

Esso Highlands Limited



Papua New Guinea LNG Project
Komo Airstrip Resettlement Action Plan

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ACRONYMS

Acronym	Definition
ALRI	Acute lower respiratory tract infection
AusAID	Australia Aid
BPEA	Best Practices in External Affairs Initiative
ANUE	Australian National University Enterprises
BSA	Benefit Sharing Agreement
CLO	Community Liaison Officer
CSS	Community Support Strategy
DHS	Demographic Health Survey
DLPP	Department of Land and Physical Planning
DPE	Department of Petroleum and Energy
EHL	Esso Highlands Limited
EIS	Environmental Impact Statement
ELC	Environmental Law Centre
FN	Family Number
GN	Garden Number
GPS	Global Positioning System
GPSr	GPS receiver
GR	Growth Rates
HGCP	Hides Gas Conditioning Plant
HHS	Households
HIV/AIDS	Human Immunodeficiency Virus / Acquired Immune Deficiency Syndrome
IDP	Internally Displaced Person
IFC	International Financing Corporation
ILG	Incorporated Land Group
LA	Landowner Association
Lancos	Landowner Companies
LLG	Local Level Government
LNG	Liquefied Natural Gas
LSMS	Living Standards Measurement Survey
L&CA	Land & Community Affairs
MOA	Memorandum of Agreement
MOU	Memorandum of Understanding
MUAC	Mid Upper Arm Circumference
M&E	Monitoring and Evaluation

Acronym	Definition
NEFC	National Economic and Fiscal Commission
NGO	Non-Governmental Organization
O&GA	Oil and Gas Act
OIMS	Operations Integrity Management Systems
OSL	Oil Search Limited
PAP	Project Affected Person
PDLs	Petroleum Development License
PIA	Project Impacted Area
PN	Person Number
PNG	Papua New Guinea
PNG LNG	Papua New Guinea Liquefied Natural Gas Project
PPL	Petroleum Prospecting License
PRL	Petroleum Retention License
PS	Performance Standard
RAP	Resettlement Action Plan
RIC	RAP Implementation Coordinator
RIT	RAP Implementation Team
ROT	Registrar of Titles
RoW	Right of Way
RPF	Resettlement Policy Framework
RTC	Resettlement Team Coordinator
SIA	Social Impact Assessment
SELCA	Socio-economic, Lands and Community Affairs
SHP	Southern Highlands Province
SLF	Sustainable Livelihoods Framework
SMLI	Social Mapping and Landowner Identification
SPM	Social Programs Manager
STI	Sexually Transmitted Infections
TCS	Tax Credit Scheme
TFI	Turama Forest Industries
UN	United Nations
VLO	Village Liaison Officer
WB	World Bank
WHO	World Health Organisation

Preface

The ESMP, its component plans and the Komo RAP were agreed at Financial Close. Since then they have been revised to incorporate additional requirements by local regulators and minor editorial changes.

D'Appolonia S.P.A., the independent environmental and social auditor for the Lender Group, has reviewed the revised ESMP and component plans and advised that they comply with applicable Lender Environmental and Social Standards and applicable Environmental and Social Laws.

EXECUTIVE SUMMARY

Introduction

Esso Highlands Limited (the Company), proposes to develop the Papua New Guinea Liquefied Natural Gas Project (the Project) to commercialise the gas reserves within the Southern Highlands and Western Provinces of Papua New Guinea. Natural gas will be produced from gas fields at Hides, Angore and Juha and from existing oil fields feeding production facilities at Kutubu, Agogo and Gobe. It will be processed and then transported via pipeline from these provinces through Gulf Province and the Gulf of Papua to LNG producing and transporting facilities in Central Province.

Commencing in 2009, the development of the Project will be undertaken in five phases, allowing the gas production schedule to be optimized and the LNG plant operation to be maximized. The Project is expected to have an operational life of approximately 30 years, beginning in 2014 when the first LNG cargo shipment is expected.

The development of the Hides Gas Conditioning Plant (HGCP) and selected elements of the onshore pipeline requires heavy haul materials and equipment of up to 100 tonnes to be transported to site. An assessment of available transport and access options concluded that aircraft would offer the optimal solution to transport heavy haul equipment to the HGCP site. This option would deliver equipment to the plant site economically and efficiently and support the proposed Project schedule while minimising the overall social impact. A corridor of land approximately 5,200m by 1,000m in area will have to be cleared, levelled and fenced to construct the airstrip and associated structures. The airstrip will be designed as a private airport, owned and operated by the Company and capable of accepting international flights

As a result of the Komo Airstrip development, unavoidable resettlement impacts will be experienced by some households, with people being both physically and economically displaced.

Resettlement Goal

The Project's overall resettlement goal is to design and implement resettlement in a manner that gives physically and economically displaced persons the opportunity to at least restore their livelihood and standards of living. This RAP (referred to as the Komo RAP) is consistent with the goals, principles, and processes set out in the Company's Resettlement Policy Framework (November 2009).

Institutional and Legal Framework

Landowners affected by the Project are protected by legislated provisions contained in the Oil and Gas Act 1998 (O&GA). This Act contains provisions for adequate and fair compensation for land that is accessed or acquired. It also contains the criteria for compensation for damage.

The process of resettlement will comply with all legal requirements and criteria, such as those specified in the O&GA, key PNG National Government institution guidelines, legislation of both the Provincial and Local governments, and the International Finance Corporation's (IFC) Performance Standards on Social and Environmental Sustainability. The Komo RAP also conforms to the requirements of the IFC's Performance Standard 5 (PS5 – Land Acquisition and Involuntary Resettlement) and will also address any differences between the requirements of PS5 and PNG law. In addition, it reflects the Company's approach to property rights and resettlement.

The Social, Economic and Cultural Environment

The Komo Airstrip lies wholly within Komo-Margarima district in the Southern Highlands Province (SHP). The area is inhabited by the Huli linguo-cultural peoples, whose socio-

economic and cultural environment will have significant implications and consequences for the process of resettlement. This report provides an analysis of their economic conditions, ethnic groups' constituency, language and migration, residential patterns, social organization and land tenure principles in order to understand positive or negative impacts on the Komo resettlement process.

In particular, the RAP focuses on the practice of multi-local residence amongst the Huli, i.e. households often have access to more than one house and garden. The issue of host community reception or rejection is not a consideration since people only move to locales where they already have rights and access. Subsistence farming is predominant, with little variation in agricultural practices or seasonal cycles and low-level cash economy participation, indicating economic impacts should be limited. The dynamic and flexible nature of Huli group composition is a key factor in the resettlement process and in the resettlement assistance proposed, which will at least restore their livelihood and standards of living.

Socio-Economic Surveys and Baseline Status

Various baseline studies have been undertaken in the vicinity of the Komo Airstrip to provide an understanding of the socio-economic conditions in the area. These studies focused specifically on the livelihood assets and activities of the households that will be physically or economically displaced.

A census and assets register and socio-economic survey were undertaken using GPS to identify households, land ownership and usage patterns. Twenty three households were found within the proposed airstrip area, with a further seven living outside the area, but owning land within. One of these households has all of its gardens inside the airstrip site. A total of 323 household members were listed as living within the airstrip site, but many of the household members included were found to be resident elsewhere and absent during the survey.

Most houses (92%) located within the airstrip area are constructed with walls of bush materials (usually woven cane or split timber slabs) with kunai (*Imperata grass*) thatch roof, whilst the other two were constructed of woven cane grass walls with corrugated iron roofs. Eighty per cent of houses were 50 m² or less in floor area. Huli gardens are planted mainly with sweet potato as well as with highlands pitpit (*Setaria*), sugarcane, various greens and ferns, bananas and tanget (*Cordyline*). The families with gardens inside the airstrip possessed a number of economic trees including avocado, *Casuarina* and pine trees. Pig husbandry is also a common form of subsistence and income.

Employment levels are higher than recorded in other Project areas with 23% reporting income in the Komo catchment area. Thirty-four per cent of airstrip families reported some form of business income, derived mainly from trade store sales.

Education levels reflect averages of PNG, although 47% of households' children were not in school. Fifty-five per cent of the adults surveyed in the Komo Airstrip area are literate in English or Huli. Sixteen per cent of adults had completed at least Grade 6 (primary school), but only nine (3%) had Grade 10 (secondary school) or higher qualifications. Most people who had some form of employment experience were labourers (39%), compared to Komo catchment (20%), and Komo Station (33%).

Malnutrition remains a widespread problem in PNG, in particular among the poorest and most vulnerable segments of the population. In rural areas there is a high prevalence of underweight children (weight for age), a very high prevalence of stunting (height for age) and a medium prevalence of wasting (weight for height) in children under five years old (FAO, 2003). The prevalence of underweight and wasting was highest among infants at one year, while stunting affected more than half of the children at four years. Children younger than five years living in the Highlands have a greater risk of stunting than their coastal

counterparts. The average Komo Airstrip haemoglobin levels do not exceed the relevant WHO anaemia thresholds, and appear to be significantly better than the WHO predicated PNG anaemia prevalence rates. The Komo field survey confirmed that transmission of malaria was low, with only 2% of 135 rapid diagnostic tests (RDT) showing as malaria positive, but the situation could be significantly different during the wet season.

HIV/AIDS is a critical issue for PNG and investigators believe that PNG has a generalized HIV epidemic, though there is no consistent and reliable data. The Komo Airstrip households performed better in HIV/AIDS awareness questionnaires than the rural or Highlands regions did in the 2006 Demographic Health Survey.

Consultation and Disclosure for the Komo RAP

The Company Land and Community Affairs (L&CA) function, together with a specialist resettlement team, conducted consultations for the Komo Airstrip RAP, starting in May 2009. This commenced with a series of public meetings to inform stakeholders about the Project and surveys that would be conducted. Following the land use, asset register and household census, attitudinal surveys were conducted and a second series of public meetings were held in September 2009, when ongoing individual consultation was undertaken with households to finalize their preferred resettlement assistance packages. Ongoing future consultation will be undertaken with all 30 affected households as well as absentee landowners. This will also involve local government officials as well as other villages in the area.

Information provided verbally during community meetings and household meetings on the proposed airstrip location, was supported by various written materials, such as booklets, flyers, summaries and flipcharts, and was appropriate to the stage of the process.

Issues commonly raised by the affected communities include: compensation rates; provisions for replacement of land and housing; timing of the construction of relocation houses; lack of services in some resettlement areas; the resettlement assistance package; distance from employment opportunities; and land demarcation and identification, given absentee landowners or disputed ownership claims. In addition to issues raised by the affected communities, a number of ongoing issues in the wider Hides - Komo catchment area were also identified, such as issues surrounding the Petroleum Retention Licence areas, benefit sharing agreements and conflict between the Komo Dai and Komo Tuguba business groups.

The Environmental Law Centre (ELC) is actively playing a monitoring and review role as an impartial observer. A process of disclosure of documents is in place, and will include the disclosure of the Komo RAP.

Project Impacts

Once resettlement occurs, both households living within and households owning land within the proposed airstrip will lose their land and fixed assets and will be affected by various other physical, economic and cultural losses or adverse impacts. The main impacts expected are summarised below:

Summary of Impacts

Impact	Scale
Residential structures affected	23 affected 24 to be moved (one losing all gardens)
Communal structures affected	2 churches
Loss of field & agricultural land	30 houses (7 with land only) 1,700 - 2,000 absentee landowners
Loss of trees and crops	2,496 sweet potato mounds 14,165 coffee trees 3,471 other trees
Loss of access to forest resources	30 houses and clan/clan segment members
Disruption in social networks	Physically displaced
Impacts on business and employment	Physically/economically displaced
Community services and facilities	Physically/economically displaced
Cultural sites	Cultural heritage, archaeological sites
Internally Displaced Persons (IDPs)	List provided by local landowners (164 families)
Influx of migrants	Limited influx expected owing to social and administration reasons

Other impacts include possible influx of work seekers and previously displaced IDPs into the airstrip and resettlement areas and loss of access to social facilities and services. On the positive side, improved infrastructure arising from the Project may result in lower costs of inputs owing to improved transport efficiencies and the development of more effective marketing channels.

In terms of the availability of resettlement sites, the cultural tendency for Huli peoples is to travel and practice multi-local residency. Each household has access to alternative lands, and possibly household structures or crop growing gardens, and so can resettle to these alternative sites. Impacts would therefore be low in terms of disruption of livelihoods and impacts on host communities. However, it is also customary practice for individuals to 'lease' garden lands from others so although alternative land would appear to be available, confirmation would be required to establish security of tenure.

Komo households have identified seven resettlement areas that are distributed around the airstrip within a distance of 300m to 2.5km. By early October 2009, 90% of households had identified resettlement sites.

Households who are especially vulnerable to displacement impacts are to be identified and provided with special assistance. Apart from the 1,700 to 2,000 individual IDPs, three of the thirty households have been identified as potentially vulnerable, mainly as a result of the ages of the members.

Compensation and Resettlement Strategy

The Project intends to compensate and/or assist people who will be affected by resettlement so that their income is at minimum restored and living standards improved.

Strategies for compensation and other support measures, as outlined in this RAP, for people physically and/or economically displaced by the Komo Airstrip were developed based on PNG law, IFC PS5, the results of surveys, census, and consultation, and lessons learned from resettlement for other projects in PNG.

In addition, eligibility and entitlements for statutory damage and deprivation compensation have been defined. Eligibility also covers absentee landowners forced to leave the area as a

result of past conflict. Damage and deprivation payments will have regard for the customary classification of landowners, landholders and land users in respect of their tenurial status and portfolio of land rights and responsibilities.

Those households subject to economic displacement will receive damage and deprivation compensation as well as livelihood restoration. Those being physically displaced will receive the same type of compensation as well as a relocatee assistance package. The relocatee assistance package includes a selection of four options to replace housing, ranging from a bank managed fund option through to funding for a self-build house using semi permanent materials. Additional support measures include the provision of in-kind items, transit support, rations, and mosquito nets.

An independent local advocacy group (ELC) has been appointed by the Company to assist affected people to participate in the resettlement process on an informed basis by teaching them their rights, responsibilities, and options concerning resettlement in the context of both national PNG legislation and the Project plans and provisions. In addition, the Company will provide the services of a Compensation Advisor, who will advise affected people on money management.

Livelihood Restoration

Apart from compensation payments, livelihood restoration programs will be implemented to at a minimum restore income levels of the affected communities. These programs include land-based as well as non land-based activities. Possible land-based programs include:

- Extension and support for garden re-establishment; and
- Rural enterprise to provide assistance with the development of commercial enterprises.

Possible non land-based programs include:

- Training and capacity building to provide skills to reduce dependence on subsistence agriculture; and
- Paid employment on the Project.

Programmes will also be implemented through the Community Support Strategy, to improve the social infrastructure in the area, such as short-term support to schools and health centres, and support for infrastructure development such as access roads around the airstrip.

Grievance Management Framework

The objective of the Project's 3rd Party Grievance Mechanism is to receive, respond, and address any grievances made to the Project. Grievances will be responded to as quickly and efficiently as possible, avoiding escalation of the issue, reducing negative impacts on the local population and assisting to maintain a positive attitude towards the Project amongst stakeholders.

Organisational Roles and Responsibilities

Overall responsibility for the planning, implementation, and monitoring of the Komo resettlement program rests with the Company, with the Social Programs Team undertaking these activities. Adequate resources and effective management will be allocated to ensure that the Komo RAP is developed and implemented with the participation of affected communities in a timely manner.

The RAP clearly defines roles and responsibilities of the Company's Social Programs Manager, the Resettlement Team Coordinator, the Resettlement Census and Survey Team,

the RAP Documentation Development Team, Resettlement Advisor, and the RAP Implementation Team (consisting of Technical Advisors, Land and Community Affairs, Logistics and Procurement Team, Community Health, and Government Affairs Team). In addition the Local Advocacy Consultant will review and evaluate effectiveness and the Compensation Advisor will provide assistance to affected households.

Monitoring and Evaluation

Monitoring and evaluation (M&E) are critical to achieve the goal of resettlement to at least restore livelihood and standards of living of affected people. The purpose of the M&E system is to provide Project management, and directly affected persons, households and communities, with timely, concise, information on whether compensation, resettlement and development investments are on track and to indicate the need for any corrections required.

The monitoring and evaluation framework consists of internal progress monitoring, internal output monitoring, an external outcome evaluation, an external completion audit and regular reporting.

An independent third party will conduct the completion audit for the Komo RAP. The completion audit's purpose will be to determine whether the Company's undertakings (RAP measures) to at least restore affected people's livelihood and living standards were properly conceived, executed and have had the intended outcome, measured against the baseline conditions.

Resettlement Implementation Schedule

A schedule of tasks has been developed to implement resettlement commencing in October 2009. Implementation activities will commence with the approval of the RAP by the Company and submission of the RAP to the Lenders. Monitoring and evaluation will continue for a further two years after implementation.

Cost and Budget Estimate

The Capital Funding budget for the Project includes a resettlement budget. The Company is the source of funds for all resettlement related expenditure. The budget has been approved, and additional budget for contingencies will be made available as needed. The resettlement budget falls under the management of the Socio-economic, Lands and Community Affairs (SELCA) Manager reporting to the Company Managing Director. The cost of Komo Airport resettlement was estimated at approximately US\$ 3.7 million.

1.0 INTRODUCTION

This Resettlement Action Plan (RAP) focuses on the resettlement of people currently residing on land required for the development of the Komo Airstrip. A 5.2km by 1km strip of land is required for development of an airstrip for the Project. This RAP has been developed in accordance with the policies and guidelines presented in the Resettlement Policy Framework (RPF) document of November 2009.

1.1 Description of the Project

The Project will commercialise the gas reserves within the Southern Highlands and Western Provinces of PNG. Natural gas will be produced from gas fields at Hides, Angore and Juha and from existing oil fields feeding production facilities at Kutubu, Agogo and Gobe. It will be processed and then transported via pipeline from these provinces through Gulf Province and the Gulf of Papua to LNG producing and transporting facilities in Central Province.

The Project is to be implemented through a joint venture between licensees representing the following participating interests: Esso Highlands Limited as operator, Oil Search Limited, Santos Ltd, Nippon Oil Exploration Limited, and the Independent State of Papua New Guinea and Mineral Resources Development Ltd representing landowners.

Figure 1-1 shows the facilities that will be constructed for the Project, identified by phase. Figure 1-2 shows the location of some major Project components relative to the Komo Airstrip.

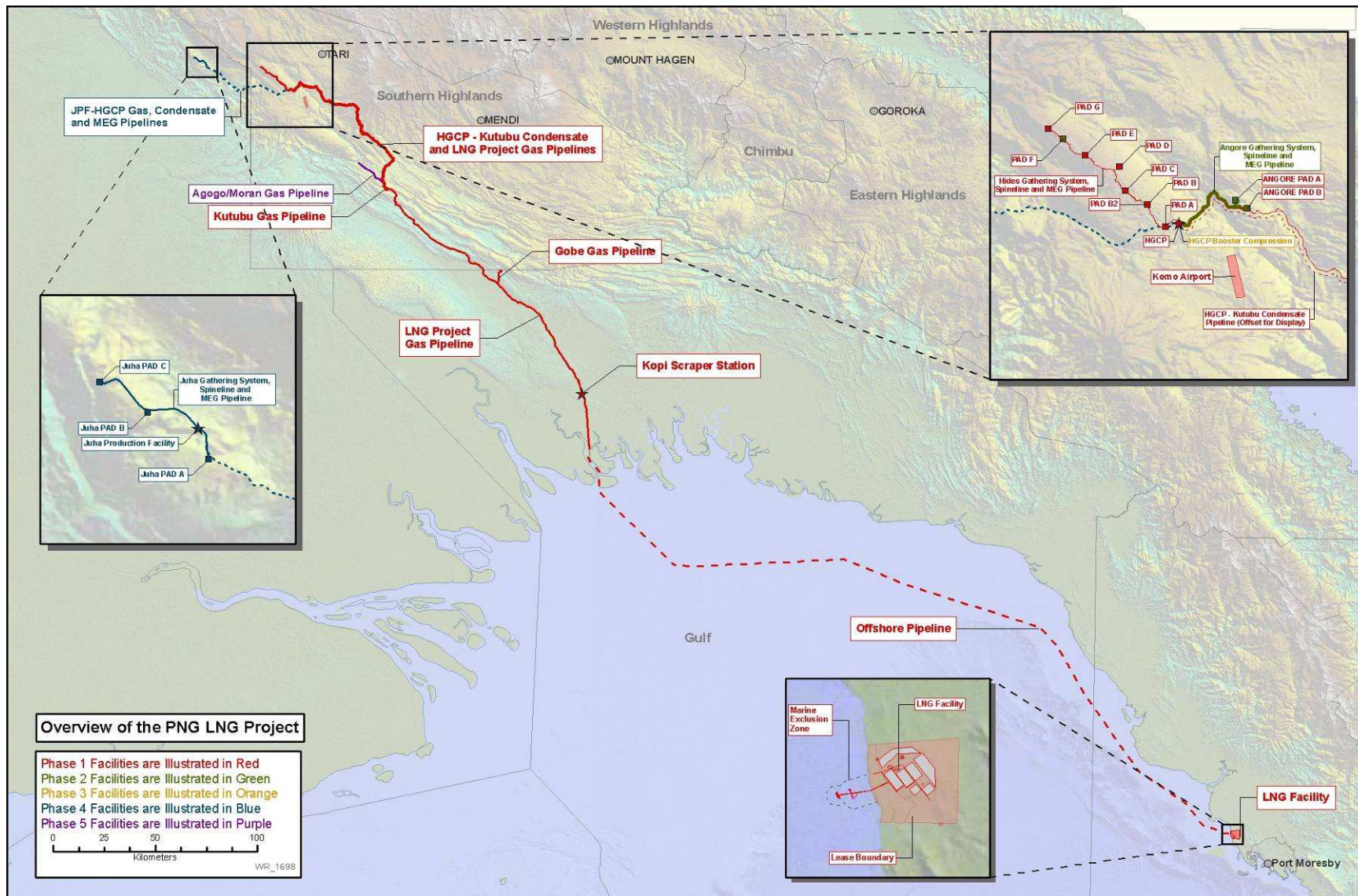


Figure 1-1: Project Overview Map C

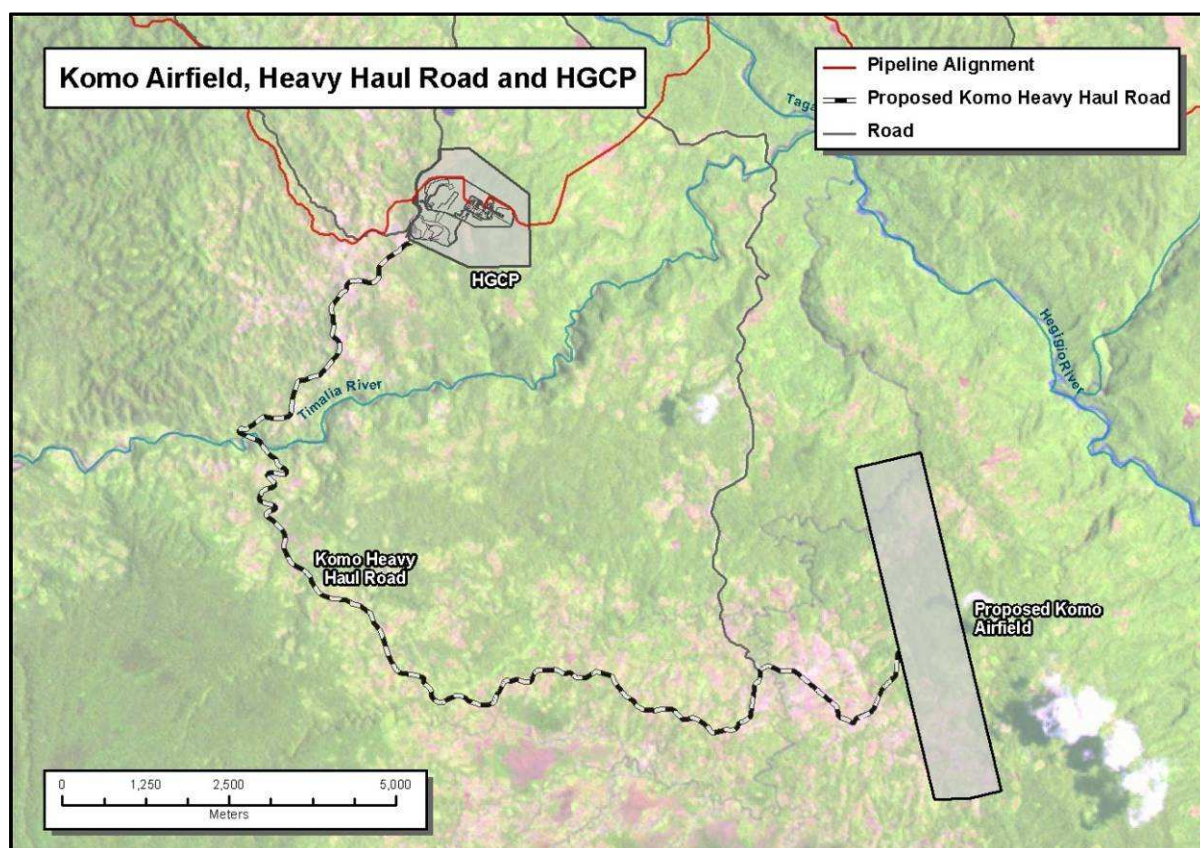


Figure 1-2: Komo Airstrip in Relation to HGCP Plant and Heavy Haul Road

The Project will enhance and expand existing production fields and facilities developed in Southern Highlands Province in the 1990s, constructing a portion of the Project adjacent to or within the footprint of the existing oil production and transport facilities and infrastructure from Kutubu to Kopi.

The natural gas that will be used as feed gas for LNG processing will be produced from gas fields at Hides, Angore and Juha, via the Hides Gas Conditioning Plant and the Juha Production Facility and other gas fields at South East Hedinia, as well as from the existing oil fields via the existing facilities at Kutubu, Agogo and Gobe. The natural gas will be conditioned and then transported via an onshore pipeline to the Gulf of Papua and then via an offshore pipeline to the onshore LNG Plant some 20km northwest of Port Moresby at Caution Bay, where it will be liquefied and then exported via LNG carriers to international gas markets. In addition to LNG, the Project will produce some condensate at Hides and at the LNG Plant. The former will be transported via pipeline to storage tanks at Kutubu and then exported via the existing crude oil pipeline to the existing Kumul Marine Terminal; the latter will be stored in tanks at the LNG Plant and then exported via condensate carriers.

1.2 Project Development Phasing and Areas Impacted by Displacement

The Project will be developed in five phases (Table 1-1). The Project is expected to have an operational life of approximately 30 years, beginning in 2014 when the first LNG cargo shipment is expected.

Reconnaissance surveys are underway or completed (Komo Airstrip) for some Phase I facilities. Schedules for RAP preparation for all other Phase I facilities will be finalized during 2011.

The affected land is owned by indigenous ethnic groups, but represents a fairly small proportion of the total land mass owned by the indigenous ethnic groups. The heaviest displacement impact will occur in the Hides-Komo environs as a result of its greater population density and the extensive Project footprint. Economic displacement is expected to be greater along the pipeline corridor.

Table 1-1: Project Phases

Phase	Proposed Facilities	Estimated Timing ¹
Phase 1: Develop Hides, Angore, Kutubu and Gobe	Hides Gas Field: Wellpads A,B,C, D, E, & G	2009 - 2014
	Hides Gathering System and Spine	
	Hides-HGCP MEG Pipeline	
	Hides Gas Conditioning Plant (HGCP)	
	HGCP-Kutubu Condensate Pipeline	
	Kopi Scraper Station	
	Komo Airstrip	
	LNG Project Gas Pipeline (Onshore/Offshore)	
	LNG Plant & Facilities	
	Gobe Gas Pipeline	
	Kutubu Gas Pipeline	
	Hides Gas Field: Wellpads F and B2	
	Angore Gas Field Wellpads A and B	
	LNG facility	
	Angore Gathering System and Spine to HGCP	
	Angore-HGCP MEG Pipeline	
Phase 2: Additional Compression at HGCP	HGCP Booster Compression	2019
Phase 3: Develop Juha	Juha Gas Field Wellpads A, B, and C	2022
	Juha Gathering System and Spine to JPF	
	Juha-JPF MEG Pipeline	
	Juha Production Facility (JPF)	
	JPF-HGCP Gas Pipeline	
	JPF-HGCP Condensate Pipeline	
	JPF-HGCP MEG Pipeline	
Phase 4: Develop Agogo and Moran	Agogo/Moran Gas Pipeline	2024
Phase 5: Develop SE Hedina	South East Hedina Wellpads A & B	TBD

In Principle Agreements are being negotiated over a significantly larger area than is likely to be required to provide construction contractors with flexibility. For example: (i) 1,000 meter corridor negotiated on the basis that the construction RoW will be only 40 meter wide

¹ Indicates an estimated year for commencement of operations.

resulting in land take of 1,254 ha, rather than 31,359 ha; and (ii) road design negotiated on 50 meter widths, but design based on 8 meter width.

1.3 The Komo Airstrip

The development of the Hides Gas Conditioning Plant (HGCP) and selected elements of the pipeline requires heavy haul materials and equipment of up to 100 tonnes to be transported to site. Following an assessment of available transport and access options, including existing roads and required upgrades from the Port of Lae, it was agreed that aircraft offered the optimal solution to transport heavy haul equipment to the HGCP site. This option would support the Project schedule and minimise the overall Project social impact by transporting equipment to the plant site economically and efficiently.

Various options for the location of the airstrip were investigated, as indicated in Figure 1-3. The preferred site for the airstrip is located some 1.2km east of Komo.

The required Airstrip would be expected to initially accommodate AN124-1002 aircraft for 6-12 months and then to accommodate regular operations of DHC8-300 series passenger aircraft and Bell 412 and 414 helicopters in the long term. Operations will only occur in daylight hours. Provisions will be made to allow for emergency night operations for Medevac purposes by aircraft up to and including the DHC8-300.

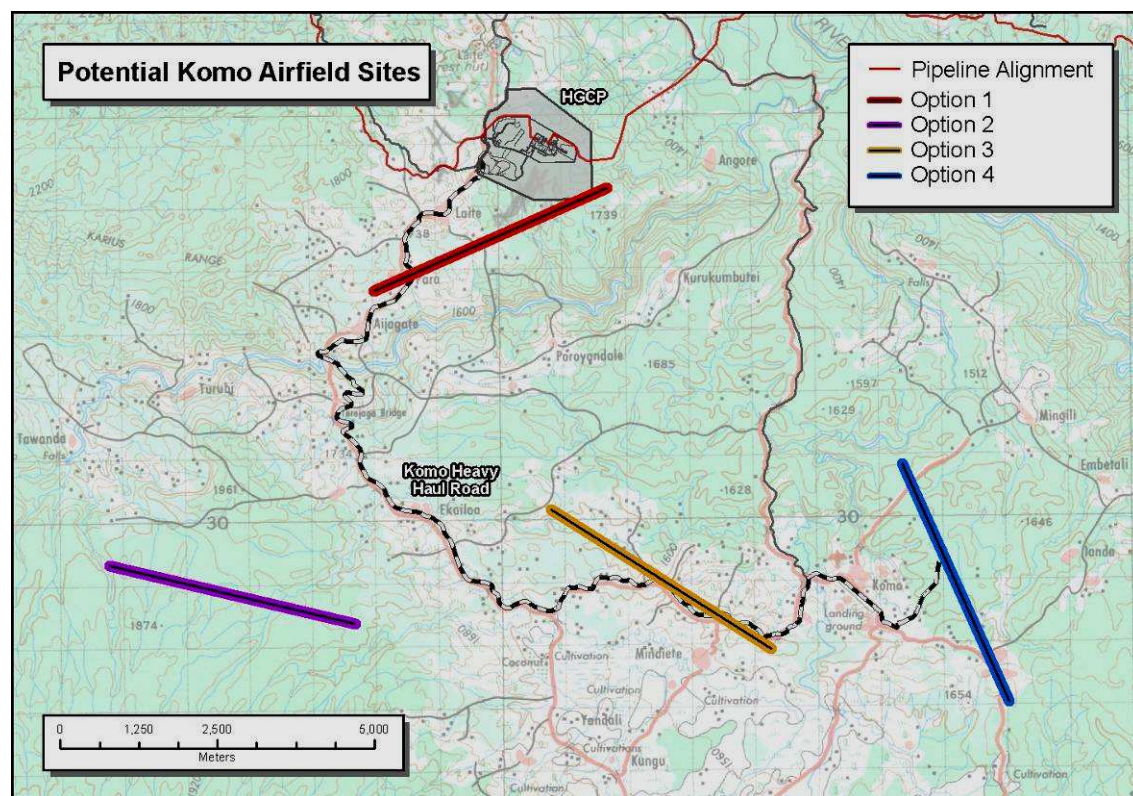


Figure 1-3: Komo Airstrip Options Evaluated

² The AN124-100 is a very large, high capacity jet freight aircraft with both front and rear loading capability. It is manufactured in Russia and is frequently used to transport outsized cargo of the type envisaged for the establishment of the HGCP facility. It will unload on the freight apron, which provides direct access to a freight storage area.

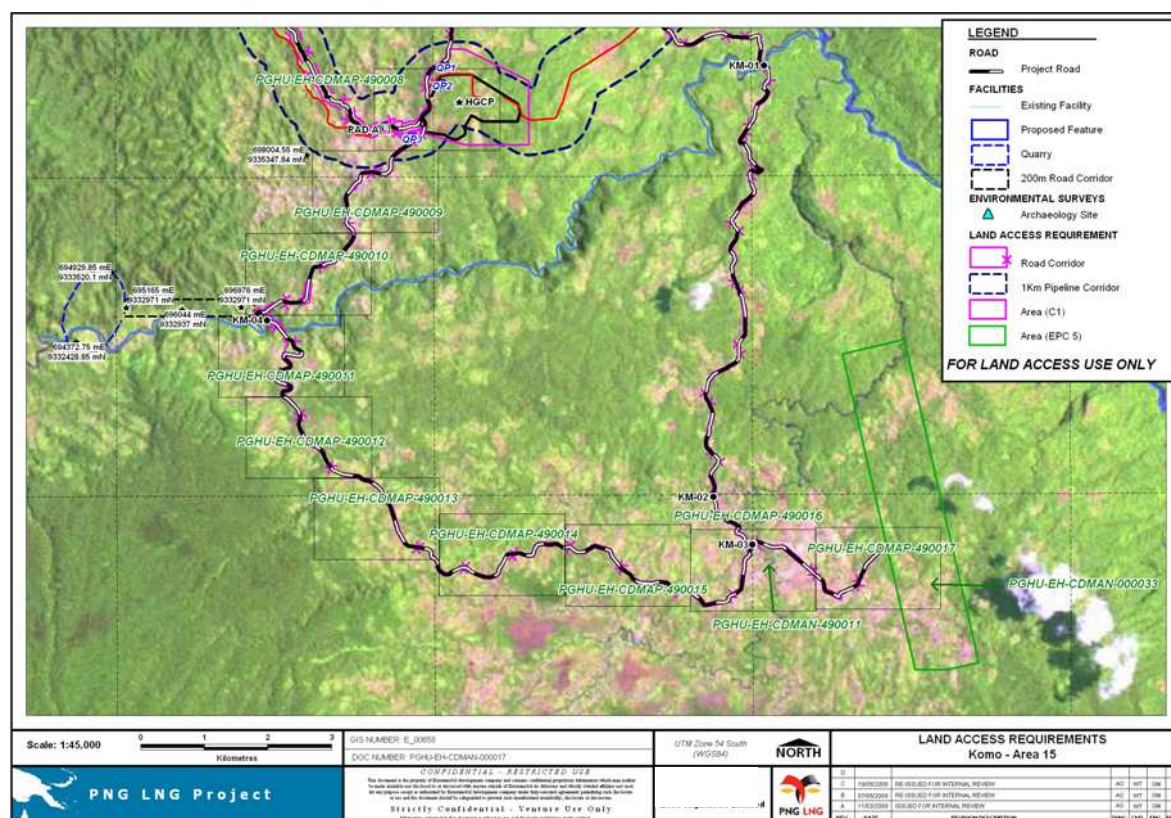


Figure 1-4: Illustration of Land Access Requirements for the HGCP

A corridor of land approximately 5,200m by 1,000m in area will be required to be cleared, levelled and fenced to construct the airstrip and associated structures. Access will be required by last quarter of 2009 (Q4) to allow for early-works and main construction activities to commence. All construction camps will be located within this airstrip footprint. The facility will comprise the following:

- A 3,200m sealed runway;
- Taxiway and aprons;
- Terminal building;
- Hangar for Dash 8;
- Freight storage area;
- Helipad;
- Rescue and fire fighting facilities;
- Fuel depot for diesel and aviation fuel;
- Power generation facility;
- Site utilities and services;
- Boundary and security fencing and guard house; and
- Navigation and landing aids to accommodate operations of AN124-100 and DHC8-300 aircraft, and Bell 412 and 414 helicopters.

