauna, currently that is now mostly lost owing to habitat loss or fragmentation. In fact for Palms (Family Arecaceae), the Bewani and surrounding lowland areas were well known as New Guinea's centre of palm diversity and endemism, we have now lost the opportunity to identify and scientifically name them, together with the ability to discover their potential uses to mankind and the environment.

Logging and mining activities have been known to be responsible for the greater percentage of accidental introduction of foreign invasive species. Unfortunately, the threat from introduced invasive species is unfortunately often over-looked or under-estimated in PNG. The Sepik flood-plain wetlands is quite a vulnerable ecosystem, and any introduction of invasive species can easily and quickly destabilize the wetland ecosystems, as recently experienced with the free-floating fern *Salvinia molesta*. Fortunately, the problem was contained through the use of biological control. Logging machinery has been responsible for introducing many invasive plant species, and should logging become the preferred option for the area, introduction of new invasive species to the area are a sure possibility. Furthermore, the influx of people into the area could also lead to introduction of invasive species, unless strict controls are established from the outset.

The current trend of “Integrated Rural Development Projects”, where land is acquired for agricultural projects such as Oil Palm, with the timber being removed and exported by clear-felling and the planting of crops do not provide real success stories to showcase this scheme. Some

actually planted the crops, but abandoned the area soon after, while some never planted any agricultural crops at all. It is so obvious that all they wanted was the timber, using agricultural development only as a pretext to create a logging operation.

As described in the DOS large scale clearing of the land would obviously have the same effects as those mentioned above however in potentially greater impact.

Additional considerations include,

1. Loss of habitat.
2. Lower water quality due to silting caused by run-off.
3. Competition caused by the introduction of invasive species.
4. Potentially greater hunting pressure as increased population looks for food.

Developing a successful REDD project in the April-Salumei Area will certainly encourage other landowners to follow this development option for their forest resources, as it is clearly a better and more sustainable development option. The net result is that the landowners and government benefit economically, the forests and biodiversity is conserved, a real win-win situation for all.



G3. Project Design and Goals

G3.1 Major Climate, Community and Biodiversity Objectives

The major goal of the April Salumei Sustainable Forest Management Project is to prevent the commercial logging of the project area and to assist the development of sustainable projects for local communities by the development of infrastructure, accessibility and communications.

Other major objectives that will flow from this are:

Community

- Improved health standards within the area,
- Improved education opportunities and assistance with tertiary studies for students within the project area.
- Development of communications within the project area.
- Development of road and river infrastructure into the project zone to allow the movement of goods and services,
- Creation of employment within the project zone by utilizing the local stewards.
- The creation of long term community support for the conservation of the Forests and wildlife through ongoing educational programs developed for schools.
- Development of mechanisms through consultation to ensure the equitable and transparent distribution of benefits to all stakeholders.

Climate

- Long-term protection and conservation of the April Salumei Primary Rainforest area, leading to (based on current Tier 1 estimates. avoided emissions of 33,934,761 tonnes of CO₂ to the atmosphere over the project life,
- Utilisation of the commercial viability of carbon markets to generate income for landowners.

Biodiversity

- The preservation of the project area to contribute to species conservation in one of the ten most important biodiversity hotspots on earth.
- The Prevention of loss of habitat due to logging and assistance with the preservation of HCV species to maximize biodiversity values

- Development of sustainable projects with the goal of assuring long-term sustainable livelihoods, positive environmental and economic measures for the people in the East Sepik province and neighbouring areas.
- Investment of the proceeds of carbon projects back into alternative livelihood creation for people in the surrounding areas so that pressure on the forest with regard to indiscriminate commercial activity is removed
- Management of the conservation benefits of the project through the identification, training and employment of Climate, Community and Biodiversity Stewards from within the project zone. See Monitoring Plans.

G3.2 Major Project Activities

Following consultation in the villages the landowner company Hunstein Range Holdings has formulated the following priority projects for the FMA.

Below is an extract from their documentation on the projects.

Renovation of “White House” at Ambunti

“The building at Ambunti was earmarked to be used by the Landowner Company as the field operations management and coordination centre for the April Salumei FMA resource area. This will become the community centre for the project controls. The whole building needs urgent renovation to make the place useable and liveable. There is no electrical power generation unit; electrical wiring has been ripped out, no water supply and no telephone wiring or connections.

Once the centre is fully renovated, it will serve as the heart of field operations for the four Landowner Companies. HRHL will provide the daily management and coordination services to the four Landowner Companies. It is therefore critical that the renovation job is completed as soon as possible”.



Photo: White House – Ambunti

Resource Center Complex

“The idea of a Resource Centre stems from the need to establish a multipurpose venue where information is disseminated, stored, exchanged, skills and technology are demonstrated ready for adoption and distribution. It will become a communication centre where resource owners interact with the outside world for the enhancement of appropriate skills and technology.

The Resource Centre will comprise a building for meeting and accommodation for guests. At the start this will be of a semi-permanent material but in time will be of a more permanent material of an appropriate design to include a meeting room, storeroom, and an office & communication room. The set up of technologies such as V-sat communication, hydropower, solar power, wind power, model farms & fishing cultures as well as practical training for eco-tourism and landscaping with local fauna and flora are intended to be incorporated. These and many more ideas become the key features of the Resource Center”.

Note. Resource centres will be built in all 4 tribal areas so as to provide equal opportunity and recognition to all.

Upgrading of Education Levels – Human Resource Development

“During the field trip and upon talking to the communities, it became obvious that literacy levels at the village had not changed much over the last ten years or so. Many children are wandering about in the villages with little opportunity to continue their education. Quite a large proportion had dropped off after grade 6/ 7 with only a few having had the opportunity to progress to grades 10 or 12.

In an era when the communities of April Salumei Forest Resource have agreed to partake in the new concept of carbon trading, it is of paramount importance that literacy levels at this level are boosted. We would like to achieve minimum education levels of grade 12 for the majority of youths and children in rural villages. With this there is fair chance that the ongoing education relating to GHG, Climate Change mitigation and Carbon Sequestration will be taught to future generations in school. The community will continue to become more informed as they are educated to understand and translate the need to conserve their forest by utilizing eco-friendly technology to sustain their livelihood.

Tertiary scholarships will also be established to ensure our people are trained with the necessary skills and education to lead our area”.

Improvement in Health Facilities and Services

“Mortality rates in the resource area is high and is attributed to poor to nil health services. Small children, infants and mothers are the usual victims of poor health services. Services and health facilities to isolated areas are limited or nil due to lack of a health extension program from the government administration. The community must venture to maintain a healthy workforce within the resource area. A review of needs will be undertaken and a health project plan will be developed. This will be in consultation with the Landowner Companies proposed plans for the area. Cost estimates will include for the setting up of buildings in close proximity to the four resource centres and will be equipped with medical supplies”.

Improvement in Access to the project area – River and Land Transport

“Lack of mobility along the Sepik River and its tributaries and within the April Salumei FMA can cause hindrances to project programs and transfer of information. Landowner Company officials and technical specialists must be able to move throughout the project area with ease. It is especially vital at this stage in the process of setting up Resource Centres especially the movement of materials back and forth between work locations.

Each of the four Landowner companies needs equipping with a 23-foot dinghy, an outboard motor of 40 horse power capacity and appropriate road transport. Road transport will allow accessibility between Pagwi and other main centres to pick up supplies or deliver company personnel and resource owners for business commitments. A lot of work can be done more quickly and in a timely manner given this provision for mobility”.



Photo: Sepik River Transport

Establishment & Improvement of the Communication Network - V-Sat Technology

“The present communication network using the mobile system provided by B Mobile and Digicel is not effective in the resource area. Network coverage is either erratic or nonexistent in the resource area. Communication is a vital element for relaying information throughout the project area from within or outside. It was suggested by the Board of Directors for the four Landowner Companies that V-Sat communication

technology promoted by Telicom PNG will be an ideal setup for the entire resource area. A single set-up has five LAN lines and one internet line`

We believe it is imperative that the landowners determine the rate of change in their own environments. It is not the role of the project developer to impose their ideals on the people from the project area. The communities within the area must be the drivers of change. Following this philosophy we have developed methodologies and policy to encourage the stakeholders to seek funds for development in their areas.

We have three platforms of investment. Education, Health and Enterprise. The development of education and health projects into the area will be combined with the current government policies and plans. Enterprise which includes infrastructure will be driven largely from the landowners themselves.

Agriculture, Additional projects identified for consideration by the landowners include:

- Coco production
- Fishery management
- Eco tourism projects
- Sago production
- Community Housing including the upgrading of existing facilities

These projects will be submitted to the board of the project and will be based on predetermined assessment criteria. This will involve the approval from all relevant government departments to ensure consistency with their development plans and support from the community stewards from the project area.

Ambunti-Drekiker Road

A major project to be implemented is the building of the Ambunti-Drekiker road. This is a 161 Km road project that will connect the Sepik Highway to the villages in some of the remotest parts of the Ambunti-Drekiker area of East Sepik Province.

We believe this road will be vital to promote commercial trade opportunities for local producers, assisting them in transporting produce to market. Access to these markets will be a major factor in creating a sustainable environment for local communities.

Development of Curriculums for Schools

The project will also develop a curriculum for local schools in association with the education department. We believe it is important for schools to support traditional learning on biodiversity and climate change. Traditional values and ways of life should be learnt and respected as changes take place in the everyday life of the FMA.

Teaching the children of today about the projects aims and objectives will ensure that when they become the community leaders of tomorrow they will understand its value.

Updating of ILG's and Mapping Boundaries.

As discussed previously traditional landowners register their land through the formation of Incorporated landowner Groups (ILG's). The cost of updating the ILG's is most often too great for the individual ILG to bear (see average yearly incomes). As time passes ILG members change with births and deaths. A major project activity is to constantly update all ILG's and map their boundaries. We believe this will take 3 to 4 years to complete, however, once it is done it will provide what will be possibly the most robust database and understanding of traditional landownership in PNG.

10 Year Plan.

The local member Tony Aimo has developed a 10 year District plan. This is consistent with the PNG National Governments plans. It specifically outlines the requirements for Health and Education. The project foundation will fund the plan.

Project Stewards

A key component of ongoing community involvement with the project involves the identification, training and employment of project Stewards. As outlined in the monitoring plan, Community, Biodiversity and Climate Stewards will be employed. These stewards will be trained in the gathering of essential data to assist the ongoing monitoring of the project at the community level. This data will be collated and fed into the formal ongoing verification process every five years.

On an annual basis suitably qualified people will assist the respective stewards to undertake a complete review and analysis of their respective area.

These stewards will also receive training in conflict resolution and will utilise the Resource Centres that will be established as a work base.

Community Auxiliary Policing

The community auxiliary policing programme has gained momentum in recent years as police and community leaders search for more effective ways to promote public safety and to enhance the quality of life in their neighbourhoods and in PNG.

The Community auxiliary policing encompasses a variety of philosophical and practical approaches and are still evolving rapidly. Community policing strategies vary depending on the needs and responses of the communities involved; however, certain basic principles and considerations are common to all community policing efforts.

The project will trial the development of community auxiliary policing in the project area. More details on this initiative are available for inspection by the validator.

Papua New Guinea Vision 2050

Consistent with Papua New Guinea's Vision 2050 the following activities are linked to the performance criteria of the Community Stewards and Project Superintendents.

(The reference numbers following are relative to the actual Vision 2050)

1.17.2 Education

1.17.2.1 Free and Universal education for all school-age children from Elementary to Grade 12.

1.17.2.2 100% literacy for the adult population over 15 years of age. Literacy levels will also be monitored to ensure continuous improvement in the community.

1.17.2.17 Establish public-private partnerships in the delivering of education.

1.17.2.18 Introduce Environmental sustainability and climate change as school subjects into the National Curriculum. (We have already stated an objective of ours is to establish curriculum that represents the cultural and traditional values of the local communities.) Climate Change and Environmental Sustainability curriculum would also be established.

1.17.3 Health

1.17.3.1 Reduce HIV/AIDS prevalence from 1.28 percent of the population aged 15-49 to 0.1 percent.

1.17.3.2 Reduce tuberculosis prevalence from 51 per 100,000 to 10 per 100,000 of the population.

1.17.3.2 Reduce malaria deaths from 51 per 100,000 to 10 per 100,000 of the population.

Reduction of specific illness and infection such as these will become key measurements of the health Superintendent.

1.17.3.5 Establish one aid post per ward area.

1.17.3.6 Provide two health workers per ward area

1.17.3.7 Establish one basic health service centre with two doctors and support personnel per district;

These objectives have been integrated into our health outcomes.

1.17.3.8 Improve the terms and conditions of employment of health officers.

1.17.7.3 Infrastructure and Utilities

1.17.7.3.1 Increase the national road network from the current 25,000 km to complete road networks throughout Papua New Guinea.

1.17.7.3.4 Increase the availability of rural electrification from 15% to 100%

1.17.7.3.5 Increase access to clean water from 39% to 100%

1.17.7.3.6 Increase communication access from 10% to 100% of the population.

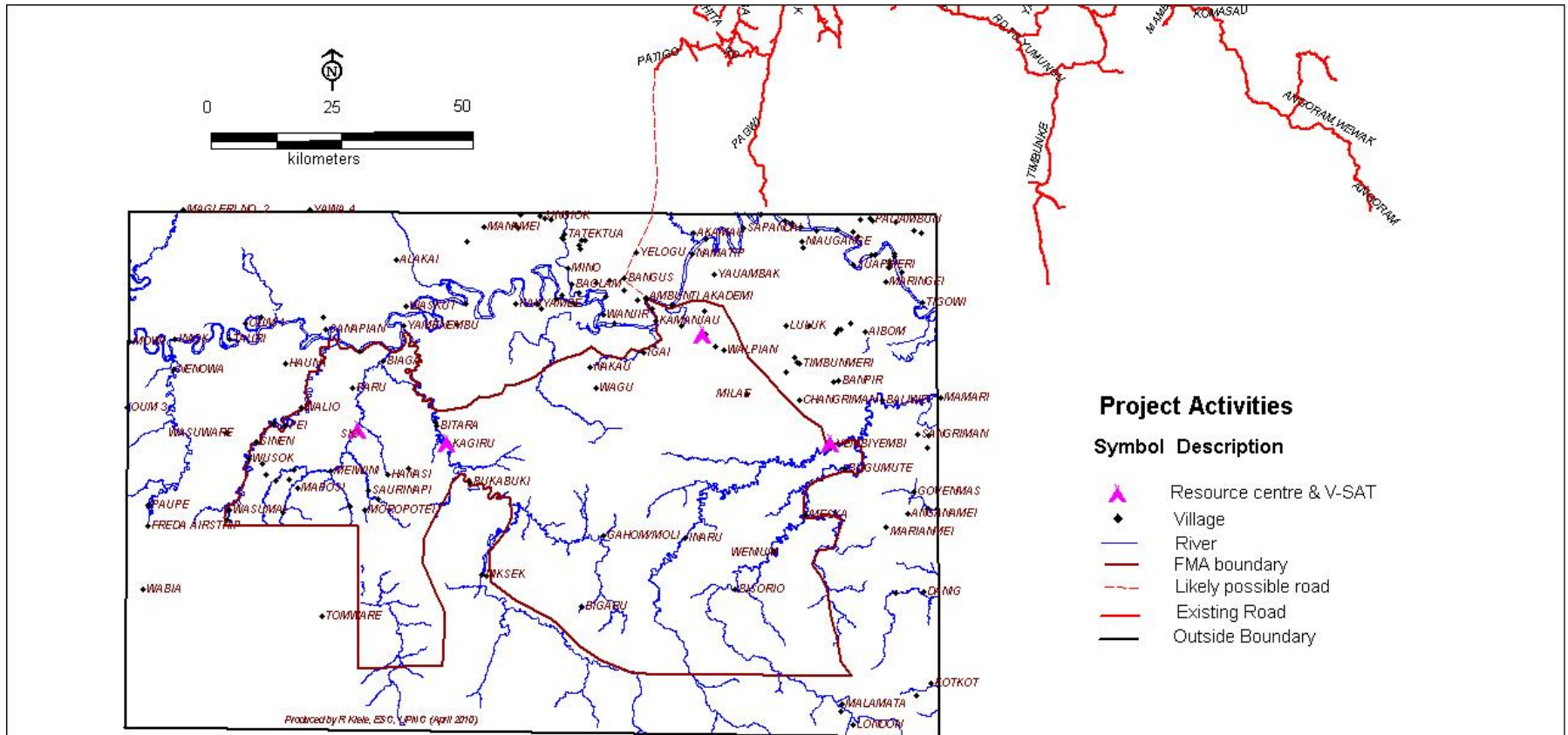
G3.3 Location of Project Activities

The April Salumei Forest Management area (FMA) is located within the district of Ambunti in the province of East Sepik. The location of the Central Resource Centre and Project Head Office will be the Whitehouse in Ambunti as this is the district centre.

The location of the additional four Resource Centres are planned to be in the villages of Yembi Yembi, Yerkai, Kaigaru and Sio.

Individual projects will be developed by the communities and assessed on a case by case basis. Given the project has not commenced and the applications for landowner projects has not been made available nor have any been assessed so we are unable to determine the location of the specific projects not yet approved at this stage. Mapping and monitoring of all activities will occur to support future verification requirements. Please refer to the District 10 year plan for further details.

Map 16. Project Activities.



G3.4 Time-frame and Project Accounting

Project proponents use a time-frame of 25 years to account for changes in carbon emissions between the baseline and project scenarios.

This time interval permits a reasonable estimation of medium term (25 years) of baseline and carbon accounting, and ensures the longevity of carbon benefits for a period of time that is relevant for climate change and atmospheric CO2 levels.

The starting date of the April Salumei Sustainable Forest Management Project is deemed to be the 22 May 2009. This is the date the agreement was signed by Hunstein Range Holdings.

End date for the crediting period: April 2029. This is the end date for the baseline projections used in calculating the carbon stocks and dynamics.

Throughout the crediting period there will be periodic certifications performed by an accredited CCB Standards certifying organisation. These certifications will verify that the carbon remaining in the Project is consistent with the values expected at the start of the Project. These certifications will be performed after obtaining the initial validation and every five years thereafter.

We have provided the Validator with a Project Activity Timeline that outlines these activities for the preceding five years. A revised timeline will be completed for the next 5 years prior verification.

G3.5 Project Risks and Mitigation Measures

Please refer to the following project Risk Register for specific risks identified specific to the project and the action to mitigate them.

| Risks | Classification | Consequence | Probability | Risk Rating | |
|---|--|--|---|-----------------------------|--|
| | | 4= Extreme 3= High 2 =Medium 1 =Low | 4 = Almost certain 3 = Likely 2 = Possible 1= Unlikely | (Consequence x Probability) | |
| | Community Climate Biodiversity General All | | | | |
| Lack of Political or Administrative Support | General | 3 | 1 | 3 | Project has demonstrated support with approvals from Local, District, Provincial and National Governments. Adaptive management plan ensures ongoing communication with these stakeholders. |
| Change of Government Policy | General | 3 | 1 | 3 | Project has approval from all landowners PNGFA who currently hold rights through FMA. Project will continue to liaise with relevant bodies. |
| Population growth | Community, Biodiversity and Climate | 2 | 2 | 4 | Project has committed to mapping all ILG boundaries and the creation of genealogy registers for each ILG. This will assist the local people in determining if usage rights exist. |

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| Agricultural pressure causing loss of habitat. | Biodiversity | 2 | 1 | 2 | Project has HCV and Environmental policies. Projects submitted for funding are required to complete an EIA to ensure biodiversity is maintained. |
| Insufficient funding for project | General | 4 | 1 | 4 | Budget has demonstrated there is sufficient for the project and the project activities. There is a significant surplus which is planned to be utilised in the creation of an endowment fund. |
| Inappropriate use of funds | General | 3 | 2 | 6 | Strict procedures will ensure the funds are used correctly. The management company will be subject to 90 day audits from the foundation and an independent project review board will approve project finding over a financial threshold. Additional a member of the landowner Company Hunstein Range Holdings will sit on the board of the Foundation. |
| Loss of carbon Stocks | Climate | 3 | 1 | 3 | Management of the carbon stock is paramount to the project. There is a significant buffer built into the project. Regular monitoring and patrols from the Climate Steward will ensure any loss of carbon stock is identified early and can be mitigated. Accessibility to |

| | | | | | |
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| | | | | | the area will require and illegal logging to pass through Ambunti and will be identified immediately. |
| ILG leadership struggle | Community | 2 | 3 | 6 | ILG's have a documented dispute process and a nominated person to deal with such a dispute. Traditional resolutions methods will be encouraged however the project has a complaints handling and dispute resolution policy that can also be utilised. |
| Law & order issues. | Community | 2 | 2 | 4 | Traditional methods have proved adequate in controlling community issues and disputes. The project is also considering a community policing initiative to train and employ local people in this additional role. |
| High expectations by landowners for cash and projects. | Community | 3 | 1 | 3 | The comprehensive awareness plan has discussed this with all stakeholders to manage their expectations. Ongoing consultation and adaptive management plan will continue to mitigate this. |

| | | | | | |
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| Not complying with international treaties and conventions. | General | 4 | 1 | 4 | The project adaptive management plan will ensure consultation continues with stakeholders. This along with ongoing awareness and education will minimise any potential risk. |
| Demand for business contracts from landowner companies. | General | 3 | 1 | 2 | The projects tender process and independent project review board will ensure the contractor has capacity to complete the contract. If the proponents are equal a preference will be given to local people but not to the detriment of the project. |
| Landowner Groups competing to get more for their areas & develop jealousy and competition. | | 2 | 2 | 4 | The approval of projects will be managed to ensure a fair representation between all groups. Health and Education needs will be addressed based on population requirements consistent with the Provincial and District Plans and PNG Vision 2050. |
| Wantok system and Landowner leaders demand their own to be employed. | Community | 2 | 3 | 6 | Please refer to the project employment selection process and Equal Opportunity Policy to ensure transparency in selection and the best person for the role. |

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| Lack of understanding of the protocols and standards by the landowners. | Community | 3 | 1 | 3 | The projects adaptive management plan will ensure ongoing consultation and education of all aspects of the project as it develops. Community Stewards will also play an active role in disseminating information to landowners. |
| Illegal activities to encroach into project area. | Community | 2 | 2 | 4 | All illegal activities will be reported to relevant authorities immediately they are identified in the project. |
| Lack of knowledge and skills in business administration by landowner leaders. | Community | 4 | 2 | 8 | Business training is planned within six months of the projects validation for the landowner leaders. |
| Natural disaster, Fire, Flood, Earthquake, Volcano etc. | Climate | 2 | 1 | 2 | History shows there is little occurrence of naturally occurring fire, volcano and earthquakes in the area, however seasonal flooding is regular. Education of fire methods will assist to mitigate their impact of landowner induced fires, such as fires for hunting in the area. |
| Staff turn over capacity of key personnel | General | 2 | 2 | 4 | Medium risk, but staff identified have project management experience and will be supported by technical staff and consultants. Improve staff packages |

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| Unsettled land tenure or boundary disputes | Community | 3 | 1 | 3 | Community consultation has indicated that this is not a problem. A project activity is to map the boundaries of each area and update the ILG's |
| Slow delivery of project into communities | | 3 | 3 | 9 | Awareness that planned development and projects will take time to be introduced correctly. A project calendar is planned to be distributed and communicated at the resource centres. |
| Participation of women and other minority groups. | Community | 2 | 2 | 4 | The project has an equal opportunity policy to ensure all groups are represented. In the role of steward's one man, women and youth must all be selected. This will ensure women are represented. Additionally gender awareness activities will be included in the ongoing consultation. |
| Maintenance of HCV | Bio-diversity | 4 | 1 | 4 | The project is committed to the preservation of HCV's. Please refer to the project HCV and Environmental awareness policy along with the community monitoring by the 12 planned Biodiversity Stewards or assistants. |

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| Financial benefits not shared equally. | General | 4 | 2 | 8 | The board of Hunstein Range Holdings has resolved all payments will be distributed equally to the ILG's based on the number of adults (over 16) in each ILG. |
| Group outside the area jealous | Community | 2 | 2 | 4 | Train and instruct the FROs to venture into eco-forestry businesses and employ a business development officer to assist establish small scale timber businesses. |
| Emissions from the project activities; | Climate | 3 | 1 | 3 | Identify and mitigate in line with project policies guidelines. Additional pool set aside (see G2.3) |
| Hunting of endangered or threatened species. | Biodiversity | 4 | 2 | 8 | Awareness and monitoring is conducted by project stewards on the importance of the endangered species. |
| Water and river systems pollution as a result of increase in population and migration. | Community | 4 | 1 | 4 | Forest stewards monitor regularly in relation to policy guidelines. |
| Illegal logging | Community and Climate | 2 | 2 | 4 | Forest stewards monitor regularly in relation to policy guidelines |
| Increase in demand for social services & equitable | General | 3 | 2 | 6 | Projects developed in line with community needs and priorities. |

| | | | | | |
|---|---------------|---|---|---|--|
| distribution. | | | | | |
| Clash with cultural beliefs, values, rules, taboos etc. | General | 4 | 1 | 4 | Project is developed in close consultation with communities without violation of traditional beliefs and values. |
| The definition of HCV areas are not clearly understood well by the landowners. | Bio-diversity | 3 | 1 | 3 | Ongoing awareness is conducted by project biodiversity stewards in line with policy guidelines on HCV and projects adaptive management plan. An ongoing monitoring process is established. |
| GMO plants & products introduction and cultivation. | Bio-diversity | 1 | 1 | 1 | No GMO plants or products will be introduced into the PIA. |
| Access to areas fundamental for meeting basic needs of the local community e.g. essential food, fodder, fuel, medicines or building materials. "Sago, the tree of | Community | 4 | 1 | 4 | Forest stewards monitor the activities in the project area. Traditional values and practices such as Sago collecting will not be affected. |

| | | | | | |
|--|---------------|---|---|---|---|
| life" | | | | | |
| Introduction of pest and diseases in the project area. | General | 3 | 2 | | Project has specific policies to protect against this. Monthly monitoring by community stewards will ensure any potential issues mitigated. |
| Population increase. | Community | 2 | 2 | 4 | Community stewards monitor increase or decrease of population and the possible effects this will have on the project. The establishment of genealogy records will assist the landowners in determining traditional land usage rights. |
| Invasive species. | Bio-diversity | 3 | 3 | 9 | Ongoing awareness and education to stakeholders will mitigate possible impact from invasive species. Biodiversity monitors will notify the project superintendent immediately the find invasive species. |
| Small scale clearing of land. | Community | 3 | 2 | 6 | Communities seek permission from forest steward for clarity |
| Degradation of forest. | Community | 3 | 2 | 6 | Community monitoring by Climate stewards including regular patrols will ensure the forest resource is protected. Access to the area is only available via the river and requires people to |

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| | | | | | transect Ambunti so identification will be easier. The project also has the approval of the PNGFA the legislative body responsible for managing the forest resource in PNG. |
| Regular burning of grasslands. | Community | 3 | 2 | 6 | Community awareness and information sessions on the dangers of fire will mitigate the effects of traditional burning. Forest stewards monitor and mitigate along policy guidelines |
| Commercial mining. | General | 3 | 2 | 6 | Commercial mining must comply with environmental and mining regulations. Additional monitoring by community stewards will regularly check for and potential negative impacts. |

G3.6 Maintenance of High Conservation Values

As this is a forest conservation project, it is anticipated that there will be no negative impact on the high conservation values but rather a positive impact due to habitat protection. Nevertheless, the HCV will be monitored through the biodiversity impact monitoring plan and any negative impact will be resolved in an appropriate and timely matter.

The project will have 4 dedicated Biodiversity Stewards, each with two assistants, that have the responsibility to monitor the project on a daily basis and will report monthly. Any exceptions or activities that are found to have a negative impact on HCV's are required to be reported immediately.

An annual review will also be undertaken (see monitoring plans) by a suitably qualified expert.

The project seeks to ensure the maintenance of the cultural HCV areas by supporting traditional forest-dependent lifestyles through (1) clarifying the land-tenure and stewardship of the local communities over the forest they have been living in for centuries, and (2) by supporting the community's livelihoods through the various measures that are being financed from the sale of carbon benefits.

Please refer to the companies High Conservation Value Policy for further information.

Additional to the HCV Policy the project finding requests exceeding a financial threshold will require an Environmental Impact Assessment and to adhere to the precautionary principle to ensure the projects HCV areas are protected.

G3.7 Measures Taken to Enhance Climate, Community, Biodiversity Benefits

As the pilot REDD project for Papua New Guinea special significance will be placed on this project and area.

Climate benefits are immediate in the removal of the threat of logging from the project area. The continued undisturbed growth of this pristine forest and ecosystem will generate essentially a world class preserved ecosystem.

As the landowners will be paid for the carbon sequestration benefits of their land the threat of logging will be removed. This will impact positively to remove the threat and improve biodiversity and communities. They will also be able to afford to continue their traditional lifestyle past the project timeline, further enhancing local sustainability.

Traditional areas of cultural significance and tribal customs will be maintained as the need for people to move from the area to find work and to attend schooling will also be reduced.

Underpinning the project's design is the aim to provide the infrastructure to allow and assist with the development of sustainable enterprise within the project zone. This enterprise coupled with the development of infrastructure will allow movement of goods and services for trade and sale to take place, further assisting the local people to derive an income.

PNG is the most bio-diverse island in the world. The removal of the potential loss of habitat through logging will obviously produce significant benefits to the areas unique biodiversity.

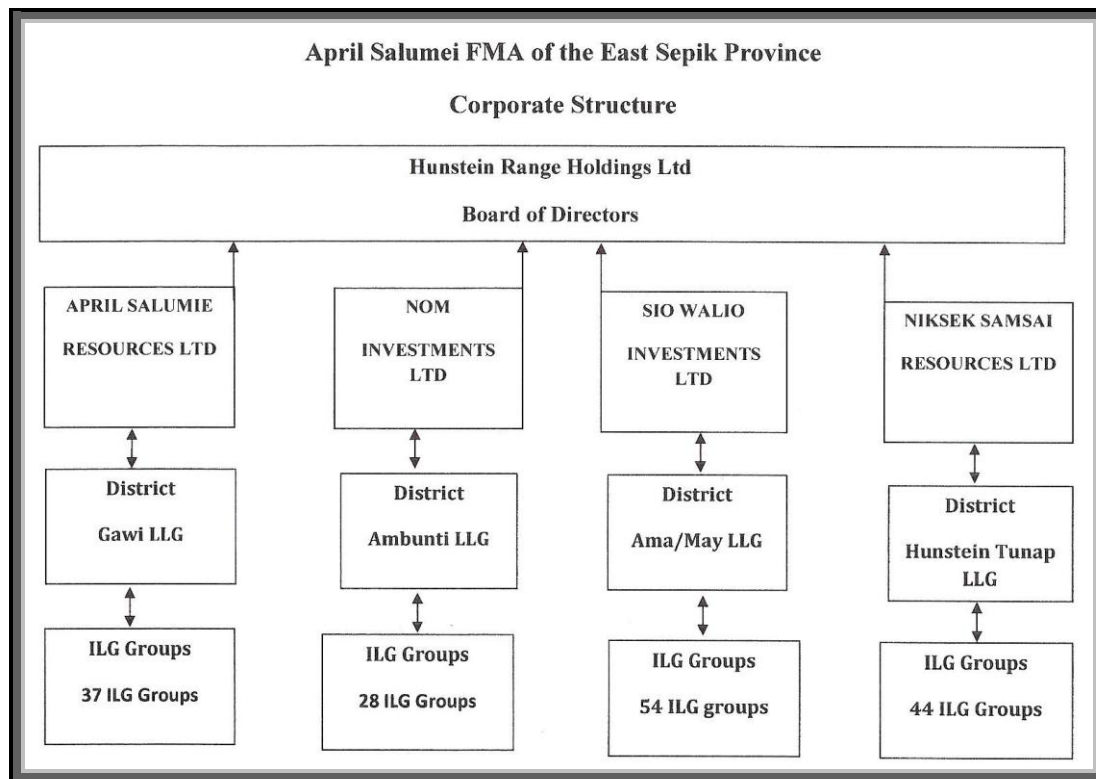
The net climate impact of the project is the net change in carbon stocks plus net change in non-CO2 GHGs where appropriate, minus any other GHG emissions resulting from project activities ,minus any likely project related unmitigated negative offsite climate impacts. The project will contribute net positive climate impact; due to the combination of avoided deforestation on the one hand and an additional timber plantation on the other. The timber plantation will prevent additional leakage and guarantees through sustainable management the supply of the same amount of logs that would have been logged within the project area

The PNG Forest Authority New Forestry and Climate Change Framework 2009-2015 includes important adaptation policies and outputs for two reasons; firstly because of their vulnerability and secondly because of their potential to help reduce the vulnerability of society to climate change. Many socioeconomic sectors (e.g. hydropower or drinking water) are highly vulnerable to climate change and dependent on forest ecosystem services. Thus, an option to help maintain these sectors is the conservation and adaptive management of forests providing relevant ecosystem services. The new policy framework which embraces adaptation polices will make these important linkages with forestry and

adaptation sectors such as water, energy, health and education in terms of research and training and capacity building for communities.

G3.8 Stakeholder Involvement

The April – Salumei FMA area has 163 Incorporated Land Groups (ILG)s that come under an umbrella landowner company, Hunstein Range Holdings Ltd. Under this are four landowner companies; April Salumei Investments Ltd, Sio Walio Investments Ltd, Nom Investments Ltd and Niksek Samsai Resources Ltd. They represent ILGs from the Gawi, Ambunti, Ama/May and Hunstein Tunap LLG areas. Tack Realty (2004) stated that 30 ILG groups from the April River LLG refused to sign during the structuring of the FMA. Those thirty ILG’s have now signed the agreement as an individual ILG and have given consent to Niksek Samsai to act on their behalf in respect to the project.