The airstrip will be designed as a private airport, owned and operated by the Company and capable of accepting international flights.

The airstrip site will be accessed by road during the site construction. During airstrip operations, cargo will be transported to the HGCP site via the Heavy Haul Road indicated on the map in Figure 1-5. The nature of the terrain and land-use which affects the alignment of the Heavy Haul Road to site can be seen in Figure 1-5, and the alignment of the Heavy Haul Road is shown in Figure 1-6.

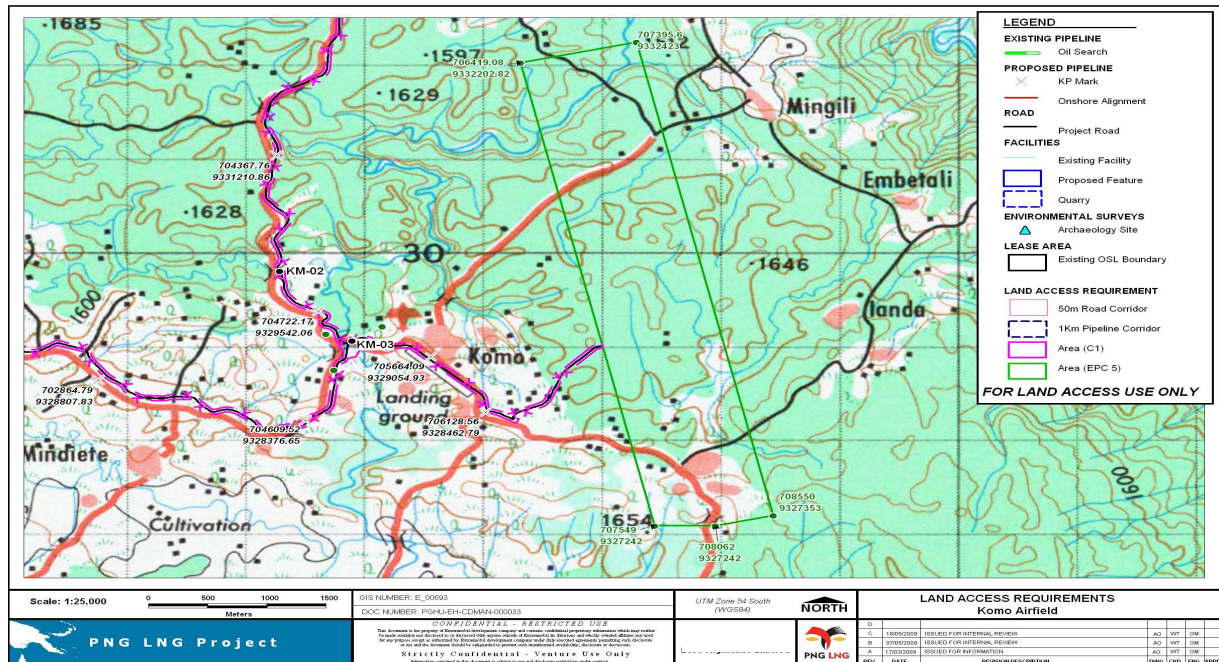


Figure 1-5: Road Network in Komo Airstrip Area

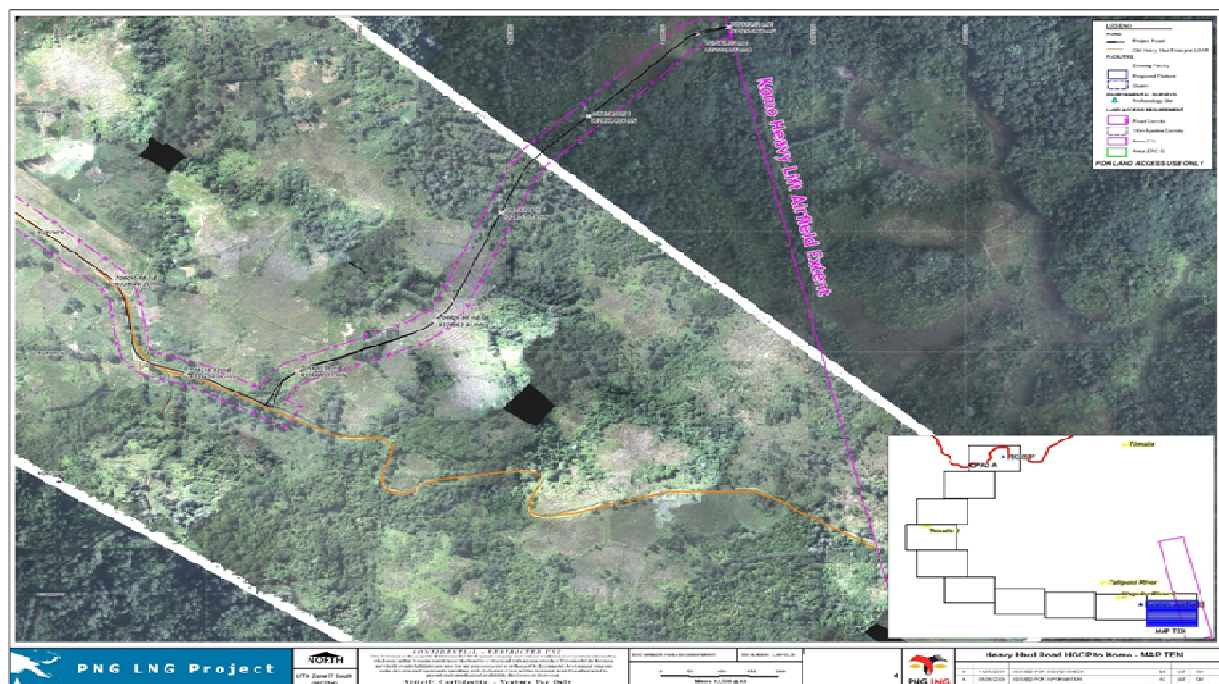


Figure 1-6: Alignment of the Heavy Haul Road, HGCP Komo Airstrip

1.4 Resettlement Goals and Principles

The Project's overall resettlement goal is to design and implement resettlement in a manner that gives physically and economically displaced persons the opportunity to at least restore their livelihood and standards of living. This RAP is consistent with the goals, principles, and processes set out in the Project Resettlement Policy Framework.

Physical displacement involves the loss of shelter and assets resulting from acquisition of land associated with a project that requires the affected persons to move to another location.

Economic displacement involves the loss of income streams or means of livelihood resulting from land acquisition or obstructed access to economic resources (land, water, forest) resulting from the construction or operation of a project or its associated facilities.

1.4.1 Resettlement Principles

A number of fundamental principles will be applied to facilitate achievement of the resettlement goal. These principles are:

- Avoid and or minimize the need for physical/economic displacement through alternatives analysis and siting, alignment, and other design modifications;
- Conduct consultation processes that achieve free, prior, and informed participation of affected people and communities (including hosts) in decision making related to resettlement, and continuing participation during implementation and monitoring/evaluation;
- Compensate people affected by land acquisition for loss of assets at full replacement value (FRV);
- Improve the living conditions of physically displaced households;
- Design and implement in a timely manner culturally sensitive and economically sustainable income restoration measures;
- Provide measures to support physical relocation and re-establishment;
- Identify and provide special assistance to people who are especially vulnerable to displacement impacts; and
- Carefully monitor and evaluate to ensure that resettlement measures are meeting the needs of affected people and to identify the need for implementing corrective measures.

1.5 The Resettlement Process

Figure 1-7 below illustrates the resettlement planning and implementation process.

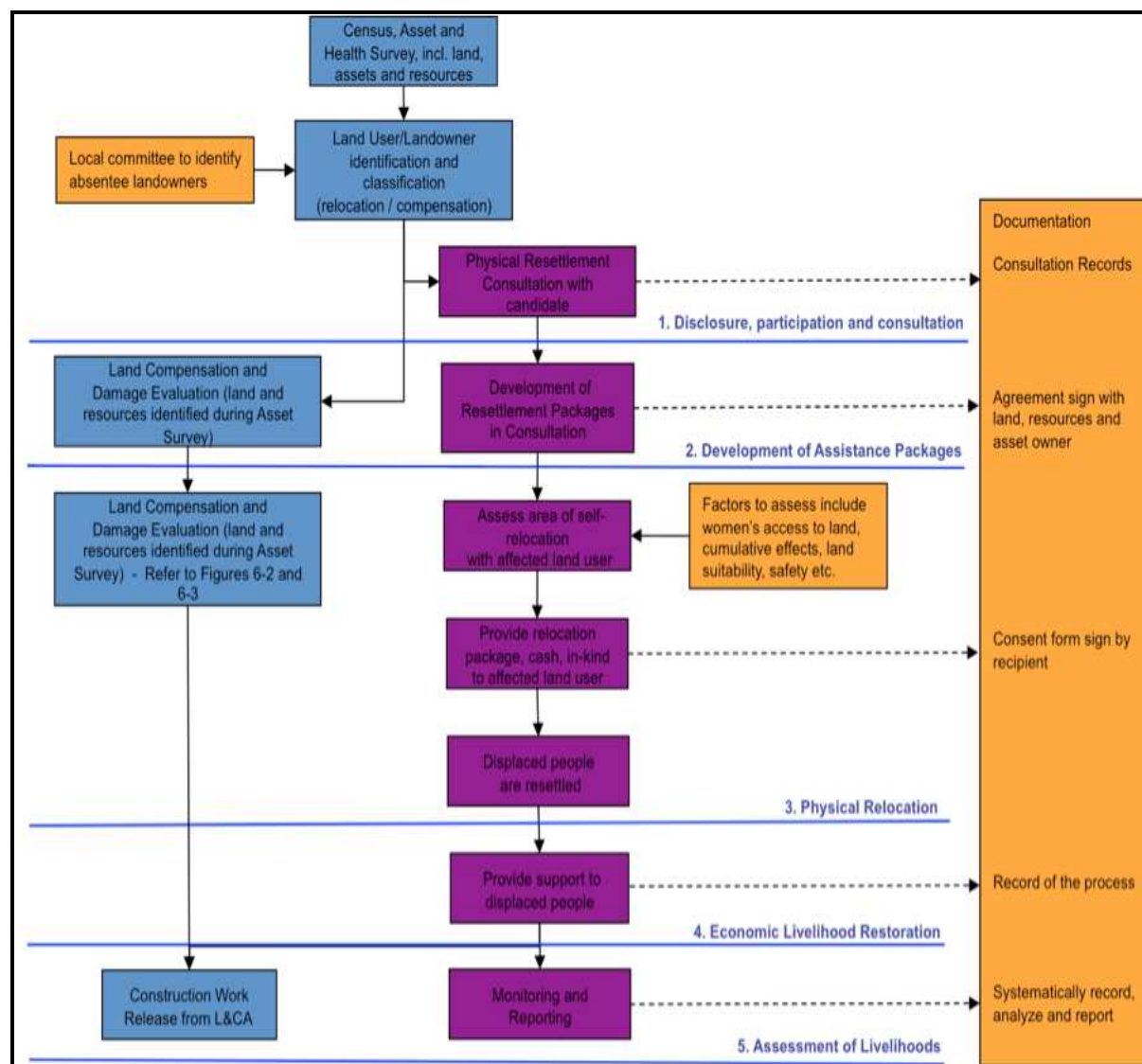


Figure 1-7: Komo Resettlement Process

The RAP process involves:

- Collection and analysis of socio-economic data regarding the households subject to loss of assets or resources;
- Determining pre-Project baseline conditions as part of the resettlement/compensation methodology;
- Estimation of the impact that resettlement will have on people and property (buildings, structures, land, crops, and access to forest and grazing resources);
- Definition and description of eligibility criteria and compensation categories;
- Valuation of land, crops, buildings and all other property, including cultural property such as graves, sacred sites and monuments;
- Determination of various income restoration strategies (including assistance in sustainable agricultural techniques);
- Definition of individual, household and community compensation agreements;
- Structuring of the complaints and grievance procedures;
- Preparation of a comprehensive budget and schedule for the implementation of the RAP;

- Preparation of a monitoring and evaluation process for the RAP implementation;
- Identification of the monitoring and evaluation indicators; and
- Provision of recommendations as to resettlement implementation.

1.6 Sources of Information

Key sources of information used in the preparation of this Resettlement Action Plan include:

- Papua New Guinea Liquefied Natural Gas Project Environmental Impact Statement (EIS) and Papua New Guinea Liquefied Natural Gas Project Social Impact Assessment (SIA) as part of the Environment Impact Statement – 2009;
- Project Environmental Impact Statement;
- Censuses and Survey results;
- Social Mapping and Landowner Identification studies (SMLIs);
- National Content Plan (outlines workforce development, local business development, investment in strategic community programs);
- Integration of Lessons Learned from Land and Community Affairs Activities and their approach to business;
- The Company Corporate Elements (Best Practices in External Affairs (BPEA), Company Land Use Standard, Community Awareness element of Operations Integrity Management System (OIMS) on Property Rights and Resettlement, Company Policy on Human Rights);
- IFC Performance Standards (PS) 5 - Land Acquisition and Involuntary Resettlement, (PS) 4 - Community Health and Safety and Security, (PS) 7 - Indigenous People
- Lessons learned from Company and other Land and Community Affairs teams (the Project, OSL), other oil and gas and other extractive industry projects (including Barrick's Project in Porgera and Lihir) gained through consultation with people involved in those projects.

1.6.1 Minimising Resettlement

An evaluation study, completed by a KBR aviation team from Houston, Texas along with local Australian and Papua New Guinea staff/researchers familiar with the area, examined four potential airstrip sites large enough to accommodate a 4km runway complex needed to service the Antonov 124 aircraft.

All four sites (see Figure 1-3) were located within 10-12 kilometres of the proposed HGCP plant site in the Komo area. These potential runway sites were evaluated against the following criteria:

- Technical criteria including aircraft performance criteria;
- Geotechnical criteria including land formation and stability;
- Logistical criteria including infrastructure, bridges and access to HGCP plant site;
- Location within PDL or PRL boundaries and space to meet regulatory standards;
- Flight safety and ability to support a Category 1 instrument landing system;
- Weather and other environmental conditions at the site;
- Terrain features, e.g. flatness, trees, and water on the site;
- Proximity of earth and stone materials for construction;
- Distance from the LNG plant site and available road access; and
- Social impact criteria, including impacts on communities and scale of physical displacement and disruption of local livelihoods.

Following site visits, construction costs and schedules for each option were calculated, and evaluations were made against the technical criteria set for this Project component. This evaluation recommended Site No.1 (immediately west of the former Komo government station and airstrip) and Site No. 3 (immediately northeast of the former Komo government station and airstrip) as the most appropriate options. Site No. 1 appeared to be a better location for construction, while Site No. 3 had a better alignment for aviation purposes.

These options were then assessed against social criteria with the assistance of the L&CA Teams. It was found that Option 3 would impact on the least number of households in terms of physical and economic resettlement and limit the number of impacts on household gardens when compared to Option 1, which is in a more populated area.

The Heavy Haul Road is common to both options and the following assumptions were made:

- Impacts resulting from upgrading the Heavy Haul road would be similar for both Options 1 and 3;
- The Heavy Haul Road could be re-routed as appropriate to minimise the potential requirement for resettlement; and
- Options 1 and 3 provided an opportunity to share the benefits of the Project, rather than concentrating activities solely around the HGCP site.

Option 3, as indicated in Figure 1-3, was selected and it is this site that will be discussed further in relation to resettlement options.

2.0 INSTITUTIONAL AND LEGAL FRAMEWORK

This section addresses the PNG legal and institutional framework applicable to land acquisition and compensation. PNG does not have a resettlement policy. The Komo RAP, as all other Project RAPs, conforms to the requirements of Performance Standard 5 (PS5 – Land Acquisition and Involuntary Resettlement) of the International Finance Corporation. These requirements are also addressed, as well as differences between the requirements of PS5 and PNG law.

2.1 Institutional Framework

2.1.1 Provincial Government

The Project affects the territories of four Provinces, as well as the National Capital District. These affected territories and their capital centres are:

- Southern Highlands Province – Mendi;
- Gulf Province – Kerema;
- Western Province – Daru;
- Central Province – Port Moresby; and
- National Capital District – Port Moresby

The Komo Airstrip is located in the Southern Highlands Province.

The following government institutions exist within each province:

- **The Provincial Assembly** is the paramount decision making body in a province. It is composed of Members of the National Parliament (MPs) and a limited number of appointed members representing women and other groups.
- **The Provincial Executive Council (PEC)** is the executive arm of the Provincial Government, and is comprised of the Provincial Governor, Deputy Governor and a series of Chairpersons appointed to supervise permanent development committees.
- **The Joint District Planning and Budget Priorities Committee (JDPBPC)** oversees and coordinates the preparation of district plans and budgets. JDPBPCs

are comprised of the heads of local-level governments in the district (usually three), and three members appointed by the Chairman, who is the Open MP for the district.

- The Provincial Administrator and Staff are responsible for overseeing the administration of the Organic Law in the province.
- The District Administrator and Staff are responsible for overseeing the administration of the Organic Law in the district.

2.1.2 Local Government

Local Level Governments (LLGs) were originally given a constitutional mandate, a long list of legislative powers and, in principle, guaranteed funding under the Organic Law of 1977. Under the reformed Organic Law of 1997, the LLGs were to develop plans and budgets, raise taxes, fees and levies, pass and enforce laws, and provide a range of services. However, due to various constraints, the LLGs in most provinces function largely as political offices and have very limited capacity to raise revenue or deliver public infrastructure and services.

Special Purpose Authorities (SPAs) were established by LLGs to carry out community development projects. The SPAs receive funds from Provincial Government through development levies, royalties and direct government grants.

Ward Councillors/Chairmen are, presently, the only duly elected landowner representatives in the Project Impact Area. Ward councillors are part of the LLG system and should form part of a Ward Development Committee (WDC) under the provisions of the Local Level Administration Act 1997 Div.2. Ward Development Committees should service their ward constituencies in respect of services, development programs and infrastructure. At present WDCs are non-operative in the Southern Highlands Province.

2.2 **PNG Legislation Relating to Land and Resettlement**

2.2.1 Land Tenure and Rights

PNG land laws are largely based on “customary land title”. Customary land notionally covers most of the usable land in the country (some 97% of the total land area). The remaining land is held as either Freehold Title (also known as fee simple) and held privately under a 99 year State Lease, or is government land.

Ownership of customary land is determined by oral history and genealogical enquiry.

Groups such as clans usually have a notional title over land. However, the effective landholding units, who own and/or operate the smallest portions of land whose ownership cannot be further divided, are individual heads of extended families and their descendants. Customary property, usually land, cannot be devised by will and can only be inherited according to the custom of the deceased's people.

Clan members who may have moved elsewhere but retain claims to interests in land, often contest land ownership. Such disputes can go back for generations.

Project Area Landowners are defined in the Oil and Gas Act (O&GA) 1998 as persons who have customary rights of ownership of, or registered title to, any part of the license area of a Petroleum Development License. This includes the operations which are part of a petroleum project; and any land within the buffer zone of a petroleum project.

2.2.2 Land Access

A private entity cannot purchase customary land, but under the Land Act of 1996, the private entity may negotiate with customary landowners for the land to (i) be leased to the State and (ii) for the State to then issue a State Lease to the landowners, who may sub-lease the land to the private entity.

Where the State wishes to acquire customary land for governmental purposes, the PNG Constitution provides a statutory framework to do so by negotiation or, subject to certain conditions, by compulsory acquisition upon just compensation.

The Constitution provides a number of safeguards against unjust deprivation of property. The Land Act, for example, enables claims for compensation in relation to State acquisition of property to be heard by the Land Titles Commission.

The Project will require access to land for its facilities for the term of the licenses granted under the O&GA. Sections 110 to 120 of the O&GA describe the rights and obligations of the licensees.

The O&GA also stipulates the need for preliminary and full-scale Social Mapping and Landowner Identification Studies for Petroleum Development Licenses, Petroleum Retention Licenses, Pipeline Licenses, and Petroleum Production Facilities Licenses³.

Where the people to be relocated do not own the land that is to be resettled, access to the relocation site could in principle be obtained via acquisition by the State under the Land Act.

2.2.3 Compensation

2.2.3.1 Legal Basis

Landowners affected by the Project are protected by legislated provisions contained within the O&GA. This Act contains provisions for adequate and fair compensation for land which is accessed or acquired.

O&GA Section 118 (2) specifies that compensation shall be paid for:

- The deprivation of the use and enjoyment of the surface of the land or any part of it or of any rights customarily associated with it, except where there has been a reservation in favour of the State of the right to such use and enjoyment; and damage:
 - i. to the surface of the land or any part of it, or any improvements on it; or
 - ii. to any trees, fish or animals, caused by the carrying on of operations by the licensee; and
- Severance of the land from other land of any owner, occupier or person interested in the land; and
- Rights of way and easements; and any other damage consequential on the licensee's use or occupation of the land.

The provisions of the O&GA are overseen by the PNG Government agencies of the Department of Petroleum and Energy and Department of Lands and Physical Planning.

2.2.3.2 Eligibility

Table 2-1 indicates those individuals or groups eligible for compensation. This subject is expanded in Section 7.2.

³ Social Mapping and Landowner Identification (SMLI) reports are commissioned by the licensee and most usually undertaken by anthropologists with a research and publication record relevant to the affected ethnic groups. The research involves fieldwork to ascertain who the social groups are that inhabit the license area with respect to their history, language, culture, social organization, trade and political and economic systems. Particular attention is paid to mapping out social groups and their distribution on the land. The report details relationships of people to land, and how a portfolio of rights to access and use are defined within the social context, and with regard to the descent and kinship systems. The final report is submitted to the Minister of the Department of Petroleum and Energy who can use it (along with any Social Impact Analysis) as an aid to the identification of project landowners prior to the commencement of any Development Forum. The Project Lands & Community Affairs agency uses the SMLIs as a basis for ground-truthing clan ownership of tracts/areas likely to be accessed or used by project infrastructure.

Table 2-1: Compensation Eligibility

Compensation Type	O&GA Reference (Sections)	Eligible Claimants
Deprivation of use of land	S118 (2) (a)	Landowners and land-users with rightful, recognised claims to land
Damage to land surface	S118 (2) (b) (e) (i)	Owners of dwellings, fences, houses, and other man-made structures
Damage to any trees, animals or fish	S118 (2) (b) (ii)	Persons recognised as owners of animals, planters of trees or, in the case of riverine fish, villages holding traditional fishing rights in the stretch of river where fish kills occur
Damage to improvements	S 118 (3)	Recognised owners of improvements whether landowners or not
Severance or reduced access to land	S 118 (2) (c)	Persons recognised as landowners or land-users on the land to which access is reduced
RoW or easements	S 118 (2) (d)	Persons recognized as landowners along the RoW or easement
Any other damage (e.g. water)	S 118 (2) (e)	In the case of water damage, villagers who habitually use the tainted water source

2.2.3.3 Compensation Rates

The Project is using the Project Land Management manual as the basis for compensation assessment. This manual uses 2008 Valuer General (VG) Compensation Rates. These rates provide guidelines for the replacement cost of man-made structures, trees and plants. They are commonly used by the mining and oil and gas industry in PNG. The VG rates are reviewed on a regular basis by a committee chaired by the Valuer General with representatives from Government Departments, Statutory Authorities, Government Corporations and PNG Chamber of Mines and Petroleum. Table 2-2 shows the rates that landowners and developers have accepted as appropriate for the Komo area and these are generally higher than the Valuer General's rates. The figures presented are average rates that would be derived by counting flora within 1 ha.

Table 2-2: Valuer General Compensation Schedule

COMPENSATION RATES USED - (Kina per hectare)			
INITIAL DAMAGE (One off)	Easy Access	Moderate Access	Difficult Access
Kunai or secondary growth	206.00	165.00	132.00
Low density - Lowland / Mid montane & Alpine Forest.	1 030.00	825.00	660.00
Medium Density Lowland / Mid montane & Alpine Forest	1 287.50	1 031.25	825.00
High density - Lowland / Mid montane & Alpine Forest	1 802.50	1 443.75	1 155.00
SURFACE DAMAGE (One off)	2 575.00	2 062.50	1 650.00
LAND USE – All areas (Annual)*		203.78	

2.2.3.4 Benefit Distribution Mechanisms

Project Area Landowners are defined in the O&GA as persons who have customary rights of ownership of, or registered title to, any part of the license area of a Petroleum Development License. This includes the operations which are part of a petroleum project; and any land within the buffer zone of a petroleum project. As such, landowners are eligible for various cash and non-cash entitlements. However, since more than 97% of all land in the country is subject to traditional ownership and management, usually vested in clans or sub-clans, these entitlements are paid through intermediate entities such as:

- Incorporated Land Groups (ILGs). These are legally registered corporations for the management of land resources. The registration process is governed by the Minister of Lands and the Registrar of Titles (ROT). One of their functions as determined under Oil and Gas Act Section 169(b) (Identification of Landowner Beneficiaries) and Section 176(3)(f) is the receipt of benefits such as royalty and equity dividends.
- Landowner Companies (Lancos). These are incorporated under the PNG Companies Act, and give expression to local business aspirations and provide an avenue for direct and indirect employment and income generating activities. They have been formed to undertake business ventures.
- Landowner Associations (LAs). These are incorporated under the Associations Incorporation Act, to collectively represent local landowners that may also have formed themselves into ILGs or Agencies within a PPL, PRL or PDL. Whereas ILGs function to distribute royalties and equity dividends, a Landowner Association is supposedly vested with authority to represent landowners in negotiations that may affect their social and economic welfare. Although LAs are not formally recognised by or alluded to in the Oil and Gas Act, they are often mandated by MOA/MOUs as for example in the Moran PDL 5 Development Agreement.
- Agents are clan/sub-clan representatives who receive benefits on behalf of, and subsequently distribute to, their constituencies.

2.2.4 Disputes

Land disputes are common to all regions of PNG and are a major cause of social and economic disruption. Disputes may go back several generations and settling them can be a complex process.

PNG's Land Dispute Settlement Act 1975 created a three-tiered structure for dispute settlement based on a combination of Melanesian customs, principles and practice, and formal law of British origin. The Act provides a formal structure by which land disputes may be resolved. The mechanisms for resolution comprise three stages:

- *Mediation*: through Provincial Land Dispute Committees established for each province.
- *Judicially assisted mediation at the Local Land Court level*: Where mediation fails to resolve land disputes, the matter may be taken to the Local Land Court for judicial determination. However, in practice, the lack of magistrates is a constraint on the prompt hearing of land dispute cases in PNG.
- *Appeal to the Provincial Land Court*: A party aggrieved by a decision of the Local Land Court may appeal to the Provincial Land Court; and may invoke the inherent powers of the National Court and seek a judicial review of the Provincial Land Court decision.

2.3 PNG National Government Institutions

Key National Government institutions that are potentially relevant to this RAP are as follows:

- The Department of Petroleum and Energy (DPE), which administers the O&GA and currently distributes royalty and development levy entitlements;
- The National Economic and Fiscal Commission (NEFC), which is responsible for overseeing inter-governmental financial arrangements, making recommendations on the allocation of grants to Provincial Governments and assessing the impact of natural resource projects on national development;
- The Department of Provincial and Local Level Government, which administers the Organic Law and supervises the performance of provincial governments and any associated Special Purpose Authorities;
- The Department of Internal Security, which is responsible for ensuring public safety, protection of public assets and upholding law and order;
- The Department of Land and Physical Planning (DLPP), which administers all alienated land (State and Freehold) in PNG and customary land dealings; facilitates customary land (land under the ownership of the original inhabitants of PNG) issues at the discretion of the customary landowners, for social and economic sustainability; and issues lease agreements and conditions for lease of State land (required for LNG facility).

The following National Acts and Regulations pertaining to land apply to the Project and are administered by DLPP:

- Land Act (1996)
- Land Regulation (1999)
- Land Registration Act (Chapter 191)
- Land Registration Regulation (1999)
- Land (Tenure Conversion) Act (1963)
- Land (Tenure Conversion) Regulations (1964)
- Land Disputes Settlement Act and Regulation (Chapter 45)
- Land Groups Incorporation Act and Regulation (Chapter 147) (1996).

2.4 IFC Standards and Guidelines

2.4.1 IFC Performance Standards (PS) on Social & Environmental Sustainability

IFC Performance Standards (PS) on Social & Environmental Sustainability (2006) defines IFC's expectations of their clients, specifically in terms of roles and responsibilities for managing projects. The most relevant PS for resettlement is PS 5: Land Acquisition and Involuntary Resettlement and generally considered best practice for private sector projects.

The main requirements of PS 5 are:

- To avoid or at least minimize involuntary resettlement wherever feasible by exploring alternative project designs;
- To mitigate adverse social and economic impacts from land acquisition or restrictions on affected persons' use of land by: (i) providing compensation for loss of assets at full replacement cost; and (ii) ensuring that resettlement activities are implemented with appropriate disclosure of information, consultation, and the free, prior and informed participation of affected people;
- To improve or at least restore the livelihoods and standards of living of displaced persons; and
- To improve living conditions among displaced persons through provision of adequate housing with security of tenure at resettlement sites.

Other relevant documents, guidelines and standards considered in the preparation of this RAP are:

- IFC Handbook for Preparing a Resettlement Action Plan (2002);
- IFC Performance Standards on Social & Environmental Sustainability (2006);
- IFC Policy on Disclosure of Information (2006) Revised Environmental and Social Review Procedure (2007);
- Revised IFC Policy on Disclosure of Information (2006);
- PS 1: Social and Environmental Assessment and Management Systems;
- PS 7: Indigenous Peoples;
- PS 8: Cultural Heritage.

The RPF ⁴(identifies any gaps or conflicts between IFC PS 5 requirements and PNG Laws and Regulations and defines the proposed Project strategy. The Komo RAP is not expected to result in any variations from those defined in the RPF.

2.5 Project Owner Policies

This Resettlement Action Plan reflects the Company's corporate approach to property rights and resettlement:

"We respect property rights in the nations in which we operate. Before implementing new projects, we engage in free, prior, informed consultation with communities that will likely be affected by our operations. Direct compensation programs and community programs that in some instances provide micro-development programs are incorporated into our projects, as required. In the rare case in which our projects require resettlement of people, we provide fair and just compensation to those affected and we are consistent with the World Bank Operational Policy and Bank Procedure on Involuntary Resettlement."

3.0 THE SOCIAL, ECONOMIC, AND CULTURAL ENVIRONMENT

3.1 Summary

The Komo catchment is inhabited by Huli people whose socio-cultural environment will have significant impacts and consequences for the process of resettlement. This section outlines the positive and negative attributes of the social, economic and cultural environment in relation to relocation before going on to discuss these characteristics in more detail.

3.1.1 Negative Attributes

- Population densities vary dramatically across the Southern Highlands Province due to the lack of habitable land. The Tari Basin has around 190 persons/km², whereas the western part of the Komo-Margarima district has a population density of less than 20 persons/km². These population densities and lack of land suitable for cultivation could severely affect relocation efforts.
- People in the Komo-Margarima District are more economically disadvantaged in relation to other districts in PNG. This vulnerability could restrict the abilities of households to successfully relocate without sustained disadvantages.

⁴ Resettlement Policy Framework, November 2010

- Households typically rely on customary networks of obligations within communities, and the loss of such support could result in insufficient resources to sustain a livelihood.
- A previous inter-clan war in 2000 resulted in a large absentee landowner constituency (referred to as internally displaced persons (IDP)⁵) which will require identification and consultation.

3.1.2 Positive Attributes

- Despite the presence of a high number of ethnic groups, there are no boundaries between most of these groups and it is common to find a high degree of bilingualism at the very margins. Huli is now the language of at least 30% of Fasu and is spoken by many Febi and Onabasulu, making integration due to resettlement a more feasible option.
- As most clans are exogamous, there exists a necessary degree of interaction between clans. Furthermore, previous inter-marriages will have created ties between clans, suggesting widespread links between communities that could be drawn on in the event of resettlement
- Multi-local residence in Huli means households often have access to more than one house and gardens, with members and segments of a clan widely spread across huge distances in Huli territory. The advantages of such a practice in relation to resettlement are:
 - o There is a high degree of tolerance and acceptance of such travel;
 - o Underlying, widespread support structures exist;
 - o The issue of 'host community reception/rejection' is not a consideration since people move only to those locales where they have established rights to access and use;
 - o Alternative accommodation is readily and immediately available; and
 - o Crops are likely to be cultivated simultaneously at alternative sites, thereby providing ongoing resources for household consumption and for selling.
- There are no marked seasonal changes in the highlands, meaning no annual horticultural cycle exists and there is little variation in everyday gardening. As such, resettled households should not experience the loss of certain crops during resettlement, and similar agricultural practices should be relatively easy to re-establish elsewhere. Furthermore, sweet potato gardening and pig husbandry are the predominant subsistence forms with low-level cash economy participation, meaning economic impacts should be limited.
- The Huli typically self-build their homesteads, indicating the existence of relevant skills and cultural practices should the need arise for alternative accommodation due to resettlement

⁵ The United Nations report, "Guiding Principles on Internal Displacement" defines a range of in-country conflict situations that result in persons becoming displaced and thereby being formally defined as internally displaced persons – IDPs (Office of the UN High Commissioner for Refugees). In the case of the Komo Airstrip, the conflict situation is very localised, occurring only within the Huli area, but the implications are similar, households have been forced to flee and leave their homes of habitual residence in order to avoid the effects of armed conflict or war. For the purposes of this Komo RAP, the occupants of these households are referred to as IDPs and the term used interchangeably with absentee landowners. The possible land rights of IDPs are acknowledged in the RAP, in terms of possible damage or deprivation, but the Company is not deemed to be responsible for any restitution arising from the conflict itself.

- Currently, individual clan members have the right to sub-let land to anyone for a fee or fixed term, or grant usage to title and hunting tracts by gift, deed or inheritance. These principles indicate opportunities for resettled households to seek alternative land to cultivate or reside on.
- The dynamic and flexible nature of Huli group composition and settlement further suggest an ability to adapt and accommodate new situations and to readjust.

3.1.3 Relocation Benefits

- Resettlement assistance package will offer options to people for replacement houses either self-built or with Project assistance; livelihood restoration through an extensive agricultural assistance and training program, and health provisions and monitoring. People with either gardens and/or houses on the relocation site will be eligible for this.
- Both resident and non-resident landowners are potential recipients of both deprivation and damage compensation. The Project will provide a dedicated Compensation Advisor (section 9.3) to assist these beneficiaries to better understand their business and investment options for their disposable cash.

3.2 **Komo Airstrip**

The Komo Airstrip area lies wholly within the Southern Highlands Province (SHP) of Papua New Guinea. Within the SHP, the area falls within the Komo-Margarima district (Figure 3-1). The SHP is at the south-western end of the Highlands Highway that runs through Mendi, Nipa, Tari and ends at Koroba. Good roads connect Tari with Kopiago in the north and the Hides gas field in the south. Politically, the SHP divides into the Koroba-Tari-Margarima area in the west, the Nipa-Mendi area in the centre, and the Lalibu-Kagua area in the east.

Komo is inhabited by the Huli linguo-cultural group (approximately 130,000 speakers). The Huli occupy areas northwest from Yalenda through Baguale-Homa-Paua-Yarale-Tari-Koroba, and the area on the western side of the Hegegio/ Tagari River from south Komo through to Nogoli-Yaluba-Mogora Pugua-Levani and Tanggi.