Hunstein Range Holdings Limited operates as the representative holding company with the chairman from each of the four ILG groups sitting on the board of Hunstein Range Holdings Limited. The office of Hunstein Range Holdings is at PO Box 879, Port Moresby 121, National Capital District, Papua New Guinea, its Company Number is: 1-22140.

During the extensive awareness and consultation program a number of activities were implemented to invite comments and input from stakeholders.

These include;

- Initial discussions of potential project by HRH to Office Climate Change (OCC)
- Initial discussions between HRH OCC and prospective developer.
- Public Notice of initial Meeting – April 30 2009
- Public awareness meetings held in Wewak, Yarak, Wagu and Bugabugi - May 2009
- Community Meetings including, District Administrator, East Sepik Council of Women, Local Level Government officers, HELP Resources a local NGO and various faith based organisations in October 2009,
- Individual signing of consent with 163 individual ILG's in English and Pidgeon.
- Planning meeting with Landowner Company Chairman to identify priority projects and discuss project structure – November 2009 to January 2010.
- Landowner Company and ILG Chairman meetings held in the villages Jan 2010
- HRH Executive meeting in Wewak to finalise priority projects – Jan 2010.
- Further awareness in local villages from project developer to discuss projects and provide additional awareness.
- Per-assessment with SCS - March 2010
- Further Individual awareness by Landowner Company Chairman April 2010.
- Final awareness and compensation agreement to be completed in June 2010. This includes the distribution of a project booklet to all ILG's.

Once the project receives validation each of the 4 landowner companies will have a Community Steward, Biodiversity Steward and Climate Steward (with their assistants) trained and employed by the project to monitor and report the respective project data and activities to their landowner group. This will ensure the continued involvement of the community with regard to the project and a regular (quarterly) meeting in each community will report on the project activities and will be held by these stewards.

Landowners are encouraged to apply for funding to support the development of sustainable enterprises within the project zone. These

applications are assessed (please refer to the project assessment policy) and funding made available if the project is approved by the board.

All stakeholders including community groups and individuals are eligible for the enterprise funding opportunity.

Please refer to the Project Flowchart in Section G4 for further information.

The developer believes this representation at a local level and the direct responsibility of the Community Steward to monitor community involvement will ensure the interests and rights of all individuals within the project area and zone will be represented in an ongoing capacity with annual and quarterly reviews.

More qualified Health, Education and Enterprise Superintendents will be employed to link the project with government and provide specialist advice and experience in relation to the delivery of the project objectives.

Governance, decision making and mediation or conflict resolution at the village and community level in Papua New Guinea is greatly influenced by firstly the clan where the chief will mediate in this matter. If a consensus is not researched, then this will be referred to a village court where there are peace officers and a magistrate to resolve this. Failing that, the ward councillor through the ILG process can arbitrate in this dispute. However, if that is not to the favour of all parties, then the option is to refer the matter to the local and district courts under the Magisterial Services. In most cases, the latter option requires lawyers for all parties and the financial resources to engage lawyers often do not allow the disputing parties to proceed.

Adaptive Management Plan – Summary

Meeting Schedule

Government Stakeholders

- *Provincial Government* – 6 Monthly update provided for the
- *District Government*– Quarterly meeting of the Joint District Budget Planning Committee. Projects are also required to be approved through this process.

- *Local Government*– Quarterly meeting with the LLG and Hunstein Range Holdings.

Local Stakeholders

- *Community Stewards* – Monthly report and revision of the report with the Project Superintendent.
- *Project Superintendent* – Monthly Report to the Project Manager
- *Project Manager* – Quarterly review with all Superintendents.
- *Annual Performance Reviews* – All Superintendents will undergo an annual performance review to ensure objectives are being met.

Note : Should a community steward record an illegal event the project superintendent will act immediately and address the issue and report to the project manager.

Additional distribution of information

- Newsletter - to be produced and distributed quarterly to all landowners. This will also be displayed at the resource centres once established.
- 6 Monthly update of projects to be published in the National press.
- Radio – Monthly update on the local NBC network.

All meeting minutes are documented and sent to the Project Manager.

Meeting outcomes are reviewed during the quarterly review with the project superintendent.

A document control and review process will be followed to ensure actions and outcomes from these meetings are followed up.

As the selection and training of the project stewards commence there will be ongoing information sessions in the local communities to ensure the requirements of the CCB Standard and the project are being met. This is important as the population ages and there is a commitment to

commence the development of a curriculum for the schools to address the ongoing development of the project with youths.

G3.9 Publicizing the Public Comment Period

The Project Design Document will be posted on the CCBA website (<http://www.climate-standards.org>) and it will be open to comments from the public. The document will be also available to the public in hard copy during the public comment period, at our offices and will afford local stakeholders an opportunity to raise and address any issues.

The project management will attempt to solve all reasonable grievances raised, and provide a written response to grievances within 30 days. Grievances and project responses will be documented. Please refer to our Complaint and dispute resolution policy.

A media release was published on the Sunday 20th June. This was followed up by media releases in the national newspapers and public advertisements placed in the two national papers.

Following this the project was launched on the CCB website and our own web site.

Copies of the PDD were also made available to the Provincial offices in Wewak, the district office in Ambunti and the University of PNG Centre for Climate Change and Sustainable Development.

A final awareness trip was conducted in June with a copy of the PDD circulated to all stakeholders for comment.

G3.10 Conflict Resolution Tools

Conflicts identified at a community level will be reported to the community steward.

The community steward will have 14 days to resolve the conflict at the community level, firstly in discussion with the clan structure (see G3.8). If this dispute is not resolved to the satisfaction of the party or parties raising or involved in the dispute the individual ILG dispute mediation process is to be utilized. If this resolution is not acceptable the matter is referred to the project manager for determination.

All project stewards will be trained in conflict resolution.

For conflicts occurring in the project zone a written complaint must be received by the ASSFMPF. ASSFMPF will endeavour to respond to all

reasonable comments raised, and provide a written response to comments within 30 days. Comments and project responses will be documented.

Please refer to our Complaints Handling and Dispute Resolution Policy for further details.

All community stewards will continue to inform the community and other stakeholders of the Complaints Handling and Dispute Resolution Policy. A hard copy of all policies is available at the Resource Centres.

Additional to the abovementioned a Conflict of Interest Policy will assist in mitigating potential issues and all projects will need to be approved by the independent project review board to assist with mitigating and potential conflict.

G 3.11 Project Financial Support and Revenue

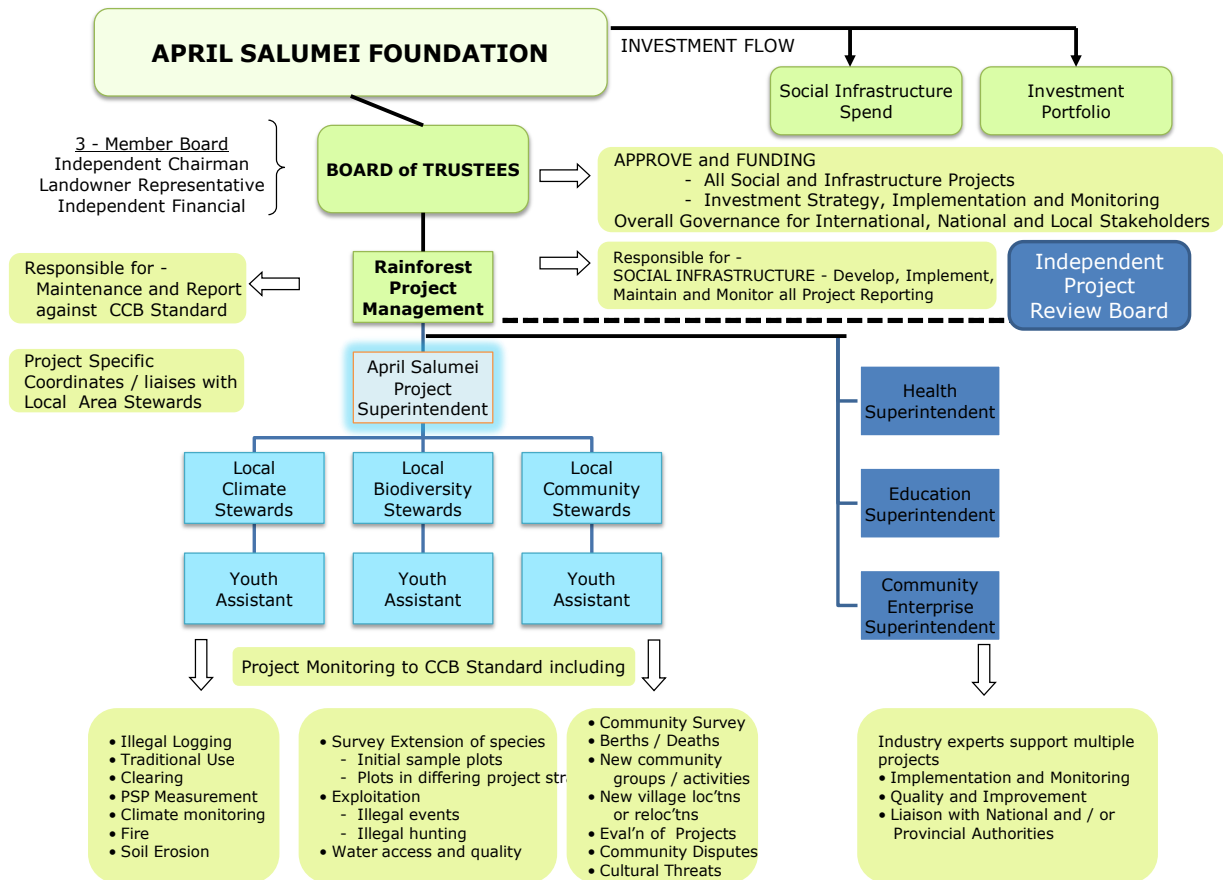
ASSFMPF is responsible for project implementation and performance. They will have the financial resources necessary to implement and manage this project.

Anticipated project costs include sample plot monitoring and data analysis, biodiversity sampling, periodic verification to an appropriate carbon accounting mechanism, and publication of the project. These costs will be covered by funds from the financial returns realised from the sale of carbon benefits generated by this project.

More information including revenue and expense forecasts are available for review by the verifier during the site visit.

Section G4. Management Capacity and Best Practices

Project Flowchart



G4.1 Project Proponents

April Salumei Foundation- Board of Trustees

The April Salome Foundation - Board of Trustees is the project proponent. The Foundation is responsible for the selection, and funding of the project and projects with the proceeds from carbon credit sales. Landowners will submit project proposals to the foundation for funding. Once approved the foundation will then provide the funds for the project

The Board of Trustees includes a representative from the Landowner Company.

Rainforest Project Management Limited (RPM) will support the April Salumei Foundation Board of Trustees to fulfil its responsibilities to the project.

RPM has a wide variety of “on the ground” relationships established through the ex involvement of its management in avoided deforestation projects in PNG.

RPM will provide a management structure and process to ensure the efficient implementation of the Foundations objectives and the projects approved by the foundation.

RPM will provide a diverse package of skills, through its team of employees, external consultants and external stakeholders including NGOs and Provincial and Federal representatives. The key responsibilities that it can manage on behalf of the April Salumei Foundation can be broken down into the following elements;

Key Roles:

- Provide experienced personnel to maintain and continuously report against CCB Standard for the Project Area
- Provide competent contractors and professionals to develop, implement and monitor the projects’ Social Infrastructure Projects.

Project Implementation Support:

- Establish the above noted management structure with sufficient experience, depth and local availability to deliver on all required outcomes.
- Create a reporting process for the foundation that fulfils `Best Practice` objectives.
- Appoint sub teams and establish meeting and reporting processes for:
 - The Human Resource Team which will focus on local stakeholder employment, worker rights, worker safety and workplace issues.
 - The Land Owner / Community Interface Team to focus on the desired projects, project tracking and community issues.
 - The Health , Education and Community Enterprise Teams to act as industry expert liaisons to monitor desired Best Practice initiatives against local community outcomes experienced during the implementation and management of the projects

- Establish an Annual Planning Meeting to schedule and monitor Board, Management Team and Management sub team meetings.
- Develop and maintain a comprehensive set of Policies and Procedures
- Establish a strong culture focused on Social Outcomes, Respect and Empathy and Shared Financial Outcomes as demonstrated in the following table

More information is available at our web site www.rainforestmanagementalliance.org and at the validator's request further commercial and confidential details on our Governance / Annual Meeting Planner Structure and our Policies and Procedures will be made available.

Landowner Representatives.

A key component of the project is the ongoing input and representation of the landowners. To achieve this following Community Interfaces will be implemented and developed.

Land Owner / Community Interface Team

Appointment of a minimum of 6 staff as each major population centre including Climate Steward, Climate Assistant, Biodiversity Steward, Biodiversity Assistant, Community Steward, Community Assistant
Regular Community meetings will be attended by RPM Superintendents of Health, Education and Community Enterprise

The local Climate, Biodiversity and Community Stewards will be employed to represent individual cultural and language groups. Each steward will also have a member from the community youth group to assist them.

The employment of local people will assist in ensuring local commitment and continuous feedback of the project activities to the community.

The stewards will also serve as representative members of the community along with the Landowner Company Chairman. This will help to ensure there are representative views from the greater community when project decisions are made.

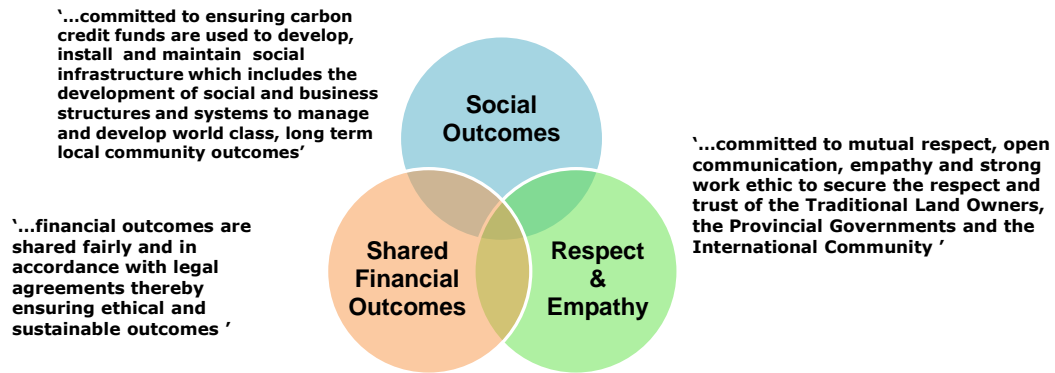
All project applications are to be endorsed by the Stewards to ensure that representative views of the community are reflected in the projects to be developed.

Independent Project Review Board comprising experienced and credible individuals will be established to review funding proposals for landowner projects.

The independent board will also be involved in the dispute handling process (see Complaints Handling and Dispute Resolution Policy).

Please refer to the Independent Review Board’s Charter and the Project finding policy for further information.

Rainforest Management’s philosophy is focused on three core principals; Social Outcomes, Respect & Empathy and Shared Financial Outcomes.



Rainforest Management’s sources of competitive advantage

Social Outcomes

- ✓ Established strong relationships with political factions of PNG, NGO’s and Traditional Owners to develop a reputation as developer of choice
- ✓ Prepared to invest in the development of people and systems necessary for the delivery of sustainable social outcomes

Respect and Empathy

- ✓ Established strong relationships with political factions of PNG, NGO’s and Traditional Owners to develop a reputation as developer of choice
- ✓ Close knit management team with Developing Country experience and success in start up companies

Shared Financial Outcomes

- ✓ Established legal agreements and financial models that clearly delineate shared financial outcomes
- ✓ Established alignment of interest between Land Owners, Political Authorities and Project Manager through the development of an endowment style financial structure

G4.2 Technical and Management Expertise

Rainforest Project Management

Rainforest Project Management Limited (RPM) is the project developer. RPM is responsible for assisting the ASSFMPF with the commercialization of this project and other potential projects in the future in the area of

afforestation, reforestation & avoided deforestation and sustainable development projects in many priority areas of the government and communities in Papua New Guinea.

RPM, with endorsement by the Government of Papua New Guinea (OCCES and Prime Minister and NEC Department), supports this REDD project's implementation and related activities including monitoring, verification and reporting of carbon and sustainable development monitoring in the country.

The RPM has coordinated the compiling of the agreements and policies with assistance and input from a number of PNG experts, local communities, private sectors and non government organizations.

We believe that by utilizing the services of the best available institutions, human resources, individuals and seeking advice from local communities, we are able to develop and present a management team that will embrace the skills and knowledge of some of the best people available in PNG in addressing this REDD project. We have specifically utilized PNG people wherever possible as the country is unique and no one knows its climate, environment, cultures, traditions, and languages better than its own people.

It is also important for us to recognize and acknowledge the commitment these people have made to see the April Salumei Rainforest Preservation Project developed as the first pilot project for PNG employing the CCB methodology and supporting techniques.

The following are some of the institutions and individuals who have contributed towards the completion of this April Salumei Rainforest Preservation Project.



Photo: April Salumei Area

Management Team

i) Stephen Hooper, the Chief Executive Officer of RPM, has researched and worked for the last two years in developing an in-depth understanding of the social and business issues that surround an Avoided Deforestation Project in PNG. His previous experience has seen him working in Senior Management roles which have provided him with the experience and insight to lead this diverse and complex project.

ii) Philip Moya, the Operations Officer, has 27 years experience with local and provincial government management and public service in PNG. His experience over the last 4 years as Community Development Officer. Philip holds a Master of Science (MSc) in Education Development Studies from the University of Wolverhampton.

iii) Peter Wood, the Chief Financial Officer, has previous experience in start up companies both in SE Asia and Australia. He brings 30 years of financial and operational experience to RPM as well as extensive experience in risk and mitigation strategies for local and offshore infrastructure projects.

Technical Support Team

It is with great pride we acknowledge the commitment of the following organisations and people who have helped make the April Salumei Rainforest Preservation Project the first such project for PNG.

As the pilot project these entities and individuals will continue to work with the project developer to provide technical and policy expertise and together the project will assist in the enhancement and building capacity for Papua New Guinea in realising the country's new plan, The PNG Vision 2050.

As discussed earlier as this capacity is developed the project will apply for validation firstly to a Tier 2 then to a Tier 3 standard. It is expected that the country's technical and human resource capacity will have developed tremendously.

It is the aim of the project developer to utilise PNG experts in all areas possible. There is also discussions taking place with international institutions to assist with building capacity and sharing the learning that will come from this pilot project.

The following are some of the PNG institutions and expertise who have contributed in the technical and policy advice:

University of Papua New Guinea – School of Natural and Physical Sciences

The technical team from the University is lead and coordinated by;

- Professor Chalapan Kaluwin -. Prof Kaluwin has developed extensive experiences and expertise in the areas of science of atmosphere, oceans, terrestrial, environment and strong management skills. This included climate change, variability, environmental changes and management and policy development. Has been involved with Climate change, Biodiversity, Desertification negotiations and technical advisor for 26 Pacific countries and PNG for 20 years. Advisor to the PNG Government on the development of the PNG Vision 2050 and especially Pillar 5: Climate Change and Environmental Sustainability. He has strong international and regional skills on negotiations on multilateral agreements.
- Dr Oisa Gideon -A forestry expertise who has worked extensively as a researcher in the areas of biology and terrestrial sciences. Long term expert and advisor to the PNG Government on Environment, forestry and biodiversity for more than 20 years

and worked in the PNG Forestry Institute. The head of the PNG Centre for Biodiversity and Conservation

- Dr Gae Gowae – A forestry expert to the government and private sector and travelled extensively in forestry and environmental in the region and globally. Special interest in the area of sustainable development and natural resources in the country. Greater network skills with NGOs and international donors.
- Dr John Duguman - Extensive experience in geology, Environment and with management planning expertise. Worked with government and private sector in environment and especially in the Social, EIA/EIS and mining and biodiversity. ,
- Ms Regina Kiele - Worked in Australia and PNG government and especially with the Department of Agriculture and Livestock and specialise in GIS RS and Mapping and monitoring. Continues to develop GIS RS certificates for private and government twice a year. Supervised more than 10 honours students on GIS RS
- Mr Peter Samuel – An experience physical geographer and teacher with high schools. Last 5 years extensive in Disaster and Risking Management and planning for provincial governments.
- Ms Urusula Kolkolo – The coordinator for Centre for Climate Change and Sustainable Development. Extensive experts in the areas of marine and terrestrial management. Advisor to PNG government on fisheries and marine biodiversity. Strong interest in adaptation and risk management on climate change and resilience approaches.
- Mr Jason Alonk –Tutor with the Discipline of Environmental Science and Geographhy. Completed his Honours on Forestry and REDD. Continue to research into social mapping in forestry sectors.
- Mr Freddy Alei - Honours Student on GIS RS-Mining and Forestry. Special interest in mining and watershed management in the country.
- Mr Ravu Geno - Camera Man and Audio Video Specialist. Productions of movies and Videos for environment and

livelihoods of the country. Filmed extensively in country and did consultancy for the PNG government.

- Associate Professor - Eric Kwa - Law specialist with the of the School of Law with the University of PNG. Biodiversity and Law specialist and provides legal advise to government and communities on multilateral agreements such UNFCCC, UN Biodiversity and UN Desertification. Legal advisor to the PNG Vision 2050. Has attended to many international environmental agreements.

Papua New Guinea Forest Research Institute

- Professor Simon Saulei – Expert in tropical Forestry and REDD management in the country. The Director of the PNG Forestry Institute and manages 45 staff on all types of forestry and management and policy. Continues to provide advise to the PNG Government on Forestry and REDD. Travel extensively as an advisor on technical matters related to forestry and biological studies. Has produced more than 50 publications.

University of Technology

- Professor Pal Lal – The head of the University of Technology in Lae, Morobe Province and specialised in GISRS and Land Management studies. Worked with Indian Government on the national GISRS for more than 15 years. Advisor to the PNG Government on GISRS application and policy

Prime Minister and NEC Department (Office of Climate Change and Development)

- Mr Noel Mobiha – The PNG Government Satellite and communication specialist and advisor. Expert on space science and communication and information. Has travelled extensively in the country and internationally. Contributed to the PNG Vision 2050 on the ICT policy and its communications.
- Mr Max Yalon - IT specialist and coordinates the PM/NEC Department communication and Data management.
- Mr Joe Pokana – The Director for Mitigation for the Office of Climate Change and Development. A Forestry and REDD specialist who has contributed to the REDD model and policy development. Continues to be involved in UN negotiations and especially on REDD.

- Mr John Mosoro – The Director of Adaptation with the Office of Climate Change and Development. Environment and policy advisor and has worked in the Ministry for Environment and Conservation for more than 20 years. In addition mining and water management expert.

Papua New Guinea Weather Office

- Mr Samuel Maiha – Head of the PNG Weather Office and known as a Meteorologist. Has had wide range of skills with international organisations such World Meteorology Organisation, Intergovernmental Panel on Climate Change (WG 1 and 2) and regional institutions. The institution has a lot of valuable data with long history.
- Mr Benjamin Malai – Continue to specialise in the area of Climatology and weather forecaster for the country to all clients. Post graduate experiences from India and Australia. Member of the PNG satellite and GISRS work.

Papua New Guinea Forest Authority

The Minister Hon. Belden Namah and his executive team have endorsed the project and assisted with information on the timber resource in the area.

PNG Office of Climate Change and Development

The PNG Government established the Office of Climate Change, Environmental Sustainability and Carbon Trade in January 2007 and later changed its name to Office of Climate Change and Environmental Sustainability (OCCES) in January 2008 and is now known as the office Climate Change and Development. Under the Office mandate it is charged as the Designated National Authority (DNA).

Partners with Melanesia

Partners with Melanesia (PWM) are a national “Not for Profit” (NGO) focused on conservation and community development programmes operating in Papua New Guinea.

Resumes and capability statements for the above mentioned are available to be inspected by the validator from the people listed above.

G4.3 Capacity Building

We believe that building local capacity achieves not only stronger project outcomes but is also a fundamental aspect of the Community acceptance and belief in the overall project.

Our philosophy is not to simply develop a training regime but to ensure that we offer career pathways for our staff. Our education objectives therefore are not simply focused on improvement of skills, but to reduce staff turnover by training staff on a dynamic and continual improvement basis in order that they want to fully contribute, thereby feeling valued which in turn endows a sense of belonging.

In terms of the specific aspects of our training program we propose to assist in the development of individuals based both in Port Moresby and at local communities. Our internal education programs will target skills required for three broad areas of staff engagement:

- Project Superintendent
- Standards – Local Measuring and Monitoring
- Projects – Local management and delivery

We will develop a complete range of courses for each of these areas. Courses will be mandatory for all staff and will vary depending on the staff members job responsibilities.

A broad outline of proposed courses together with the frequency of attendance is noted below.

All staff

- Corporate Induction including ethics and employee conduct (every two years)
- Basic First Aid (every two years)
- Principles of Reporting (every two years)
- Use of Technology (annual)

Project Specific Staff

- Health - Intermediate and Advance First Aid (annual)
- Education – Train the Trainer (annual)
- Community Enterprise - Project and People Management (annual)
- More advanced courses will be selected from local colleges and universities (periodic)

Standard Monitoring Staff

- Climate Monitoring – Technology, data collection and reporting (annual)
- Biodiversity Monitoring – Technology, data collection and reporting (annual)
- Community Monitoring – Technology, data collection and reporting (annual)

Project Superintendent Staff

- Courses to be selected from local colleges and universities (periodic)

We have identified building capacity of local Project Specific skills Courses (Health, Education and Community Enterprise) as the most challenging. The first step in our plan will be to survey and better understand current local capabilities. This will be achieved through a series of visits by the Health, Education and Community Enterprise Superintendents. Based on the information collected, we will then tailor our training programs to meet the challenge of providing improved services in individual local areas. During this phase we will work closely with the government to ensure training and development options are matched to the government initiatives.

We are very aware of the commonly experienced problem of staff turnover due to younger enthusiastic staff moving on to other opportunities afforded to them with their new found skills packages as a result of improved training and work experience. We believe that the need to keep the students fully focused by involving them in a continuous dynamically based skills enhancement program is paramount and will form a logical base from which individuals may progress to more complex and demanding roles in the Health, Education and Community Enterprise. This will form a major part of our overarching Career Pathways Philosophy noted above.

Please also refer to our policy documentation file and specifically the “Equal Opportunity Policy”.

G4.4 Equal Employment Opportunities

The April Salumei project will provide employment opportunities for all members of the community. Please refer to EEO policy.

The Second Goal and Principle of the Papua New Guinea Constitution (1975) called for an equal opportunity to participate in and benefit from any development in the country. Likewise the Timber Permit Conditions in the country called for equal participation and benefit from any forest development project, and that the forest owners should be given equal opportunity to participate in the development of their forest resources through employment and any business spin offs.

People within the project area, East Sepik Province and Papua New Guinea, and externally will be provided equal employment opportunities in any project activities based on the level of skills and qualifications attained.

A specific role of the community steward will be to annually survey all community groups to ensure they have been represented and are aware of the ongoing activities of the project. This will ensure local communities are fully aware of any opportunities for employment.

The Project Developer and Project Superintendent will encourage the Community Steward in each area to be selected from the local "Women's Group" and role specific training will be provided if an employee is identified as having a skill deficiency in a particular area. It is an aim of the project to ensure all groups are represented with equal opportunity to participate.

Please refer to the projects;

- Equal Employment Opportunity Policy
- Recruitment of Staff and Hiring Policy

G4.5 Employment Laws

Employment within any of the project activities will be governed under the Papua New Employment Act No. 54 of 1998 (Consolidated up to 31 March 2001) and the Employment of Non-Citizens Act 2007 (No. 10 of 2007). These Acts set out employment policies and regulations required for compliance by the Department of Labor and Employment.

Appropriate acts in relation to Workers Health & Safety in PNG are the Industrial Safety and Welfare Act (Chapter 175) 1961, followed by the Industrial Safety and Welfare Regulation (Chapter 175) of 1965.

A comprehensive Employment Induction Booklet has been completed and this along with the project policy documents will ensure the project meets and exceeds the local laws and regulations.

All employees will be given a copy of the Employee Induction Booklet following their induction and copies of all policies will be available at the individual resource centres.

G4.6 Employee Safety

Please refer to the Employee Induction Booklet and Policy Documents in particular our “Health and Safety” policy for further details.

Regular Risk assessments are undertaken on a daily and weekly basis dependent on the activity planned.

Please refer to the Health and Safety Policy that is communicated in the Induction handbook for further clarification.

A copy of the induction booklet is given to all employees and copies of the policies will be available at each resource centre.

G4.7 Financial Health of the Implementing Organizations

We believe the resources off the Rainforest Project Management and the Project Foundation is sufficient to fully support the development of the project.

Commercial details of this capability will be provided to the Validator in the form of a 12 month budget for the project and its activities.

Section G5. Legal Status and Property Rights

G5.1 Local Laws and Regulations

As discussed previously the forest resource in Papua New Guinea is owned by the landowners. The resource is however managed by the PNG National Forest Authority.

The fourth goal of the PNG constitution is the cornerstone for forest policies. The constitution states “to ensure that the forest resources of the country are used and replenished for the collective benefit of all Papua New Guinean now and for future generations”⁵⁵

Multilateral Agreements

The Papua New Guinea Government is committed to a number of important multilateral agreements, which include:

A. Conventions.

1. Convention on Wetlands of International Importance Especially as Waterfowl Habitat (Ramsar-1971)
2. Convention for the Protection of the World Cultural and Natural Heritage (World Heritage 1972)
3. Convention on International Trade in Endangered Species of Wild Funa and Flora (CITIES 1973)
4. Convention on the Conservation of Migratory Species of Wild Animals (Bonn-1979)
5. Vienna Convention for the protection of the Ozone Layer (1985)
6. Basel Convention on the Control of Trans boundary Movement of Hazardous Waste and their Disposal (1989)
7. Convention on Biological Diversity (1992)
8. United Nations Framework Convention on Climate Change (1992)
9. Kyoto Protocol to the UNFCCC (1992)
10. International Tropical Timber Agreement (1994)
11. United Nations Declaration on the Rights of Indigenous Peoples.
12. United Nations Convention to Combat Desertification (UNDDC)

B. Instruments

⁵⁵ PNGNFA, Forestry and Climate Change Framework for Action 2009-2015. (Nov 2009)

13. Stockholm Declaration of the United Nations Conference on Human Environment (1972)
14. Rio Declaration on Environment and Development (1992)
15. Forest Principles- UNCED (1992)
16. Declaration on Barbados (1994)
17. Washington Declaration on Protection of the Marine Environment from Land Based Activities (1995)

C. Regional Environmental Agreement and Instruments

18. Convention on Conservation of Nature in the South Pacific Region (1976)
19. Convention for the Protection of the Natural Resources and Environment of the South Pacific Region and related Protocols (SPREP- 1986)

PNG National Forestry Authority – Forestry Laws

The Papua New Guinea Forest Authority (PNGFA) was established in 1993, replacing the former Department of Forests, and unifying all Provincial Forest Divisions and the Forest Industries Council. The PNGFA mission statement is in harmony with the country's constitution, particularly the 4th Goal which aims to “promote the management and wise utilization of the forest resources of Papua New Guinea as a renewable asset for the well- being of present and future generations”.

A new National Forest Policy was formulated in 1990 (the Forestry Act 1991 was passed by Parliament in July 1991, and the Forest Policy was approved in September 1991, paving way for the establishment of PNG NFA in 1993) to remedy the shortcomings of the previous policy of 1979 to place emphasis on sustainable forest management principles in the forestry sector. Some of the notable achievements since implementation of this policy include:

1. A new Forestry Act was enacted by Parliament replacing three previous legislations on forestry matters that came into force in June 1992. Further amendment to the Act has been made to various sections of the Act – 1993, 1996, 2000 and 2005.
2. The 1996 Forestry Regulation which provides the legal status for the implementation of many of the requirements specified under the Forestry Act

3. Establishment and operation of the PNG Forest Authority that came into effect in October 1993
4. Formulation and approval of the National Forest Development Guidelines in 1993
5. Establishment of the National Forest Board
6. Establishment of the Provincial Forest Management Committees
7. Forest Management Agreements for acquiring timber rights from customary owners superseding the previous Timber Rights Purchase and Local Forest Declaration Methods of acquiring timber rights from customary owners (the April Salumei Rainforest Preservation Project baseline projection is based on such an Agreement)
8. Drafting and finalizing the Manual for the Incorporation of Land Groups to identify legitimate landowners of forest resources
9. Drafting and finalizing the Logging Code of Practice which was supposed to control and monitor harvesting of the forest resource but in practice is not implemented widely
10. Engagement of Society General Surveillance (SGS), a Swiss Surveillance Company to monitor log export operations, thus preventing undervaluing, misidentification of species and pricing and avoidance of customs duties
11. Formulation, approval and implementation of a National Forest Plan. The plan serves as the guiding principle for orderly forest development in PNG

Other legislation to be considered and comply with include;

- Environmental Act (2000)
- Investment Promotion Act (1992)
- Provincial Health Authorities Act (2007)
- Industrial Relations Act (1962)
- Industrial Health Safety and Welfare Act (1962)
- Land Groups Incorporation Act (1974)
- Land Disputes Settlement Act (1975)
- Land Act (1996)
- Flora and Fauna Act (1968)

Further PNG Government development strategies include the recently completed “Papua New Guinea Vision 2050” that has a specific pillar, pillar 5, Environmental Sustainability and Climate Change”.

In addition, the PNG Development Strategic Plan 2010-2030 compliments the PNG Vision and assist the all sectors and provincial

policies to be aligned with these plans. The roll out is planned every 20 years.

The project complies with all relevant laws and regulations.

Documentation of this is available for inspection by the Validator.