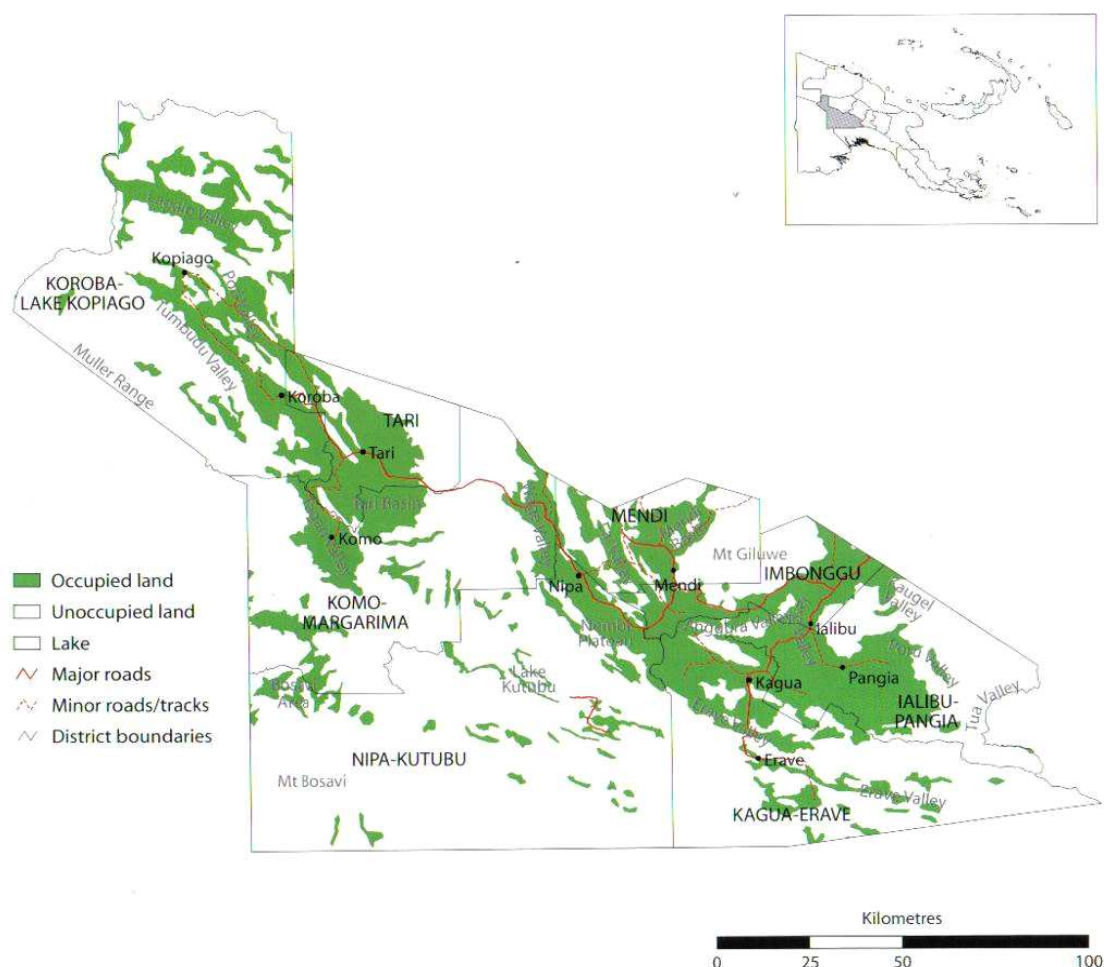


Figure 3-1: Southern Highlands provincial (SHP) districts 6

3.3 Demographics

Table 3-1 provides some demographic data taken from the 2000 National census showing gender distribution of population, households (HHs), and in descending order of government. These units provide a degree of decentralised government within each PNG Province. The census units are not necessarily villages, but State determined areas used only for the purposes of the national decadal census.

⁶ Sourced from Hanson et al 2001:90.

Table 3-1: SHP Provincial Demographics

SOUTHERN HIGHLANDS PROVINCE 2000							
Total	Male	Female	HHs	LLGs	CU	Wards	Districts
546,265	278,331	267,934	96,461	30	2749	677	8
Komo-Margarima District							
64,162	32,628	31,534	11,580	3	287	85	
Tari-Pori							
9,027	26,290	25,920	9,025	4	79	67	
Hulia Rural LLG							
15,125	7,493	7,632	3,076		72	29	
Komo Rural LLG							
15,815	8,284	7,531	2,623		51	21	
Haiyapuga Rural							
17,272	8,679	8,543	3,368		21	21	
Koroba							
20,732	10,512	10,210	3,324		73	23	

Table 3-2 shows the provincial growth rate since 1990 to be approximately 5.4 per cent, making SHP one of the fastest growing provinces in PNG, though more than half of the area is unoccupied. Population densities are highest in the Tari Basin at about 190 persons/ km² with areas around Lake Kutubu supporting 40 persons/ km² (see Figure 3-2). In the western part of the Komo-Margarima district, density is less than 1–20 persons/ km² (Hanson et al 2001:91).

Table 3-2: SHP Growth Rates

Southern Highlands Provincial Growth Rate (GR) 1980–2000 %					
1980	1990	2000	1980–2000 GR	1980–1990 GR	1990–2000 GR
236,025	317,437	546,265	4.2	3.0	5.4

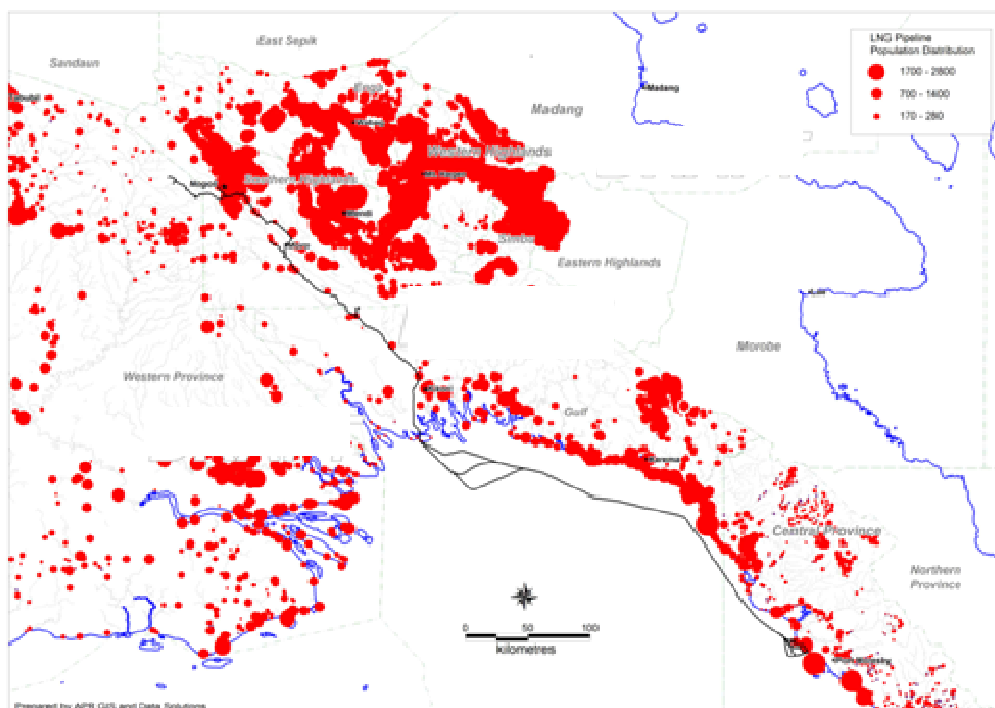


Figure 3-2: Population Densities in LNG Project Area

3.4 Economic Conditions

Income across the province is generally very low, with the exception of those landowners who receive royalty and equity benefits. With respect to the Komo-Margarima and Nipa-Kutubu districts, Hanson et al concluded that: 'Overall, people in Komo-Margarima District [and Nipa-Kutubu] are seriously/extremely disadvantaged, relative to people in other districts of PNG' (2001:101,104).

Agriculture provides the main source of cash income through sales of coffee, fresh market food, and firewood. Most of the coffee grown in SHP is east of Nipa. Trade store businesses tend to be short-lived with only those situated close to major roads surviving beyond a 12 month period. Profits are disbursed through customary networks of obligations, and re-supply of store items is hampered by transport and road problems. Wage employment from the Kutubu-Gobe-Hides oil and gas operations is the main non-agricultural source of cash income.

Despite an ever-increasing use of trade store items (rice, tinned fish) and influx of oil/gas royalty and equity monies over some two decades, the bulk of the Huli remain subsistence farmers, utilising a bush-fallow technique devoted to sweet-potato cultivation. With no marked seasonal changes and thus no annual horticultural cycle, little variation occurs in everyday gardening activities. Sweet potato is supplemented by crops such as sugarcane, taro, pandanus, bananas, leaf vegetables, and depending on locations, new crops like pineapple, tomatoes, potatoes, pumpkin and taro, and augmented by pig husbandry. In the province's lowland areas people generally rely on sago production, supplemented by low intensity mixed staple gardens and pig husbandry. Pig husbandry continues to play a vital

economic role in Huli both as a standard of wealth and as a prime medium of exchange in bride price and compensation payments.

Fishing occurs only irregularly, mostly when valley floors become flooded. Hunting provides minimal dietary input from wild game such as boar, snakes, cassowary, kangaroo and possums.

Over the last decade there has been a marked decrease in the previously huge number of sweet potato varieties. Hunting has similarly decreased in frequency and dietary significance. The introduced activities of cattle farming, silkworms and cash-cropping of coffee, fruits and vegetables have had only sporadic success with little sustainability across the target area.

3.5 Ethnic Group Constituency

The socio-cultural composition of the Komo Airstrip area reflects traditional migration patterns, inter-tribal relationships, and the history of contact in the area. Komo is inhabited by the Huli linguo-cultural group (approximately 130,000 speakers). The Huli occupy areas northwest from Yalenda through Baguale-Homa-Paua-Yarale-Tari-Koroba, and the area on the western side of the Hegegio/ Tagari River from south Komo through to Nogoli-Yaluba-Mogora Pugua-Levani and Tanggi.

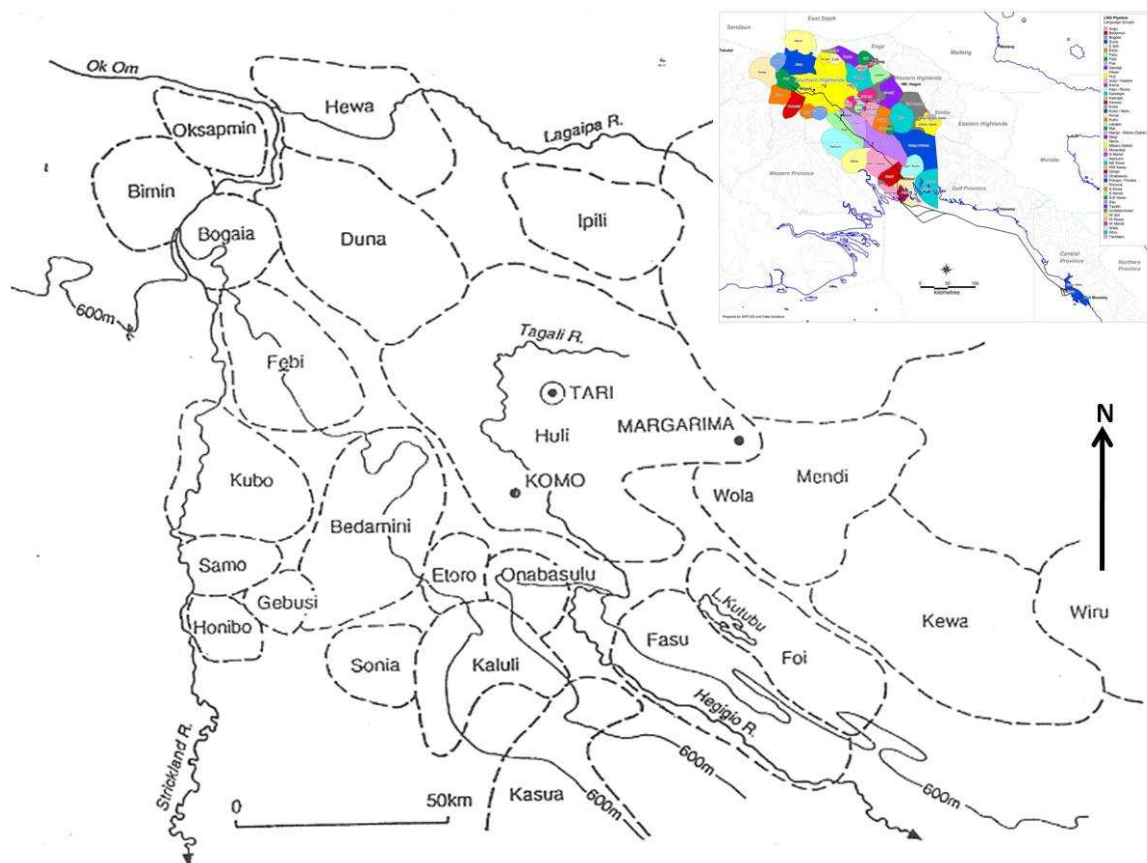


Figure 3-3: Ethnic Groups Adjacent to the Huli

Figure 3-3 illustrates the various ethnic groups adjacent to the Huli with an inset of all major ethnic groups in the Project environs. Appendix 1 provides detailed information on the affected areas' ethnic groups and characteristics.

There are no real boundaries between most of these groups and it is common to find a high degree of bilingualism at the very margins. The numerical preponderance of Huli within the resource development area, coupled with their ownership of major gas fields, inhibited the

political and economic strategies adopted by neighbouring groups. Other groups perceive themselves as threatened or at least at a 'disadvantage' because Huli are seen to use their numerical advantage in any conflict scenario. This has led to a tendency by numerically disadvantaged groups to adopt the litigation strategies, genealogical models, and principles of land tenureship of the dominant Huli culture in an effort to compete with them. Huli is now the language of at least 30 per cent of Fasu and is spoken by many Febi and Onabasulu.

Figure 3-4 below indicates a political reality for the ethnic groups adjacent to the Huli.

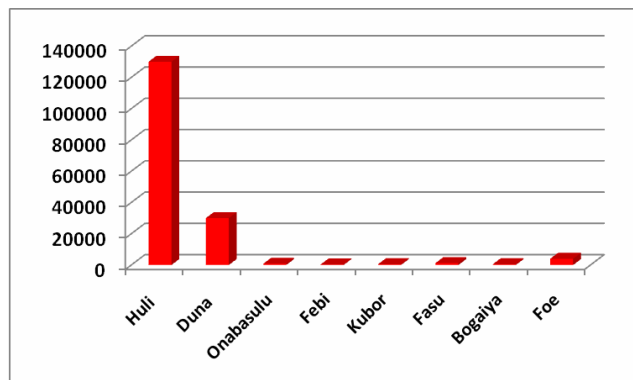


Figure 3-4: Ethnic Populations in Proximity to Huli

3.6 Language & Migration

Figure 3-5 depicts what is commonly referred to as the Trans-New Guinea Phylum with two of its many language stock sub-divisions:

- The Central and South New Guinea—Kutubuan super-stock.
- The East New Guinea Highlands stock.

The West Central family of Highland languages includes Enga and Huli. The accepted model of language development suggests Huli, Kewa and Sau were initially part of a large undifferentiated group speaking one language before subsequent fission into other genetically related languages of the Southern Highlands. There is, however, no indigenous understanding of a prior common language.

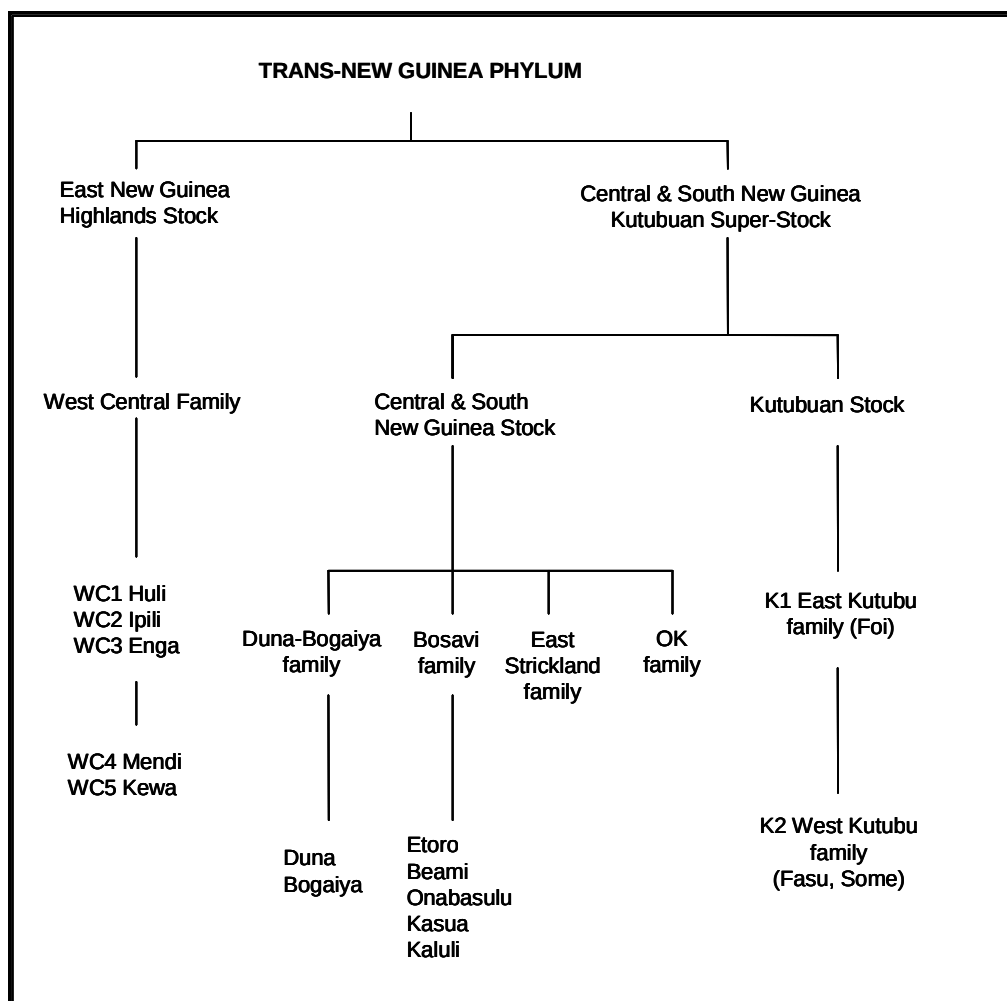


Figure 3-5: The Trans-New Guinea Phylum

The ethnographic evidence indicates well-defined, pre-colonial inter-tribal trade (Figure 3-6). These trade routes helped establish social landscapes in which people came to know about neighbouring 'others'. Importantly then, the oil and gas explorations and pipelines will not so much create new pathways between previously isolated ethnic groups, as redefine and retrace old regional networks.

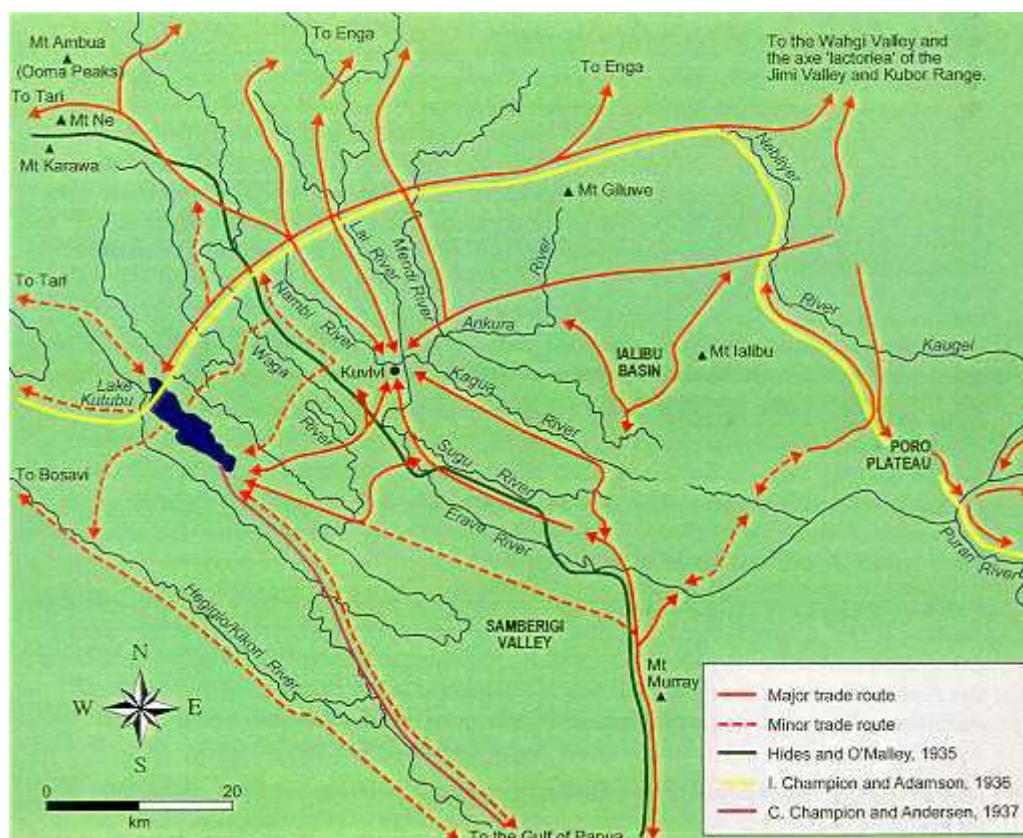


Figure 3-6: Pre-contact Lowland-Highland Trade Networks and Early Exploration Patrol Routes

3.7 Huli Residential Patterns and Practices

The Huli residential pattern has traditionally been one of scattered households living on small plots, rather than in nucleated villages. In some areas, clustered households (not actual villages), however, use common facilities such as aid posts, schools, and various community based schemes.

In the pre-contact era and up until the 1970's men and women occupied quite separate residences, due in part to a trenchant ideology of sexual pollution and male: female separation in most spheres of activity. A sizeable proportion of Huli now maintain co-residential homes.

Multi-local residence in Huli (the practice whereby people have more than one house on different clan lands which they may access and use at any time) reflects the paramount need for security and the advantage to be gained from dispersing the effects of war and natural hazards on crops. The picture that emerges of any given piece of Huli land tract is one of a mosaic of garden plots and forest areas on which the owners and users may or may not be resident, and who invariably trace their descent to a wide variety of clans.

Forest areas are used to collect wild pandanus, banana, other flora and fauna, and hunting. In some areas there are discrete forest terrains for specific sub-clans of the clan. In other areas, because of inter-marriage and the vicissitudes of clan population, the ownership or rights to hunt and collect are distributed between many clan segments in an intermixed and again mosaic pattern of usufruct rights.

The Huli conform to the patrilineal⁷ descent systems typical of much of the Highlands region. It is important to understand that history, boundaries, genealogies and descent statuses become defined only in the context of conflict. Such considerations have little impact on everyday interaction, except when they threaten or impinge on the politico-economic status quo.

The Huli have a social organisation based on named clans, some of whom recognise common descent, with each clan associated with a distinct territory commonly referred to as a 'parish'. The Huli deviate from the simple 'one clan one piece of land' model in the extent to which it is permissible for people to travel, occupy, stay and utilise gardens in other clan parishes to which they may or may not trace some kinship/descent affiliation. In essence, there is a high degree and tolerance of multi-residence within the society, such that members and segments of any one-named clan are invariably spread across huge distances in Huli territory.

This type of complex residence strategy is further complicated by various category distinctions the Huli make between residents on the basis of their kinship and descent connections to the founding clan after which the parish is most usually named. The varying statuses and land rights accorded such satellite clan segments and individuals are discussed below.

Uneven development and the feelings of jealousy, frustration and determination to capitalize on any future projects present a significant barrier to the smooth implementation of any resource development in the Huli environs. The Gas-to-Electricity Project in Hides has left a legacy of dissatisfied 'have-not' landowners. These disadvantaged people see the Project as an opportunity to secure Project benefits.

3.7.1 Huli Social Organisation

Huli people are divided into named patrilineal clans. It is estimated there are anywhere between 300-400 individually-named clans in total. Clans are internally divided into sub-clans and may be further divided into smaller units called lineages. Most clans are exogamous, meaning that clan members are typically, but not always, expected to marry someone from another clan.

3.7.2 Land Tenure and Residence Principles

Essentially, each clan has a principal traditional territory (parish) that represents a central station for their ritual, territorial, and historical property. All members of that clan notionally have a right to land on that tract by virtue of their descent status in that clan. This land comprises gardening, grazing, gathering and hunting tracts, various rivers, creeks, caves, sink holes, etc.

Land is held notionally by the clan and sub-clan corporations in perpetuity and can never be permanently alienated. Individual clan members (male and female), however, have the right to sub-let land to anyone for a fee or fixed term or grant usage or title to garden and hunting tracts by gift, deed, or inheritance. Rights to use land include the forest areas within the clan and sub-clan boundaries. People have groves of trees, hunting lookouts, traps etc., in the forest and these are to be respected by other lineage or sub-clan members.

Individuals have often moved out of natal clan territories to take up residence on a permanent or temporary basis with relatives or friends. People who relocate in this way do not necessarily lose their rights to land in their 'home' clan territory.

⁷ Patrilineal or agnatic descent confers membership to a named group by virtue of an unbroken line of descent from an apical ancestor though male links only.

3.7.3 Resettlement and Landowner Status – Dispute Potential

The indigenous category system provides the right to compensation to land users for any land improvements and houses that they construct. Compensation for land use deprivation (rents), however, will likely cause disputes because migrants who have established themselves over several generations will challenge the prerogative of landowners to claim such compensation. Long-term guests will claim they are independent hosts in their own right and not someone else's guests

The history of disputes in Moran, NW Moran and Hides is to a large extent a manifestation of these kinds of problems. There is resistance to any control by primary landholding units over *yamuwini* (related guests whose rights are secondary to those of the landowner) and a desire on the part of *yamuwini* to be treated equally in benefit stream scenarios. Despite the fact that the system and its categories are well understood by Huli, there is room to manoeuvre within the system by exploiting grey areas and re-categorising oneself as a 'primary' rather than 'secondary' resident. The most likely conflicts will emerge from the following situations:

- Host disputes over traditional boundaries resulting from conflicting accounts of ownership of ancestral names and places.
- Tenant (secondary and tertiary clan citizens) who may use accounts to establish themselves as independent hosts/landowners.

Other land disputes are likely to be triggered by the interaction of the system of Huli multi-local affiliation/ residence and any license-based benefit distribution. The Huli land tenure ideology is referenced to a system of oral history which relates how ancestral progenitors travelled the landscape, named land forms and rivers, and bequeathed rights to land. The Huli land tenure ideology justifies land claims which are based on these genealogical footprints even if descendants no longer inhabit the same areas.

3.8 **Komo Impacted Area**

The Komo area has a history of relatively recent settlement by numerous fragmented groups and a past characterized by protracted conflict and out-migration, which has resulted in confusion over the status of many clans. This situation is complicated by multiple layers of occupation by the original non-Huli-speaking clans and by fragments of varying sizes of Huli refugee clans from the north and by further movements caused by subsequent fighting within the Komo area. Appendix 1 contains detailed information on the area's history. Appendix 4 provides a summary listing of clans. Table 3-3 below provides a summary of the clans recorded for the Komo Airstrip and a comparison against the 2008 Social Mapping and Landowner Identification study for the wider Komo environs.

Table 3-3: Komo Airstrip Principal Clan Listing

Principal Impacted Airstrip Clans	ANU Fieldwork Team – Komo Airstrip	L&CA Field Officers Komo Airstrip	Goldman SMLI 2008 – KOMO General	Notes
TOBE	•	•	•	Minor land dispute at Paite with Pirija & Tobe
IMINI	•	•	•	Minor land dispute with Undipi
DAGIMA	•	•	•	Inter-sub-clans tribal fight resulted in many deaths and many yet to be compensated. Minor land disputes between 2 sub-clans
YUMU	•	•	•	
UNDUPI	•	•	•	Minor land dispute with Imini Angoya
MAIYA	•	•	•	
TAMBARUMA		•	•	
URABIA	•	•		
BAGADA	•			
TIBA	•			
YALUMA	•			

Resettlement planning and implementation considers the implications of the dynamic and flexible Huli group composition and settlement structure, of which the basic considerations are:

- No group is ever fixed or stable in terms of its composition. A census or snapshot of a community of people living together, or of a group of people claiming landowner status in a given territory is unlikely to contain the same individuals from one census moment till the next.
- The population of a bounded territory or parish can fluctuate dramatically as people move to be closer to resources or potential benefit streams. Most of these people will have a socially recognised claim to be there.

The situation at the proposed Komo Airstrip site is further complicated by the flight of its residents from a conflict in the late 1990s and early 2000s between two sub-clans of the one clan Dagima. The majority of dwellings on the airstrip site were burned and many structures at Komo station were destroyed. Most of the internally displaced residents are still living in the broader Komo area, but some are said to be as far away as Goroka, Mount Hagen, and Port Moresby. Between 2000 and the present, 23 families returned to their land within the airstrip site and have rebuilt houses and replanted sweet potato gardens. Another seven families have remained living in houses outside the airstrip site, but have begun cultivating land within the site. However, based on lists of names handed to the team by people at Komo, a further 166 families comprising some 1,700 people are still living outside the airstrip site.

From various consultations with landowners conducted by ANUE and RAP research teams, these include both individual and landowner committee focus group interviews, a listing of some 2,000 people comprising some 200 families has been identified.

Most of these absent families are said to be 'landowners' and are acknowledged as such by the present residents. Many have economic trees and coffee planted within the airstrip site. However, because they are absent and because most of the land that was previously cultivated on the airstrip site is now covered in almost ten years of re-growth, it is extremely

difficult to locate and count coffee gardens, or to know with any level of confidence who are or were the true owners.

It is unlikely that the Komo Airstrip was settled by such large numbers of people and the listings reflect heightened expectations of further benefits or assistance to clan members who have voluntarily left the area as opposed to those who are genuinely internally displaced persons. These claims will be verified during the implementation phase.

4.0 SOCIO-ECONOMIC SURVEYS AND BASELINE STATUS

4.1 Overview of Komo Airstrip Social Baseline Resources

Various baseline studies have been undertaken in the Komo Airstrip area to provide an understanding of the socio-economic conditions of the areas, as well as specific studies of the livelihood assets and activities of the households who will be physically or economically displaced. These are described below.

The pre-resettlement socio-economic baseline survey as it relates to the Komo Airstrip area consisted of the following activities:

- Review of the large ethnographic volume of works on the Huli culture;
- Review of archival data including Government Patrol reports, travelogues, films, and mission produced materials;
- Social Mapping and Landowner Identification studies; and
- Social Impact Assessments including cultural heritage surveys.

The Social Program team commissioned its own research to provide fine-grained information about the directly impacted individuals, households and communities, including a questionnaire survey to gauge the response of Komo residents to the proposed airstrip (Appendix 5); and:

- A land and house assets survey, providing a database of where people live and where they plan to relocate.
- A family and household socio-economic (census) survey of each resettlement household that will assist the Project to monitor the well-being of those who are affected by physical and/or economic resettlement (Appendix 5 and 6).
- An individual health and malaria survey which provides a baseline for ongoing healthcare both during and after the resettlement process.
- A physical examination of all affected households including blood testing for malaria parasites and haemoglobin; nutritional status as assessed by body mass index (BMI) for adults; and standard anthropometric height/weight/age measurements for children and the addition of Mid Upper Arm Circumference (MUAC), based on standard WHO techniques.

The information from these surveys contributes to the development of options for livelihood support and community development training, agriculture, and health improvement initiatives. A cultural heritage survey was also conducted to support the suite of Komo Airstrip area findings.

Figure 4-1 illustrates the various surveys associated with the resettlement program.

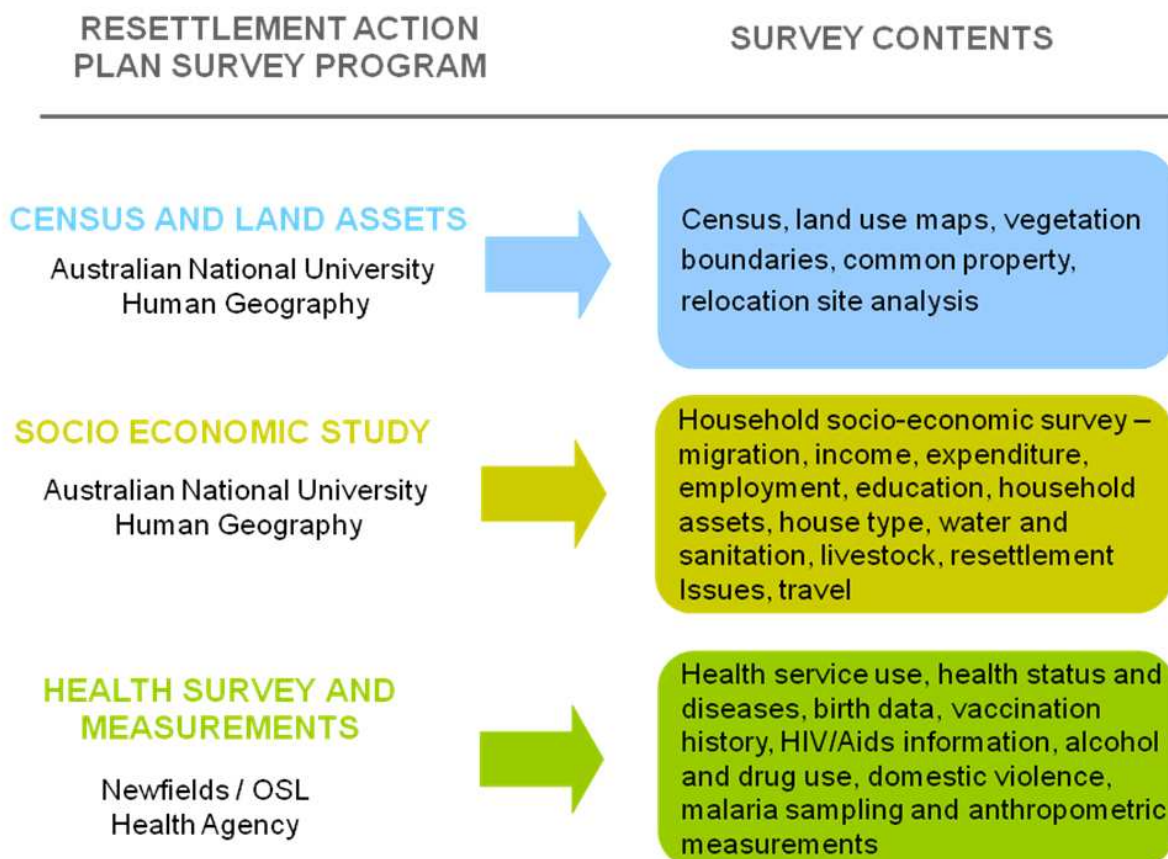


Figure 4-1: Resettlement Survey Types

4.2 Research Agencies Involved

The Project has engaged the services of Research Fellows of the Department of Human Geography, Research School of Pacific and Asian Studies, The Australian National University, Canberra under the auspices of ANU Enterprise Pty Ltd. The team are internationally accredited research scholars in land mapping and agricultural systems in Papua New Guinea.

NewFields, a consulting firm, was engaged to develop a resettlement health measurement survey that will be used for monitoring certain health indicators. This information will assist with monitoring the wellbeing of households affected by Project resettlement. It will also feed into the Health Impact Management Plan.

The data collection for the resettlement health measurements survey is being performed by the Oil Search Health agency that has operated in the Hides region for more than a decade. The team consists of four OSL Health staff and one nurse from the nearby Malanda Health Sub-centre to act as assistant and medical interpreter.

Cultural heritage clearance surveys will be conducted in all locales affected by resettlement prior to any physical displacement or disturbance of the ground. These surveys are conducted by PNG National Museum staff. All of these survey teams have partnership programs with the Archaeology Department, University of Papua New Guinea.

4.3 Land and Assets Field Survey Methods

4.3.1 Census

The boundaries of the required areas of land identified by the Company were entered into GPS receivers (GPSr)⁸. The name of the head of household was recorded and the location of the house recorded as a waypoint in the GPSr. Local Huli assistants with Grade 10 or better education, under supervision from team members, recorded the names, approximate ages, sex and present location of all persons said to be “members” of the household and living in a particular house⁹. The household, or family, was allocated a Family Number (FN). Every person listed as part of that family was allocated a Person Number (PN). The combination of Family Number and Person Number was a unique personal identifier. Every person present during the survey was photographed with a digital camera and the image stored by the FN/ PN identifier¹⁰.

4.3.2 Assets Register and Socio-Economic Survey

Huli speaking team members (from outside the Project area) conducted household interviews, with both husbands and wives present. The information provided was entered directly onto forms and into a Microsoft Access database. The floor area of the houses owned by a family was measured by pacing around the external walls, the type of construction was recorded, and the house was photographed with a digital camera. The images of the houses are stored and identified by Family Number and House Number.

⁸ The GPS receivers being used are Garmin 60CSx which have a spatial accuracy of +/- 3 m. ExpertGPS software is used to transfer waypoints and tracks to the GPS receivers from maps provided by ExxonMobil as digital images and to edit and manage the GPS data collected in the field. The boundaries of the project land can be viewed on the GPSr screen in the field and decisions can be made about whether a particular asset is within project land or outside of it.

⁹ In the case of multi-residency, a person is recorded in two households, but has a primary record in only one, to avoid double counting.

¹⁰ People can be photographed up to several weeks after the initial survey.