G5.2 Documentation of legal approval

As discussed in G1.6 Hunstein Range Holdings commenced discussions with the then Office Climate Change and Environmental Sustainability. These initial meetings and the decision from the Office of the Prime Minister to establish the April Salumei as the pilot project for Papua New Guinea established a top down approach.

The project is based on a solid legal framework, to which the following letters and undertakings further support the project:

- Consultation letter of the landowners to the OCCES, in which they are asking for the support in the commercialization of the REDD project.
- Letter of OCCES to landowners accepting to support landowners to find ways to commercialize the VERs on the international carbon market.
- Letter of understanding between the project developer and the OCCES to cooperate in the development of this project as a VER project.
- Letter of notification to the Office of the Prime Minister informing it about the involvement of project developer.

The need for landowner consultation and awareness was addressed with comprehensive awareness campaigns (See G3.8) before a contract was signed between the project developer and Hunstein Range Holdings Limited as the landowner Company representing the areas 163 ILG's, whereby Hunstein Range Holdings transferred the rights to the carbon sequestered within the project area to the project developer. Following this a Joint Venture Agreement was also signed between the two parties.

(Please refer to G 1.6 for the rights of Landowner Companies and Incorporated Land Groups to enter into legal agreements.)

Additional to the legally binding agreement between the landowner company Hunstein Range Holdings Limited and the project developer

separate agreements/acknowledgements were signed with all 163 Incorporated Land Groups from the Project Area.

All documents are available for inspection by the validator.

G5.3 Free, Prior, and Informed Consent

Stakeholder consultations have been conducted and there is clear evidence that all parties are informed and have freely consented to the April Salumei FMA project as evidenced by the documentation listed in G3.8.

Consistent with the UN Rights of Indigenous people the landowners first sought a project developer. Following this a series of meetings documented below were held before agreements and were signed.

A copy of any document or video and photos of any of the below mentioned meetings are available for the validator at our companies offices. Please cite the reference number listed below.

Record of awareness and Community Consultation Meetings.

- April 30 2009 Public Notice of meeting – Invitation and outline of meeting
- May 2009 Awareness meetings held in Wewak, Yarak, Wagu and Bukabugi.
(There is a video tape available from the Wewak meeting)
- 22 May 2009 Signing of the Agreement between Project developer and HRHL.
- August 2009 Letter of Allegiance from landowner Companies to Project developer.
- Signing of individual acknowledgement/agreements with all 163 Incorporated Land Groups

Further awareness and consultation programs have also been held.

- Independent survey Nov 2010.
- January 2010 - Individual Landowner Company Meetings in the villages.
- Community Views document from Landowner Company HRH

- January 2010 HRH meeting in Wewak
- January Awareness in Villages
- March 2010 Pre- Assessment field visit.
- Further and final awareness planned for June 2010.

A full timeline and discovery of all documents is available from our offices. All meetings have been documented and all supporting documents are available for view by the validator.

Please refer to G3.8 and G5.2 for further information.

Every landowner in the area has signed a consent agreement with the developer on behalf of their respective Incorporated Land Group. This ensures all landowners have provided consent for the project on their land. Further to this the PNGFA who currently hold the rights to the project on behalf of the landowners (under the Forest Management Agreement) have consented in a letter from the Minister and supported by further meetings with the Managing Director and Board members of the PNGFA.

G5.4 Involuntary Relocations

No relocation of any people will result from this project.

G5.5 Illegal Activities

Illegal threats include,

- Drugs
- Illegal Logging
- Small Scale mining.
- Trade of endangered species.

The Project includes a formal community monitoring plan that will identify illegal activities such as commercial logging. All illegal activities would be reported to the relevant authorities.

The remoteness and tranquillity of the project area allows for illegal activities to readily visible as it would need to transect Ambunti before it gets into the area.

Landowners will be encouraged to develop and formalize their laws in relation to illegal activities and a Community Auxiliary Policing model will be considered.

G5.6 Carbon Rights

Under the PNG Constitution these ILG's (previously Clan groups) are recognised as the owners of the land. This was further acknowledged by the government when in forming the Forestry Management Agreement (FMA) it sought the consent from the ILG's for the project. (Refer to comments in G 1.6)

As also discussed in G1.6 and evidenced by the court case between HRH and the Government in relation to declaring a WMA without the consent of the landowners the landowners have the rights to the biodiversity on the said land owned by them.

The project area is currently a Forest Management Area (FMA). As such the landowners have transferred their rights in relation to the timber to the PNGFA for 50 years from the date they signed the agreement, 20 December 1996. The Forestry Minister has consented to the project.

Please note during the FMA process 30 ILG's refused to sign the FMA. These ILG's have now consented and have agreed to join with the remainder of the ILG's and come together for the project. A Position Paper from the Landowners involved is available for inspection by the validator.

All 163 ILG's (see structure below and G3.8) have confirmed in writing they have consented to the Hunstein Range Holdings Limited executing an agreement with the project developer.

Further to this the project has the support and approval from the PNG Forest Authority and the Office of the Prime Minister. (Refer to G3.8)

These documents are available for inspection by the validator.

Climate Section CL1. Net Positive Climate Impacts

CL 1.1 Net Change in Carbon Stocks

Taken from G2.3.

As discussed in G2.1.the most likely ‘without project’ scenario is the commercial harvesting of the carbon accounting area.

Based on the “without” project scenario, that is the logging project going ahead would create significant reductions in the carbon stocks of the area.

Further development of these degraded lands would most likely result in conversion to Agricultural leases as evidenced by the DOS.

To determine the extent of the change in carbon stocks in the project area we must determine the total carbon value of the project area (see G 1.4) and estimate the residual carbon in the project area following commercial logging. We must also consider other factors that influence levels of carbon stocks in the project area as discussed in G2.1.

These are;

5. The carbon lost due to the degradation of the forest during logging.
6. GHG emissions from the machinery used in the logging operation
7. Carbon stocks lost as a result from the conversion of degraded land to agriculture projects post logging.
8. The regeneration of the degraded land.

Assumptions

Sector: Agriculture, Forestry and Other Land Use.

Category: Forest Land Remaining Forest Land

Climate Domain: Tropical

Ecological Zone: Tropical Rainforest

Continent: Asia (insular)

Carbon Pools

Firstly we determined the Carbon Pools to be included. These were Above-ground Biomass and below-ground biomass. For the sake of being conservative and given we are estimating the carbon values to a Tier 1

level we have not included Dead Organic Matter (Dead Wood and Litter and Soil Carbon.

Source of data

Tier 1 estimated above-ground biomass (Table 4.7) 350 tonnes d.m. /ha⁵⁶

Ration below-ground biomass to above-ground biomass (Table 4.4) 0.37
Carbon Fraction default value (table 4.3) 0.47

Carbon Accounting Area

As discussed the April Salumei FMA is a total area of 521,000 ha, with a gross forest area of 177,200 ha. This area of 177,200ha has been determined by PNG Forest Authority as 'merchantable' and therefore is the area we are avoiding the deforestation.

Furthermore, in accordance with the Forestry Management Guidelines 15% buffer zone has been applied to determine a net production area of 150,620 ha.⁵⁷

We are therefore avoiding the deforestation of the 150,620 ha (See Map 14) that would have been harvested as evidenced by Map 15 that delineates the harvestable area as determined by the PNG Forest Authority.

1. The carbon lost due to the degradation of the forest during logging.

The carbon accounting area is 150,620 ha. The FMA document approved harvesting of 155,620 ha or 6,871 ha per annum (as evidenced in the DOS) of the area. It is common practice in PNG for the actual area harvested to be greater than the allowable cut⁵⁸ and also for the harvestable area to be increased following a request from the developer.

The project lifetime has been determined as 25 years. For the purpose of the carbon accounting and to remain conservative the project will claim avoided deforestation and degradation for 21 years at a rate of 6,871 ha per year and year 22 will claim the remaining 6329 ha. This will sum to 150,620ha and there will be no claim for years 23, 24 and 25.

⁵⁶ We have used the value given in table 4.7 of 350 tonnes d.m. ha of Tropical rainforest, Asia (insular).

⁵⁷ Tack Reality Report (2004) Determination of value of harvestable timber.

⁵⁸ PNG FA data Amanab and Vanimo logging concessions.

To determine the above ground biomass we have selected the default value. Tropical Rainforest – Asia (insular) (Table 4.7 - Tier 1) of 350 tonnes d.m. /ha. Table 4.12 lists Tropical Rainforest at 300 tonnes d.m./ha, and Bryan et al. (2010) has reported the biomass of unlogged forests to be 358 tonnes d.m./ha. We have used Table 4.7 value of 350 tonnes d.m./ha.

To determine the below ground biomass we multiply the above ground biomass value (350 tonnes d.m./ha) by 1.37 (the ration given in table 4.4) to determine the combined above-ground and below-ground biomass is 479.5 tonnes d.m./ha.

We have then applied a carbon factor of 0.47 (table 4.3) to determine 225.365 tonnes Carbon per hectare.

To determine the carbon pool remaining following the area being logged we have used work from Fox et al. (2006) using PNGFRI permanent sampling plots from East Sepik Province recorded an average of 59 tC/ha for logged over forest areas.

Having determined the carbon content per logging is 225.365 t C/ha and post logging is 56 t C/ha we can conclude 166 t C/ha is lost when the area is selectively harvested or degraded.

We can then determine 25,147,310 tonnes of carbon would be emitted by the project.

When applying the global warming potential we can conclude 92,215,187 t CO₂e are avoided by the project in stopping the initial selective logging of the project.

We have also assumed the Forestry Management Agreement conditions are followed and no illegal activities are undertaken by the harvesting contractor.

2. GHG emissions from the machinery used in the logging operation

Radomir Klvac and Alois Skoupy (2009) of the Department of Forest and Forest Products Technology of Mendel University of Agriculture and Forestry in Czech Republic calculated the exhaust emissions from logging machines on the basis of the average fuel consumption; found that CO₂ emissions amounted to 9.63kg/m³ for delivered timber for diesel fuel for every 1 cubic metre of timber produced.

The FMA lists the volume to be harvested to be 5,831,705m³ as outlined in the Tack Reality Report and the FMA. (Gross Volume per ha of 55.312 m³/ha, discounted 30% for defect allowance to 38.718 m³/ha.)

Consequently the harvesting of 5,831,705m³ and an emission rate of 9.63 Kg/m³ we can determine the initial logging of the area would produce 56,159,319 kg CO₂ or 56,156 t CO₂.

3. Carbon stocks lost as a result from the conversion of degraded land to agriculture projects post logging.

Reports including ITTO (1992) showed that generally 20% of the area following conventional selective timber harvesting is converted into other land uses activities including shifting cultivation (subsistence farming), agricultural and forestry plantations, fire, and human settlement.

The Development Options Study (DOS, 1996) of April Salumei discusses the options available to the landowners following the commercial logging. This study suggests conversion of land for agricultural leases (See G2.1) and other alternative land uses.

Therefore it is reasonable to assume that 20% of the area or 30,232ha would be converted to other land use.

Given we have already accounted for the initial degradation from harvesting the remaining carbon (59 t/C/ha) from the above ground and below ground carbon pools would be lost.

Assuming the 20% of the land would be converted to agriculture as suggested the ITTO, this would equate to 30,232 ha of land being converted to agriculture and releasing the remaining carbon (59 t C/ha) contained in the above ground and below ground biomass or 1,844,164 t C being released

Again when we apply the global warming potential (3.66) of carbon we can determine a further 6,762,550 t CO₂e would be released.

4. The regeneration of the degraded land.

Fox et al. (2008) also estimated that about 1.4 t of Carbon is sequestered per ha per annum from disturbed forest as a result of logging in PNG.

For the sake of clarity and accounting this regeneration will commence in year two of the project calculations. This is because it is assumed the area is being harvested in year 1.

Please note the area to be considered for regeneration of forests is only the area that has not been converted to other land use. Again for the sake of clarity we have assumed this will be a 'straight line average' based on the original area less the 20% reduction as this area has been deemed to have been converted to agriculture.
per the annual harvest amount.

| Year | Annual Harvestable Area (ha) | Emissions from Degradable area (tCO ₂) | Emissions from other land use conversion (tCO ₂) | Emissions from harvesting Activities (tCO ₂) | Sequestration from Degradable forests (tCO ₂) | Net CO ₂ Emissions (tCO ₂) |
|------|------------------------------|--|--|--|---|---|
| (A) | (B) | (C) | (D) | (E) | (F) | (G) |
| 1 | 6871 | 4,191,599 | 2,552.39 | 297,269 | | 4,491,421 |
| 2 | 13742 | 8,383,199 | 5,104.78 | 594,581 | 28,215 | 8,954,670 |
| 3 | 20613 | 12,574,798 | 7,657.16 | 891,894 | 56,431 | 13,417,918 |
| 4 | 27484 | 16,766,398 | 10,209.55 | 1,189,206 | 84,646 | 17,881,167 |
| 5 | 34355 | 20,957,997 | 12,761.94 | 1,486,518 | 112,861 | 22,344,416 |
| 6 | 41226 | 25,149,596 | 15,314.33 | 1,783,830 | 141,077 | 26,807,664 |
| 7 | 48097 | 29,341,196 | 17,866.71 | 2,081,143 | 169,292 | 31,270,913 |
| 8 | 54968 | 33,532,795 | 20,419.10 | 2,378,455 | 197,508 | 35,734,162 |
| 9 | 61839 | 37,724,395 | 22,971.49 | 2,675,767 | 225,723 | 40,197,411 |
| 10 | 68710 | 41,915,994 | 25,523.88 | 2,973,080 | 253,938 | 44,660,659 |
| 11 | 75581 | 46,107,593 | 28,076.27 | 3,270,392 | 282,154 | 49,123,908 |
| 12 | 82452 | 50,299,193 | 30,628.65 | 3,567,704 | 310,369 | 53,587,157 |
| 13 | 89323 | 54,490,792 | 33,181.04 | 3,865,017 | 338,584 | 58,050,405 |
| 14 | 96194 | 58,682,392 | 35,733.43 | 4,162,329 | 366,800 | 62,513,654 |
| 15 | 103065 | 62,873,991 | 38,285.82 | 4,459,641 | 395,015 | 66,976,903 |
| 16 | 109936 | 67,065,591 | 40,838.20 | 4,756,953 | 423,230 | 71,440,152 |
| 17 | 116807 | 71,257,190 | 43,390.59 | 5,054,266 | 451,446 | 75,903,400 |
| 18 | 123678 | 75,448,789 | 45,942.98 | 5,351,578 | 479,661 | 80,366,649 |
| 19 | 130549 | 79,640,389 | 48,495.37 | 5,648,890 | 507,877 | 84,829,898 |

| | | | | | | |
|----|----------|------------|-----------|-----------|---------|------------|
| 20 | 137420 | 83,831,988 | 51,047.75 | 5,946,203 | 536,092 | 89,293,147 |
| 21 | 144291 | 88,023,588 | 53,600.14 | 6,349,337 | 564,307 | 93,862,218 |
| 22 | 150620 | 92,215,187 | 56,152.53 | 6,762,550 | 592,523 | 98,441,367 |
| 23 | No Claim | | | | | |
| 24 | No Claim | | | | | |
| 25 | No Claim | | | | | |

The developer believes this to be conservative based on the existence of a 15% buffer already existing in the total area harvested in accordance with the PNG Logging Code of Practice.

The developer wishes to note they reserve their right to revise this estimate as a more robust data and increased capacity is established to allow the assessment of this project to move to a “Tier 3” level.

The developer will then allocate a further 10% or 9,844,136 t CO₂e to a pool in the case it needs to be used to mitigate any potential project activity.

This will reduce the emissions being avoided to 88,597,230 tonnes of CO₂.

CL1.2 Net Change in Non-CO₂ Gases

There are no significant (>5%) other GHGs estimated in either the with or without project scenarios. In the with project scenario a small amount of emissions result from the burning of fuel in the use of river transport for monitoring programs, however in the without project scenario this would be more than offset in our opinion by the emission from the deforestation and degradation of the forest and subsequent agricultural practices which would follow conversion of the forest,

CL1.3 Other GHG Emissions from Project Activities

In the with project scenario a small amount of emissions will result from the burning of fuel in the motors of boats to be purchased to facilitate water transport. However in the without project scenario this would be more than offset in our opinion by the emission from the agricultural practices which would follow conversion of the forest, With the potential for agricultural projects to be developed potential fertilizer use and annual emissions from burning of the agricultural waste.

Please refer to the Project Funding Guidelines and Policy where all projects need to complete an emissions analysis.

A safety pool (10%) has been established to ensure any project activity that creates emissions will have to offset them against the pool or take separate issues to do the same.

As previously mentioned, no other GHG emissions aside from CO₂ will be considered within the Project activities.

CL1.4 Positive Net Climate Impact

As previously described in section CL 1.1, the contribution of the project toward climate change mitigation through the reduction of CO₂ emissions is evident.

CL1.5 Avoid Double-Counting

There is no risk of double-counting given that PNG is a non-Annex 1 member for the Kyoto Protocol and no national level REDD activities are currently being implemented by government authorities. All of the Project's emission reductions will be registered and held by an independent third party registry.

CL2. Offsite Climate Impacts

CL2.1 Types of Leakage

The project area is currently a Forest Management Agreement (FMA) and as such is part of the National Forest Plan.

The preservation of the project area and rescinding of the FMA by the Papua New Guinea National Forest Authority (PNG NFA) Forestry will not see the creation of another FMA in the future therefore no leakage will occur as a result of the project.

The National Forest Plan currently identifies all present and future logging concessions (See Map 1). If the April Salumei FMA is converted to a REDD project a new FMA will not be created as a result of revoking the FMA.

As discussed previously (G 5.1) there is a formal process to be followed in applying for and having an FMA approved by the NFA.

Currently there is also a moratorium in place for the allocation of new FMA's. A logging contractor who was intending to commercially harvest the April

Salumei FMA could alternatively apply for the concession to harvest another current FMA in PNG.

This right exists today and would in no way be influenced by the rescinding of the April Salumei FMA.

A new FMA area would not be created to replace the rescinded FMA. For any new concession to be issued the proposed FMA project must currently be part of the National Forest Plan and the logging contractor would have to apply for the concession in the area of interest through a set process

Document the process of the additional approval for a new FMA through the National Forest Plan. This operates on a 5 year cycle.

CL2.2 Mitigation of Negative Offsite Impacts

There are no foreseen negative offsite climate impacts. Should carbon leakage occur, however, as a result of the April Salumei FMA area project, appropriate action will be taken to account for this loss.

CL2.3 Unmitigated Negative Offsite Climate Impacts

Given the implementation of a climate impact monitoring system, no unmitigated negative impacts to the offsite carbon stocks are expected. CL 2.4 Unmitigated Negative Offsite Non-CO₂ Climate Impacts

The Project has no significant non-CO₂ emissions.

CL3 ***Climate Impact Monitoring***

CL3.1 **Carbon Pool Selection and Monitoring**

Carbon Pools monitored

The carbon pools to be monitored will include above ground biomass, below ground biomass. Litter, dead wood and soil carbon are excluded as all these pools are expected to stay constant or increase due to the project and furthermore are insignificant (<5%) in terms of the total CO₂-equivalent benefits generated by the project.

Carbon stock monitoring in the project area

The approach of the “tool to estimate the amount of monitoring plots in a CDM A/R activity” will be applied. This includes a preliminary measurement plot established in the main strata of the project area, and sampling on 30 temporal plots established in each stratum in order to obtain preliminary data for each stratum. The outcome of the preliminary sampling will be standard deviations for each value measured. Values measured include Diameter at breast height and total tree height of all trees beyond 3 m height, counting of the number of trees, classification of all tree species in the plot, assessment of any abnormalities (logging activities, tree mortality). The centres of all plots will be recorded in GIS, and marked with a metal pole. Sample plot radius will be 10 and 15 m during temporal plot establishment. The cost of monitoring per plot will be recorded and used as input value for the calculation of the final, permanent monitoring framework.

Ground truthing of remote sensing data

Ground truthing of a remote sample from each stratum will be undertaken to demonstrate the reliability level of the automated classification of baseline vegetation strata. It is important to mention that the monitoring of the deforestation will be via satellite and the infield verification will be carried out in those areas. Otherwise, the verification will be carried out in selected points of the same characteristics identified during the interpretation of the satellite images. This monitoring and ground truthing will be undertaken as a joint effort with the University of Papua New Guinea’s satellite capacity currently being established.

Carbon Leakage monitoring

The essential approach to monitor leakage in this project is to demonstrate that the area of land acquired and/or allocated for legal commercial timber harvesting by Government Agencies does not increase as a result of the project activity. Therefore, the rate of Government allocation of forest to harvesting must be the same as, or no more than the same trajectory as, before the project start date. The project will identify all governmental agents that allow for logging activities leading to degradation and will prove that the allocation of forest is constrained to within a pre-determined extent, e.g. The National Forest Plan. If this is the case, it will be assumed that no leakage occurs.

Initially the monitoring plan will be undertaken annually. This will assist with building local capacity in the region and allow for a detailed and robust understanding of the forest.

Monitoring for verification will be undertaken every 5 years. That is years 5, 10, 15, 20 and 22 following validation.

CL3.2 Monitoring Plan

The project will commit to developing a full monitoring plan within twelve months of validation against the CCB Standards and to disseminate this plan and the results of monitoring, ensuring that they are made publicly available on the internet and are communicated to the communities and other stakeholders.

A comprehensive training plan will be implemented to ensure the Climate Steward is trained with the necessary skills to fulfil its role. This is additional to the standard employee induction training and subsequent communications and computer training for all employees.

Local Level - Climate Monitoring

Identification and training of “Forest Stewards”. These will be local people employed and trained by the foundation to monitor, observe and report at a local level.

Community Reporting

All timber used for traditional use to be recorded with the Climate Steward. This is to ensure the community maintains the awareness and sees a high value placed on any activity that utilises the resource.

Immediate Reporting

1. Any illegal logging activity
2. Any Fire
3. Any other loss of resource.

Quarterly Reporting.

1. On ground survey of forest area. Reporting of any illegal or suspicious actions.
2. Summary of all timber resource used for traditional use. Eg, Cleared land for making gardens, timber harvested for building canoes or homes.

Annual Reporting

Third party validation of the resource area by a qualified forester with PNG National Forest Service

Measurement of Permanent Sampling Plots (PSP) in the project area

Investigation of any irregularities identified in aerial surveys or satellite imaging as they become available.

| CLIMATE STEWARD | Frequency | Report to | Comments |
|----------------------------|------------------|-----------------------------|---|
| Illegal Logging activities | Immediate | Superintendent & Supervisor | Reporting of any commercial or illegal logging activity |
| Traditional use activities | Monthly | Supervisor | Log of landowner traditional use. |
| Any clearing | Immediate | Superintendent | Report any areas of cleared land |
| PSP measurement | Annual | Superintendent | With qualified forester |
| Climate Monitoring | Daily | Superintendent | Wind, direction, temp, humidity etc. |
| Report on Fires | Immediate | Superintendent | Any fires in the area. |
| Identify any soil erosion | Quarterly | Supervisor | Identification of areas of erosion. |



Community Section

CM 1 Net Positive Community Impacts



Photo: Typical Village life in Project Area

CM1.1 Community Benefits

The community benefits (G 2.3) derived from the project's development objectives and goals (G 3.1) are set to improve livelihood within the community and an appropriate methodology to use is Social Carbon⁵⁹ where the basic structure is framed within the Sustainable Livelihood Approach(SLA) originally developed by Robert Chambers and Gordon

⁵⁹ <http://www.socialcarbon.org/Documents/> Accessed 23/7/10.

Conway, and subsequently modified by Scoones: “A livelihood is sustainable when it can cope with and recover from stresses and shocks and maintain or enhance its capabilities and assets both now and in the future, while not undermining the natural resource base.”¹

Social Impact Indicators

Appropriate indicators are listed here within the six resources to assess impacts associate within the SLA framework with a minimum of three. These will also be compatible with the monitoring plan (see CM 3.1)

Indicators for Sustainable Livelihood Approach

| | |
|--------------|---|
| Social | Strength of working networks in communities Rights of men, women and youths Relationships between communities and clans |
| Human | Level of education Level of health services Maintenance of community rights |
| Financial | Level of business Income source Asset ownership |
| Natural | Availability of natural resources Maintenance of ecosystem services Food security |
| Biodiversity | Integrity of natural communities Use and consumption of biodiversity Pressures and threats |
| Carbon | Appropriate carbon mechanism Methods used Project performance |

Application of Social Carbon Indicators

Social carbon indicators are set out here to detail the benefits and impacts arising from this project for the six resources of the methodology. These indicators receive scores ranging from the worst scenario (level 1) to the ideal situation; sustainable use of resources (level 6).

An example representation of the adaptation applied to Human Resources – Capacity Building

| | |
|------------|---|
| Scenario 1 | No capacity building in programs, in the last 12 months |
| Scenario 2 | Results from capacity building programs are not evident or measurable |
| Scenario 3 | Results from capacity building programs are evident , but not measurable |
| Scenario 4 | Results from capacity building programs are evident and measurable, but the benefit is limited (e.g. few people, small changes, etc) |
| Scenario 5 | Results from capacity building programs are evident, measurable, and satisfactory (e.g. reasonable amount of people involved, significant changes etc.) |
| Scenario 6 | Results from capacity building programs are evident, measurable, and benefits lot of people with significant impact in their lives. |

Assumptions

The management capacity within Rainforest Project Management together with the Climate Stewards is affected to ensure that the project deliverables are targeted towards the objectives and goals (G 3). Successful implementation of the corresponding activities will address the community aspirations which are also cognisant of the Vision 2050 pillars.

“With Project” Results - Relevant indicators

| | |
|---|--|
| Establishment of functional centre: Provides hub and management base for the coordination and implementation of all project activities | Monthly and annual reports , Community Response |
| Establishment of Resource Centres: Provision of effective dissemination of information, skills and technology to community | Community response.. Improved skills transfer to community |
| Upgrading of Human Resources Development: Upgrading of education facilities will ensure the bulk of school age children complete their education. Curriculum will be developed in line with to support and enhance traditional values on biodiversity and climate change. | Access to education for majority of community |
| Improvement in Health Facilities and Services: Improvements will result in better health care for the community and reduction of maternal deaths an important project goal. | Access to health services |
| Improvement in Access in the project area: Access to the project area is vital for linkages to other parts of the province. Provided through river transport and construction of 161 kms of road. | Access to river and road network. |
| Establishment & Improvement of the Communication Network – V Sat Technology: Provides for effective communication for project and also community through resource centres. | Improved communication access to community |
| Improvements to Community Enterprises: Provision of support to landowner based businesses such as cocoa production, fishery management or ecotourism | Source of income. Change in community well being |
| Project Stewards: Provide Community, Biodiversity and Climate Stewards with monitoring responsibility to address community tasks, RPM’s technical team will provide surveillance with advanced remote sensing techniques. | Monitoring reports |
| Upgrading of ILGs and Mapping Boundaries: Accurate and legitimate records of ILG boundaries ensures project benefits are distributed to appropriate communities and ILGs. | Updated and correct ILG boundaries; Asset ownership |
| Source of Income: the project's commercialisation of carbon credits will create a stable revenue stream to be managed by the RPM and April Salumei Foundation in project related activities | Development of project activities |

“Without project” represents a scenario as usual situation meaning the community within April – Salumei and the Hunstein Range will be left to continue their subsistence lifestyle and socio – economic indicators will be as noted in the Rural Development Handbook for 2001⁶⁰. The likelihood of an FMA granted with logging will also impact the area as is evident in other logging projects in Papua New Guinea⁶¹.

“Without project” results - Relevant indicators

| | |
|---|---|
| Limited administrative activities towards communities in April – Salumei; transfer of skills from logging only to a limited population in workforce | Source of income and change in lifestyle |
| Destruction of forest and biodiversity: logging practices do not adequately adhere to the Logging Code of Practice | Sustainable use of biodiversity in forest. Maintenance of traditional lifestyle |
| Road and bridges construction often temporary and sub standard | Maintenance of roads. Returning of roads to secondary forests |
| Health and school building often sub standard and not conducive to the provision of these services | Health and education records |
| Impact on water supplies through forest clearing for logging | Provision of alternative water supply |
| Wildlife Mangement Area may be impacted by logging, but on its own does not provide adequate benefits to local community | Wildlife Management Committee records |
| Wages paid to community: Only restricted to employees and no tangible benefit to the majority of community | Source of income. Acquiring of modern assets |

Table to show the highest to lowest what do they mean.

Estimating Community Impacts - With Project Scenario

| Indicator | Impact (Scenario) | Comments |
|------------------------------------|-------------------|--|
| Coordination of project activities | 6 | See page 152 for explanation of the Scenarios. |
| Information, skills and technology | 5 | |
| Education | 6 | |
| Enhancement of traditional values | 4 | |
| Health services | 6 | |
| Road and River Access | 6 | |
| Community Enterprises | 5 | |
| CBC Stewards | 6 | |
| ILG Boundaries | 6 | |
| Community Lifestyle | 6 | |
| Net Project Impact | 56 | |

⁶⁰ Hanson et al 2001, Papua New Guinea Rural Development Handbook ANU, Canberra. Australia.,

⁶¹ See footnote 5

Estimating Community Impacts - Without Project Scenario

| Indicator | Impact (Scenario) | Comments |
|------------------------------------|-------------------|--|
| Coordination of project activities | 1 | See page 152 for explanation of the Scenarios. |
| Information, skills and technology | 1 | |
| Education | 1 | |
| Enhancement of traditional values | 2 | |
| Health services | 2 | |
| Road and River Access | 2 | |
| Community Enterprises | 2 | |
| CBC Stewards | 1 | |
| ILG Boundaries | 1 | |
| Community Lifestyle | 1 | |
| Net Project Impact | 14 | |

Using the Social Carbon methodology the above table show the net benefit of the project is (56) over (14) which is without the project. In the above scenario, over the non project period, government service will increase however the extent of services will be limited in proportion to the availability of funding.

As mentioned in section G 2.4, the ILGs within the April Salumei FMA area would potentially have gained considerably through concession payments, employment and infrastructure investment. The conservation project will aim to compensate, in cash and kind, for their loss by opting not to deforest and degrade their lands.

Please refer to G 3.2 for a list of the priority projects for the area.

As also discussed in G 3.2 a review of the current Health and Education services will be undertaken. Once completed the Health and Education Superintendent respectively will budget and implement a plan to improve these areas consistent with the District 10 Year Plan.

The building of a strategic road as detailed in G3.2 will also provide much needed access and transport options for local people. As the accessibility improves small scale sustainable businesses will start to develop. These businesses will be supported by the Enterprise Superintendent with funding available from the April Salumei Sustainable Forest Management Foundation. Please refer to Project Funding Policy for further information.

All significant development in the project area will be subjected to the Environmental Act 2000 where activities will be screened and depending on its impacts warrants either meeting guidelines or code of conduct or through the submission of an Environmental Impact Statement (EIS). The process for the submission of preparatory documents leading to the assessment process of the EIS is available from the Department of Environment and Conservation. For the road project, an important component is the

Environmental Management and Monitoring requirements which must be documented and implemented before, during construction and in the operational phase. The determination of assigning road status and responsibility will be discussed by the project management team and the tiers of government.

CM1.2 Impact on High Conservation Values

The proceeds from the carbon credits will provide for activities that adhere to the maintenance of the HCVF and the biodiversity it contains (G 1.8)

The population within the April Salumei FMA area is very small and their population densities are very low, their use of the land is inherently sustainable. The wetland and sago areas provide ample resources for sustainable harvesting thus maintaining habitats for the maintenance of populations of flora and fauna.

Community, Biodiversity and Climate stewards will maintain a register of resource harvested within the area to be consistent with the project design and specification. This will be consistent with the Community Impact Monitoring Plan (CM 3.1). Therefore there is no foreseeable impact by the community on high conservation values.

All significant development in the project area will be subjected to the Environmental Act 2000 will require an EIA that will ensure the HCV not to be negatively affected. Activities will be screened and depending on its impacts warrants either meeting guidelines or code of conduct or through the submission of an Environmental Impact Statement (EIS). The process for the submission of preparatory documents leading to the assessment process of the EIS is available from the Department of Environment and Conservation.

For the road project (and others over a specific scale) an important component is the Environmental Impact Assessment. Additionally these projects will also require normal approval through the Joint District Budget and Planning Committee where the district government also has safeguards. Management and monitoring requirements must be documented and implemented before and during construction as well as in the operational phase. The determination of assigning road status and responsibility will be discussed by the project management team and the tiers of government. Overall, the impacts of high conservation values will be minimal as effectively mitigation measure will be in place.

The relatively small population in the April Salumei FMA area the relative population densities which are also very low will allow for the ongoing sustainability of the HCV area.

Therefore there is no foreseeable impact by the community on high conservation values that has not been identified in the projects risk register with appropriate actions to mitigate these risks where necessary.

CM2 Offsite Stakeholder Impacts

CM2.1 Potential Negative Offsite Stakeholder Impacts.

There are no identified negative offsite stakeholder impacts that have not been identified in the project risk register and have had an appropriate mitigation plan to address them.

Please refer to the projects Risk Register (G3.5) for identification of potential risks and the mitigation action planned.

If however there is any discontent being vocalized by surrounding communities, these concerns will be identified and addresses through the local community stewards. If this process and other traditional measures are unable to address the concern the projects Complaints Handling and Dispute Resolution policy will be utilised with the determination from the projects independent review board.

The agreement for elections to be held for the umbrella landowner companies and Hunstein Range Holdings will ensure a transparent process for representation of all landowners in the project area.

The previously stated project activity of the mapping of all ILG boundaries and creation of genealogy studies will ensure the legitimate and traditional owners are identified. This will largely mitigate any potential negative impacts.

CM2.2 Plans to Mitigate Potential Offsite Impacts

Please refer to the projects Risk Register in G3.5.