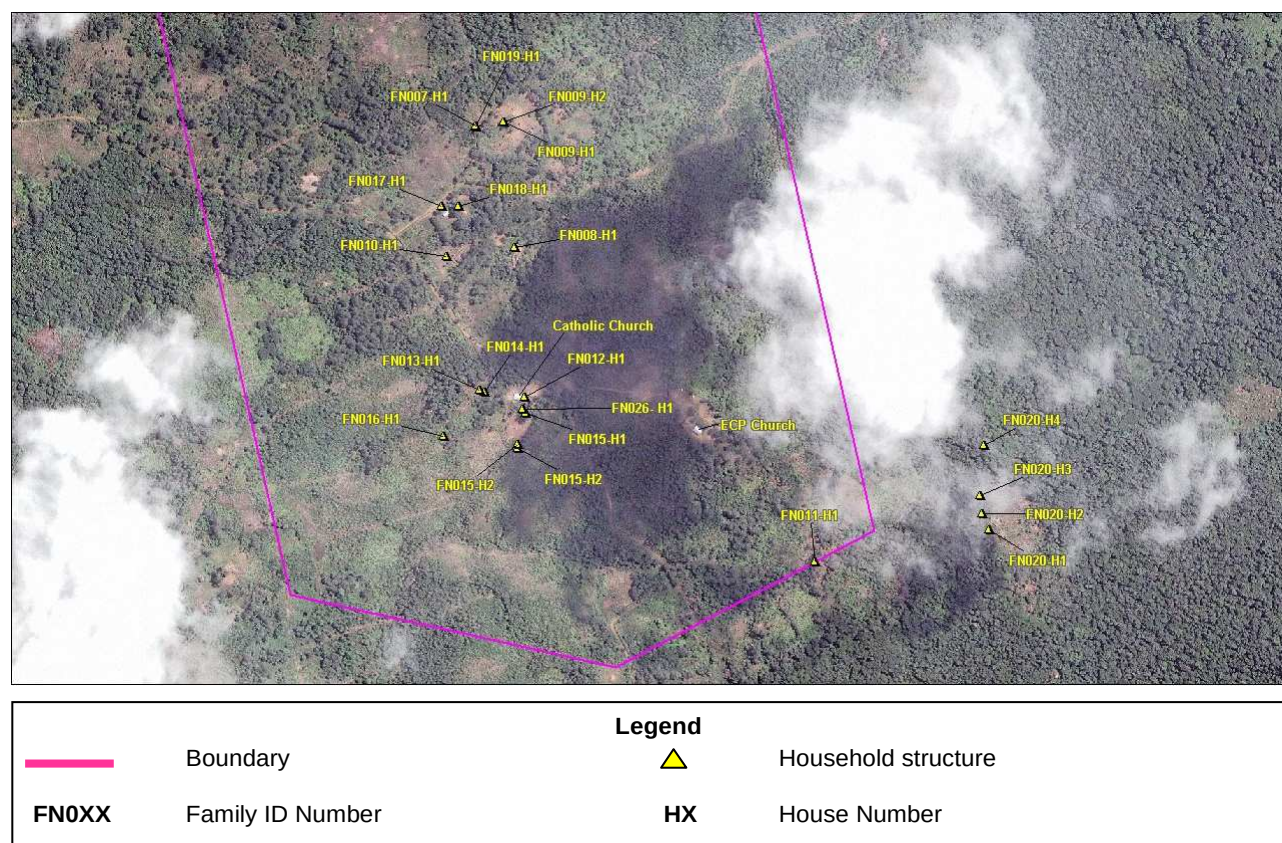


Figure 4-2: Houses Surveyed at the Southern End of the Komo Airstrip Site Showing Family ID Numbers and House Numbers

4.4 Land Use Survey Description and Methodology

During or after the census, household adults were asked to identify the location of all their productive land and to accompany team members to this land. Most households had at least two areas under sweet potato (the staple food) and some up to six. These gardens are frequently scattered about and can be some distance from the house. Houses and gardens are surrounded by food producing trees and 'economic' trees. They are also surrounded by a deep ditch and a fence of split timber palings pushed into the ground vertically and bound by cane along the top. The ditch and fence are designed to keep pigs and human trespassers out of the garden. Entrance is usually made across a single stick bridge over the ditch.

The ANUE team measured the area of complete gardens for most gardens. Only trees were counted individually as opposed to any other vegetation. There were two main reasons for this.

- The Valuer General's schedule requires "sweet potato mounds" to be counted, but Huli horticulturalists in the area of the Project do not use mounds. They plant sweet potato in elongated beds that vary in length. Counting beds would have severely disadvantaged garden owners.
- The GPSrs being used measured land areas with less than a 10 per cent error, a better result than if the area was measured with a tape measure and a compass. The GPSr will also record a map of the garden that was downloaded into a GIS program.

In order to account for the individual plants using the total garden area method, the team counted all the individual plants in ten gardens and then also counted all plants within 100m²

(10m x 10m) areas in about 15 gardens at Komo and at the HGCP site. Using the known area of these gardens, or the 10m x 10m plots, the team established planting densities for the most common garden plants. These rates can be applied to total garden areas to estimate the number of plants in a garden of a known area. This method is at least as accurate as counting hundreds of individual plants (where error rates can be high) and a fairer method of estimating the area planted to sweet potato. Local assistants counted food-producing and 'economic' trees individually using handheld mechanical counting devices.

The GPS maps the shape of the plot being measured and the area. The names of the family and the informants present were recorded in field notebooks, together with the ID of the track, the area and the tree counts. The garden owners were shown the map of the garden on the GPSr and the area and some recorded the area on pieces of paper.

The method used for surveying productive land was explained to the landowners and all agreed that it was fair and reasonable. Most disagreements occurred over the ownership of small areas within larger gardens. Unmarried children, some as young as ten years old, stridently claimed very small areas (less than 50m²) should be recorded in their names. This has been resisted on several grounds: (a) individual counts of crops would have meant a laborious and pedestrian process across the entire 5.2km x 1km area; (b) it is customary for family heads to make decisions for young children as to any share in damage/deprivation compensations. The research team did not wish to usurp this discretion by inadvertently providing recognition to pre-teen damage claims. It is also noted that utilising a base-case aggregate estimate of crops and trees has advantaged the landowners since clearly not all acreages would contain the same count as the base-case example used for computation. The areas planted by married sons or daughters, or other adults, within a larger garden have been recorded separately, with their own Family Number.

On returning from the field, the tracks were downloaded from the GPSr into ExpertGPS, which records all data held in the GPSr. The garden plots could then be closed¹¹ and cleaned up. Family members are used to delineate boundaries of gardens, which are irregular in shape and have boundaries that are usually indefinite, such as a wooden fence and a ditch often covered in vegetation. Gardens have no land survey pegs of any sort associated with them. The fence and ditch can be up to 3m wide, as can be the vegetation covered field edge. Consequently the area measured usually includes uncultivated as well as fallow land in addition to land planted to crops - the true "garden" area. This latitude is given by the enumerators to ensure that the area measured is deemed to be fair by the landowners and is large enough to accommodate the small error factor that may arise from the use of hand-held GPSrs.

When the Family Number was allocated, it was written into the field notebooks beside each survey record and attached to the digital GPS record that then had a Family Number (FN) and Garden Number (GN) as a unique identifier. A Land Use form was then completed in which all the area data, garden type, tree counts and other notes were written down, the Family Number was recorded on the Land Use form and filed with the Census Form and the Assets Registers and Socio-Economic Survey form. The data on the form was entered into a database.

The land use surveys required considerable follow-up as household members remembered gardens some distance away often days after they had sworn they have no more gardens. They also recalled trees planted on other's land 20 years ago, up to a week after the first survey of their land and trees. To respond to questions and changes in information the notebooks and forms were amended as required after additional information was captured

¹¹ A ground traverse around an area of land starts and begins at the same point. However the traverse almost never actually joins with the beginning of the line. "Closing" the traverse creates a closed polygon, the area of which can be measured.

and site verified. The notebook pages were numbered and dated and serve as a record of who was consulted and when. The local assistants who participated in all garden survey work explained the rationale behind the survey and explained garden owners' concerns.

4.5 Census, Asset Register and Land Use Survey Findings

Figure 4-3 provides an indication of the approximate position of the proposed Komo Airstrip. The site is customary land. Although customary land is recognized in the Constitution of Papua New Guinea and has laws relating to it, it remains outside any formal system of land administration, with the exception of courts for dispute settlement. No titles are issued to customary land or are held by its occupiers. Rights to dwell on this land, to cultivate it, to plant trees on it or to bury the dead in it are achieved through membership of customary groups.

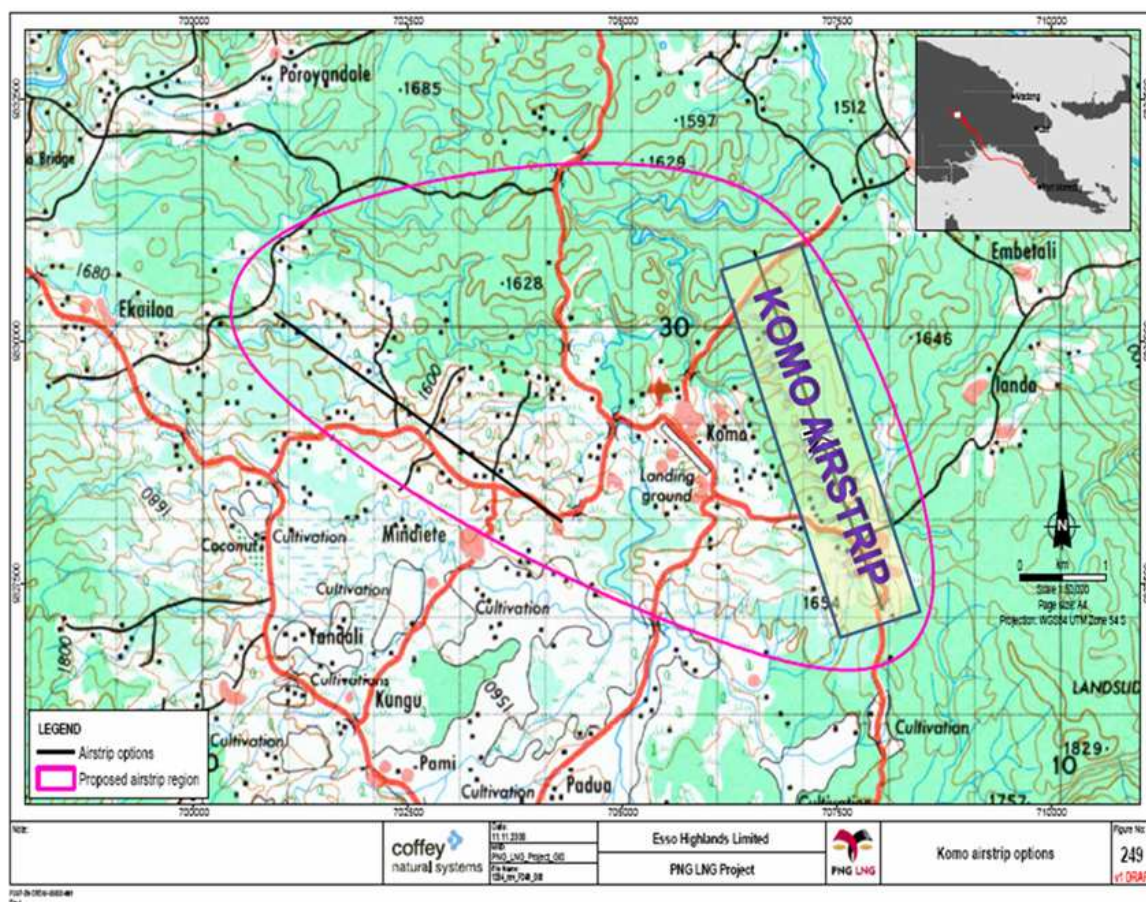


Figure 4-3: Komo Airstrip Location

4.5.1 Census

At the time of the May 2009 survey seventeen houses were found to be inside the proposed airstrip boundary, eight at Migili to the north and nine at Eanda to the south. In September 2009 a further 6 houses were added to the total, 4 of which were located at Migili, 2 at Eanda. The Migili families were approximately 30 minutes' walk and the Eanda families approximately one hour's walk from Komo station. It is presently not possible to reach any part of the airstrip site by vehicle because bridges on the local unsurfaced roads have fallen into the streams.

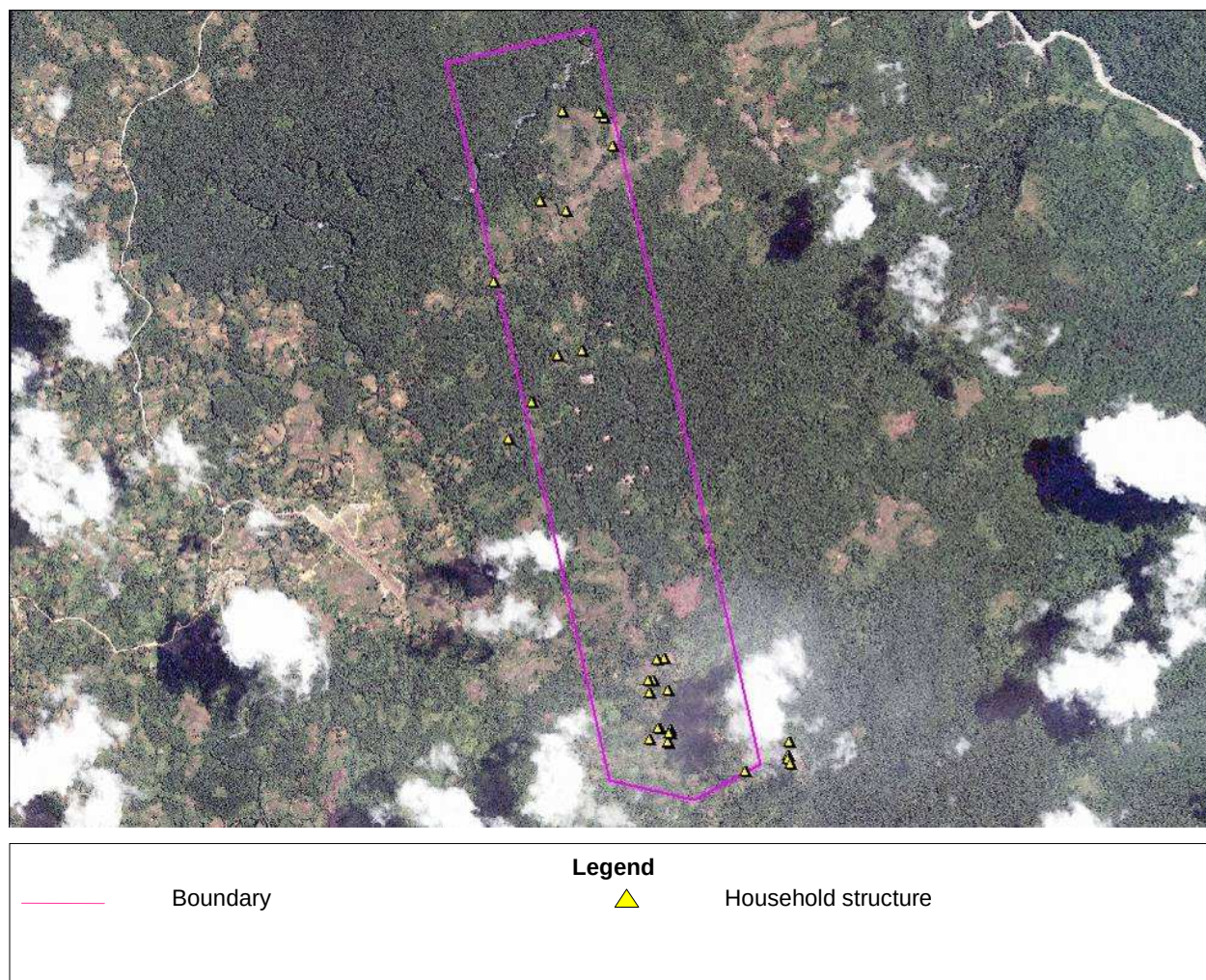


Figure 4-4: Location of Houses on Komo Airstrip

A further seven families, all at Eanda, have gardens but no houses within the boundary. They were interviewed for the census but their gardens outside the site were not surveyed because many live considerable distances from the airstrip site at indeterminate locations¹². One of these families with considerable garden area inside the airstrip site was interviewed for resettlement and health purposes in September 2009. In total, 24 families were included in the survey, 23 with houses inside the airstrip site, and 1 with gardens but without a house inside the airstrip site¹³.

A total of 329 persons were recorded in 24 families at the Komo Airstrip site. Of these only 189 were present and photographed when the census was performed. The average family size for the 24 households was 13.7. If those who were not photographed are excluded, average family size falls to 7.9. The inflation in household numbers can in part be attributed to landowner strategies to maximise resettlement associated benefit streams as well as minimizing potential conflict.

¹² Households know where their absent relatives are living, but can only provide vague descriptions of the locations, like “near Tagiria” or “across the Tagari River”. Absentee landowners who were met at Komo commented that some absentee landowners live up to one full days walk away, at places with no road or helicopter access. The Absentee Landowner Committee members will obtain the assistance of relatives to locate all possible displaced landowners.

¹³ Although this 24th household structure is outside of the airstrip site, all of its gardens are inside, therefore, for resettlement purposes, this household will be offered the full resettlement assistance package, in line with the other 23 households inside the airstrip.

Of the 329 people included in the survey, 170 (52%) were immediate family members and 159 (48%) had some other relationship to people in the household (i.e., not immediate family members). 189 (57%) were present and were able to be photographed during the survey. Some of those not photographed were living in the household but were not present on the day of the survey.

The age-sex breakdown of the 189 photographed residents is shown below:

Table 4-1: Demographic Breakdown of Komo Household Residents

	F	M	Grand Total
Photographed	89	100	189
Age group	F	M	Grand Total
0-4	9	8	17
5-14	23	21	44
15-19	11	12	23
20-54	42	48	90
55+	3	8	11
Unknown	1	3	4
Grand Total	89	100	189

Another 18 (5.4%) are said to be resident in districts or towns outside of the Komo/ Hides region. When the householders were asked why they wished to include these distant people in their household they said they were related, they visited occasionally, and they had once lived nearby, so they should be included. However it is likely people resident in the site wish to include the absentees to avoid being later accused by them of trying to exclude them from any anticipated benefit streams.

Full census details were not completed on the 72 members of five families who had only gardens in the area. Their gardens within the airstrip site were measured but other gardens outside the airstrip were not. One reason for this was that many were not present during the survey visit. Some of these people are included on lists of absentees, handed to the team during and after the survey. Further attempts will be made to locate these individuals and measure all their gardens, but this may prove to be a time consuming and challenging exercise if they are scattered across PNG.

There are two probable reasons for the large sizes of many families in the survey:

- A desire on the part of homeowners to be as inclusive as possible to ensure that no-one misses out on anticipated potential benefits from the Project.
- Refugees from the Komo wars are beginning to return to re-establish their houses and gardens. Hence relatives visit and occasionally stay for a reasonable period of time with those who have houses in the area, and accordingly are listed as household members by them.

For these reasons it can be difficult to differentiate between those impacted by physical and/or economic displacement. Some members of families claim they have no other house, while others claim to have additional properties.

4.6 Absentee Landowners

There is a large constituency of landowners who are said to own land or have land rights within the proposed airstrip environs but who, because of personal preference or conflict that occurred in the late 1990s and early 2000s, are absent at present. Airstrip landowners indicated in the social/economic survey that approximately 47% of household members were absent.

Most of these absentees are still living in the broader Komo area, but some are said to be as far away as Goroka, Mount Hagen, and Port Moresby. Between 2000 and the present, 23 families returned to their land within the airstrip site and have rebuilt houses and replanted sweet potato gardens. Another seven families have remained living in houses outside the airstrip site, but have begun cultivating land within the site (see Table 3-3). However, based on one list of names handed to the ANUE team by people at Komo a total of 164 families with 1,694 people were recorded (section 5.3). The quality of the lists varies greatly, with some just listing names, while others list age and sex of the people listed.

A summary of these absentees is presented in Table 4-2 below:

Table 4-2: Summary of Absentee Land Owners of the Komo Airstrip Site

Clan	No. of Families	%	No. of Persons	%
Undibi	56	34.1	435	25.7
Dagima	34	20.7	254	15.0
Tamburama	25	15.2	358	21.1
Imini	18	11.0	361	21.3
Tobe	12	7.3	103	6.1
Maiya	9	5.5	67	4.0
Tiba	3	1.8	29	1.7
(Poro)	3	1.8	23	1.4
Jaluma	1	0.6	26	1.5
Kulaya*	1	0.6	16	0.9
Mokorali	1	0.6	9	0.5
Not stated or indecipherable	1	0.6	13	0.8
Total	164	100.0	1 694	100.0

The RAP team has established clan landowner committees to re-audit the initial lists and discriminate within each list as to who may be considered 'internally displaced persons'. This is an ongoing process of consultation and has yet to reach a definitive outcome.

The returned refugees now residing within the site made determined attempts to add to their families the names of refugees who are still absent. As a result, at Komo the size of families resident within the airstrip site are larger than is to be expected, inflated by the names of many relatives who would not normally be included as members of a household. Whilst the 2009 SIA Household questionnaire results indicated a mean average household size of nine members, the 2009 Resettlement survey yielded an average total of sixteen persons per household.

The absentee landowners of the Komo Airstrip were acknowledged by the resident Komo Airstrip landowners. Those now living within the Komo Airstrip site include some absentees

to their family lists so as not to be seen to exclude them from potential Project and resettlement benefits.

As Figure 4-5 illustrates, there are those absentees who departed voluntarily and a separate constituency who departed involuntarily, and are considered by the Project as internally displaced persons (IDP's). The figure also portrays how the various assistance measures and packages are distributed between the categories of eligible landowners.

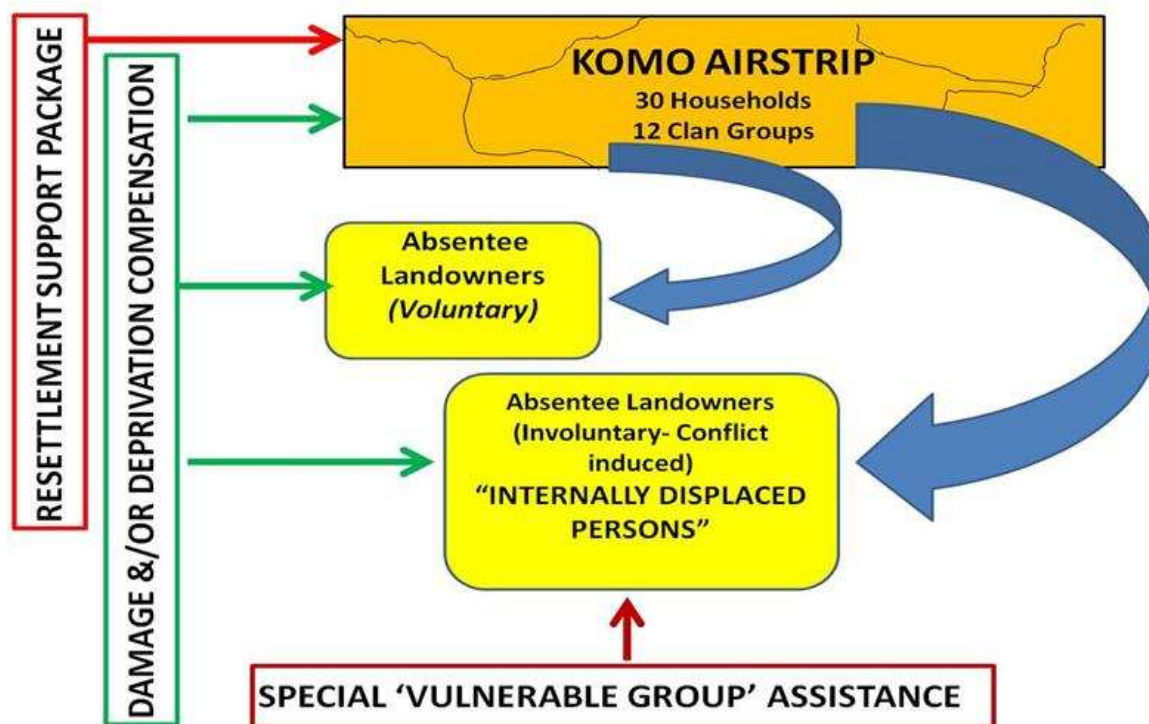


Figure 4-5: Overview of IDPs, Compensation and Assistance Eligibility

When challenged about the numbers of people listed as household or family members, people argue that although these absentees are living elsewhere, they visit every so often and as multiple residency and coming-and-going are a well-established Huli practice, they should be listed as family members. Even when it is explained that inflating the size of families will not increase the amount paid for land or gardens, which are fixed in area, people are not deterred, but argue that if the absentees are not included they will be “unhappy” in the future. To avoid any disputes, absentees are included in order to ensure they receive a share of the compensation and other benefits accruing from the Project.

4.6.1 Assets

Twenty-two (92%) of the 24 airstrip houses were constructed with walls of bush materials (usually woven cane or split timber slabs) with kunai (*Imperata grass*) thatch roof whilst the two others were constructed with woven cane grass walls and corrugated iron roofs. Eighty per cent of houses were 50m² or less in floor area. All houses had dirt floors (often covered with dried grass) with raised sleeping platforms surrounding a fireplace in a main room, often with smaller rooms divided off by woven cane grass walls. None had windows and most had only one entrance doorway.

“Bush materials” houses fall into two main types: either they are very low, traditional Huli houses, thatched with *Imperata grass* and walled with vertical timber slabs, rounded at either end, or they are what is sometimes known as “coastal” houses, which are rectangular in shape, with higher walls, with few or no windows. Figure 4-6 and Figure 4-7 show the two bush material house styles.



Figure 4-6: Traditional House



Figure 4-7: 'Coastal' Style House

Traditional houses have fireplaces running down the centre of the house and the fires in them are rarely allowed to go out. Often the house is divided across the middle and if it is not a house restricted just to men¹⁴, women live in one end and men in the other. These houses may have accommodation for pigs at the women's end. It is not possible to stand up inside one of these houses and they are frequently full of smoke that seeps out through the thatch.

¹⁴ Huli men and women traditionally lived in separate houses. Men commonly lived with other males in a men's house and women lived alone with their children. The wives of polygamous marriages almost always lived in individual houses and did not cooperate much with each other. It is now much more common for men and women to live in separate rooms in the same house, although separate houses for men and women are not uncommon.



Figure 4-8: Semi-permanent materials house with thatch roof and woven cane walls

The design common to almost all “coastal” houses is one of a central room in which the only entrance from outside is in one wall. A large fireplace runs down the middle of this room and on two or three sides of the fireplace are platforms raised about 75 cm off the ground and covered in woven cane. People sit or sleep on these platforms. The dirt floor around the fireplace is commonly covered in dry grass. Internal walls and low doorways create two further rooms, one at each end of the house. These houses are dark and smoke-filled, but are roomier and it is possible to stand in them. Seven of these houses were raised off the ground on piles¹⁵ and had wooden sawn timber floors with fireplaces built on clay and stone lined platforms, isolated from the rest of the floor. One “coastal” house built of bush materials is raised at least three meters off the ground on tall poles. The reasons why it was built like this are unclear but it has a large number of graves beneath it.

Where houses are of semi-permanent construction they generally have iron roofs, sawn timber frames and walls and small windows and all are raised on piles. Three houses are built of permanent materials, on piles with iron roofs, sheet metal cladding, windows and more than one door.¹⁶ “Coastal” bush material and semi-permanent houses are around the average same size, 40 square meters, but permanent materials houses are between 50 and 90 square meters in area.

It is common for a household to have more than one house, either to segregate the sexes, or to move backwards and forwards between areas of gardens some kilometres apart. Of the 23 households living in houses within the airstrip site, 11 families have houses outside of the site in addition to at least one house within the site, while 12 say they do not. Most of these other houses are said to be within a day’s walk of their Komo Airstrip residence and were established after the families fled the fighting in the Komo area. They were lived in for a number of years, after which the families returned to Komo and began to re-establish their houses and gardens there.

Seventeen families say they have all their gardens inside the boundaries of the airstrip site, while seven say all of their gardens are outside the boundaries but their house is inside. This circumstance arises because people moving back to their land first build a house to stay in,

¹⁵ Drilling pipe left behind from the oil project has been carried from the well heads and cut into suitable lengths for house piles with an oxy-acetylene torch.

¹⁶ This house was constructed by Oil Search as a community meeting place, but it is similar to the permanent materials dwellings on the site.

while they clear land for the cultivation of food crops. They carry food with them from their places of refuge, until their new gardens are productive enough to support them.

All of the 24 families surveyed at Komo rely on natural sources for drinking (see Table 4-3) and domestic water (usually a local spring) and use basic pit latrines, sometimes just an uncovered pit with no structure over it. No houses had water collection facilities or rainwater tanks.

Table 4-3: Komo Families by Size, Garden Locations, House Type, House Area, Water Source and Sanitation

Family ¹⁷	Family Size	Other Residence	Garden	Pigs	Coffee	Resources	House	Area (m ²)	Water	Toilet
1	8	Dagiria	Outside	Outside	Outside	Inside	Bush	18	Spring	Pit
2	21	Komo	Inside	Both	Inside	Inside	Bush	20	Spring	Pit
3	6	Komo	Outside	Both	Inside	Inside	Bush	24	Spring	Pit
4	33	Kopanda	Inside	Inside	Inside	Inside	Bush	64	Spring	Pit
5	11	N	Inside	Inside	Inside	Inside	Bush	50	Spring	Pit
6	8	Aruma	Inside	Inside	Inside	Inside	Bush	24	Spring	Pit
7	24	N	Both	Inside	Inside	Both	Bush	49	Spring	Pit
8	19	Haguabi	Outside	Inside	Inside	Inside	Bush	30	Spring	Pit
9	27	Yarale	Both	Inside	Inside	Inside	Bush	54	Spring	Pit
10	12	Tari	Outside	Outside	Inside	Inside	Bush	25	Spring	Pit
11	12	Gunga	Inside	Inside	Inside	Inside	Bush	63	Spring	Pit
12	14	N	Inside	Inside	Inside	Inside	Semi	40	Spring	Pit
13	17	N	Inside	Inside	Inside	Inside	Bush	35	Spring	Pit
14	20	Nearby	Outside	Inside	Inside	Inside	Bush	30	Spring	Pit
15	14	N	Inside	Inside	Inside	Inside	Bush		Spring	Pit
16	19	N	Inside	Inside	Inside	Inside	Semi	32	Spring	Pit
17	13	N	Inside	Inside	Inside	Inside	Bush	63	Spring	Pit
18	12	N	Inside	Outside	None	Outside	Bush	42	Stream	Pit
19	9	N	Inside	Inside	Inside	Inside	Bush	20	Spring	None
20	1	N	Inside	Inside	Inside	Inside	Bush	20	Stream	Pit
21	11	Bulu	Inside	Inside	Inside	Inside	Bush	35	Spring	Pit
22	6	N	Inside	Inside	None	Inside	Bush	20	Spring	None
23	5	N	Inside	Inside	Inside	Inside	Bush	7.5	Spring	Pit
24	7	N	Inside	Inside	Inside	Inside	Bush	20	Stream	Pit

4.6.2 Land Use

The average size of garden areas was 0.17 ha, the largest being 0.49 ha and the smallest 0.04 ha. Within a garden a number of family members, including wives, unmarried sons and daughters and aged parents may cultivate their own areas of sweet potato. The survey teams came under great pressure to measure every individual's area of sweet potato, but this was resisted on the grounds that the head of the family should be able to redistribute any compensation received within the family. Both the heads of families and family members were in agreement with this decision. Moreover, as indicated above, it was well understood that the aggregate measurement method advantaged all landowners since many of the sampled gardens would not have yielded the same crop total as the base-case garden used for compensation purposes.

The garden areas contained 2,495 mounds of sweet potato. Mounds are the unit of sweet potato that can be compensated in the Surveyor-General schedule. But in the Komo area at least, a mound is a variable unit and is therefore unsatisfactory as a means of estimating loss of productive land. Mounding at Komo is less regular than other parts of Huli territory, with many mounds being elongated beds, especially when they are constructed on slopes. Total garden area is a more reliable measure, and garden owners can see the shape of the area included and the area measurement in square meters on the GPS receiver.

¹⁷ Actual Family Numbers have not been referenced in order to protect their privacy.

As well as sweet potato, Huli gardens are also planted with highlands pitpit (*Setaria*), sugarcane, various greens and ferns. Bananas and target (*Cordyline*) are planted regularly throughout the garden area. Gardens are surrounded by a deep ditch and a fence made of sharpened *Casuarina* stakes, bound together at the top by cane. The distribution of gardens is illustrated in Figure 4-9 to Figure 4-11.

A garden is treated as a unit and the area of the garden is used to calculate a rate for loss of the productive asset, over and above the Valuer General's scheduled rate for a sweet potato mound (Valuer General 2008). This takes into account the additional food plants and the fence and ditch. Garden owners at Komo were happy with this idea when it was explained to them.

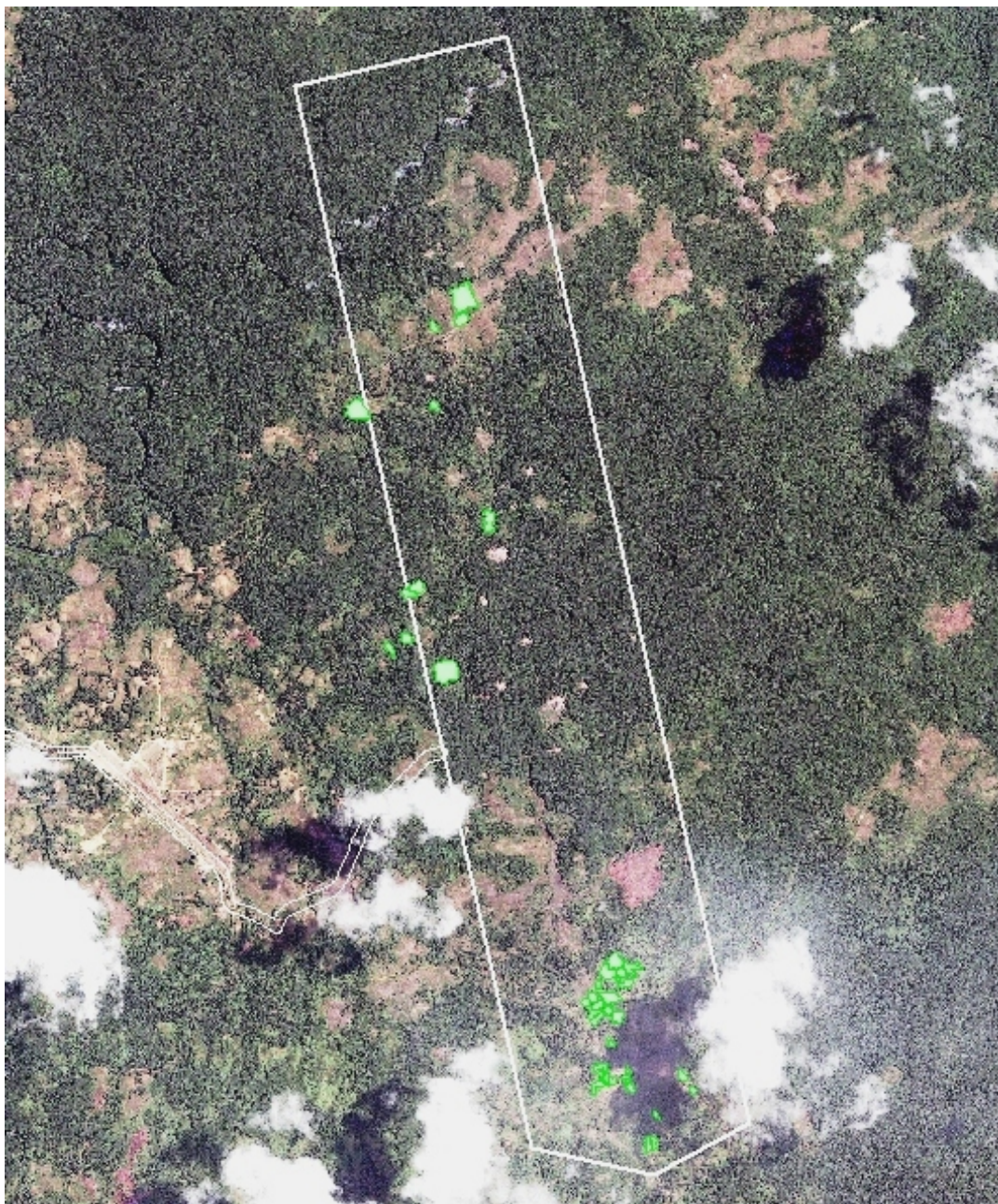


Figure 4-9: Sweet Potato Gardens, Komo Airstrip Site, June 2009



Figure 4-10: The Southern Part of the Komo Airstrip Site, Near the Centre-Line; Houses and Gardens, May 2009 ¹⁸

4.6.3 Coffee

Coffee has been a small but important source of income at Komo for many years. Komo's location at the end of the road network and hundreds of kilometres from Mount Hagen and Goroka has resulted in low prices, irregular buying and a general loss of interest by people in maintaining coffee. This, combined with the abandonment of coffee gardens for more than ten years because of the fighting, means that most coffee gardens at Komo are in a very poor condition, overgrown, over-shaded and largely unproductive. Only a minority of families possess coffee gardens of moderate to good condition that they say brings them reasonable annual income.