The greatest potential impact identified is the identification of the true landowners and the subsequent distribution of benefits to them. This will be mitigated by the mapping of ILG boundaries as discussed in the project activities. The mapping will also assist with the identification of landowners with a traditional right to settle in the area if the attraction of improved social benefits draws them.

Any surrounding communities have the right to voice project impact concerns to the project administrators and community leaders. See G3.1 and Complaint Handling and Dispute Resolution Policy.

The community stewards will provide a non confronting opportunity for any negative impact to be communicated. These complaints will be dealt with at the local level using traditional methods or may be discussed with the Project Superintendent for resolution.

Please refer to our Complaint Handling and Dispute Resolution Policy.

The project is also considering the establishment of Community Auxiliary Policing that would assist with any potential impacts.

CM2.3 Unmitigated Offsite Impacts

There are no identified unmitigated offsite community impacts are anticipated by this project.

All members of the community have rights to utilise the benefits the project will bring to the community. For example all people can freely move along the road, all children can go to schools or seek health care. No one is precluded from this.

Through the community stewards in application of the monitoring plan, should there be negative impacts identified they will be mitigated.

CM3 Community Impact Monitoring

CM3.1 Community Impact Monitoring Plan

Monitoring of community impacts is important to allow us to determine the effectiveness of proposed programs. Below is a table indicating the key activities that will be monitored. In addition the Community Steward will be living and working in the community. Refer to CM 3.3 below.

Table 9 : Monitoring Plan

| Activity Description | Indicator | Frequency | Responsible (tbd) |
|--|--|------------------|--------------------------|
| Demographic growth | Population per district | Every 5 years | |
| Road expansion in project or buffer area Road improvement in project or buffer area Road use expansion | Kilometres of new sealed (length and width) Classification of roads sealed (paved, non-paved) Use of roads paved (timber, Brazil nut, agriculture, mining, other) | Every 5 years | |
| New settlements in project or buffer area | GPS location and area Type (native community, rural settlement, urban settlement) Population Main productive activities (crops, cattle, hunting, logging, average | Every 5 years | |

| | | | |
|--|---|-----------|--|
| | extension) | | |
| Apply surveys to local families that are being supported by the project to develop sustainable economic activities | Number of local families developing new sustainable economic activities | Annually | |
| Apply surveys in local schools that are being supported by the project | Number of local students involved in environmental protection activities | Annually | |
| Register remaining, regulated and legal logging activity (number and species), register amount of discovered illegal logging activity, using paper formats defined for custody chain process | Volume of wood extracted legally in m3 Volume of illegal wood extraction discovered | Permanent | |
| Surveys to households and communities to determine land converted since the beginning of the project | Hectares converted in the Project area | Annually | |
| Surveys to communities to determine the demand of land for agriculture because of the population growth (not migration) | Demand of new land for agriculture in communities | Annually | |
| Success of diversification into NTFP use | Number of extracted non-wood products (measures the diversification of products of the forests) | Annually | |
| Number of training and capacitating activities carried out by the project | | Annual | |
| Number of institutions in which REDD project developers count with a formally designed representative | Copies of the documents related to the institutions | Annual | |
| Number of guided visits organized for locals and tourists in the project area, focused on the REDD project | Reports of the activities | Annual | |
| Number of signed or ratified agreements with public or private universities Number of researches carried out within the agreements with universities framework Number of publications made, reporting the main results of the researches carried out | Copy of the agreements Copy of the researchers reports Copy of the publications Bi-monthly | Annual | |
| Gender equality: % of women participating in guided visits % of women involved in new sustainable commercial activities | Participants list Survey report Salary list of project Copies of the documents related to the institutions | Annual | |

| | | | |
|--|--|--|--|
| % of women employed by the project | | | |
| % of women representing the project in local and regional institutions | | | |
| | | | |
| | | | |

CM3.2 Community Impact on High Conservation Values

Given the small population living within the April Salumei FMA area and their proven commitment to forest conservation, no negative impact on high conservation values is foreseen.

Please refer to the companies High Conservation Value Policy and Environmental Policy and the Biodiversity Steward Monitoring plan.

CM3.3 Community Impact Monitoring Plan Development Commitment

A comprehensive training plan will be implemented to ensure the Community Steward is trained with the necessary skills to fulfil their role. This is additional to the standard employee induction training and subsequent communications and computer training for all employees.

RPM commits to developing a full monitoring plan within twelve months of validation against the CCB Standards and to disseminate this plan and the results of monitoring, ensuring that they are made publicly available on the internet and are communicated to the communities and other stakeholders.

Assessment will be annual to ensure that monitoring variables are directly linked to the project’s community development objectives and to anticipated impacts both positive and negative.

Any negative impacts will be reviewed by RPM and local stakeholder’s representatives with an aim to mitigate or removing them.

Local Support

Identification and training of “Community Stewards”

There will be three Community Stewards for the area represented by each Landowner Company. Where an individual village has over 500 inhabitants a specific steward will be employed for that village to meet the demands of such a high population. This will be additional to the total number of stewards and all stewards will be employed and trained by the foundation to monitor, observe and report at a local level. The demand for the services of these stewards will be monitored by the Project Superintendent and

integrated via regular management meetings into our “Adaptive Management Plan”. Should the demand require more resourcing then this will be provided by the project.

Immediate Reporting

1. Any conflict arising directly from the project activities.
2. Any significant hardship caused to community group as a result of the project activities.
3. Any damage to a culturally significant site.

Quarterly Reporting.

1. Summary of all issues reported in the immediate area above and the actions taken to resolve the issue identified.

Annual Reporting.

Note the community steward is to be selected from individual community groups. There must be at least one representative from the women’s group and one from the youth group.

Table 10: Community Steward Monitoring requirements and frequency

| COMMUNITY STEWARD | Frequency | Report to | Comments |
|--|------------------|------------------|--|
| Community Survey | Annual | Superintendent | |
| Birth/Death Report | Monthly | Supervisor | Log of births and deaths. |
| Evaluation Community Enterprise Projects | Annual | Superintendent | Summary of all projects. |
| Identify any new Villages or Village relocations | Monthly | Supervisor | |
| Identify new community groups / activities | Monthly | Supervisor | |
| New Income producing activities | Monthly | Supervisor | Assist to prepare funding requisition. |
| Community group - Project Requests | As requested | Supervisor | Assist to prepare funding requisition. |
| Community Disputes or Concerns re project | Immediate | Supervisor | |
| Cultural Threats | Monthly | Supervisor | Identify any threats to traditional cultures from the project. |



Photo: **Community Discussion during awareness November 2009.**

Biodiversity Section

B1. Net Positive Biodiversity Impacts

B1.1 Net Positive Biodiversity Impacts

Methodology for biodiversity impact have been championed by various authors and institutions including the World Bank and World Conservation Monitoring Centre⁶². Numerous conservation organisations such as WWF and TNC have adopted these methods for their field data collection. Within the proposed area, there has been limited biodiversity inventory, where there is sparse information around. However, the ecoregion (G 1.8) does account for the overall biodiversity of the area providing for its extensive coverage.

The projects plans to undertake an initial biodiversity inventory on the available data providing a baseline scenario and continuing that will be a biodiversity impact monitoring plan (B 3.1). Thus, a detailed monitoring plan will be developed to assess threats, some of these have already been identified in the risk register.

As stated in G3.1 the major goal of the April Salumei Sustainable Forest Management Project is to prevent the commercial logging of the project area. The establishment of the project will remove the potential for commercial logging and the area will remain in its current natural state. The preservation of this area would see no negative impacts to the biodiversity of the area.

The following is an extract from the Greenpeace report “Preserving Paradise” (Nov 2008) “Logging is the key driving force in forest change and degradation in PNG and a leading contributor to eventual deforestation and conversion for other uses”.

It is this degradation and deforestation that will obviously cause loss of habitat and changes to the existing ecosystems. These will be avoided with the implementation of the project.

As sustainable landowner projects are developed they will be consistent with the projects policies to ensure Genetically Modified Organisms are not used and to restrict the increase on invasive and non native species

B1.2 Impact on High Conservation Values

The project will eliminate the possibility of commercial logging in the FMA, hence no high conservation values will be negatively affected by this project. In addition, all

⁶² http://www.unep-wcmc.org/collaborations/BCBMAN/PDF/PA_Guidelines_BMA_D.pdf. Accessed 23/7/10.

project activities will be situated within existing clearing and the removal of vegetation or habitat will be minimal. All HCV areas such as the sago swamp, cultural and spiritual sites will be safeguarded through the allowable community harvesting practices, while the cultural and spiritual sites are highly protected by the local community and that in itself safeguards the HCV areas.

The biodiversity monitoring (B 1.1 & B 3.1) will ensure that these activities are confined with appropriate mitigation measure put into place to safeguard these areas. The only large activity that will impact on the north western portion of the project area would be the Ambunti – Dreikir road, which will have an EIS as it falls within the jurisdiction of the Department of Environment and Conservation. The EIS safeguards against biodiversity impacts will be guided by the management and mitigation measures contained in the EIS. These measures will also be contained in the Monitoring Plan which the community stewards will be using to ensure all threats to biodiversity are effectively mitigated.

The potential impact of other smaller project activities such as the community agriculture projects will be assessed taking into consideration the scale of land clearance that would be undertaken. A risk assessment methodology will be developed that is aligned to the risk register and displays a checklist for the identification of a particular ecosystem that might be impacted upon and the corresponding mitigation measures.

As the project's main outcome will be conservation, no offsite negative biodiversity impacts are anticipated. However, should any negative impact be identified, the Project Management Team, together with the local communities, will address such problems quickly and effectively. Any offsite impacts will mostly be positive, as conservation of a large area of pristine forest habitat will improve the long-term viability of populations' offsite as well.

In summary, this project will have overall positive impacts on the high conservation values of forests. The fact that it will eliminate logging and all of its negative impacts will protect and conserve the natural habitats and the flora and fauna they harbour, particularly the endemic species. Any degree of habitat degradation or fragmentation could result in a significant loss of endemic species or distinct species populations. Please refer to our High Conservation Values Policy and our Environmental Awareness Policy for further details. These policies will ensure no HCV's are negatively affected.

The preservation of this area and the identification of HCV areas in G1.8 would in fact provide protection to the reserves of flora and fauna, maintaining local biodiversity and HCV.

The protection of HCV's is fundamental to the project's success and risks to the HCV areas have been identified in the projects Risk Register.

Please refer to our High Conservation Values Policy and our Environmental Awareness Policy for further details.

Additionally proposed projects are required to conduct an environmental Impact Assessment to ensure project activities do not compromise HCV's.

B1.3 Species Used by the Project

No invasive and non native species are planned to be introduced to the April Salumei FMA area. The project aims to conserve and protect native flora and fauna.

Ongoing consultation with all stakeholders will be undertaken to ensure continued understanding of the project requirements under the CCB Standard to increase capacity will be conducted on a quarterly basis.

B1.4 Use of non native species by the Project.

No non native species are planned to be introduced to the project area.

Exotic species of fish and were introduced in the 1960s to provide for enhanced protein diet for the Sepik river community (see G1.7). This introduction created changes in the predator relationship in the aquatic ecosystem. Aquatic grasses were also removed as a result of the exotic species habitual and feeding behaviour. As a result of this, native fish and crocodile hatcheries were impacted and there is noted changes in fish and crocodile population (2010, J. Duguman, pers comm.,19 June). The aquatic weeds such as the *Salvinia molesta* have its share of destruction by covering lakes and waterways.

B1.5 Genetically Modified Organisms

The project will not use any genetically modified organisms in its operations to generate emission removals or reductions.

B2. Offsite Biodiversity Impacts

2.1 Potential Negative Offsite Biodiversity Impacts

As the project's main outcome will be conservation, no offsite negative biodiversity impacts are anticipated that has not been identified in the projects risk register. However, should any negative impact be identified, the Project Management Team, together with the local communities, will address such problems quickly and effectively. Any offsite impacts will mostly be positive, as conservation of a large area of pristine forest habitat will improve the long-term viability of populations' offsite as well.

Safeguards against biodiversity impacts will be guided by the management and mitigation measures contained in the Environmental Impact Statement that will be submitted to the Department of Environment and Conservation. These measures will also be contained in the Monitoring Plan which the community stewards will be using to ensure all threats to biodiversity are effectively mitigated.

This Project will have only positive impacts on the high conservation values of forests. The fact that it will eliminate logging and all of its negative impacts will protect and conserve the natural habitats and the flora and fauna they harbour, particularly the endemic species. Any degree of habitat degradation or fragmentation could result in a significant loss of endemic species or distinct species populations.

B2.2 Mitigation of Potential Negative Offsite Biodiversity Impacts

The project does not anticipate any negative offsite biodiversity impacts not identified and mitigated in the Risk Register.

As mentioned in B2.1, should any changes in offsite biodiversity be detected, appropriate actions through monitoring and mitigation would commence. Refer to the biodiversity monitoring plan.

B2.3 Evaluation of Potential Negative Offsite Biodiversity Impacts

The project does not anticipate any negative offsite biodiversity impacts. In fact, offsite biodiversity impacts from the project are anticipated as being positive as the conservation area will provide a larger habitat for species and thereby improve their long term viability in the region.

The protection of the forest area is in fact expected to provide positive impacts to the region's water supply in contrast to the without project scenario.

As the project has demonstrated how it does not cause leakage there are few if any potential offsite biodiversity impacts.

Project policies and the mitigation plans outlined in the Risk Register (G3.5) will ensure no negative offsite biodiversity impacts.

In considering the biodiversity impacts in the "with project" and "without project" scenario it is obvious there is a positive effect from the project on biodiversity.

B3. Biodiversity Impact Monitoring

B3.1 Biodiversity Impact Monitoring Plan

Under the proposed REDD project, a biodiversity monitoring programme will be implemented, which will include regular data collections, assessments of existing and new threats to biodiversity and the local communities living within the Project area or nearby areas. One of the aims of monitoring should be to continue building up and improving the scientific data on the Project areas biological diversity, and to determine whether the Project is achieving its main objective as a Carbon Bank. Details of monitoring methodologies will be developed and continue to be refined throughout the life of the Project .The initial inventory data of the area’s biological diversity will help to develop and direct future monitoring activities.

| Activity Description | Indicator | Frequency | Responsible |
|---------------------------------|---|------------------|--------------------|
| Biodiversity exploitation Level | Number of illegal events detected. Number of illegal hunting complaints. Number of native fauna confiscations. | Annually | |
| Biodiversity in project area | Amount of species/species families identified in sampling plots established in different project strata, using selected indicator families (for example mammals or butterflies or moths (animals, key families (plants)), focus on globally, regionally or nationally significant biodiversity. | 5 yearly | |

The project owner commits to developing a full monitoring plan within twelve months of validation against the chosen Carbon Standards and to disseminate this plan and the results of monitoring, ensuring that they are made publicly available on the internet and are communicated to the communities and other stakeholders.

A comprehensive training plan will be implemented to ensure the Biodiversity stewards are trained with the necessary skills to fulfil their role. This is in addition to the standard employee induction training and subsequent communications and computer training for all employees.

B3.2 Biodiversity Impact Monitoring Implementation

The project will within twelve months of the validation of the project have an initial monitoring plan to quantify and document the changes in biodiversity resulting from the project activities (both in and outside the project boundaries). The monitoring plan will identify the types of measurements, the sampling method, and the frequency of measurement.

An annual survey will be undertaken by the project through a suitably qualified third party such as WWF to assess the changes both positive and negative in the biodiversity of the area. This will include particular attention to species with High Conservation Values (HCV) and occurrence of invasive species and native species generally.

Biodiversity Impact Monitoring – Local Level

Identification and training of “Biodiversity Stewards”

There will be two local people per village of over 500 inhabitants, employed and trained by the foundation to monitor, observe and report at a local level. (This will include one member from Women or Youth groups)

Immediate Reporting

1. Any change in an area of high conservation value.
2. Disturbance to nests or the taking of eggs from HCV fauna.
3. The hunting, killing or finding of a dead animal of HCV.
4. The identification of any invasive species.

Quarterly Reporting.

1. Summary of any issues reported in the immediate reporting area above and the actions taken to resolve the issue identified.
2. In conjunction with the Forestry Steward to visit the PSP and identify any new species of fauna present during the field trip.

Annual Reporting.

1. Annual report to be compiled in conjunction with suitably qualified and independent third party such as WWF or a suitably qualified entity.

| BIODIVERSITY STEWARD | Frequency | Report to | Comments |
|--------------------------------------|------------------|------------------|-----------------|
| Hunting Log | Monthly | Supervisor | |
| Illegal hunting Activity | Immediate | Supervisor | |
| Illegal Collection of Flora or fauna | Immediate | Supervisor | |
| Monitoring of water access | Monthly | Supervisor | |
| Monitoring of water quality | Monthly | Supervisor | |

| | | | |
|-------------------------|-----------|------------|--|
| Monitoring of HCV areas | Quarterly | Supervisor | |
| Animals found dead | Monthly | Supervisor | |

GOLD LEVEL SECTION

GL3. *Exceptional Biodiversity Benefits*

The April Salumei Sustainable Forest Management Project (ASSFMP) has exceptional biodiversity with the high endemism rate for birds eg; 385 birds out of 725 total bird species within the Sepik river region indicating 53% endemism (Sherman et al).