The families surveyed, plus those who have houses outside the area, owned 14,165 coffee trees planted within the airstrip site (see Table 4-4). Of these, 6,553 were seedlings that showed many signs of having been recently planted¹⁹; 6,157 are older trees in very poor condition, overgrown with long grass and bush and showing little signs of any maintenance or production for some years, and 1,455 show signs of being cared for and are in moderately good condition. The largest number of coffee trees owned by a family was 5,000 (most of them overgrown, diseased and unproductive) and the smallest number five. The largest area

¹⁸ Abandoned gardens are located in the bottom left of the photograph in Figure 4-10, with new houses and reconstructed ditches in the centre. A typically large number of Casuarina trees surround the houses and gardens. A coffee garden is located behind the centre house. New sweet potato plantings exist near the house on the right. The small white objects in the centre are graves which have been recently renovated. The houses in the photograph belong to Family No 17 and Family No 18 (see Table A1 and Figure C3).

¹⁹ Planted along the edges of ditches and tracks, throughout sweet potato fields and around houses, at very high densities, these seedlings were probably obtained from a recent Oil Search Ltd sponsored extension exercise to promote more coffee growing in the area. Very few blocks of properly spaced and maintained coffee seedlings were observed. A number of areas of seedlings recently planted at very high densities were referred to by the survey team as "giaman kopi", which means "not real coffee".

of coffee is 2 ha and the smallest 20 m², excluding the new coffee plantings which were scattered too far to be sensibly measured.

A number of other coffee gardens owned by absentee landowners were identified within the airstrip site. These are heavily overgrown and are difficult to identify on the imagery provided, other than by the rows of *Casuarina* trees around the boundaries of some gardens. Other gardens could not be identified from the surrounding forest on the images provided and were not physically searched for in the thick forest and undergrowth.

Table 4-4: Komo Gardens Surveyed

Family - Garden Number ²⁰	Notes
1-G1	Whole area in long grass, last planted in 2000. Present gardens are at Tagiria, outside area. Trees and tree crops counted only.
2-G1	Thick scrub and tall grass. No cultivation at present. Trees counted only.
3-G1	
3-G2	.
4-C2	Approx 1,500 coffee trees in bush near edge of A/F site.
4-G1	Sweet potato.
4-G2	
4-G3	Garden area outside A/F.
5-C1	Coffee in very poor condition.
6-G1	Sweet potato with larger area planted in coffee, will eventually be a coffee garden.
7-G1	50 coffee seedlings.
7-G2	944 coffee trees in poor condition.
7-G3	360 coffee seedlings.
7-G4	400 coffee seedlings.
7-G5	360 coffee trees of moderate quality.
7-G6	60 coffee trees in poor condition.
8-G1	Sweet potato.
8-G1	Garden identified.
8-G1	Garden identified..
8-G2	Sweet potato planted on another person's land.
9-G1	Sweet potato.
10-G1	
11-C1	Coffee.
11-C2	
12-G2	Sweet potato garden.
13-G1	Sweet potato.
13-G2	Sweet potato.
13-G3	Sweet potato, planted by landowner's relative
13-G4	Garden.
14-G1	Sweet potato. No house in A/F site.
15-G1	Planted in the name of the ECP Church at Eanda but used by this family for food.
15-G2	Planted in the name of the ECP Church at Eanda but used by this family for food.
16-C1	Estimated 5,000 trees, now overgrown poor quality coffee

²⁰ Actual Family Numbers have not been referenced in order to protect their privacy

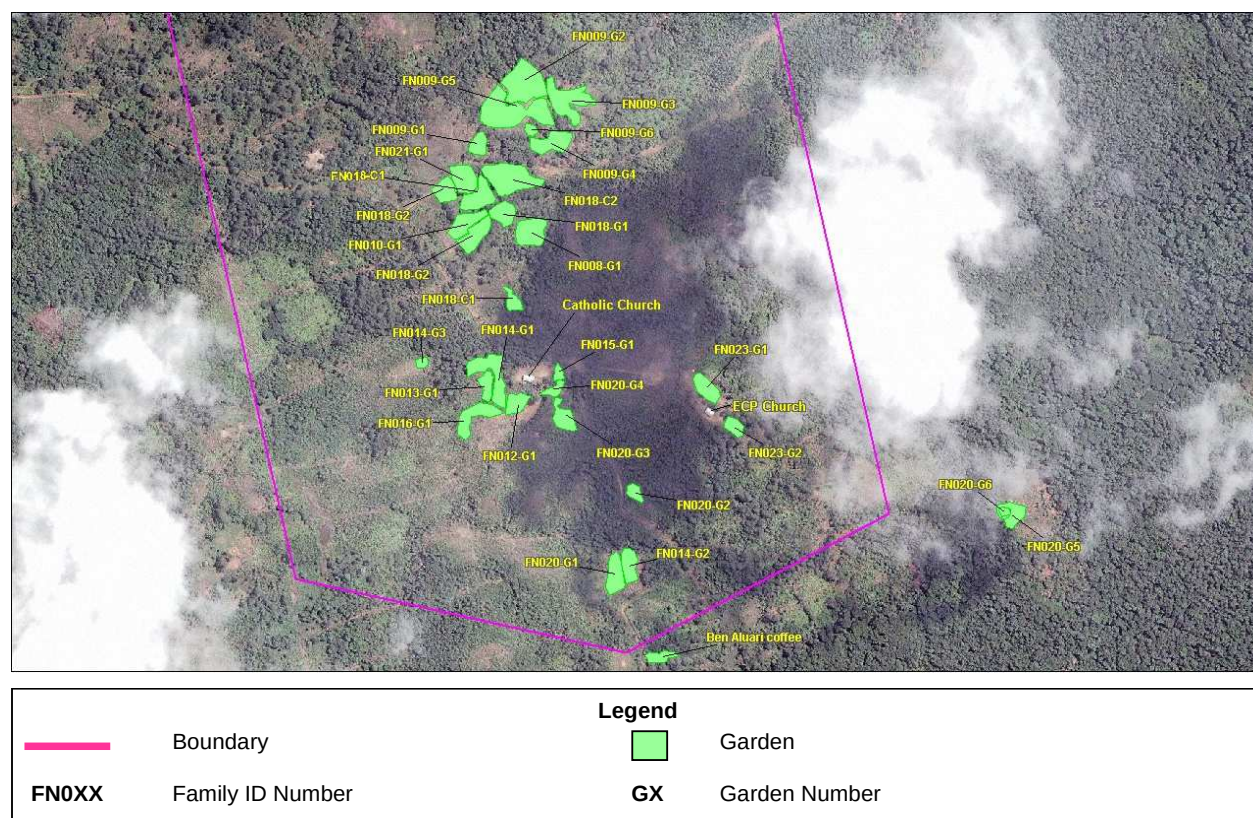


Figure 4-11: Detail of Sweet Potato Gardens Mapped at the Southern End of the Komo Airstrip Site June 2009, showing Family ID numbers and Garden Numbers

(Not all gardens are labelled to avoid cluttering the figure.)

4.6.4 Food Crop Trees and Economic Trees

The 17 families that were initially measured possessed a total of 178 avocado trees, 732 marita (*Pandanus canoideus*), 205 ficus trees and 8 orange trees; 2,111 mature *Casuarina* trees, 167 immature *Casuarina*, 52 bamboo clumps and 18 mature pine trees.

4.7 Attitude Towards Relocation

During the initial survey, affected households were asked about their willingness to relocate outside the area. 30% of the families initially identified said they did not want to relocate (Table 4-5) whilst the remaining families were divided into two groups of 'unsure about' and 'willing to' move.

Many people were not prepared to commit themselves to a particular outcome prior to understanding the full suite of assistance measures. Of those willing to relocate, almost all expected to move no more than two hours walk from their current home. In the intervening period 22 households have indicated their willingness to move.

Among those unwilling or unsure about relocation, the most commonly stated concern was a lack of land or insufficient land, on to which to relocate. Other common problems raised were the loss of the resources enjoyed at the present location (forest products, hunting areas, building materials, firewood, bush foods such as mushrooms, burial sites and so on). Other persons said they need to know whether a house will be built for them before they can agree to move. The possible lack of services including roads, health institutions and schools in the relocation area, the risk of malaria and the lack of employment opportunities were other concerns that were raised. Many of these concerns have since been allayed following dissemination of the assistance package and support measures.

Men are significantly more enthusiastic about relocating than women and most responses to questions about relocation were made by men on behalf of their household. Women expressed considerable anxiety about moving to an area where they would not enjoy the same access to resources because their status as the occupiers of land will reduce. Women also say that if cash payments are made, men will receive most, if not all of the monetary compensation for loss of productive land, even though they are responsible for most of the production.

The feedback about relocation concerns recorded in the initial social survey evidenced widespread anxiety about loss of land (78%) followed closely by loss of physical residence (58%). Of those who had initially indicated a willingness to relocate some 26% were going to go to their father's land (where their tenurial rights were strongest) and the distance from present residences for most of these people was no more than a 1-2 hrs walk. This indicates a desire to remain within the general community environs of Komo.

Table 4-5: Komo Families' Initial Survey Response to "Willingness to Relocate" Question

Family Number ²¹	Willing to Relocate	Destination	Distance to Destination	Concerns
1	Yes	Dagiria	<1hr	Access to services, malaria, no road
2	No			No land, houses, resources, income. CA to talk to landowners first.
3	Unsure	Komo	1hr	Need new land, now on Komo station
4	Unsure	Kopanda	<1hr	No resources, land is taken by church and government
5	No	Dagiria	2hrs	Company should provide land
6	Yes	Aruma	2hrs	Company should provide house, food and other essentials
7	Yes	Aruma	2hrs	Company should provide house and services. Will have to move to a malaria area
8	Yes	Emberali	1.5hrs	Requires a house and access to services
9	Unsure	Don't know		Has no place to resettle. Will suffer loss of income and access to bush resources
10	No	Tigibi	8hrs	Small clans are being excluded from RAP. No garden access.
11	Yes	Aenda	15min	Need new house and land
12	No			Requires K100,000 - K200,000 to relocate business to a town elsewhere in PNG
13	Unsure	Yuwini	15min	Need a new house for four children and pay for resources
14	Unsure			Training so local people can get jobs. Need houses and a good location to build them
15	No			No land. Will remain until company allocates land to the family
16	Unsure			Need land, services and assistance to replant gardens etc
17	No			Company to buy block and build house for family. Will suffer a loss of resources.

4.7.1 Community Infrastructure

Within the Komo Airstrip area, two churches are the only items of community infrastructure (Eanda Catholic Church buildings, Figure 4-12 and the Eanda Evangelical Church of Papua buildings), and they are located at the southern end of the airstrip site within 500m of each other. The Project has agreed to reconstruct the churches in any area selected by the community

²¹ Actual Family Numbers have not been referenced in order to protect their privacy



Figure 4-12: Eanda Catholic Church

4.7.2 Huli Cultural Heritage Sites

A number of cultural heritage sites have been identified in ongoing Komo Airstrip surveys as seen in Table 4-6 below. Note that many individual sites can be classed under more than one category.

Table 4-6: Summary of Huli Cultural Heritage Sites

Site group	Categories
Sacred Site	• Ancestral Settlement Site (<i>Gebeanda</i>) • Sacred Stone Site (<i>Liruanda / Honeanda</i>) • Spirit Sacrificial Site (<i>Damaanda / Dama Nogo Baga / Dama Ne Miaga / Ega Kamianda</i>) • Female Earth Spirit Site (<i>Dindi Ainyaanda</i>) • Spirit Ditch (<i>Dama Gana</i>) • Myth Site
Ceremonial Site	• Bachelor Cult Site (<i>Ibagiyaanda / Harolianda / Moreanda</i>) • Tege Pulu Performance Area (<i>Tegehama / Guruanda</i>) • Dance Ground (<i>Malihama</i>) • Divination Site (<i>Tiariyaga</i>)
Settlement Site	• Men's House (<i>Balamanda</i>) • Cemetery (<i>Homali</i>) • Guardhouse (<i>Waipabeanda / Pabeanda</i>) • Ancient Ditch (<i>Bambali Gana</i>) and Walkways (<i>Bamba Hariga</i>) • Clan Boundary Ditch (<i>Kamia Kalane</i>)
Economic Site	• Garden Site (<i>Mabu</i>)
Archaeological Site	• Archaeological Site • Surface Artefacts • Artefacts held by community members

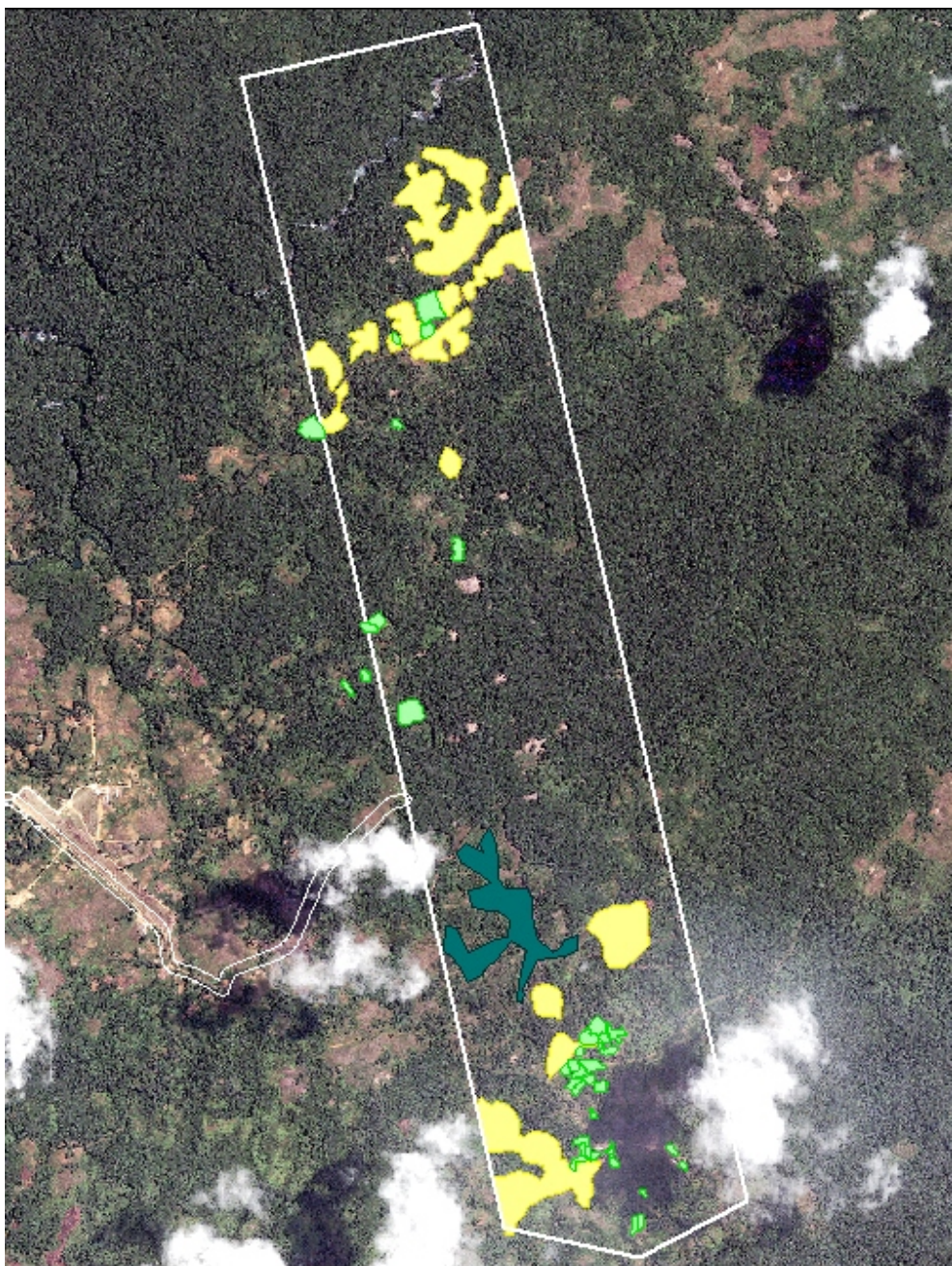


Figure 4-13: Areas of Previously Cultivated Land Lying Abandoned Following Fighting in 2001, Komo Airstrip Site, June 2009

In Figure 4-13 the dark blue areas indicate swamp areas, the yellow abandoned fields and the green areas are cultivated land.

4.8 Social and Economic Survey Results

The information provided below contains survey information for Komo. A relatively small number of households have been recorded at Komo and therefore a more meaningful interpretation of the baseline survey data is to compare the Komo Airstrip results with pre-existing social baseline data for the same catchment area as provided by the 2005 and 2009

SIAs²². (Appendices 6 and 7 contain the social and economic questionnaire survey forms and Appendix 7 contains the results spreadsheet). The 2009 EIS SIA undertook a Household & Village questionnaire in three census unit locations (Emberali, Mindirate, and Komo Station) within the general Komo area. Appendix 7 presents the results of the household socio-economic survey of Komo Airstrip affected households compared with the results for similar questionnaire items recorded for the 2008–9 EIS SIA in the Komo catchment, and specifically for both the Komo Station census unit, and the averages for the Komo catchment.

Across many of the socio-economic measures tested for in the questionnaire, Komo Airstrip individuals and households are typical of both the local Komo catchment area and greater Huli region.

4.8.1 Household Economic Conditions

Longitudinal data from all previous gas project SIA surveys indicate that bride-price (42.32%), local subsistence activity, including fishing and cash cropping, and exchange (wantok gifts 49.32%) continue to represent the vitality of the traditional economy in the financial lives of the populace. The 2008 results from Komo aligned well with this finding and the 2009 results for the Komo Airstrip indicated similarly that bride-price (65%) and wantok gifts (52%) were the most commonly cited avenues of local income.

Table 4-7 from the 2009 EIS SIA shows the level of respondents (23%) citing that employment income in the Komo catchment was higher than that recorded in other Project areas. Precisely the same levels (22%) were recorded for the Komo Airstrip demonstrating again how representative this small area is of the wider Komo catchment profile, and thus the relevance of the SIA 2009 baseline for contextualising the Komo Airstrip livelihood findings.

²² The Komo catchment included the census units of Komo Station, Emberali, and Mindirate (see Appendix 8)

Table 4-7: (EIS SIA Table of Income Sources – Table 5.11 Goldman 2009)

Source	1998 SIA		2001 SIA			2005 SIA			2007-8 SIA		
	Kutubu	Kikori	Kutubu	Kikori	Gobe	Kutubu	Kikori	Gobe	152	Juha	Komo
Employment	14.5	25.5	8.9	18.9	24.5	13.4	10.1	16.4	24.5	15.8	23.4
Royalties	83.1	37.3	55.8	43.3	0	26.2	40.4	58.8	2.1	13.7	3.4
Business	20.5	19.3	15.4	14.7	7.3	5.6	11.6	2.9	25.9	0	22.8
Cash crops	22.9	43.5	16.3	30.9	20.0	17.3	33.3	22.9	7.4	2.6	6.7
Livestock	19.3	15.5	9.3	16.1	16.4	8.9	6.0	2.3	9.8	5.2	9.2
Fishing	14.5	61.5	11.4	67.7	0.9	18.5	61.1	0.0	55.6	2.63	49.3
	1998 Total		2001 Total			2005 Total					
Bride-price	61.5		50.0			42.3			30.8	44.8	32.4
Wantok gifts	66.8		62.8			49.3			51.4	15.8	47.2
Savings	32.4		16.0			8.3			11.9	0	10.4

Less than 10% of respondents reported having full or part time employment, with demonstrably higher rates of employment amongst men than women.

Thirty-four per cent of airstrip families reported some form of business income, derived mainly from trade store sales, though one family reported truck hire and two reported property rental, as part of their enterprise. Thirty-seven per cent said that at least one family member owned a bank account. There is a relatively high level (30%) of trade store business activity.

Twenty-one of 23 families (Table 4-8) stated that they earned less than K5,000 per year, Estimated average income per household – and this includes a monetary value for pigs is approximately K14,000. Expenditure followed a similar pattern averaging K18,000 per household. Reported income and expenditure are, however, unreliable because it is not common for respondents to keep accurate records, discuss financial issues with outsiders, and they are likely to inflate income in the hope of receiving higher compensation.

Table 4-8: Komo Households Families by Economic Activity

Family ²³	Business	Bank Account	Income	Source of Income	Reported Annual Income	Reported Annual Expenditure	Net Income
1	No	No	Low	Pigs	4,000	4,000	0
2	Trade store	Yes	Moderate-High	Coffee	30,000	18,000	12,000
3	Trade store	Yes	High	Employment	2,000	4,000	-2,000
4	No	No	High	Employment	23,000	8,000	15,000
5	No	No	Low	Coffee	7,000	9,000	-2,000
6	No	No	Low	Business, pigs	2,000	7,000	-5,000
7	No	No	Low-Moderate	Food	4,000	12,000	-8,000
8	No	No	Low	Food	5,000	5,000	0
9	Property rental	Yes	Low-Moderate	Rent	37,000	20,000	17,000
10	Trade store	Yes	Low	Food	4,000	6,000	-2,000
11	Trade store	Yes	Low	Government	4,000	9,000	-5,000
12	Trade store, truck	Yes	Moderate-High	Business	100,000	180,000	-80,000
13	Trade store	No	Low	Coffee	15,000	30,000	-15,000
14	Trade store, rental	Yes	Low-Moderate	Rent	10,000	20,000	-10,000
15	No	No	Low	Compensation	3,000	3,000	0
16	Trade store	No	High	Employment	20,000	13,000	7,000
17	No	Yes	Low	Coffee	7,000	8,000	-1,000
18	None	Yes		Employment	15,000	5,000	10,000
19	None	No		Pigs	4,000	1,000	3,000
20	None	No		Coffee	5,000	25,000	-20,000
21	None	Yes		Coffee	13,000	12,000	1,000
22	None	Yes		Employment	5,000	1,000	4,000
23	None	No		Other	8,000	23,000	-15,000
24	None	No		Gifts	9,000	12,000	-3,000

All (100%) Komo Airstrip households rely on firewood for fuel. Komo Airstrip area respondents report possession of more radios (57%) and more mobile telephones (52%) than any other group in the Project catchment. Purchase and distribution of these Digicel mobile phones since May 2009 has been remarkable; they cost K35 and local business entrepreneurs have set up small portable stations charging K2 to re-charge batteries. Additionally, reported possession of items such as sewing machines, blankets, and pots (Figure 27) were higher among Komo residents than for counterpart Huli catchments.

²³ Actual Family Numbers have not been referenced in order to protect their privacy.

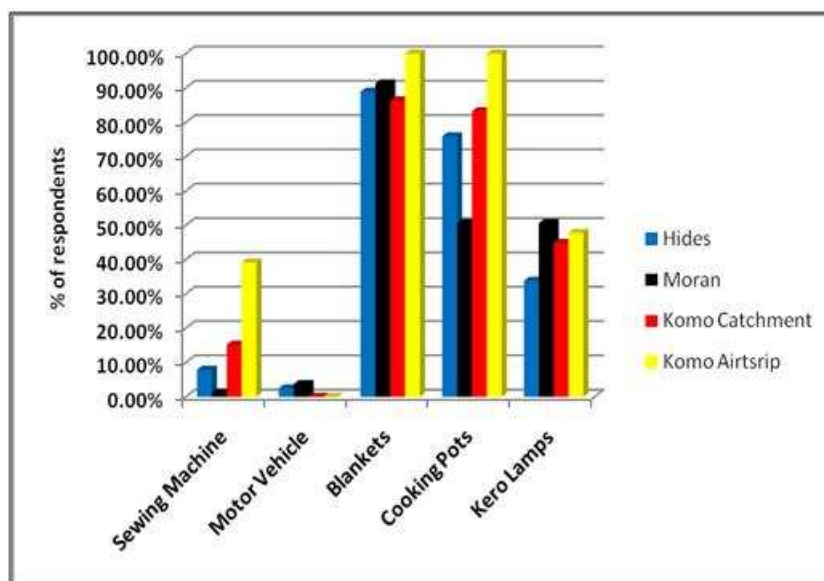


Figure 4-14: Comparative Levels of Household Assets

Much the same was true for travel profiles where some 59% of airstrip respondents reported having visited Port Moresby, compared with the Komo catchment average of 13%, Hides (16%), and Moran (37%) (see Figure 4-14). This indicates good disposable income levels compared with the catchment area averages.

The patterns of expenditure recorded similarly point to the continuity of traditional modes of social exchange through bride-price, wantok gifts, funeral donations and compensation associated with disputes. The Komo results (Figure 4-15) obtained in the 2009 SIA matched the norm for Huli areas, and the Komo Airstrip questionnaire responses did not deviate from this pattern. Expenditure on transport and disputes show elevated levels in the Komo Airstrip location by comparison with that recorded for the Komo catchment, but the small number of Komo households may have skewed the results.

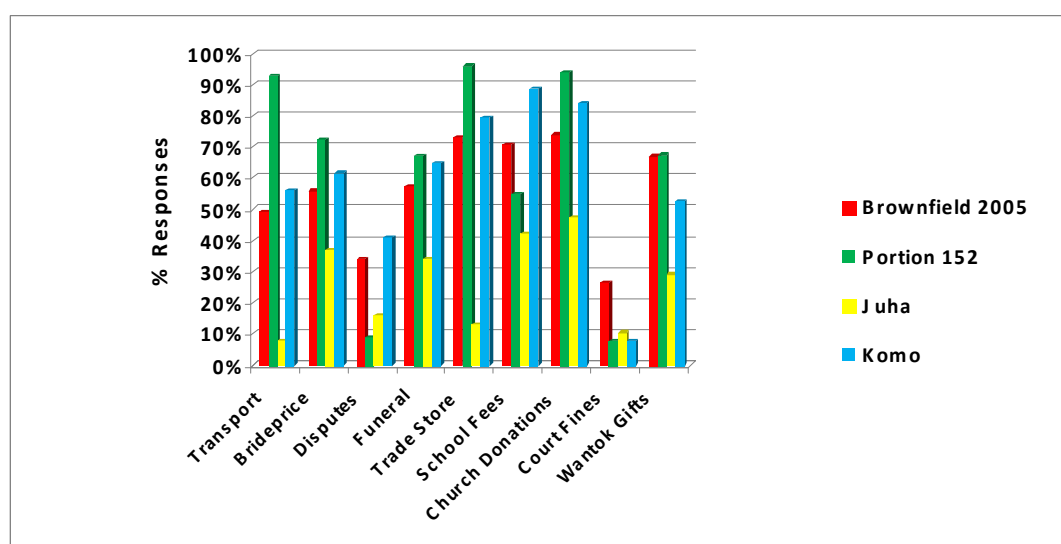


Figure 4-15: Expenditure Patterns Across Greenfield and Brownfield Comparisons

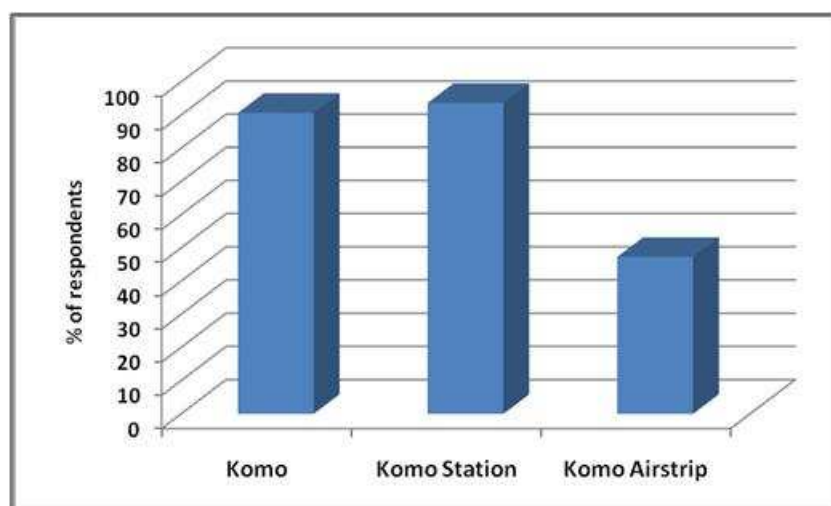
4.8.2 Education

Lack of requisite fees (60%), security (33%) and distance (13%) were the explanations of the fact that 47% of Komo respondents' children do not attend school. The level of school attendance children in the airstrip is lower than the level for the wider Komo catchment.

Fifty-five per cent of the adults surveyed in the Komo Airstrip area are literate in English or Huli. Sixteen per cent of adults had completed at least Grade 6 (primary school), but only nine (3%) had Grade 10 (secondary school) or higher qualifications. Most people who had some form of employment experience were labourers (39%), compared to Komo catchment (20%), and Komo Station (33%).

4.8.3 Migration

With regard to the discussions above concerning the out-migration of people from Komo, the most startling baseline finding for the Komo Airstrip area is the comparative number of absentee household members reported. Figure 4-16 illustrates the discontinuity between what has been reported for the airstrip and what was reported for the wider Komo areas before respondents knew about construction of the Project airstrip and any resettlement repercussions. The impacted airstrip landowners claim that approximately 47% of household members are absentees.

**Figure 4-16: Percent of Household Members Reported as 'Present'**

The 2009 EIS SIA noted "the average percentage of landowners who have moved to their present location in the brownfield and greenfield areas is between 15–18%". Table 4-9 shows the findings for the Upstream Project impact area.

In the Komo area, by contrast, almost 33% of inhabitants are people who moved to this catchment. While such relocations are rarely mono-causal in nature, the high level of tribal fighting rationales is consistent with fieldwork observations in Highland catchments such as Huli and Gobe. In the Komo catchment (the location for the intended airstrip), tribal fighting (78%) was more frequently cited as a migration reason than employment (17%) or family/kinship reasons.

Table 4-9: 2005 Survey Response to SIA HHS Q.A2 'Why Have You Moved?'²⁴

Reason	Gobe		Hides		Kikori		Kutubu		Moran		Total	
	N (11)	%	N (139)	%	N (78)	%	N (39)	%	N (1)	%	N (268)	%
Multiple lands/family ties (including marriage)	4	36.36	50	35.97	19	24.36	9	23.08	0	0.00	82	30.60
Tribal (and domestic) fighting/ land dispute	4	36.36	43	30.94	4	5.13	3	7.69	1	100	55	20.52
Better services (especially schools)	0	0.00	4	2.88	39	50.00	7	17.95	0	0.00	50	18.66
Occupational transfer (including pastor)/ employment opportunities	1	9.09	35	25.18	4	5.13	0	0.00	0	0.00	40	14.93
Other (combined)	2	18.18	7	5.04	12	15.38	20	51.28	0	0.00	41	15.30

It also indicates that multiple affiliations to various communities on the basis of kinship/descent and/or affinity have traditionally or historically provided these peoples with opportunities to escape conflict situations. This is particularly so for Komo by comparison with other Huli catchments. In this context, of those respondents who volunteered information about their various moves, only 57% identified fight related rationales.

4.9 Health and Nutrition

Malnutrition remains a widespread problem in PNG, in particular among the poorest and most vulnerable segments of the population. Surveys over the last 20 years show that the nutritional status of children under five years old has not improved significantly (Gibson, 2000). In rural areas there is a high prevalence of underweight (weight for age), a very high prevalence of stunting (height for age) and a medium prevalence of wasting (weight for height) in children less than five years of age (FAO, 2003). The prevalence of underweight and wasting was highest among infants at one year, while stunting affected more than half of the children at four years. A sub-national survey carried out among children less than five years old reported a lower prevalence of underweight, stunting and wasting in urban areas. Children under five years old living in the Highlands have a greater risk of stunting than their coastal counterparts.

Appendix 1 Section 2.0 contains a detailed discussion of nutrition and other relevant health issues.

4.9.1 Baseline Health

Exploratory data analysis was undertaken of the health survey data obtained from households in the Komo Airstrip area. Analysis was based on:

²⁴ 271 households reported to have moved and 268 of the total (99%) offered a reason

- Australian National University Enterprises (ANUE) "Report on Census, Asset Register and Land Use Survey at Komo Airstrip Site, 27-31 May, 2009;
- May 2009 Resettlement Family/House Survey for Komo Airstrip;
- May 2009 Health Survey for Komo Airstrip;
- OSL malaria, haemoglobin (Hb) and anthropometric field measurements carried out in conjunction with the ANUE survey of the Komo Airstrip site;
- September 2008 Full Scale Social Mapping and Landowner Identification Study of PRL-11 (includes Komo Station);
- 2006 National Demographic Health Survey (DHS);
- Comparison of Komo Airstrip Resettlement Family/House and Health Surveys to the 2006 DHS Rural and Highlands Region datasets and 2008 Social Mapping Study of PRL-11.

4.9.2 PNG Nutrition and Related Conditions and Illnesses

The 1996 PNG Living Standards Measurement Survey (LSMS) represents the most current national level living standards survey. The survey shows that approximately 42 percent of the population were not meeting food energy requirements of 2000 calories per person per day.

Despite the similarity in average calorie availability and in the proportion of the rural and urban population lacking access to sufficient calories, there are big differences in nutritional outcomes for the rural and urban population. Based on the 1996 PNG National Household Survey, almost one-half of rural children appear to be stunted (low height-for-age) but only one-fifth of urban children are stunted. (See Appendix 1, Section 2.1.2.4 for a more detailed discussion of Z-scores).

Table 4-10: Prevalence of Stunting in the Highlands

Age (years)	Z-scores (percentage)
<1	40
1-1.99	77
2-2.99	46
3-3.99	57
4-4.99	67
<5	56

Source: Gibson and Rozelle 1998 presented in FAO 2003 Table 4a-2

Aside from extremely high levels of stunting, underweight (WAZ) and wasting (WLZ) occurred less frequently in the PNG National Nutrition Survey, although levels of underweight approached 40% in the age 1–2 year group (Table 4-10).

The observed nutritional pattern of compromised height for age, weight for age and height for weight has significant consequences for children. Heywood (2002) studied the relationship between attained growth at various ages and risk of death in a large sample of Huli children in the Tari Basin. Nutritional status was assessed in 1,232 children between 6 and 30 months of age. Results showed a gradual increase in mortality rate with lower levels of W/A with a steep rise for children less than 60% of the median.

The pattern of morbidity or sickness in Tari has been previously studied by the PNG Institute of Medical Research (PNG IMR). Research findings indicated that the youngest children

have the greatest burden of illness. Acute lower respiratory tract infection (ALRI or pneumonia) was the most significant cause of morbidity, accounting for 70% of all illness episodes in children under six months of age and half of all illness in children 1–4 years (cited in Heywood, 2002). Gastroenteritis (diarrhoea and vomiting), which was lowest in the first six months of life and most frequent in children aged six months to two years, accounted for 8% to 16% of all episodes. The importance of episodes designated as fevers increased with age, accounting for 10% of episodes in children under 6 months old and increasing to 27% in the fourth year. There are clear increases in the risk of death associated with lower levels of nutritional status in Tari children (further details in Appendix 1, Section 2.1.2.8).

As part of the household census conducted for the Komo Airstrip, a health team composed of experienced medical professionals recruited from local clinics and managed by OSL was established. This team utilized the ANUE census as a basis for performing the field health measurements. Available data for individual households were reviewed in order to see if a specific household demonstrated a pattern of findings that was significantly different from the overall population. Individual household numbers are obviously small and variable, but do not appear to deviate substantially from the pattern seen across the Komo Airstrip measured population.

The Komo-specific data indicate a quite high prevalence of stunting across all ages, from 0 - 19 years, indicating a chronic condition influenced by several key factors: low birth weight, food and nutrient intake and morbidity (illness). Similarly, levels of abnormal weight for age and weight for height are generally low.

Sweet potato is the staple food in the Tari basin, as well as in the Komo Airstrip. Reliance on sweet potato as the main staple and a very low consumption of animal products is characteristic of traditional diets in most of the Highlands. Nearly all studies have associated the high prevalence of stunting observed with a diet low in protein and energy.

In most of rural PNG, up to 80% of the total dietary energy is derived from root crops, which are very high in fibre and moisture (Mueller, 2001). This bulkiness may make it difficult for the consumption of sufficient volume for energy, protein or other nutrient requirements to be satisfied.

4.9.3 Haemoglobin (Hb)/Anaemia

Anaemia is one of the most common nutritional problems in the world today. The main causes of anaemia are dietary iron deficiency; infectious diseases such as malaria and hookworm; deficiencies of other key micronutrients including foliate, vitamin B12 and vitamin A; or inherited conditions that affect red blood cells (RBCs) (e.g., sickle cell anaemia).

Iron deficiency with or without anaemia has important consequences for human health and child development. Anaemic women and their infants are at greater risk of dying during the perinatal period, children's mental and physical development is delayed or impaired by iron deficiency, and physical work capacity and productivity of manual workers may be reduced. Iron deficiency is probably the most common cause of anaemia.

Vulnerability to iron deficiency varies greatly with each stage of the life cycle. This variation is due to changes in iron stores, level of intake, and needs relating to growth or iron losses. In general, children aged six months through five years of age and women of childbearing age, especially during pregnancy, are the most vulnerable groups.

The WHO (2008) estimated the levels of anaemia in PNG to be:

- Pre-school children (60%);
- Pregnant women (55%);
- Women who are not pregnant (43%).

4.9.4 Komo Airstrip Haemoglobin Data

In public health terms anaemia is defined as a haemoglobin (Hb) concentration below the thresholds given by WHO (WHO, 2007). The average Komo Airstrip haemoglobin levels do not exceed the relevant WHO anaemia thresholds, and appear to be significantly better than the WHO predicated PNG anaemia prevalence rates (See Appendix 1, Section 2.1.4 for further details). The extremely low levels of malaria found at Komo are undoubtedly a major contributor to the robust values observed. This means that values could change markedly and adversely during the rainy season.

4.9.5 Malaria

Malaria is a parasitic disease that can occur in four forms in humans: Plasmodium falciparum, Plasmodium vivax, Plasmodium malariae and Plasmodium ovale. All forms are found in both lowland and highland areas of PNG. An individual can be infected simultaneously by multiple forms and mixed infections are common in PNG, particularly in the Highlands.

4.9.6 Komo Airstrip Field

The malaria survey was performed using a combination of rapid diagnostic tests (RDTs) and microscopy. The survey was performed during the dry season, thus observed results will represent a low season value.

The Komo field survey confirmed that transmission was low, with only 2% of 135 RDTs being positive, but the picture could be significantly different during the wet season.

4.10 **Komo Airstrip Health Survey**

In 2006 the Government of PNG, along with various international partners (including AusAID, Asian Development Bank, etc.), performed a national-level demographic health survey of more than 10,000 households. This effort covered every province in the country and is considered to be the new national benchmark. The 2006 DHS was analysed at national, regional and urban versus rural levels; however, data are not presented at provincial or census tract levels. Many key performance indicators, such as mortality rates, are unstable for small populations; hence, analysis can only be carried out for relatively large household samples.

Survey questions were asked at a household level and then aggregated at the selected levels of analysis, e.g. national, regional, urban, and rural. The Health Survey was composed of seven sections: health service, preventive health, family health, female health; HIV/AIDS, alcohol and drug use, and domestic violence.

For the Komo Airstrip survey, the Project selected a subset of the published DHS questions that were likely to produce data that could be ultimately used as a critical baseline for future M&E. The Project believes that the survey data, particularly in conjunction with the objective health measurements, provides more than sufficient information regarding the overall baseline health status of the Komo Airstrip population.

4.10.1 Komo Airstrip Health Survey

The health questionnaire was administered to heads of households or their designees. Survey enumerators were all native speakers but from a different geographical area in order to maintain a reasonable level of confidentiality. All households gave prior consent before survey administration. The health field work received an ethical review and clearance from the relevant PNG institutional review board.

See Appendix 1, Section 2.2.4 for tables showing the results of the survey.

All of the twenty three households: (i) utilize firewood as their primary fuel for cooking and heating, (ii) use unimproved water sources, i.e. surface and/or spring water, for drinking water and (iii) use pit latrines for sanitation.

4.10.1.1 Health Service

Health service questions probe different aspects of household utilization of existing health services, e.g., the frequency, rationale and access to available medical services. The survey results indicate that households use the available health services mainly for acute illness/trauma care. This is not surprising as the distances to the clinic are substantial either by foot or even when vehicles are available. Vaccination rates appeared to be suboptimal, though frequency of antenatal care visits was significantly better.

4.10.1.2 Preventive Care

The primary focus for preventive care was on malaria, specifically the use of bed nets.

In general, there is reasonable awareness of the need for mosquito nets at a household level, but there is not full household coverage due to a combination of cost and access.

4.10.1.3 Gastro-Intestinal and Respiratory

Diarrhoea rates are low, seemingly inconsistent with the use of unimproved water sources. A more detailed investigation by the ANUE team revealed that water sources are carefully constructed and maintained by households and are actually well selected spring sources that have bamboo piping and are covered to prevent access by animals (Figure 4-17).



Figure 4-17: Household Drinking Water Sources Are Well Designed and Maintained

Large numbers (3-5 times more than diarrheal complaints) reported fever or cough within the two weeks prior to the survey. Fever is most likely attributable to respiratory infection, as measured malaria rates were extremely low. Respiratory diseases are extremely common in the Highlands area and are the dominant cause of observed morbidity and mortality for children and adults over age 50. The use of firewood as a cooking and heating fuel, along with the lack of flue mechanisms, is a major contributor to respiratory illness, particularly for children (Figure 4-18). In addition, cigarette smoking is extremely common.



Figure 4-18: High Levels of Indoor Smoke Are Present in Households

4.10.1.4 Female Health

Maternal mortality rates in PNG are extremely high, and the 2005 DHS indicates that rates have deteriorated significantly.

While it is impossible to calculate meaningful neonatal, infant, or maternal mortality rates from the survey data, it is interesting that no household reported a delivery related death. Vaccination rates could not be calculated. Significantly, the percentage of mothers who had a vaccination card was extremely low (see Appendix 1, Section 2.2.4.2 for further details).

4.10.1.5 HIV/AIDS and Other STDs

HIV/AIDS is a critical issue for PNG. Most investigators believe that PNG has a generalized HIV epidemic, though there are no consistent and reliable data.

The Komo Airstrip households performed better than either the rural or Highlands region households in general knowledge, attitudes, practices and beliefs in questions regarding awareness of HIV/AIDS. This significantly better performance is likely due to (i) aggressive OSL awareness campaigns in the Komo area via the Malanda clinic and (ii) a 3+ year time interval between the DHS and the current survey (see Appendix 1, Section 2.2.4.3 for further details).

4.10.1.6 Alcohol, Drug Use, and Tobacco Use

Alcohol and drug use and smoking are serious problems in PNG, particularly binge drinking and chronic drunkenness. Therefore, the survey asked a large number of questions related to this topic. In the original 17 households surveyed, there are 27 smokers. This is a significant and high percentage of the over age population.

4.10.1.7 Domestic Violence

Domestic violence is a major issue in PNG and particularly in the Highlands. The self-reported level of violence is around 20-30%. This level may be significantly under-reported as domestic violence is a sensitive subject.

5.0 CONSULTATION AND DISCLOSURE FOR THE KOMO RAP

According to the RPF, the laws of PNG require consultation with people affected by projects. National Goal 2(9) calls for every citizen to be able to participate, either directly or through a representative, in the consideration of any matter affecting an individual's interests or the interests of his or her community. Supporting this goal, the Company policy and IFC Performance Standard 5 requires "free, prior, informed consultation with communities that will be affected by a project."

This process includes identification of stakeholders, dissemination of information, training and support for representative community groups, and formal and informal consultation with stakeholders.

This chapter outlines the consultation and disclosure activities undertaken for the preparation of the Komo RAP. The Project Land and Community Affairs (L&CA) team, together with a specialist resettlement team from the Company, conducted consultation for the Komo Airstrip RAP, starting in mid-2009. Details on the principles, approaches, purpose of consultation, are further detailed in the Resettlement Policy Framework.



Figure 5-1: RAP Consultation Meeting

The consultation process undertaken is summarised below:

- Preliminary visit to households in the area to announce that a public meeting would be held to discuss the RAP;
- On 12th May 2009, the initial public meeting was held in the Komo area to inform stakeholders about the Project's need for the RAP, raise awareness and begin identifying issues;
- In May 2009 a survey was undertaken to ascertain the local community's attitudes toward the proposed location of the airstrip within their area;
- In June 2009 a land use, asset register and household census study was conducted to identify affected landowners;
- On 1st September 2009 a second public meeting took place, providing more information on the proposed support packages for each household and disseminating written information;
- In September 2009, individual meetings were held with each of the initially identified 17 households²⁵ losing structures to discuss the proposed support packages in detail;
- During September 2009, ongoing individual consultation was undertaken with households to finalize their preferred resettlement assistance packages;

²⁵ Subsequently a further six households were identified and a further seven losing gardens.

- Ongoing future consultation will be undertaken through a combination of community and household meetings to cover a range of planning and implementation issues; and
- Ongoing consultation and disclosure activities with Project-affected absentee landowners.

In summary, many interactions have been held with the Komo households and adjoining communities, as presented in Table 5-1 with the result that all households are well informed about the process and their rights. Details are included in Appendix 8.

Table 5-1: Summary of Komo Consultation Interactions for Affected Households and Communities

Consultation Type	Date	Number of Meetings	Number of Attendees per Meeting
Public Disclosure Events	11 May 2009 to 30 Sept 2009	10	30-176
Absentee Landowner Committee Meeting	26 Sept 2009	3	47
Clan Consultation	02 Sept 2009 to 08 Sept 2009	25	40-75
Individual Household Consultation:	27 May 2009 to 04 Oct 2009	177	All affected households
Health Survey		23	
Agricultural Survey		23	
Resettlement Survey		23	
Household Consultation		88	

5.1 How Stakeholders Were Identified for the Komo RAP

In June 2009 the Project undertook a land use, asset register and household census study for the Komo Airstrip site. This work, undertaken by a team from the Australian National University (ANU), was commissioned to fulfil three objectives:

- To identify the owners of the land within the airstrip site²⁶.
- To establish the socio-economic status of the families that will be relocated so as to measure the longer-term impact on their livelihoods; and
- To provide information to enable calculation of the compensation payable to families for the loss of houses, crops, economically valuable trees and capital improvements such as garden drainage ditches and fences.

The census received feedback that, of the seventeen households identified initially that would need to relocate, five were willing to relocate, six were undecided, and six stated they did not want to relocate. At that time many of these households were awaiting details of the resettlement assistance package before making a fully informed decision about relocation.

²⁶ Land is not to be acquired but the Company will pay a rate to the Clans for the “use and enjoyment of the land” occupied as defined in the In-Principle Compensation Agreement.

Of those willing to relocate, almost all expected to move no more than two hours walk from their current home. By early October 2009, 90% of households had identified alternative resettlement areas.

5.2 Sharing Information on the RAP

Verbal information during community meetings and household meetings on the proposed airstrip location was supported by various materials, as appropriate to the stage of the process. This included:

- The “Resettlement Information Booklet for the Project”;
- The “Resettlement Information Booklet for the Komo Airstrip Resettlement Action Plan” (written in English, Huli and Pidgin);
- Flipcharts and A0 vinyl sheets to support verbal presentations during the public meetings;
- About 200 A4 double-sided paper information flyers that summarised a larger PowerPoint slide presentation (presented on vinyl A0 flipcharts). The flyers were printed in the three languages used in the area, English, Pidgin and Huli and distributed to attendees at the first community meeting (12th May 2009). Sufficient copies were made available for distribution to those unable to attend;
- A one-page summary of the census/survey data for each household, reviewed with them before the commencement of the individual household meetings;
- A handout (Appendix 2) of the draft Resettlement Assistance Package proposed by the Company, presented in both graphic and verbal format, for the information and consideration of household members during and after the individual meetings;
- A summary version of the draft Resettlement Policy Framework and draft Komo RAP were distributed to affected landowners;
- A revised summary paper of the completed RAP (in English, Pidgin and Huli) will be provided to landowners in the Komo area upon its completion to update landowners on changes made to the RAP during the drafting process. This summary report will be presented to landowners through a community meeting format; and
- A full version of the completed RPF will be disclosed widely throughout the Project area through the same points as the EIS. In the Komo area this will include public places such as local schools.

5.3 How Stakeholders’ Issues and Concerns were Elicited

During the land use, asset register and household census study, information was disclosed to landowners about the compensation process, and issues raised by landowners were recorded. Responses to issues raised were provided at subsequent meetings. (The methodology of the Census and Survey and results are outlined in section 4.3)

5.3.1 Resettlement Consultation and Disclosure Community Meetings

A key method for consultation and disclosure during the Komo RAP was a series of resettlement consultation and disclosure community meetings. These are briefly summarised below:

5.3.1.1 First Consultation and Disclosure Community Meeting

The initial resettlement consultation and disclosure public meeting in Komo on 12th May 2009 served to:

- Raise awareness of the RAP process for people who may be displaced physically or economically;

- Improve awareness of the levels of resettlement support and service provision available, and likely to be viable and sustainable, within the regional environment;
- Answer questions relating to the resettlement process;
- Undertake a preliminary identification of community needs, concerns, expectations and priorities in relation to resettlement; and
- Pave the way for the Land Use, Asset Register and Household Socio-economic Census Study to follow in June (Chapter 4).

Attendance at this community meeting is summarised in Table 5-2 below. Attendance was lower than expected as a number of community leaders and representatives were attending Benefit Sharing Agreement (BSA) meetings in East New Britain Province at the time.

Table 5-2: Road-show Attendees – Komo 12 May 2009

Number of Attendees			
Male	Female	Children	Total
39	5	9	53

The majority of the questions and informal comments made at the first community meeting related to:

- Compensation rates;
- Provisions for replacement land and housing;
- Resettlement Assistance Package; and
- Land demarcation and identification, given absentee landowners or disputed ownership claims.

These issues are well known to the L&CA team located at Hides as a result of ongoing landowner liaison. Although several community members voiced a concern that they had no other land areas on which to relocate, it was difficult to gauge whether these claims were a true reflection of the situation, or part of a concerted effort to obtain further resettlement benefits. The Project is working closely with the impacted communities through the L&CA team and the independent research teams to establish the extent and credibility of such claims. However, at the time of the community meeting there were indications that, once the Resettlement Assistance Package was negotiated and agreed upon, many of these issues would be resolved.

As noted in Chapter 4, in the Huli cultural context the Project cannot implement a 'land for land' policy because the Project cannot provide security of tenure. The expert advice given by the land research teams and consultant anthropologists is that most Huli have alternative locations to which they can relocate and thus the risks of moving to new sites are minimized and "host" communities are not impacted.

5.3.1.1.1 Awareness of the Proposed Komo Airstrip Development

The first 17 identified Komo households were consulted to establish their awareness and understanding of the RAP Consultation Process, following the first community meeting.

The results of these questions are summarised in Table 5-3 and established that the first community meeting was effective in creating substantial awareness but also confirmed that ongoing awareness programs are required to result in more informed stakeholders.

Table 5-3: Awareness of the RAP Consultation Process

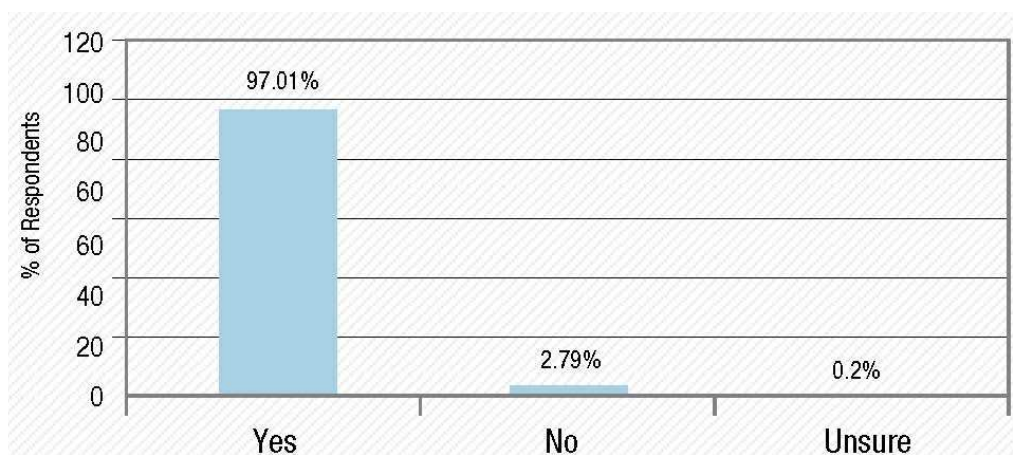
Question Posed	Yes	No	Unsure	No Response
Did you attend the road-show presentations of the RAP?	94%	6%		
Do you think you understand the Resettlement Action Plan?	65%	18%	18%	
Would you like the Project to explain the Resettlement Action Plan to you again?	59%	35%		6%

5.3.1.2 Community Attitude Survey

The proposed location of an airstrip at Komo was unknown at the time of the 2009 EIS consultations. For this reason, a separate survey was undertaken in May 2009 in the Komo area to ascertain the local community's attitude toward location of such major infrastructure within their area.

Of the 503 valid survey responses, approximately 56% of respondents were male and 44% female. This is considered a good representative sample of the possible population with links to the area (which is uncertain at present due to the out-migration associated with past fighting). Past conflict has resulted in some 1,700 to 2,000 absentee landowners (section 4.6) in the general Komo area. On this basis the sample represents at least 25-35% of the impacted constituency. The largest proportion of respondents was in the 35-55 age group, with 11% of the total between the ages of 0-15.

The results of the survey indicated that there was 97% support for construction of the airstrip (See Figure 5-2). Respondents indicated that expected positive benefits would include better services, employment and income. However, 70% of these respondents felt there would also be some negative impacts, principally from environmental damage and pollution (91%), health and safety risks (35%), and in-migration (26%).

**Figure 5-2: Support for Komo Airstrip Construction**

5.3.1.3 Second Information and Disclosure Community Meeting

A second resettlement information disclosure meeting was undertaken in Komo on 1st September 2009 in preparation for the negotiation of the Resettlement Assistance Package.

The purpose of the second community meeting was to:

- Present the results from the ANU census and survey, advising the affected people of the cut-off date for resettlement baseline conditions (5 June 2009);

- Present, and provide copies of, the “Resettlement Information Booklet for the Project” and the “Resettlement Information Booklet for the Komo Airstrip Resettlement Action Plan” (written in English, Huli and Pidgin);
- Outline in general the future Resettlement Process as it will apply to Komo landowners;
- Outline the general elements of proposed support packages for each household; and
- Introduce the Environmental Law Centre (ELC) and explain their role in assisting landowners who will be required to resettle.

The community meeting also sought to ensure that households affected by Project resettlement, and who were absent from the first consultation round held on the 12th May 2009, received sufficient information disclosure prior to commencement of further RAP activities.

There were 176 attendees at this community meeting. Issues raised by community members during resettlement public meetings are summarised in Section 5.4: Stakeholder Issues.

5.3.1.4 Consultation with Households about the Resettlement Assistance Package

Immediately following the second community meeting, consultation began with the 17 households that were originally identified as having to be resettled from the Komo Airstrip site. Each consultation was conducted as a meeting between all available members of each household and a three-member consultation team (which included a member of the Resettlement Team, an interpreter and a representative of L&CA). Two representatives from the ELC acted as observers during this process, rotating between meetings.

Three consultation teams were fielded, enabling concurrent meetings to be conducted.

Each household meeting was conducted in accordance with the following steps:

- The consultation team reviewed the one-page summary of the census/survey data for the relevant household before commencement of the meeting
- The draft Resettlement Assistance Package being proposed by the Company was explained to each household. At this time each household was provided with a handout (Appendix 2) for their information and consideration during and after the meeting
- Each household was asked to consider the information presented and requested to meet again two days later for further discussions on the draft package

5.3.1.5 Consultation with Absentee Landowners

Many landowners are absent from the Komo Airstrip site, following a substantial outmigration from the area due to tribal fighting over the last decade, as noted in Chapter 4.0: Socio Economic Surveys and Baseline Status. These absentee landowners are likely to have some claims on the site.

The Resettlement Team together with Land & Community Affairs representatives worked directly with the landowners who had previously moved as a result of the conflict to generate an initial Komo absentee landowner list. Information that ANU had obtained from the mapping of clan customary lands over the Komo Airstrip area was used in this process. Boundaries in dispute were recorded at the time of survey.

A number of interactions then took place in those areas where absentee land owners are currently resident. Each major clan group was approached and informed of the process that was proposed to identify absentee landowners. This resulted in the election of representatives from each clan by absentee landowners to serve on an absentee landowner committee. This committee, the Absentee Landowner Committee, developed clan lists for

persons living in the area prior to the conflict, which was developed after a long process of clarifying lists of names and identifying discrepancies. This included disclosure of names at clan meetings, discussion forums, and facilitation of the process by the Resettlement Team and L&CA to obtain consensus.

The Absentee Landowner Committee, currently numbering 47, has been drawn from the constituency of resident and non-resident clans identified in the census survey. The Chairperson is appointed by consensus of the members.

5.4 Stakeholder Issues

5.4.1 Stakeholder Issues in the Hides-Komo Region

A number of ongoing issues within the wider Hides-Komo catchment area have the potential to impact directly on the progress of the resettlement plans and initiatives in Komo:

- Petroleum Retention Licence areas, PRL 11 & 12 (Figure 34), which include Komo (which is inside PRL 11) have expressed their concern that the Government intend to create PDLs at the earliest opportunity. The excision of two blocks from the Petroleum Retention Licence areas, PRL 11 application is causing concern among those Project landowners who feel they may be left out of the benefit stream distribution. They will attempt to exert pressure on other PRL 11 landowners as well as the State. PRL12 landowners feel that Komo should be included within their licence, given the fact that the same clans inhabit both license areas.
- There is a heightened expectation among all upstream Project landowners that the License-Based Benefit Sharing Agreement forums will deliver the required windfalls in infrastructure and cash streams. In particular, those landowners in PRLs 11 and 12 who have not received any equity or royalty from the existing petroleum and gas projects will take firm negotiation stances.

Landowner Associations from PRL12—adjacent to PRL11 — have issued a public ultimatum to the DPE to recompense them for past MOA failures, and to provide K100m for relocation. This followed widespread publication of claims that DPE had misappropriated K160m of landowner funds, and had channelled much of this to individual leaders of Landowner Companies and Landowner Associations in the Hides area. The PRL12 community feel there has been both a lack of accountability associated with, and tangible results from, the distribution of these monies for social development projects.

- Currently there are a number of landowner submissions before the PNG Courts with respect to challenges of the validity of the Umbrella Benefit Sharing Agreement, provision of a Project EIS approval, and back-rent for many of the Hides Gas Project facility areas. It is clear that small interest groups will continue to pursue their objectives.

With specific respect to the Komo environs, the following issues were identified at the time of writing:

- Currently two business groups, Komo Dai and Komo Tuguba, are in conflict with respect to the formation of an umbrella landowner company for the purposes of business ventures associated with the Project. The Komo Airstrip populace thus presents as a factionalised constituency necessitating separate representations;

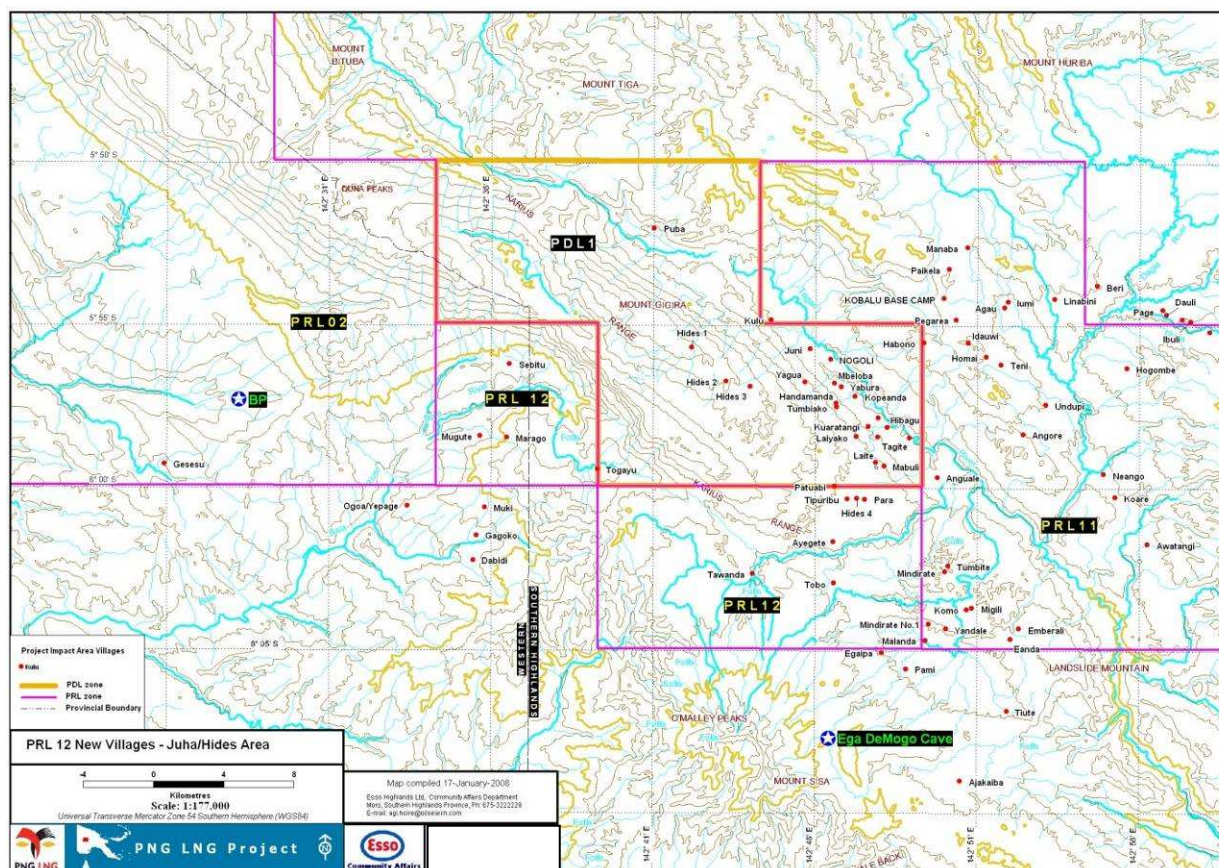


Figure 5-3: Project Upstream Project License Areas

5.4.2 Komo Stakeholder Issues

Feedback from the initial public disclosure of the resettlement program on 12th May 2009 highlighted the following issues:

- Provisions for replacement land and housing (19% of respondents);
- Compensation rates (27%);
- Assistance Package (14%); and
- Land demarcation and identification, given absentees or disputed ownership claims (5%).

5.4.2.1 Role of the Independent Advocate

The Environmental Law Centre plays a monitoring and review role as an impartial observer. Representatives of the Environmental Law Centre (ELC) attended the second Komo community meeting, and observed the household meetings regarding the resettlement assistance package.



Figure 5-4: Environmental Law Centre Monitoring and Reviewing the RAP Process

Following the completion of these consultation and disclosure activities, ELC remained in the community for around one week to provide advice on the resettlement process and peoples' rights and responsibilities, and to identify issues for which the community requires advocacy support.

Following this, they presented the Project with a written report providing information on activities undertaken (summary table of interviews held, issues and principal concerns raised, responses given, and further action required). The report includes an assessment of the issues influencing the achievement of the objectives set for the role of Local Advocate together with suggestions/ recommendations aimed at supporting the effectiveness of the role. The Komo community have responded well to their role.

5.5 Consultation for Finalisation of the Resettlement Assistance Package

The resettlement assistance package was finalised as a result of the household meetings with Project-affected landowners. Feedback provided by households was communicated back to the Company by the consultation team at the end of each day of meetings. Management considered this feedback and reported back to the consultation team, including revisions to the proposed package.

The focus in the approach was on household meetings because a) there is no representative organisation for the residents of the Komo Airstrip site, and 2) experience indicates that households would prefer to discuss the package individually. However, should the landowners prefer an alternative approach in the future, such as the formation of a committee to discuss the finalisation of the resettlement assistance package with management during the implementation phase, then this approach would be adopted.

As noted in Section 7.2: Compensation and Resettlement Strategy, while the same package will be provided to all households, options selected by each household may differ. However, it is recognised that households may not be similar in other geographic areas of the Project which require resettlement (and which will be described in other operational RAPs). As a result, the resettlement assistance package may not be identical with all operational RAPs prepared for the Project.

5.6 Issues Arising from Consultations

The following issues and concerns included in Table 5-4 have been raised by landowners consulted during the survey and census and during the initial consultation road shows. Table 5-4 provides a summary of these concerns which are placed into context as the consultation process continued and the community became more aware of mitigation measures proposed:

Table 5-4: Summary of Issues Arising from Consultations and Context

Issue	Response and Context
Among those unwilling or unsure about relocation, the most commonly stated concern was a lack of land, or insufficient land, to which they could relocate and who would assist to identify appropriate and available land.	Landowner concerns in this regard have lessened as the RAP process has progressed. All landowners at Komo have since been informed of the Resettlement Assistance Package and have indicated a willingness to resettle. 22 households losing structures at Komo have confirmed their resettlement site. The remaining households are in the process of finalising specific sites, but have indicated the general area they are seeking to resettle.
Loss of resources to support livelihoods and burial sites, and the provision and duration of interim support measures following resettlement while livelihood assets are re-established.	Loss of resources refers to access to bushland, which has been taken into account by the homesteads to be resettled in selecting their resettlement site. The key resettlement areas of Taynda, Ebetali, Tagiria are all forested areas. Landowners resettling to Komo Station will experience reduced access to bush resources but greater access to services. They have considered this in making their selection of resettlement site. Assistance with gardening and livelihood restoration will be provided to enhance the ability of resettlers to maintain livelihoods after resettlement at all locations. The period of rations provision has been set at 6 months, based on agronomic advice regarding the time required to re-establish gardens. However progress in the re-establishment of gardens will be monitored. If a longer period for garden re-establishment is required, then the period for the provision of rations will be extended. The Project will be working with landowners to determine their preferences for the relocation of grave sites, or ceremonies to be conducted on existing burial sites at the time of resettlement.
The process for consulting with people who have lived in the area but have had to leave because of conflict (fights) or other reasons, but who still have rights to the land, and their eligibility for compensation.	This issue has been addressed through the formation of an Absentee Landowner Committee. The Project is working with the Committee to develop options for the absentee landowners. The Project will also be pursuing business development opportunities with local landowner companies (Lancos).
Timing of the construction of relocation houses, payment of compensation, and the provision of other assistance measures.	This issue relates to landowners receiving timely support for physical resettlement. Households will be provided with materials to construct temporary accommodation, mosquito nets and rations prior to relocating. The moving and housing allowance (to purchase building materials) will also be paid prior to relocating. This arrangement has been well received by landowners.
A general concern that Project benefits be available to all landowners and not just to elite sub-groups of landowners.	This issue is being addressed through the development of options for the absentee landowners, business development with landowner companies, and more generally through the Landowner Benefit Sharing Agreement.
Potential lack of services in	Host communities have similar access to services and road

Issue	Response and Context
resettlement areas, including roads.	access as originally in the Komo area.
Potential risk of malaria	Malaria risks are being addressed through a risk assessment of resettlement sites, the provision of bed nets and ongoing health monitoring activities.
Potential lack of, and distancing from, employment opportunities	Paid employment opportunities close the airstrip site are currently very limited. The ability for resettling and absentee landowners to participate in the workforce and establish businesses will be enhanced through the provision of training and capacity development activities under the Community Support Strategy and National Content Plan. The agricultural support and training represents the initial focus on livelihood maintenance.
Loss of social cohesion if families relocate to different areas. In particular they advise that it will be difficult to find land on which to rebuild their churches and schools, because they will not "own" land at their resettlement sites	Landowners have tended to move in groups, with most of the 23 households selecting to resettle to seven key resettlement sites. The Project is consulting with the Eanda ECP and Catholic churches regarding the relocation of each church to a new site.
A concern that the airstrip could restrict access to services and facilities for people living on the far side from the present Komo station. To address this, a new access route around the southern, eastern and northern end of the airstrip has been proposed by residents.	The provision of appropriate access roads around the airstrip site is being planned as part of the construction planning process.

5.7 Future Consultation Activities During Implementation

5.7.1 Ongoing Consultation and Disclosure Activities with Project-affected Landowners

Household meetings are being conducted during September and October 2009 to finalise the proposed resettlement assistance package and to obtain sign-off. The ELC is in attendance in their role as local advocate.

A flexible approach will be used for the remainder of other consultation activities with Project-affected landowners, following the sign-off phase. A combination of community meetings and household meetings will be employed.

Consultation activities will be conducted under the implementation management structure as defined in Chapter 9.0: Organizational Roles. In summary, key topics for future consultation related to implementation will include:

1. Finalising agreement on the Resettlement Assistance Package;
2. Arrangements regarding compensation payments;
3. Documentation, including mapping, of relocation sites/places;
4. Planning for the construction of resettlement housing where desired;
5. Planning and implementing livelihood support programs;
6. Provision of malaria bed nets and other health initiatives that may be required; and
7. Process for on-going monitoring and evaluation of resettlement activities.

5.7.2 Ongoing Consultation and Disclosure Activities with Project-affected Absentee Landowners

The L&CA and the Resettlement Teams will continue to facilitate the functioning of the Absentee Landowners Committee. The Committee will be employed through the local Hides based landowner company to ensure (a) appropriate remuneration rates are applied; (b) provisions for their travel and activities; and (c) to provide an arm's length approach to issues of direct payments from the developer to landowners. The landowner company will be responsible for all activities of the proposed representative Committee.

The Absentee Landowner Committee will continue to undertake the following tasks:

- Engage and consider any further representations made by absentee landowners concerning compensation claims to land within the Komo Airstrip. This will include the maintenance of a list of all such claimants and detail their land and asset claims. All information will then pass to Lands & Community Affairs concerning such claims with a view to mediation and fast-track outcomes without the need to resort to court determinations.
- Resolve the boundary disputes as a precursor to compensation/rental payments. If the Absentee Landowner Committee cannot resolve the disputes then the clan owners will be referred to the government's land arbitration process. Until disputes are resolved, funds will be held in an escrow account to be distributed once the disputes are resolved.
- Evaluate development opportunities for the absentee landowners. Options under consideration include: training options including livelihood maintenance and enhancement training options; and community based investment(s)/structures.

5.7.3 Meetings with Provincial and Local Government

Provincial and local government are key stakeholders with regard to infrastructure and service provision. Consultation with these agencies will commence following the second community meeting and completion of associated household interviews. Seven resettlement areas have been identified by the 30 households. These areas will be discussed with government, as will the potential change in demand for government infrastructure and services in these areas.

5.7.4 Meetings with Village Level Stakeholders in the Area

Further interaction will be undertaken with other village stakeholders in the area during the implementation phase, particularly in those areas where there may be a concentration of settlers.

This will be through a mixture of community and smaller group meetings. Key topics for consultation and disclosure will include:

- Inclusion of Komo development activities into the planning and implementation of the National Content Plan. This could include training and employment associated with the construction and operation of the airstrip.
- General awareness of construction activities and associated safety requirements.
- Information on the operational use of the site, such as a schedule of aircraft movements, both during construction of the HGCP and general operation of the Project thereafter.
- Other local development initiatives proposed to be undertaken by the Project.
- Issue related to "influx" particularly opportunistic influx.

5.8 Disclosure of the RPF and Komo RAP

The disclosure process that has been adopted by the Project for the Komo area aims to facilitate participation and included the following activities:

- 1) Awareness presentation of resettlement to communities (using a flipchart) prior to the census and surveys: an explanation of the Company's RPF, potential of impacts as a result of resettlement, the process of census and surveys, calculating compensation and general entitlement to resettlement support.
- 2) A Site-specific Findings Presentation (using a flipchart) to the communities (following the census, surveys and consultation) presenting the general findings in the broader area, affected communal assets and future resettlement-related activities. During this meeting general issues and concerns were addressed. (Undertaken as referenced previously in this chapter). Activities included:
 - a. Handout of the a 10 page summary of the RPF document; providing independent, dedicated Environmental Law Centre (ELC) resources to explain the RPF and legal rights to households and communities; discussion of processes; and registration and discussion of issues and concerns. ELC will be available throughout the resettlement negotiation and beyond to observe the resettlement processes and provide independent advice to affected households.
 - b. Handout of a general findings document (10 pages) detailing the site-specific demographics, assets to be affected by resettlement, compensation and support framework and entitlement, and grievance management.
- 3) Household meetings to disclose specific and relevant findings, explaining the compensation calculation process, resettlement support and other entitlements relevant to the household.
 - a. Handout of Resettlement Agreement for consideration and Project support to explain agreement and associated rights. This was undertaken with the assistance of the ELC.
 - b. Handout of resettlement option materials explaining various choices available to each household and any additional offers that may be appropriate for that area. Project support to explain the possible selections and livelihood restoration elements. The disclosure process that was adopted is illustrated in Figure 5-5 below:

All summary documents are made available in Pidgin, Huli and English.