Two bird of Paradise species together with the three Falconiformes species are threatened from trading activities under CITES together with the Southern Crown Pigeon (*Goura scheepmakeri*) where numbers may be dwindling, although, no thorough avifauna survey has been undertaken since the FCES (2009) report.

It is possible to find the other twenty one birds of paradise species within the area up to the Central Range (Beehler et al 1986) although the FCES (2009) study was only within the lowland rainforest areas of the ASSFMP. Thus the area has the vulnerability of the endemic birds of Paradise together with the others within the total bird species found on the island of New Guinea. Besides this is one of the last remaining tracts of Kauri pine (*Agathis sp*) that has a high conservation value and hence the declaration of the Wildlife Management Area together with other biodiversity (see G 1.8).

Additional reference

Beehler, B, M, Pratt, K, T, and D, A, Zimmerman, 1986. Birds of New Guinea, Princeton University Press, New Jersey, United States.

CITES Appendices, 2010, Available from <<http://www.cites.org/eng/app/index.shtml>> Accessed 29 April 2010.

Additional Documentation used to support the April Salumei project.

Policies and Procedures

Project Guiding Policies

- Conflict of Interest Policy
- Code of Conduct
- Transparency Policy
- Complaints Handling and Dispute Resolution Policy

Environmental Policies

- Environmental Awareness
- High Conservation Value Policy

Project Funding Policy

- Policy and Funding Guidelines
- Tender Policy and Selection Criteria

Human Resource Policies

- Equal Employment Opportunity
- Health and Safety
- Drugs, Alcohol, Beetle Nut and Smoking
- Emergency Procedures & Evacuation
- Harassment
- Hours of Work
- Leave of Absence
- Performance, Development and Training
- Disciplinary
- Dress Code
- Fit for Work
- Recruitment of Staff and Hiring Policy

Finance Policies

- Reporting

- Purchasing

Records and Books of Account

- Operational Policies
- Company Property and Equipment
- Computer, Network, Internet and Email
- Work Vehicle

Awareness and Consultation Documentation

- Project Awareness and priority project Report. - A summary of the awareness that has taken place at the local level and a list of the priority projects identified by the landowners during this process.
- Nom Investment Ltd – Copy of the meeting held by Nom Investments Limited and the outcomes including priority projects and further endorsement and support for the project.
- Salumei Investments Ltd - Copy of the meeting held by Salumei Investments Limited and the outcomes including priority projects and further endorsement and support for the project.
- SWIL Awareness - Copy of the meeting held by Sio Wario Investments Limited and the outcomes including priority projects and further endorsement and support for the project.
- Community Views – GAP analysis conducted by independent contractor, FCES on current levels of awareness in April Salumei. November 2009.
- Awareness Preparation – Preparation notes and proposed timetable for first (May 2009) awareness sessions.
- Stakeholders Consultation – call for Stakeholder consultation April 2009. Prepared by South Pole Carbon Asset management Limited.
- Public Notice – Copy of Public Notice, The National, April 30 2009, Call for Stakeholder Comments and Invitation to attend public meeting in Wewak.
- April Salumei Awareness – Awareness trip notes and photos, November 2009.
- April Salumei Stakeholder Consultation Meetings – Notes from Public meeting and Stakeholder Comments May 2009.
- 090504 April Salumei VLC - Video of Initial Landowner Meetings, May 2009.
- April Salumei Stakeholder Consultation- List of people registering attendance at initial meetings, 149 attending.
- April Salumei Stakeholder Consultation – List of attendants based on villages and key comments recorded.
- April Salumei Stakeholder Consultation – Public Consultation Meeting Agenda
- April Salumei Stakeholder Consultation – Copy of Questionnaire (in pigeon and English) given to meeting attendants and used to develop plans for project.

- 090804 First Stakeholder Consultation Report – Summary of First Stakeholder Consultation Report, South Pole Carbon Asset Management Limited
- April Salumei Awareness – Awareness and trip notes January-February 2010
- Landowner Chairman Awareness – May 2010
- PDD – Review and discussions on PDD held in Villages and District – June 2010.
- Position paper – April River

Project Approval Documents

- Niksek Samsai Investments Limited – Certificate of Allegiance
- Sio Wario Investment Limited – Certificate of Allegiance
- Nom Investments Limited – Certificate of Allegiance
- Hunstein Range Holdings Limited – ILG Structure
- Hunstein Range Holdings Limited – Agreement
- ILG Agreement – Tok Pidgin Template
- ILG Agreement – English Template
- Letter from Office of Prime Minister
- Prime Minister Letter of Support
- Press release from Forest Minister
- Letter from Prime Minister Department & National Executive Council
- Additional meetings held during the validation visit with;

- Managing Director PNG Forest Authority
- Provincial Government and District Lands Officer in Wewak
- Local Member Hon. Tony Aimo
- Director PNG Forestry Research Institute Prof. Simon Saulei

Job Descriptions

- Biodiversity Steward
- Climate Steward
- Community Steward
- Superintendent- Education
- Superintendent- Health
- Superintendent-Community and Enterprise
- Project Superintendent

Human Resource Forms

- Application for Leave
- Bank Details Form
- Choice of Super Form
- Confidentiality Agreement
- Consulting Agreement - Contractor
- Copy of Timesheet template
- Deduction Details Form
- List of HR documentation
- New Employee Details
- New Employee Induction & Checklist
- RMA - Staff Induction and Handbook - Master (2)
- RPM Letter of Employment-Template
- RPM Schedule 1

- PM Standard Terms and Conditions of Employment
- System Access for new employees
- Template
- TFN & ID Form
- Timesheet

Additional documents

Cash-flow and Budget – the cash flow and budget for the projects including revenue and expenditure. Amongst other costs the budget includes consideration for community stewards training, funds for individual projects and monitoring.

Copy – Forestry Management Agreement – A copy of the actual agreement with the PNGFA.

April Salumei Development Option Study – A copy of the Development Option Study conducted by the PNGFA when considering an FMA.

Tack Report – Report commissioned by Hunstein range Holdings when seeking damages from the government for the allocation of the WMA on the area.

PNGFA – Forestry and Climate Change Framework for Action 2009- 2015 – Recently released document from the PNGFA to provide a framework for the Papua New Guinea Forest Authority over the next seven years.

Project Timeline – Timeline showing project activities such as employment of stewards, training, project activities and monitoring.

Copy of letter – Prime Minister, Sir Michael Somare, Endorsement of Project,

Copy, Press Statement - Hon Beldon Namah Minister of Forests, Endorsement of project.

Copy, Letter of Support - Hon. Tony W Aimo, Member for Ambunti Dreikir and Minister for Correctional Services

Copy, Press Statement – Hon. Tony W Aimo, Member for Ambunti Dreikir and Minister for Correctional Services, Endorsement of Project.



PRIME MINISTER
PORT MORESBY

18 November 2008

Dr Theo Yasause
Executive Director
Office of Climate Change and Environment Sustainability
P O Box 854
WAIGANI, NCD

My dear Executive Director

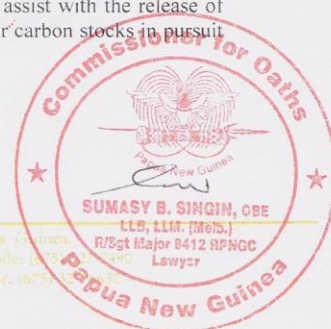
Re: Support for April Salome Forest Management Area for Environmental Income from Carbon Sequestration

I make reference to series of meetings with Husein Range Landowners and Chairman and Director of April Salome Forest Management Area (FMA) project who have been waiting for payments for eco-system services since the initial discussion in 1996. They have remained in their local area patiently waiting for many years now and have not moved on from April Salome Area which is later referred to as FMA. These discussions for payments for eco-system services mainly from carbon sequestration that were entered into during November 1996 up to this current period have been crucial in the landowners decision to stop deforestation themselves directly or through third parties.

They remained supportive and continued to believe in an environmental income solution and have observed the development of the carbon market and to undertake pilot project under the Activities Implementation Jointly. I draw your attention to AIJ project "CARFIX" in Costa Rica whom we have historic relationship under the Coalition of Rainforest Nation which we Co-Chair. Furthermore, I draw your attention to the Energy Efficiency Project for the Solomon Islands supported by Australia that we have been observing.

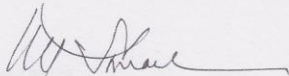
The landowners have since pursued two parallel processes to either sell their carbon credits or to undertake logging themselves which they are legally entitled to do which would deforest the area for sale of logs. They have had this legal entitlement since 1996 but have voluntarily not acted despite entering into a legal case in 1998 and subsequently winning the case in 2007.

Mindful of my leadership role since 2002 under the UNFCCC process with the Coalition of Rainforest Nations as the Co-Chair along with Costa Rica and the need to undertake a pilot project for Reducing Emissions from Deforestation and Degradation using environmental eco-system services, I am directing you to look for responsible entities to assist with the release of payments for environmental eco-services in order that we can retain our carbon stocks in pursuit of our national development objectives.



Miranda House, Waigani, P.O. Box 639, Waigani, Papua New Guinea.
Parliament House Telephone: (675) 327 7311 / (675) 327 7316 Facsimile: (675) 327 7317
Miranda House Telephone: (675) 327 6317 / (675) 327 6338 Facsimile: (675) 327 6339

I would appreciate your support for the April Salome FMA project to be a pilot project for environmental eco-services.



M T SOMARE GCL GCMG CH CF KSIJ
PRIME MINISTER

WALUABU, N.P.

Minister of Agriculture

Re: Support for April Salome Forest Management Area for Environmental Services
from Carbon Sequestration

I thank you for the letter of invitation with Honorable Justice Department and I support the Department of April Salome Forest Management Area (FMA) project and have been visiting the project for the past few weeks since the initial agreement in 1996. They have continued to work hard and patiently waiting for many years now and have not stopped the April Salome area which is later declared as an FMA. These discussions for agreement for environmental services from carbon sequestration that were agreed last during November 1996 up to this current meeting have been agreed to the Honorable Justice Department for further discussion in the near future.

The Honorable Justice Department has continued to provide its support and has observed the development of the carbon market and to encourage other projects under the April Salome Forest Management Area. I also want to mention that the Honorable Justice Department has been working under the Carbon Sequestration Project since the start. Furthermore, I thank you for attention of the Honorable Justice Department for the Honorable Justice Department by Australia and we hope to see the project.

The Honorable Justice Department has provided assistance in the past and will continue to do so in the future. However, we have been unable to do so until now due to the lack of legal support. This issue has been legal support since 1996 but have voluntarily not been able to enter into a legal agreement with the Honorable Justice Department since 2007.

Members of the Honorable Justice Department under the Honorable Justice Department and the Honorable Justice Department have been working with their staff and the need to undertake a pilot project for the Honorable Justice Department from Honorable Justice Department and Honorable Justice Department. I am glad to see you have the appropriate authority to assist with the release of payments for environmental services in order to see the April Salome area in the future of the Honorable Justice Department.



I certify this to be a true copy of the Original which I have sighted.

Signature: *[Handwritten Signature]* Date: 21/7/12

MINISTER FOR FORESTS



Press Statement

Forest Minister Endorsement of April Salome Forest Management Area for a Pilot Project for REDD

Minister for Forest Hon. Belden Namah applauds and endorses the landowners of April Salome of Husein Range which is one of the least developed area in the country work to develop the April Salome Sustainable Forestry Management Project (www.aprilsalome.com) which is one of the first pilot project in the country for the preservation of forest, bio-diversity, environment and to address climate changes under the reducing emissions from deforestation and forest degradation initiative of the UN endorsed in Bali in December of 2007.

He also announced the April Salome Project website which was launched last week. The general public who wish to get information can access the site at (www.aprilsalome.com). He supports the work of the 163 ILGs from the project area, with technical support from the PNG Forest Research Institute and the University of Papua New Guinea.

I am advised that the PDD - Project Design Document is being finalised by South Pole Carbon Asset Management and a validator will carry out an audit of the project documents following the validation process to the CCB Standard under The Climate, Community & Biodiversity Alliance (www.climate-standards.org), and then to the Voluntary Carbon Standard (VCS)

Under the Project, the landowners have signed an agreement with their project developer and the revenue distribution will be all paid to projects and there will be no cash handouts as follows: 80% Landowners - 18% PNG Government for approved projects outside of the ASFM project area - 2% of which will be paid to Climate Mitigation & Disaster Fund to be paid to Government for disaster and climate fund through the consolidated revenue being managed by the Department of Finance Revenue is distributed as Project funding - not as cash payout.

[Handwritten Signature]

HON BELDEN NAMAH, MP
Minister for Forest

Frangipani Street, Hohola, P.O Box 5055, Boroko, National Capital District, Papua New Guinea
Telephone: (675) 327 7918 - Facsimile: (675) 325 5457
Parliament Haus, Waigani: (675) 327 7393 - Facsimile: (675) 327 7480

I certify this to be a true copy of the Original which I have sighted.



Signature: [Handwritten Signature] Date: 2/7/9



PAPUA NEW GUINEA NATIONAL PARLIAMENT

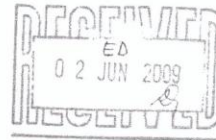
OFFICE OF THE MEMBER FOR AMBUNTI / DREIKIKIR

Post Office National Parliament WAIGANI National Capital District

Tel: (675) 3232496 Fax: (675) 3230407, 3230982 website: www.ambunti-dreikirir.gov.pg

Dr Theo Yasause Executive Director Office of Climate Change P O Box 854 WAIGANI

14 May, 2009



My dear Executive Director

SUB: SUPPORT FOR EARTHSKY AND LANDOWNERS OF APRIL SALOME CARBON SEQUESTRATION PROJECT.

As duly elected Member for Ambunti/Dreikirir and State Minister for Correctional Services, I hereby confirm my support for the Carbon Sequestration Project for my area April Salome in the Hunstein Range. I am supporting the landowners of the area to work with Earthsky Limited to develop the project.

My people have full support for the project and request that you facilitate complete documentation for registering the project and its mandated ILG processes and sanctioned. All funding for the carbon sequestration project will go towards projects which have all been documented.

As Chairman of the Joint District Planning & Budget Priority Committee (JDP&BPC) I have much pleasure in presenting you these duly approved impact project documents at our last meeting JDP&BPC 01/2009 dated 07th May 2009; for your information and records.

At this juncture, let me thank the Prime Minister for endorsing the project which will be the first and foremost pilot project for the country. This project will also allow you to test a National Methodology for the country including the baseline for reducing emissions from deforestation and degradation.

I am therefore in full support.

Yours sincerely,

[Handwritten Signature]

HON. TONY W AIMO, MP Minister for Correctional Services & Member for Ambunti Dreikirir Electorate.

Copy: - Prime Minister Chief Of Staff Prime Minister's Office

I certify this to be a true copy of the Original which I have sighted.



Press Statement

Endorsement of April Salome Forest Management Area under Climate Community & Biodiversity Alliance Standard (APRIL SALOME Meets CCBA International Guidelines)

The Member for Ambunti Drekkier and Minister for Correctional Services Hon. Tony Aimo applauds and endorses the landowners of April Salome of his electorate's work with Earthsky to develop the April Salome Sustainable Forestry Management Project (www.aprilsalome.com) which is one of the first pilot project in the country for the preservation of forest, bio-diversity and environment under the reducing emissions from deforestation and forest degradation initiative of the UN endorsed in Bali in December of 2007.

He also applauded the April Salome Project website which was launched last week. The general public who wish to get information can access the site at (www.aprilsalome.com). He supported the Hunstein Range Holding work a landowners of 163 ILGs company work with Earthsky, with technical support from the PNG Forest Research Institute and the University of Papua New Guinea.

Minister Aimo acknowledges the support provided by Earthsky to the landowners as project developer in developing the project with technical support from South Pole as a Voluntary Project appointed by the HRHL & the Landowner Groups with support from PNG Forest Research Institute and the University of Papua New Guinea.

The PDD - Project Design Document is being finalised by South Pole Carbon Asset Management and a validator will carry out an audit of the project documents following the validation process to the CCB Standard under The Climate, Community & Biodiversity Alliance (www.climate-standards.org), and then to the Voluntary Carbon Standard (VCS)

He outlined that all stakeholders consultation was completed in May 2009 involving the community in Wewak, Ambunti and April Salome Areas in his Electorate.

Under the Project the revenue distribution will be all paid to projects and there will be no cash handouts as follows: 80% Landowners - 20% PNG Government for approved projects outside of the ASFM project area - 2% of which will be paid to Climate Mitigation & Disaster Fund to be paid to Government for disaster and climate fund through the consolidated revenue being managed by the Department of Finance Revenue is distributed as Project funding - not as cash payout.

He further stressed that this project has been initiated by the Landowners, it does not require PNG Government of The OCC&ES approval, however it is endorsed by the PM and the OCC&ES and is the first pilot REDD project in PNG.

Hon. Tony Aimo, MP

Member for Ambunti Drekkier & Minister for Correctional Services