The process has been implemented by the census, social and consultation teams. During this process all consultation, issues and responses have been recorded.

These activities will be followed by consultation to refine assistance packages and complete negotiations before final agreement and sign-off. Consultation will continue during the implementation, monitoring, and evaluation of compensation payment and resettlement.

In addition, the RPF and site-specific RAP will be placed on the Project website and hard copies will be provided at the sites where the EIS was disclosed. The documents will be available in Pidgin, Huli and English (Figure 5-5)

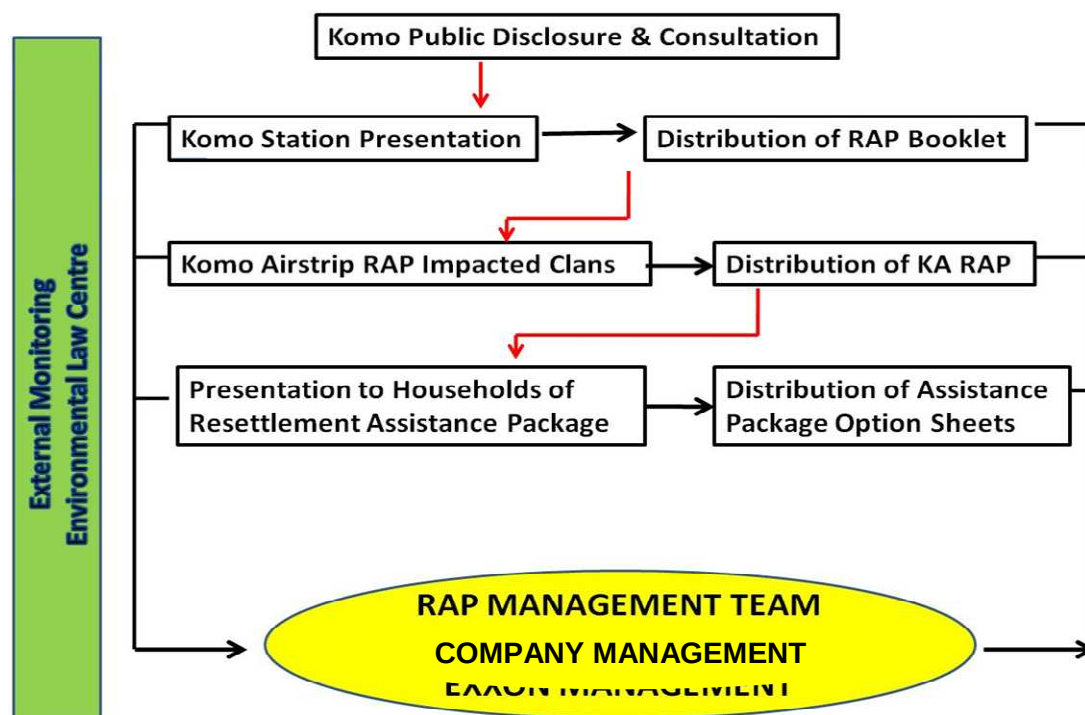


Figure 5-5: Overview of Disclosure Process

6.0 PROJECT IMPACTS

6.1 Introduction

The creation of the proposed Komo Airstrip by the Company will mean that people and other entities that currently reside within the airstrip, or use land and resources within the airstrip, will no longer be able to do so and/or will have to relocate. As resettlement occurs, households living within and households owning land within the proposed airstrip will lose access to their land and fixed assets and will experience various other physical, economical and cultural losses or adverse impacts. Although a common set of impacts is identified for all the individuals or groups, it should be noted that a particular group or individual may not necessarily incur all types of losses.

Following from the baseline surveys undertaken in the Komo area (Chapter 4.0) the Project impacts can be summarised as presented in Table 6-1 below:

Table 6-1: Summary of Impacts due to Resettlement

Impact	Scale
Residential structures affected	23 affected 24 to be moved (one losing all gardens)
Communal structures affected	2 churches
Loss of field & agricultural land	30 houses (7 with land only) 1,700 – 2,000 absentees

Loss of trees and crops	2,496 sweet potato mounds 14,165 coffee trees 3,471 other trees
Loss of access to forest resources	30 houses and clan/clan segment members
Disruption in social networks	Physically displaced
Impacts on business and employment	Physically/economically displaced
Community services and facilities	Physically/economically displaced
Cultural Sites	Cultural heritage, archaeological sites
Absentee Landowners (Internally Displaced Persons)	List provided by local landowners (164 families)
Influx of migrants	Limited influx expected owing to social and administration reasons

6.2 Project Impacts

An overview of the main impacts identified in Table 6-1 is provided in the sections below:

6.2.1 Loss of Residential Structures

Baseline studies have found 23 households living within the proposed airstrip site with a total of 323 persons. Twenty-two (92%) of airstrip houses are constructed with walls of bush materials (usually woven cane or split timber slabs) with kunai (*Imperata* grass) thatch roof whilst others are constructed of woven cane grass walls with corrugated iron roofs. Eighty per cent of houses are 50m² or less in floor area. All houses have earth floors (often covered with dried grass) with raised sleeping platforms surrounding a fireplace in a main room, often with smaller rooms divided off by woven cane grass walls. None have windows and most had only one entrance doorway.

Where houses are of semi-permanent construction, they have iron roofs, sawn timber frames and walls and small windows and all are raised on piles. Three houses are built of permanent materials, on piles with iron roofs, sheet metal cladding, windows and more than one door.

All of the families surveyed at Komo rely on natural sources for drinking and domestic water (usually a local spring) and use basic pit latrines, sometimes just an uncovered pit with no structure over it. Pit latrines will therefore be lost for all of the households inside the airstrip site, as well as access to clean water as water sources are carefully constructed and maintained by households and are actually well selected spring sources that have bamboo piping and are covered to prevent access by animals.

6.2.2 Loss of Communal Structures

Within the Komo Airstrip area, two churches are the only items of community infrastructure (Eanda Catholic Church buildings and the Eanda Evangelical Church of Papua buildings), located at the southern end of the airstrip site within 500m of each other. The Project has agreed to reconstruct the churches in any area selected by the community.

6.2.3 Loss of Foraging Areas

20 out of the 23 households with houses inside the airstrip reported keeping pigs inside the airstrip. These would need to be moved during the relocation, and adequate pig pens and foraging areas should be available for their upkeep.

6.2.4 Loss of Trees and Gardens

Seventeen discrete areas or “gardens” of sweet potato were measured. The average size of these areas was 0.17 ha, the largest being 0.49 ha and the smallest 0.04 ha. The 17 garden areas contained 2,495 “mounds” of sweet potato.

As well as sweet potato, Huli gardens are also planted with highlands pitpit (*Setaria*), sugarcane, various greens and ferns. Bananas and tanager (*Cordyline*) are planted regularly throughout the garden area. Gardens are surrounded by a deep ditch and a fence made of sharpened *Casuarina* stakes, bound together at the top by cane

The families surveyed, plus those who have houses outside the area, owned 14,165 coffee trees planted within the airstrip site. Of these, 6,553 were seedlings that showed many signs of having been recently planted ; 6,157 are older trees in very poor condition, overgrown with long grass and bush and showing little signs of any maintenance or production for some years, and 1,455 show signs of being cared for and are in moderately good condition. The largest number of coffee trees owned by a family was 5,000 (most of them overgrown, diseased and unproductive) and the smallest number five. The largest area of coffee is 2 ha and the smallest 20 m², excluding the new coffee plantings which were too far scattered to be sensibly measured.

The 17 families initially measures with all of their gardens inside the airstrip possessed a total of 178 avocado trees, 732 marita (*Pandanus canoideus*), 205 Ficus trees and 8 orange trees; 2111 mature *Casuarina* trees, 167 immature Causarina, 52 bamboo clumps and 18 mature pine trees

These trees and crops will be lost during the process of relocation. The time, effort and resources required to construct new ditches and fences around new plots of land must also be considered. If the Huli households are required to vacate the land before harvesting their crops, they will lose these resources as well as any seeds required for the next crop cycle. Harvested crops are used for home consumption, for sale as a source of income generation or for both purposes. Households that have to abandon standing crops before they are harvested will, therefore, lose their potential source of food and/or income. If they do not have access to alternative lands and crops, this loss will place them in a vulnerable situation until they can plant and harvest crops in alternative locations. Such situations will be assessed by the resettlement Team and mitigated.

A possible risk associated with the loss of land is the potential for breakdown of customary land allocation mechanisms once land transactions become monetarized through Project land acquisition activities. However, Project rental of land has been occurring within the Hides-Komo-Kutubu-Gobe-Kikori region for almost two decades and is principally associated with oil and gas developments. These rental agreements are made with local corporate entities which are usually clans or clan segments. The rental monies are shared between all members of that corporation. The remainder of the land continues to be used under customary practice and is unaffected by these development interventions. In Huli multi-local residence has not been impacted and individuals and families continue to move between garden areas where they have rights through their kinship and descent networks. Whilst the introduction of a cash economy has meant a new medium of wealth, the principles of land use have not changed. It was customary for people to rent land areas in the pre-contact era for which they paid in pigs and pearl shells – now they can use money. Land pressure is directly related to population increases and soil fertility – shorter fallows, salinity etc – not the monetarized transactions of land acquisition. Given this context the identified risk – i.e.

breakdown in customary land allocation mechanisms - is not an impact/risk which it is felt requires Project measures or intervention.

6.2.5 Reduced Access to Forest and Other Resources

22 out of the 23 affected households collect and utilise, to various extents and on a daily or periodic basis, natural resources occurring in the surrounding village lands. The same can be expected for those households with fields in the airstrip. Forest resources are used for home consumption or to sell to generate income, either directly or after processing. Wood is also collected, either for personal firewood or for resale and all Komo Airstrip households rely on firewood for fuel. Relocation will result in the loss of their ability to utilise these resources, adversely affecting their food security and the income generating capacity of certain households, unless these resources can be replaced at the resettlement sites.

6.2.6 Disruption in Social Networks and Change in Community Infrastructure

The Huli often rely on customary networks of obligation with regard to economic transactions and businesses, with any profits being shared around. These social ties may be affected with the necessary dispersal caused by relocation, potentially restricting access to such profits.

All 23 households surveyed in the proposed airstrip site have attempted to include many absentee family members in their household, following cultural customs and ensuring their relations also receive any benefits of the Project. Such ties are culturally important, and any exclusion could lead to disruption amongst social networks and community infrastructure, creating impacts on their sense of belonging.

6.2.7 Impacts on Business and Employment

The level of respondents (23%) citing employment income in the Komo catchment was higher than that recorded in other Project areas. Thirty-four per cent of airstrip families reported some form of business income, derived mainly from trade store sales, though one family reported truck hire and two reported property rental, as part of their enterprise. Thirty-seven per cent said that at least one family member owned a bank account. There is a relatively high level (30%) of trade store business activity. Indications are that employment based around oil pipelines or other business will not be lost as relocation will be to areas nearby.

Komo Airstrip area respondents report possession of more radios (57%) and more mobile telephones (52%) than any other group in the Project catchment. Additionally, reported possession of items such as sewing machines, blankets, and pots were higher among Komo residents than for counterpart Huli catchments

However, overall less than 10% of respondents reported having full or part time employment, with demonstrably higher rates of employment amongst men than women.

Many of these affected households provide household income with the sale of agricultural produce, firewood, and coffee. Part of this source of income could potentially be lost should resettlement and loss of land occur. Furthermore, individual clan members are permitted to sub-let communal land allocated to them, and relocation efforts could negatively impact any profits gained in this manner, either as land is lost, or as residents move away.

On the positive side, the construction of the airstrip could also potentially create employment opportunities, providing additional sources of income to households and improving economic expenditure. Furthermore, it is likely that other business opportunities may arise to support the airstrip infrastructure, as can be seen on the nearby smaller airstrip to the east, creating further employment and income opportunities, whilst potentially diversifying the local economy.

6.2.8 Influx of People

The economic changes that will occur at Komo will attract people from outside the area in search of economic opportunity. The situation at the proposed Komo Airstrip site is further complicated by the flight of its residents from a conflict in the late 1990s and early 2000s between two sub-clans of the one clan Dagima. Most of the internally displaced residents are still living in the larger Komo area, but some are said to be as far away as Goroka, Mount Hagen, and Port Moresby. From various consultations with landowners conducted by ANUE and RAP research teams – these include both individual and landowner committee focus group interviews – a list of some 2,000 people comprising some 200 families has been identified. Airstrip landowners indicated in the social/economic survey that approximately 47% of household members are absent and these people potentially have the right to return to the area in search of improved livelihoods or to share profits with family members benefiting from the Project.

There may also be some inflow of people who do not have rights to land in the area. This could lead to the contest for opportunities with attendant interpersonal and inter-clan tensions. This could also further put pressure on land and resource availability, negatively impacting Komo residents requiring resettlement. However, potential conflict from previously displaced landowners is low. The Project will adhere to the provisions of the OGA Section 118 in respect to the payment of compensation for damage and deprivation to Project area landowners. The resettlement assistance package is directed at households that are presently on that land and which have implemented improvements to the land. In Huli custom these households would be entitled to recompense for such improvements so there is concordance between the Project measures and PNG law. The Project has also made all efforts to publicly disseminate information about the resettlement program and to contact and negotiate with IDPs. The formation of landowner committees to oversee the list of eligible IDPs for further assistance directly addressed the issue of identification and authentication of tenurial status. All of these combined measures have reduced the risk that disgruntled IDPs will resort to violence or conflict to pursue their claims. The grievance process established by the Project and overseen by L&CA can also be utilised by these claimants. Importantly, the Project has not attempted to intervene directly in the longstanding and ongoing negotiations associated with war reparations as these will likely continue for some time and are perceived as the responsibility of the litigants themselves. Any land dispute arising from the acquisition process can be processed through the Land Court system of PNG.

6.2.9 Loss of Access to Community and Public Services and Facilities

Permanent relocation of households to alternative areas will potentially impact access to various services and facilities in and around the Komo area. This will especially be the case if households relocated permanently to alternative lands already in their possession some distance away. This may negatively affect access to health facilities, schools and churches. However, 47% of Komo respondents indicated that their children do not attend school because of lack of requisite fees (60%), security (33%) and distance (13%).

The survey results also indicate that households use the available health services mainly for acute illness/trauma care rather than for less serious medical problems. This is not surprising as the distances to the clinic are substantial either by foot (2.5 hours walk) or even when vehicles are available. Relocation could potentially improve access to healthcare and education.

6.2.10 Improved Infrastructure and Transport Links

Relative to other rural areas in the Southern Highlands, Komo benefits from the resource development activities that are centred at Hides and operated by Oil Search Ltd. The general road infrastructure in the general Hides area is significantly better and OSL has invested in upgrading local health clinics, including the Malanda Sub-Health Centre located

south of Komo. However, Komo's location at the end of the road network and hundreds of kilometres from Mount Hagen and Goroka has negatively affected commercial crop production, such as coffee. This has resulted in low prices, irregular buying and a general loss of interest by people in maintaining coffee. Improved air and land transport links associated with the Project's development may support the provision of cheaper inputs and the development of more effective marketing, increasing the attractiveness of coffee cultivation as a means of generating supplementary income. These improved links may also support some further agricultural diversification in cash or food crops.

6.2.11 Cultural Sites

Sites of cultural importance or significance are presently being identified by the Social Research Institute within the proposed airstrip site. This includes any graves or spiritual sites.

Any transfer or reinterment of these sites will be undertaken in a culturally acceptable manner, with agreement of local communities, and in alliance with national legislation & international protocols.

6.2.12 Resettlement Sites

The identification of resettlement sites is normally a complex process involving the selection of sites that have the potential to restore livelihoods of communities to be resettled, but will not result in significant impacts on host communities. Information available indicates that all households currently resident or cultivating gardens in the airstrip area have access to alternative land. This will be confirmed during the implementation phase, taking account of the following two possibilities:

6.2.12.1 Existing Sites with Security of Tenure

The cultural tendency for Huli peoples is to travel and practice multi-local residency (detailed discussion in Chapter 3). Each household has access to alternative lands, and possibly household structures or crops growing.

Although there has been an increase in the number of households living in the Komo area since 2000, this is assumed to be due to the resolution of conflict and the return of peace in the area rather than any significant factors relating to the Komo land. Furthermore, the relative economic stability of the Huli people living in Komo, and their improved status compared to surrounding populations in the Southern Highland Province suggests a resilience and ability to manage such change.

6.2.12.2 Existing Sites with Limited Security of Tenure

Although the availability of alternative land reflects the prevalent practice of multi-local residence and the cultural context of Huli tenurial rights and residence practices, it is also customary practice for individuals to 'lease' garden lands from others. Payment would be made in pigs or shell and – more recently cash. This form of customary lease could not, however, be relied upon as a solution for a 'land-for-land' program by the Project.

The reason for this is that it would provide no security of tenure. IFC principles reflect the paramount importance of ensuring "security of tenure at the resettlement site without having to face the risk of forced eviction".

In the event of any dispute between leasor-lessee parties or their clan based units it will always remain the prerogative of the leasor to evict the lessee irrespective of any current formal or informal arrangement. Precisely the same argument applies were the Project to attempt to enter into formal lease arrangements with customary landowners. Such an arrangement would deprive the leasor, or inheriting child of the leasor, the right to change their minds about the arrangement some time in the future – this would put at risk the relocatee and his/her household.

As such, customary mechanisms will be relied on in the first instance to provide access to replacement land, and the Project makes references to ethnographic literature concerning Huli multi-local residence indicating how affected families can self-relocate. Following this principle, the livelihood restoration assistance package (as discussed in Chapter 8: Resettlement and Compensation Strategy) will be utilised. This approach is viewed as giving affected persons the best chance of stability and enhanced livelihood.

6.2.12.3 Resettlement Areas

Resettlement areas that have been identified by the Komo community are presented in Figure 6-1. In total seven areas have been identified around the airstrip that occur within a range of 300m to 2.5 km – at most, a few hours walk from their current locations. At present twenty two households have identified specific areas to move to within these areas and the remaining households are confirming their locations.

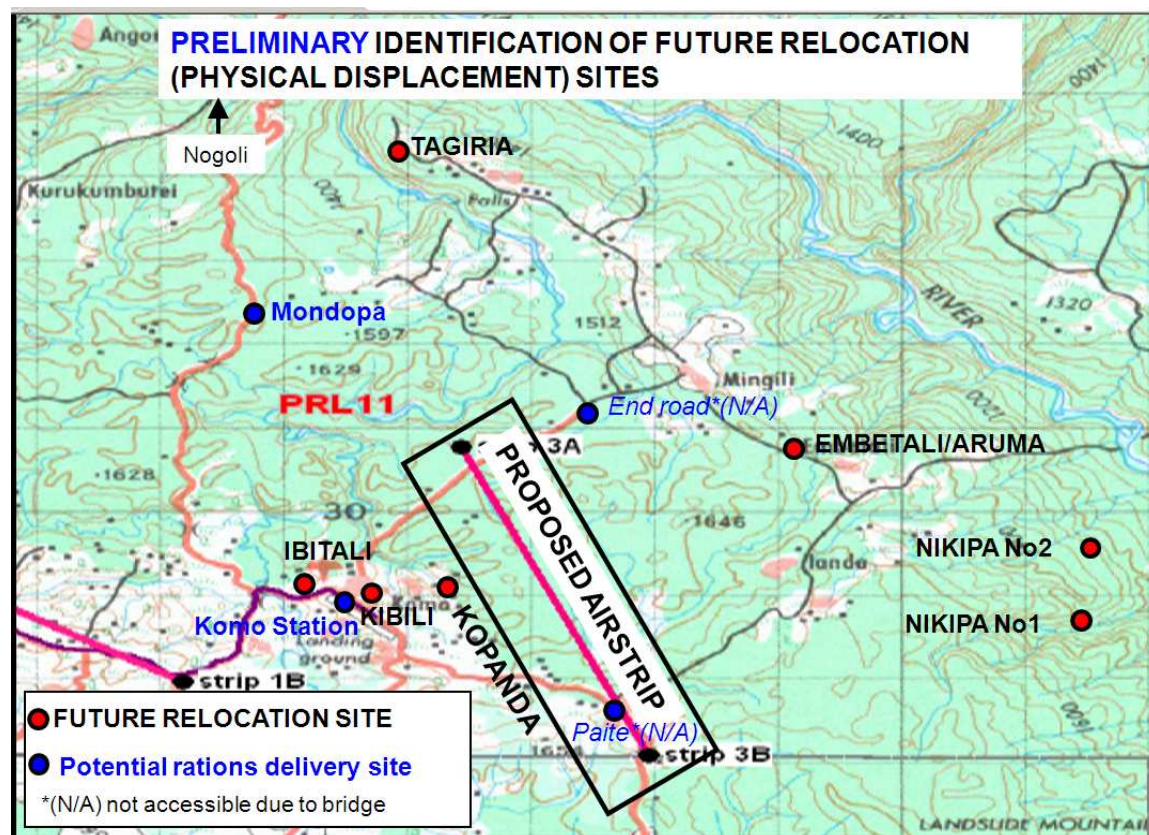


Figure 6-1: Resettlement Areas Identified by Komo Households

Resettlement sites are currently being assessed as part of the resettlement implementation process. The site assessment will include the following:

- *Land use:* The suitability of each site for growing the local crops will be assessed by an agricultural expert prior to the establishment of gardens on the resettlement site.
- *Acceptability to host community:* This has been investigated through consultation with resettling landowners. Acceptability will be verified through consultation at the resettlement site with both resettling landowners and the host community, but is not expected to be an issue as most sites are 2nd or 3rd properties, so relocation will be to familiar social networks.

- *Potable water:* Access to streams is being assessed. Consideration will also be given to potential rainwater volumes available for harvesting through the water tanks available under the resettlement assistance package.
- *Health:* The potential malaria risk at each site will be assessed as part of the health assessment and monitoring program.
- *Access to services:* Access to services will be assessed by determining road access and walking distance to key services such as aid posts, schools, aid posts and markets.
- *Environmental risks:* Such risks include landslides, flooding and erosion. These risks will be assessed through site inspections and desktop review by appropriate staff.

6.3 Vulnerable People

6.3.1 Resident Households

According to the resettlement principles defined in the RPF, people who are especially vulnerable to displacement impacts are to be identified and provided with special assistance. The RPF defined vulnerable individuals and groups to mainly include the aged, young, infirm and disabled. This should be viewed in the context of the Project and the circumstances of the surrounding communities to identify those that become vulnerable as a result of the adverse effects of resettlement, in particular. Following an analysis of the socio-economic circumstances of households studied, three households have been identified as potentially vulnerable by the social team and so will be subject to specific monitoring. The reasons for their vulnerability status are as follows:

Table 6-2: Potentially Vulnerable Households

Potentially Vulnerable Household	Number
Aged male headed household	1
Aged female headed household	1
Aged wife at risk of isolation	1
Total	3

6.3.2 Absentee Landowners

Although attention will be focused on the above households, the resettlement implementation team will continue to be aware of other households that have been internally displaced as a result of past conflict in the area - this group would be regarded as potentially vulnerable. According to the baseline, the number of Internally Displaced Persons (IDPs) is estimated to be in the order of 2,000 (Table 4-2 – Summary of Absentee Landowners).

7.0 COMPENSATION AND RESETTLEMENT STRATEGY

The Project intends to compensate and/or assist people who will be affected by resettlement to, at least restore their livelihood and standards of living. This chapter explains the strategies for compensation and for other livelihood support measures for the people physically and/or economically displaced by the Komo Airstrip component. Development of the measures is based on PNG law (O&GA); IFC PS5; the results of surveys, census, consultation with the affected households; and lessons learned from resettlements during other projects in PNG.

7.1 Considerations Determining Strategy

The Komo resettlement plan has been based on an assessment of the socio-economic and cultural circumstances of the affected households as well as previous resettlement activities in PNG. An overview of social characteristics influencing resettlement considerations and of lessons learned from other projects is summarised below:

7.1.1 Socio- economic and Cultural Considerations

The characteristics of the Project area's inhabitants that most influence strategic resettlement decision making are defined below. More detailed information on social, cultural, and economic conditions is found in Chapter 3.0 and 4.0 of this document and in Appendix 1.

Displacement will affect the Huli ethnic population in the Komo area. The Huli utilize a scattered, rather than nucleated, household settlement pattern, and there is a high degree of tolerance of multi-residence with members and segments of any one named clan spread across large distances. Any given piece of land tract is composed of a mosaic of garden plots and forested areas that is occupied by owners and users, who may or may not be resident and who invariably trace descent to a wide variety of clans. People commonly have more than one residence and gardens in several clan areas (e.g., on their mother's, father's, wife's, mother's father's, or father's mother's lands) which they may move between for any number of reasons.

The resettlement options will be consistent with these characteristics in the following ways:

- *Self-settlement* will be offered because it is customary, though various kinds of allowances and other assistance measures will be provided as well.
- *Relocation sites* will be chosen from affected people's other existing or familial residences, though the Project will assist any affected person who does not have another site. This approach reflects the customary settlement pattern, and will obviate the need for actual "resettlement sites" and "host" communities in the traditional resettlement sense.
- *New housing* will largely be self-constructed, as is customary for the affected people, though Project options include a Project-constructed dwelling, and all dwelling construction will be monitored. Additionally, the Project offers assistance to move housing materials.
- *Livelihood restoration* measures will focus on increasing the productivity of affected people's existing garden land, as well as facilitating the shift from subsistence dependence to non-land based and cash producing income streams - possible in consequence of Project opportunities, both in terms of employment and small business opportunities, and cash from rentals and other revenues. The Komo community is poised to benefit from income generating opportunities as the community has already been exposed to employment and income generating activities arising from the oil industry on Huli land.

7.1.2 Lessons Learned from PNG Resettlements

Lessons learned from past extractive industry project experience (particularly Lihir Gold Mine and Porgera Mine) in PNG have been considered in the development of the Project Compensation and Resettlement Strategy and specifically for the Komo Airstrip RAP. In particular, the following lessons are relevant to Komo:

- Commercial contracts (including compensation packages) should be concluded before resettlement commences to avoid protracted negotiation and resultant cost increases.

- Housing must be culturally appropriate, practical in design and take account of health considerations, should housing be provided by the proponent. Replacement housing constructed by the households to be resettled (owner/builder) is the preferred option, as this results in fewer disputes arising from design, materials or quality of workmanship. A wide range in housing in the Komo area was identified through the surveys undertaken (Chapter 4.0: Socio-Economic Surveys and Baseline Status)
- The owner/builder option will also minimise possible future problems relating to maintenance.
- High-quality/long-lasting materials only should be supplied if building materials are to be provided, owing to the high rate of weathering experienced in the highlands.
- There should be no discrimination in compensation entitlements between communities or groups losing equivalent resources as this leads to distrust, which will undermine the Project.
- Compensation payments should include investment options to generate income, as this increases the effectiveness of compensation.

7.2 Eligibility and Entitlements

The RPF provides a full schedule of eligibility criteria for compensation and entitlements that will be adopted for the Project. Table 22 below summarises eligibility and entitlements relevant to the affected Komo community for statutory damage and deprivation compensation. Damage and deprivation payments will have regard to the customary classification of landowners, landholders and land users with respect to their tenorial status and portfolio of land rights and responsibilities. The Komo area includes a number of absentee landowners as a result of past conflict forcing many to leave the area. Eligibility criteria for absentee landowners, according to the RPF, are:

- a. Households or individuals living outside the affected area who own an existing house or structure within the affected area not utilised at the cut-off date
- b. Households or individuals living outside the affected area who own a garden within the affected area not utilised at the cut-off date.

Table 7-1 also provides a list of considerations that will be taken into account when the Komo RAP is implemented.

Table 7-1: Illegibility and Entitlements

Eligibility	Affected Category	Assistance / Compensation	Considerations for Implementation
1. Houses and other Fixed Assets (Physical Relocation) - Resettlement Assistance Package			
Recognized owners of the assets and structures (identified in the ANU Surveys by the cut-off date)	Category 1 Households with an available relocation home	Housing/investment options: Option A) Bank Managed Fund: Bank managed fund of K10,000 (no replacement house required), Option B) Self build house & bank managed fund of K5000, Option C) Self build house with roofing, rainwater tank and gutters provided, Housing Option D) Self build	Clearly inform about site development and relocation schedules. Amounts will be determined based on replacement value of the house and other fixed assets. Consultation to determine list of options for materials, goods and equipment Delivery of in-kind packages will

²⁷ The K20,000 in-kind allowance was subsequently increased to K40,000 to bring the Komo housing package to the same K51,000 total as was subsequently agreed to at HGCP.

Eligibility	Affected Category	Assistance / Compensation	Considerations for Implementation
		house as for Option C with assistance Provided to all households: In-kind assistance goods to value of K20,000²⁷ Transit assistance up to K1000 Transition rations for up to 6 months Livelihood restoration measures directed at establishing and maintaining subsistence patterns – seeds, two garden cycle assistance; training and production of cash crops Access without financial penalty to old house materials Replacement garden tools Health care program, malaria nets, and medical monitoring of relocatees' health Provision of Compensation Advisor to assist and advise on investment and business options	be negotiated upon agreement and delivery will start at the moment of relocation
	Category 2 Households with available relocation land but no house	As for Category 1, except Option A will not be available.	Technical support for house building will also be encouraged through consultation activities. Otherwise as for Category 1
	Category 3 Households with no available relocation land	Support will be provided for finding suitable land for relocation Otherwise as for Category 2	As for Category 2
2. Land Deprivation			
Recognized landowners	Clans or other groups (e.g. ILOs) with rightful recognized claim to communal land	Annual payment for land deprivation as per guidelines set out in Land Management Manual	Clearly inform about site development and relocation schedules. Clearly inform affected group authorities about site development and land allocation schedules and regulations. Compensation paid at agreed intervals directly and publicly to landowner
	Individual/ household landowners for garden land	Annual payment for land deprivation as per guidelines set out in Land Management Manual Livelihood restoration measures as above Replacement garden tools Health care program, malaria nets,	Clearly inform about site development and relocation schedules. Compensation paid at agreed intervals directly and publicly to landowner Rations will be delivered at appropriate intervals while

Eligibility	Affected Category	Assistance / Compensation	Considerations for Implementation
		and medical monitoring of relocates health Provision of Compensation Advisor to assist and advise on investment and business options	livelihood is re-established (up to 6 months) Economic and livelihood restoration programs. If significant portion of agricultural land available to a household, physical relocation will be considered (house and other fixed assets)
		Vulnerable individuals and groups including aged, young, infirm and disabled will obtain the following: Assisted transit Provision of enhanced house facilities on request and after consultation	Identify all vulnerable households prior to resettlement
3. Damage to Trees and Crops			
Recognized land and resource users and owners	Clans or other groups (e.g. ILOs) with rightful recognized claim to communal land	Cash compensation based on Valuer General rates for trees naturally seeded in affected area	Clearly inform about site development and relocation schedules. One-off compensation to community (landowners group) directly and publicly to landowner
	Individual/ household landowners for garden land	Cash or in-kind compensation at Valuer General rates for affected area for crops and trees planted by individuals (excluding mature crops) Assistance to restore the livelihoods through economic restoration programs	Clearly inform about site development and relocation schedules. Cash compensation at Valuer General rates Cost at replacement of trees considering "lost production" at full replacement value One-off compensation or at agreed intervals to individual/household owners directly and publicly Replacement or market value of trees and crops in the calculation of compensation amounts Compensation will include land and resources not affected by the Project but that will not be accessible due to relocation of owners to distant locations. (see reference below: Reduced Access to Land and Resources) Economic and livelihood restoration programs will have provisions directly targeting affected individuals/households Provide compensation at or prior to the moment when the land/resource stops being available to the owner

Eligibility	Affected Category	Assistance / Compensation	Considerations for Implementation
4. Reduced access to Land and Resources			
Persons recognized as landowners of land to which access is reduced	Individual/household landowners and land users with reduced access to land due to Project activities	Cash or in-kind compensation at agreed intervals until reduction in access ceases Assistance to restore the livelihoods through economic restoration programs	Clearly inform about site development and relocation schedules. Cash compensation at Valuer General rates "Lost production" compensation will be considered for compensation One-off payment or compensation at agreed intervals to individual/household owner directly and publicly Economic and livelihood restoration programs will have provisions directly targeting affected individuals/households Compensation provided at or prior to the moment when access to land/resource takes effect If access to land and resources is permanent due to distant relocation, Land Deprivation compensation will apply
5. Impacts on Business and Employment			
All affected persons with monetary income through own business or as employees	Individuals with proven revenues from own business	Cash payment for proven loss of reasonable profits due to physical displacement Cash and assistance to re-establish business or other suitable economic activity Training programs and employment related to local content development	Clearly inform about site development and relocation schedules. Compensation will be assessed in a case by case basis
	Individuals with proven loss of wages	Cash payment for proven loss of wages due to physical displacement Training programs and employment related to local content development	Clearly inform about site development and relocation schedules Compensation will be assessed on a case by case basis
6. Community Infrastructure			
Owners of Public Infrastructure	National, Provincial or Local governments, Clans or ILOs with recognized ownership of infrastructure affected by the Project	Infrastructure will be replaced to an as-before or higher standard Alternatively, compensation will be paid at full replacement cost, without allowance for depreciation	Clearly inform about site development, relocation schedules and potential impacts to infrastructure One-off payment or assistance to replace infrastructure as appropriate and assessed on a case by case basis.
Community social	Relocation of	Full replacement and construction	Clearly inform about site

Eligibility	Affected Category	Assistance / Compensation	Considerations for Implementation
infrastructure	community structures e.g. churches, schools, etc.	by the Project Full replacement compensation and constructed by community	development, relocation schedules and potential impacts to infrastructure

Although the VG rates form the basis of compensation calculations, the rates used by the Project are generally higher than the VG rates. For example, Table 7-2 below compares VG rates for man made structures with the rates used by the Project:

Table 7-2: Compensation rates for man made structures

Housing/Structure	Valuer General Rate	Assistance Provided by Project
Bush material residence (up to 20 m ²)	K500	One of four options: 1) Bank Managed Fund Option to the value of K 10,000 2) Self build bush house to the value of K5,000 and 50% of the Bank-Managed Fund Option to the value of K5,000 3) Self-build semi-permanent materials house with tin roof and gutters provided. 4) Self-build semi-permanent materials house with tin roof and gutters provided with advice and support.
Bush material residence (over 20 m ²)	K750	
Semi-permanent residence	At replacement value (around K1,500 for the two semi-permanent houses at Komo)	
Bush material pig house	K50	K500
Bush material hunting/garden house	K50	K500
Bush material kitchen	K50	K500
Huli-style drain	K2/linear metre	K10/linear metre
Grave site – unmarked	K100/grave	Currently being developed to be similar to VG rates.
Grave site – permanently marked	K200/grave	
Grave site – with permanent features	K1000/grave	

7.3 Resettlement Support Packages

The Project will assist people affected by resettlement to at least restore their livelihoods and standards of living as summarized in Table 7-1 above. Compensation and/or assistance will be available to all households economically or physically displaced by Project activities that were residing in the resettlement area when the cut off date was formalized. Figure 7-1 below illustrates the resettlement packages available to those that are physically or economically displaced.

Resettlement assistance packages will be finalized in consultation with all displacement affected people. Resettlement Assistance Packages will provide options to households affected by Project resettlement with respect to:

- Type of compensation and means of delivery;
- Kinds of livelihood restoration to be implemented;
- Mix of additional assistance initiatives to be provided; and
- Integration with the community wide development initiatives of the Community Development Support Strategy.

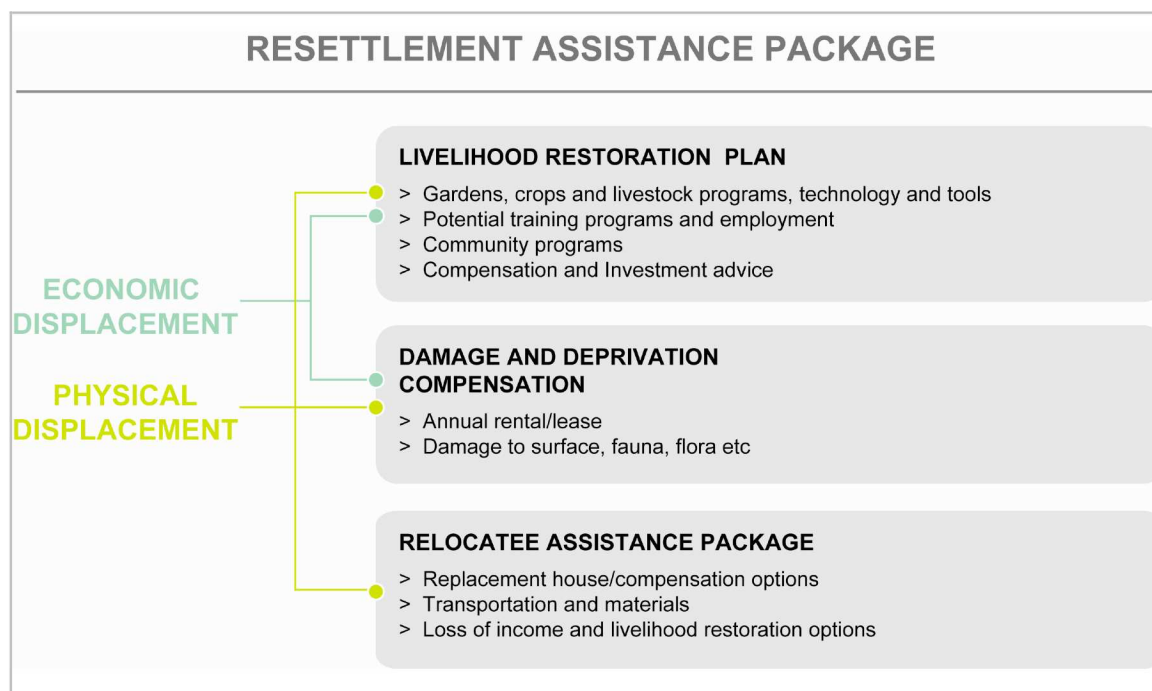


Figure 7-1: Overview of Resettlement Assistance

7.3.1 Damage and Deprivation Compensation

Damage and Deprivation Compensation will be provided as cash payments for the following:

- Annual payment for land deprivation as per the deprivation rates (annual rental) guidelines set out in Land Management Manual.
- Compensation for Damage: Once-off payment for damages as per process set out in Land Management Manual and in accordance with Valuer General rates.
- Loss of Business Income: Payment for proven loss of reasonable profits due to physical displacement (relocation). This will be judged on a case-to-case basis. At this stage there are not any businesses operating in the airstrip area.
- Loss of Employment Income: Payment for proven loss of wages due to physical displacement (relocation). This will be judged on a case-to-case basis. There is no indication at this stage that any households will lose employment.

The rates actually paid in the field deviate from the standard Valuer General (VG) rates (see Project Construction Land Manual 2008) and reflect both long term experience by the L&CA managers in the Project area and the results of extensive negotiation and accommodation with affected Project landowners. This process of engagement coupled with experience has been utilised because the VG schedule has the following shortcomings: (a) it is not always updated in a timely fashion; (b) it cannot cover all species and genera of flora found in locales; (c) it is generally regarded unfavourably by landowners who feel the rates are too low; (d) it cannot be applied in any mathematical/formula/calculus fashion as assessments of flora age tend to be inexact and require spot judgment. The rates used are those which have been established during ongoing exploration and development activities (seismic survey land damage; pipeline right-of-ways etc) and have been accepted by landowners. This approach has been adopted in the Komo community so as not to establish unattainable precedents.

7.3.2 Huli Cultural Heritage Site Compensation

The Project requires a schedule of standard compensation rates for impact to cultural heritage sites in the Komo Airstrip area. For the affected Huli of Southern Highlands Province, a very elaborate classification of different forms of sacred, ceremonial and cultural heritage sites has served as the basis for site surveys associated with the Project. In light of this, the standard compensation rates gazetted by the PNG Valuer General in 1998 for impact to cultural heritage sites have been modified and elaborated to suit the local conditions²⁸.

7.3.3 Housing Options

Four options have been developed for replacement housing. The options are based on input from consultation with affected people and on lessons learned from other Projects. The four housing options are summarised in Table 7-3:

Table 7-3: Housing Options

Four Options for a Housing and/or Investment Package			
Option A	Option B	Option C	Option D
Bank Managed Fund Option	Funds for building materials and construction of a self-build house and Investment/ Bank Managed Fund (50% of Option A)	Funding for a self-build semi-permanent materials house	Funding for a self-build semi-permanent materials house
	Half of amount paid to landowner to purchase materials and balance paid on completion of house.	Tin roof, gutters and rainwater tank provided by the Project (can be used at another existing house at the same site, if more appropriate) Funding for building materials and construction of self-build house. Half of amount paid to landowner to purchase materials and balance paid on house completion.	(As for Option C) with technical assistance for self-building (selection of materials, design, modifications e.g. chimney, cement floor)

7.3.4 Additional Support Measures

In addition to the provision of housing, for those entitled, the additional support measures will be provided as noted in Table 7-4.

²⁸ Compensation rates specific to each cultural heritage site have been calculated by Chris Ballard, 22 June 2009

Table 7-4: Additional Support Measures for Relocation

Support Measure Number	Type and Description
1	In-kind Items
	Selected by households from a list up to K20,000
2	Transit
	Additional funding for assistance with logistics and effects of physical relocation up to K1,000
3	Interim Rations/Inconvenience
	Rations or monetary equivalent distributed to representative of each family at designated point from time that garden access is lost and for maximum period of 6 months, or until gardens are re-established, whichever is the sooner.
4	Mosquito nets
	To be provided to each household occupant
5	Materials
	Affected people may remove existing house materials
6	Geotechnical Support
	If the household chooses to build on to their <u>existing house</u> cluster with the funds provided, the Project will supply a Geotechnical Officer to inspect and advise on the stability of house-sites in order to minimize any future problems from possible land instability. If design is later changed by additional earthworks or structure alteration that cause instability, the Project will not be responsible for any damage caused by such instability

Households losing gardens (economically displaced) will obtain the following compensation and support programmes (see Section 7.4):

- Livelihood restoration measures directed at establishing, maintaining subsistence patterns and increasing productivity – seeds, two garden cycle assistance; and agricultural and agribusiness training
- Replacement garden tools
- Health care program, malaria nets, and medical monitoring of relocatees' health
- Provision of Compensation Advisor to assist and advise on investment and business options

7.3.5 Compensation Payment Process

The process for compensation assessment and payment for people affected by the Komo Airstrip for individuals and clans is illustrated in Figure 7-2. The compensation payment process, as defined in the RPF, is as follows:

- The Resettlement information surveyors complete an improvement data assessment and the compiled information is put into the Field Data Assessments form.
- The data from these forms are transferred into the payment forms and are forwarded to Company management for approval and a cash requisition is made.
- The payments are transferred through the Company L&CA Cash Movement and Storage Procedures.
- Compensation payment will be made to the owners by L&CA representatives with the Resettlement team accompanying them.

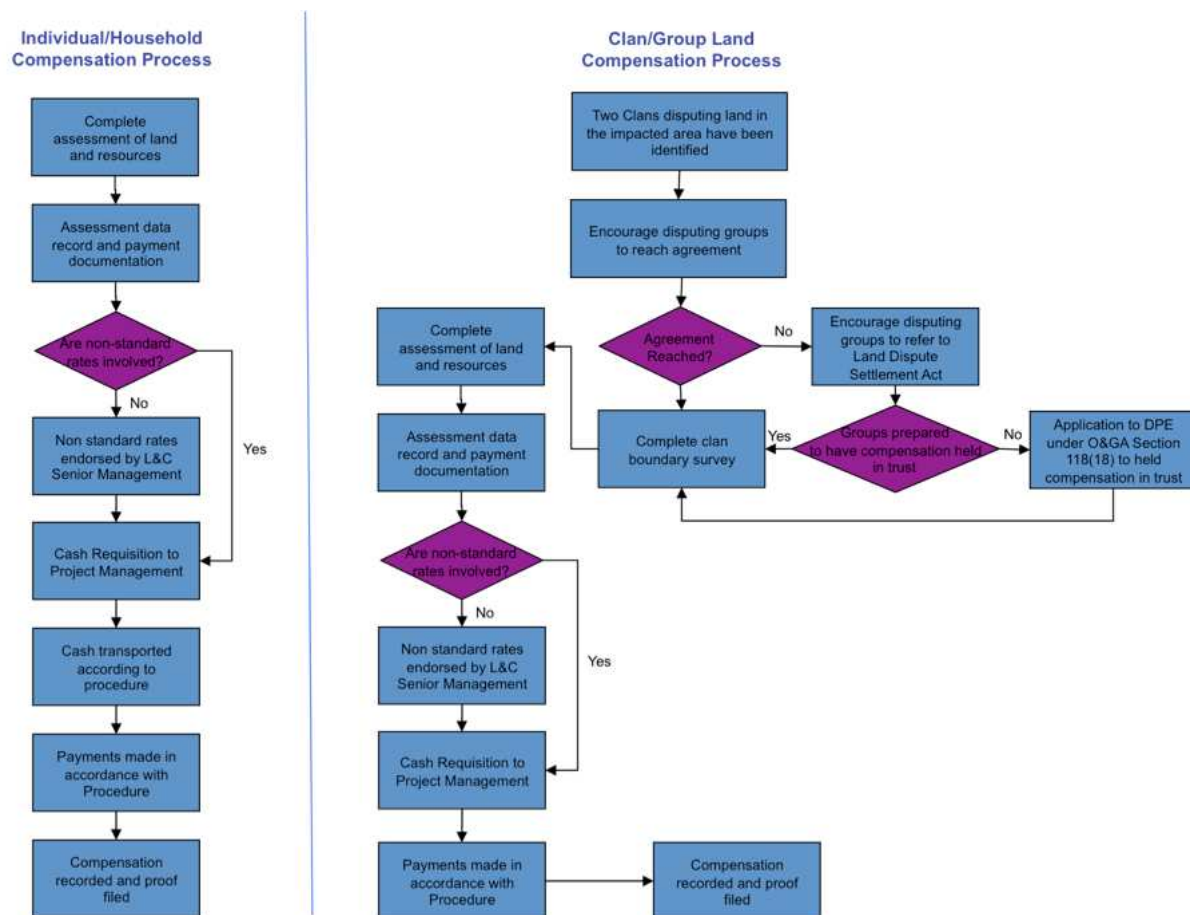


Figure 7-2: Compensation Process

7.3.6 Compensation and Assistance Advocacy

The Komo community has already benefited from the Project's initiatives to provide a Local Advocate to assist the affected constituencies to participate in the resettlement process on an informed basis. The Environmental Law Centre Ltd (ELC) has been undertaking this role as Local Advocate to act as an independent advisor to the Komo community with respect to their rights, responsibilities, and options concerning resettlement in the context of both national PNG legislation and LNG Project plans and provisions. The ELC is a non-profit public interest environmental law organization whose core mission is to ensure protection of the environment and sustainable management of natural resources in Papua New Guinea.

In addition to the advocacy role, the Project will also provide the services of a Compensation Advisor, who will advise affected people on money management matters, such as, for example:

- Financial forward planning;
- Investment options;
- Expansion or 'start-up' business ventures; and
- Training and employment opportunities.

7.4 Summary of mitigation measures

Table 7-5 below presents a summary of mitigation measures that affected landowners and communities are entitled to, together with the types of compensation available, in relation to possible impacts identified.

Table 7-5: Summary of Mitigation Measures and Project Responses

Impact	Scale	Mitigation – Project Responses
Residential structures affected	23 affected 24 to be moved	Physical relocation package finalised after consultation and negotiation with impacted landowners. Package reflects agreed cash and in-kind compensation provisions for affected landowners. Landowner acceptance evidenced by signed agreements with independent monitoring by PNG Environmental Law Centre (ELC) representative lawyers.
Communal structures affected	2 churches	Negotiation with affected constituencies as to possible and desired relocation sites. Agreement by Project to replace these structures for the communities.
Loss of field & agricultural land	30 houses (7 with land only) 1,700 – 2,000 absentees	As per O&GA Section 118 and Eligibility Matrix these affected landowners are entitled to deprivation compensation (rental). These payments are made to the respective landowning corporations (i.e. clans or clan segments) and have to be shared out amongst the respective members in accordance with custom. In the event of disputes the money is held in escrow until the dispute has been resolved either formally through the court system or informally.
Loss of trees and crops	2,496 sweet potato mounds 14,165 coffee trees 3,471 other trees	As per O&GA Section 118 and Eligibility Matrix landowners are entitled to damage compensation and this will be paid out by L&CA. In the event of disputes the money is held in escrow until the dispute has been resolved either formally through the court system or informally.
Loss of access to forest resources	30 houses and clan/ clan segment members	As per O&GA Section 118 and Eligibility Matrix these affected landowners are entitled to deprivation compensation (rental). These payments are made to the respective landowning corporations (i.e. clans or clan segments) and have to be shared out amongst the respective members in accordance with custom. In the event of disputes the money is held in escrow until the dispute has been resolved either formally through the court system or informally.
Disruption in social networks	Physically displaced	Relocates will self-relocate to areas in close proximity. Social networks with respect to exchange relations will continue as these are based on kinship, descent, affinity and friendship ties not related per se to specific locales/areas.
Impacts on business and employment	Physically/ economically displaced	No loss of employment

Impact	Scale	Mitigation – Project Responses
Community services and facilities	Physically/ economically displaced	Churches to be rebuilt at locations specified by impacted communities. No other services/facilities impacted on the site. Access to education and health facilities will be monitored when relocation sites have been determined.
Cultural Sites	Cultural heritage, archaeological sites	Compensation schedules for range of cultural heritage sites. Skeletal material to be handled by PNG National Museum. Appropriate rituals to be undertaken by local landowners and caretakers of sites. Sacred stones and artefacts to be relocated by people themselves. Other material to be lodged with National Museum and overseen by archaeologists.
Internally Displaced Persons/ Absentee Landowners	List provided by local landowners	Identification provided by landowner committees. These families will be given special consideration with respect to training and livelihood restoration provisions. They will also share in the deprivation and damage compensation as clan members. Clan committees which provided absentee lists can arbitrate disputes or claims in the first instance and in accordance with custom. If a claimant is still dissatisfied then he/she can proceed to the courts under the Lands Dispute Settlement Act.
Influx of migrants		Squatter settlements will be difficult to establish in this area as most of the land is under customary ownership so that migrants without close relatives will find it hard to maintain any subsistence livelihood. The Provincial Government is establishing a new police barracks at Komo and this will ensure a measure of security for the community. In the initial stage of construction the site will likely prove a magnet for short-term onlookers. Given there are only two roads out of Komo to Hides consideration of a boom gate and permitted vehicular access should be considered.

7.5 Livelihood Restoration

The livelihood of most Komo affected people and their neighbours are based on subsistence agriculture, though survey results indicate that many derive some “business” income, mainly from trade store sales. The mix of restoration measures also considers other factors, such as low education levels and lack of work experience, the scattered nature of habitation and lack of transport, and poor nutrition and associated health problems. Agricultural improvements are therefore an important component. At the same time, the livelihood restoration strategy anticipates change resulting from employment and business opportunities provided by or associated with the Project and development initiatives that may be funded by Project revenues.

Affected people have had preliminary input through surveys and consultations to the livelihood restoration options as illustrated in Figure 7-3 below. The options and processes, including the Project’s Community Assistance Plan, however, will be finalized during in-depth consultations with both affected people and other entitled who will be involved in program delivery.

Appendix 9 contains a Terms of Reference suitable for a livelihood specialist to identify, plan and implement a livelihood restoration program for the Komo Airstrip resettled communities

and households. Rations will be provided to mitigate the impact on food security until agriculture and other livelihood support mechanisms have been re-established.

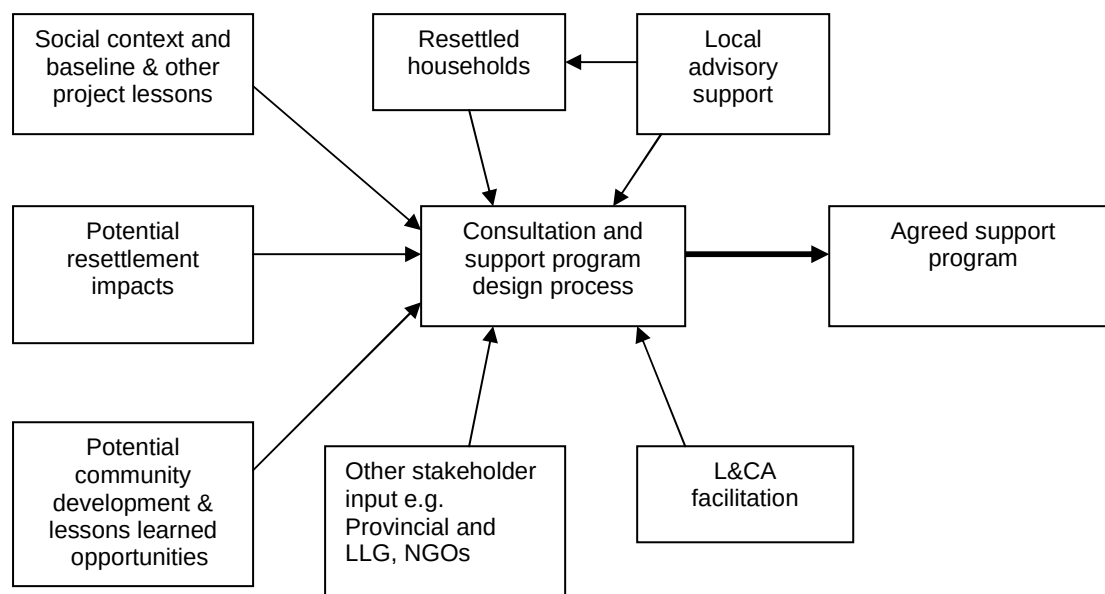


Figure 7-3: Resettlement Livelihood Support Program Design Process

Livelihood restoration programs will be both land-based and non-land-based with funds assigned specifically to these programs. Options that will be evaluated during the implementation phase through consultation with the affected households include the following:

7.5.1 Land Based Programs

7.5.1.1 Extension and Support Unit for Garden Re-establishment

Extension services will be provided by the Project to assist Komo resettlement-affected households to re-establish agricultural and livestock activities at their resettlement sites, increase production and develop new economic activities. These services will be provided prior to relocation so as to minimise any interruption in production. Consideration will be given to the dispersed nature of resettlement and the relatively small numbers of households that will be resettling. Extension services will therefore include: i) dedicated extension staff contracted by the Company, once implementation commences, with the transport, equipment and materials needed to provide services; and ii) demonstration projects to provide examples of new practices and technologies with potential to help people increase incomes. Demonstration projects could include:

- Improved varieties of crops and virus free cultivars, as in the case of Pathogen Tested sweet potato vines;
- Establishment of cash crops that can be grown relatively easily, such as pineapple and spring onion.
- Animal health and nutrition, directed towards decreasing incidence of disease and parasites; and

- Crop and livestock processing technologies, related to, for example, preserving fruit and tubers.

7.5.1.2 Rural Enterprise

Extension and demonstration services will also extend to the potential development of new activities, for example, redevelopment of the Arabica coffee industry, selected spices, fish production, and fresh food to be sold to catering companies. Specific programs will be developed for resettled households through a consultation approach between households and specialists appointed by the Company to implement the programs.

Assistance with marketing, financial and business management may also be provided in relation to demonstration projects established for affected households. Extension services will be provided in close cooperation with staff of the government departments and with NGOs and development agencies to increase development opportunities. Resettled households will be given priority access to agriculture and livestock development programs to be implemented under the Community Support Strategy (CSS) programs.

Improved transport links associated with the Project's development may support the provision of less costly inputs and the development of more effective marketing, increasing the attractiveness of coffee cultivation as a means of generating supplementary income. These improved links may also support some further agricultural diversification in cash or food crops.

7.5.2 Non Land Based Programs

7.5.2.1 Training and Capacity Building

Resettlement-affected households will be provided with training in:

- Home economic management skills, to help them use compensation awards (either through compensation or long-term land rental) appropriately in support of household economies;
- House maintenance skills, to enable people to take care of new houses and other structures built by the Project as part of the resettlement program; and
- Training will be provided to interested households in non-agricultural skills, to enable people to reduce their dependence on subsistence agriculture. Such training programs could include:
 - o Construction skills, for example in brick laying, carpentry, welding and driving, to prepare people to work on the construction of the Project and replacement houses;
 - o Micro-enterprise skills, to prepare people to launch new businesses.

The women of the Komo community would benefit particularly from training programs in home economics as they have expressed significant concern that income derived from the Project would not be managed effectively for household well-being.

7.5.2.2 Wage Employment

The Project's recruitment and employment policies for PNG nationals will involve a "closest people first" methodology where qualified individuals within communities in the immediate Project area have first priority for employment. This will be co-ordinated through the local Lancos. If sufficient workers cannot be found within the directly impacted communities, individuals from outside the region will be considered.

7.5.2.3 Livelihood restoration staffing and implementation

Livelihood restoration implementation specialists will be appointed to implement the program. The program for each of the three main components, the extension and support unit, the rural enterprise unit and the training and capacity building unit, will be planned

through a consultative process with the affected communities and then implemented over a two-year period. Appendix 9 provides an outline of the terms of reference for the appointment of livelihood restoration implementation specialists.

The affected people at Komo will also benefit in the longer term from the Project's community program initiatives. These are described below.

7.5.2.4 Short-term Support to Schools and Health Facilities

It could be expected that a significant portion of the population required to resettle would opt for housing in the vicinity of the airstrip to optimize employment prospects and to access a broader range of government services (in particular health and education as well as public infrastructure required to support an increased residency at Komo Station) than they have been able to access in the past.

The Project will provide short-term support to schools and health facilities in resettlement areas should the additional use of these services exceed their capacity.

7.5.2.5 Support for the Provision of Infrastructure

The Project will support infrastructure development, such as access roads around the airstrip, through the Community Support Strategy activities currently being investigated.

7.5.2.6 Other Social Programs

The economic changes that will occur at Komo will inevitably attract people from outside the area in search of economic opportunities. As has been noted, there are a significant number of landowners who have left the area due to fighting in the past, and who still have rights in the area. There will undoubtedly also be some inflow of people who do not have rights to land in the area. This could lead to competition for opportunities with attendant interpersonal and inter-clan tensions. Recognition of this should ensure that there is consideration of the issue, and the need for building capability in conflict management. Suitable programs will be evaluated to implement training for community representatives.

8.0 GRIEVANCE MANAGEMENT FRAMEWORK

8.1 Introduction

The resettlement process for the Komo households will consider grievances through the Third Party Grievance Procedure, which will apply across all Project activities. The Third Party Grievance Procedure is available to people affected by displacement, other local populations residing in the Project impact area, and other stakeholders directly affected by the Project.

The Third Party Grievance Procedure that will be adopted for the Komo RAP has been defined in the RPF. The Project will disclose information about the Third Party Grievance Procedure to affected Komo community, adjoining landowners and interested persons and organisations. The transparency and fairness of the process will be explained through both verbal (via regular stakeholder meetings) and written (newsletters, website, posters, etc.) updates.

8.2 Mechanisms to Receive Grievances

Grievances will be received both verbally and in writing through the following mechanisms:

- L&CA (Land & Community Affairs) personnel assigned to the Komo area will receive verbal grievances through their periodic visits to communities and capture them in the Grievance Form.
- Written grievances will be lodged in person or sent to the L&CA offices located at Hides, Moro, Kopi and the LNG Facility site, or at the Head Office at Port Moresby.

- L&CA personnel will be in constant communication with local authorities, making themselves available to respond to any grievance brought up through community leaders.
- The Project will establish an email address pnglng-grievance@exxonmobil.com which will provide a means by which stakeholders (particularly absentee landowners or other local populations who may not reside near one of the L&CA offices) can lodge grievances.

Figure 8-1 provides illustration of the Third Party Grievance Flowchart. The steps are further detailed below:

Recording and Acknowledgement

All grievances, regardless of how they are received, will be recorded by L&CA personnel using the Grievance Form. All grievances will be recorded in duplicate in Part A of the Grievance Form. A copy of the form will be provided to the person raising the grievance either at the time of raising the grievance or within seven (7) days of receipt of the grievance. This acknowledges receipt of the grievance and provides the person with a unique identification (tracking) number.

Register

Once recorded, all grievances will be registered in a centralized Grievance Tracking Database. L&CA personnel will enter all grievances into the Database. However, before doing so, L&CA will check the Database to determine if it is a new complaint so as to avoid duplication and to review if there is any context or precedent related to the issue²⁹.

Assess

Grievances will be reviewed and assessed by L&CA using all available information to determine whether it is a grievance related to the Project, the government or another external entity. If the grievance is not related to the Project, the person raising the grievance will be informed and reasonable efforts will be made to facilitate involved entities to address the issue. In this case, the grievance will be closed out in the Database.

Management and Response

Depending on the nature of the grievance, the L&CA Manager will assign the grievance to the appropriate Project department for action and resolution. The assigned Project department will review and investigate the grievance, and provide a response (with a resolution and if necessary a schedule of corrective actions) to the L&CA Manager. The L&CA Manager will ensure that a written response will be provided as soon as possible and not more than 30 days after receiving the grievance. If, however, more time is required for resolution, L&CA will keep the person raising the grievance informed.

Monitoring and Evaluation

L&CA will monitor progress of their respective grievance and keep the person raising the grievance informed of its status. Updates will be given on a regular basis and information sharing will not exceed 30 days and will continue until the grievance is resolved. The L&CA Manager will monitor implementation of the response and corrective action relating to Project grievances. Within a month of the response being provided to the person raising the grievance, L&CA personnel will make a visit to verify that the situation has been resolved to the satisfaction of all involved. If required, monitoring will be made on a regular basis, which will be determined on a case-by-case basis.

²⁹ All past recorded grievances must be entered into the Grievance Tracking Database.

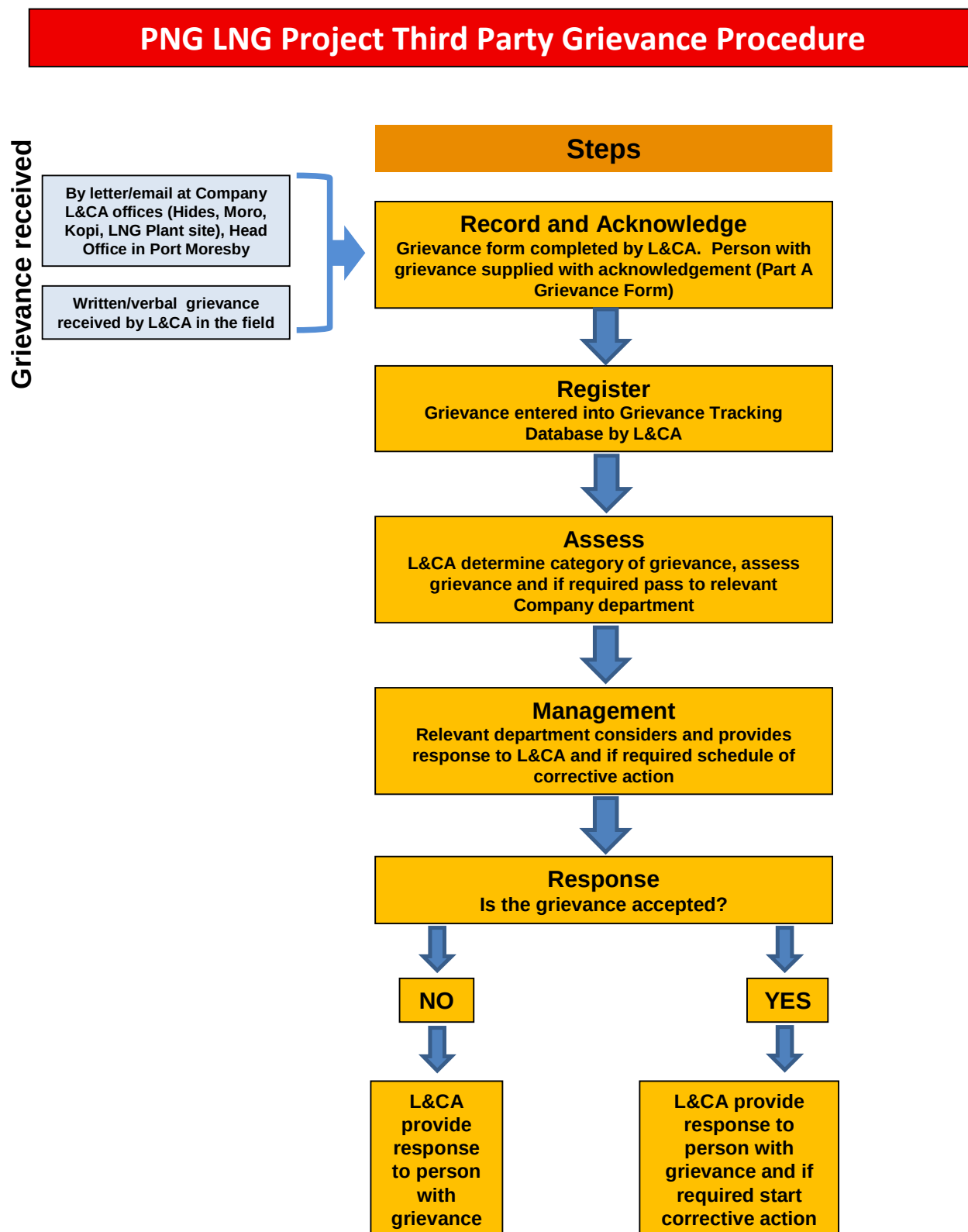


Figure 8-1: Project Grievance Procedure

9.0 ORGANIZATIONAL ROLES AND RESPONSIBILITIES

Overall responsibility for the planning, implementation, and monitoring of the Komo resettlement program rests with the Company as specified in the RPF. The Company's Social Programs Team will be undertaking these activities for the Komo program.

9.1 Organizational Structure

The relationship between the Social Programs Team and other relevant teams within the Company is illustrated below in Figure 9-1.

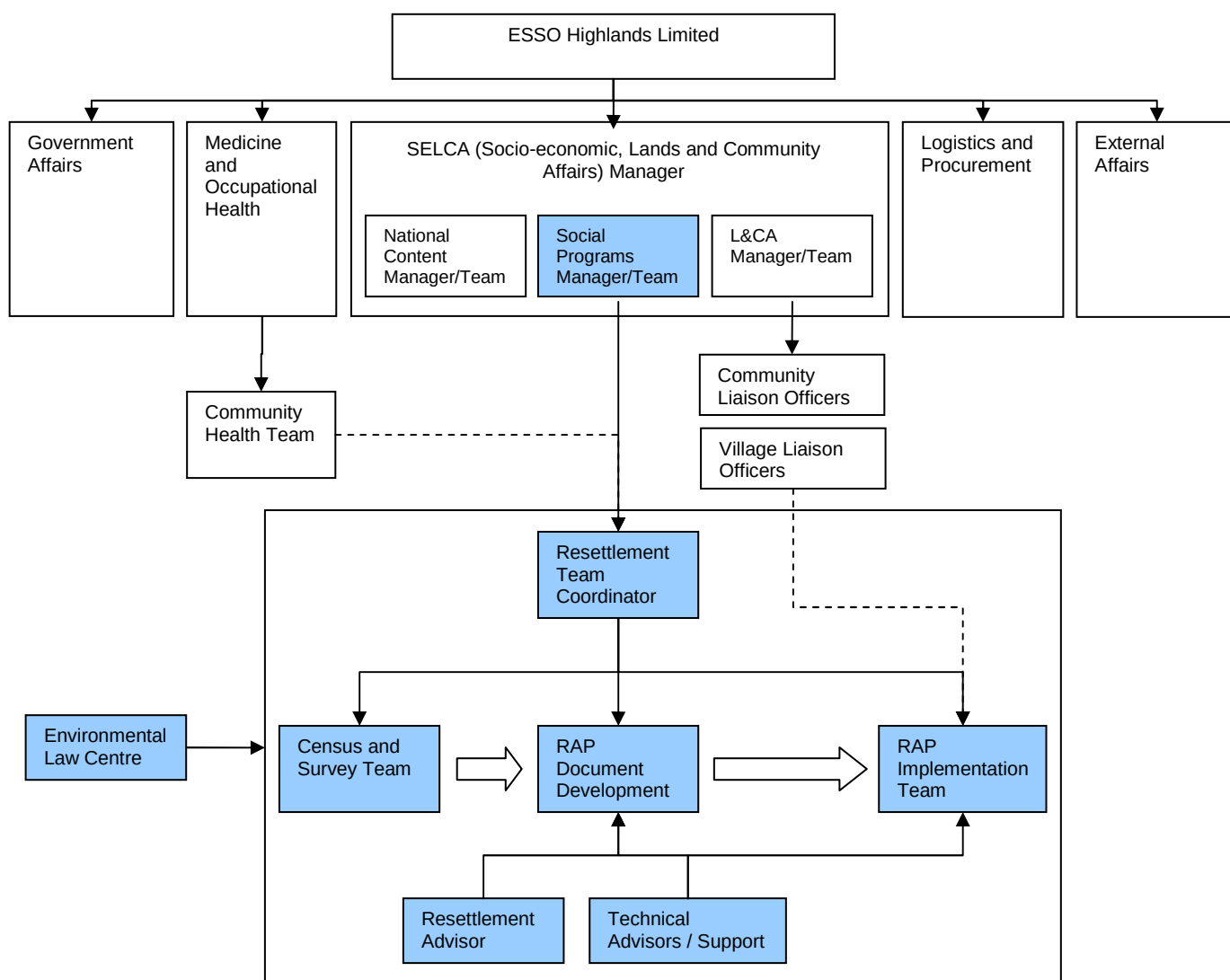


Figure 9-1: Social Programs Team and Relationship with Other Relevant Teams within the Company

9.2 Roles and Responsibilities

The roles and responsibilities of each position undertaking the resettlement program, as defined in the RPF, are outlined below:

9.2.1 Social Programs Manager

The Company Social Programs Manager (SPM) has overall responsibility for achievement of resettlement goals. The SPM is responsible for gaining Company approval for the Komo

RAP, ensuring that this conforms to the RPF. The SPM will also receive regular progress reports on the implementation of the Komo RAP, including reasons for any delays or variations from the RAP, as well as proposed corrective actions. The SPM will provide status reports to Company management, external lenders, and stakeholders, as required. The SPM may commission input advice from specialist advisors as required.

9.2.2 Resettlement Team Coordinator

The Resettlement Team Coordinator (RTC) reports to the SPM and has day-to-day responsibility for the development and on-going stewardship of the RPF and the RAPs. The RTC will coordinate the following Komo teams:

- Census and Survey Team;
- RAP Document Draft Team; and
- RAP Implementation Team (including the monitoring and evaluation).

The RTC will serve on the Grievance Panel as defined by the Grievance Procedure.

9.2.3 Resettlement Census and Survey Team

The Company has contracted a Census and Survey Team from Australian National University (ANU) to complete initial reconnaissance surveys, census and asset and livelihood surveys, and spatial mapping. In addition they will also complete any required clan boundary demarcation and identification. The OSL Health Team has also been contracted as part of this team to complete relevant health surveys as part of the initial process.

9.2.4 RAP Document Development Team

The RAP Development Team (RDT) is responsible for planning and preparation of individual site-specific RAPs, including the Komo RAP. The Team is composed of consultant resettlement and consultation and disclosure practitioners with experience in resettlement in PNG and other countries.

It also includes expert advisors in sectoral areas such as anthropology and human geography, agriculture, human health and environmental management. As part of the RAP preparation, members of this team will support the RAP Implementation Team to complete relevant consultation and disclosure activities.

9.2.5 Resettlement Advisor

The draft Komo RAP was reviewed by an expert advisor who provided high-level input and guidance prior to documents being endorsed for distribution and implementation.

9.2.6 RAP Implementation Team

The RAP Implementation Team (RIT) is composed of an Implementation Coordinator with day-to-day management responsibility for:

- Initial formation and on-going operations of the RAP Implementation Team
- Management of RAP implementation for relevant areas
- Planned consultation with and information disclosure to affected households and host communities
- Provision of regular progress reports to the RTC and RIC
- Liaison with the Local Advocate and Compensation Advisor
- Coordination of the Resettlement Assistance Package delivery
- Resettlement grievance procedure operation

In addition coordination and support personnel will assist with coordinating and implementing:

- Physical infrastructure development;
- Procurement and logistics;
- Compensation advice;
- Consultation and disclosure;
- Resettlement package delivery; and
- Grievance management

The RIT will also be responsible for implementation of livelihood restoration and development support programs for the Komo households and for RAP implementation progress monitoring and reporting. In addition this group will also establish and maintain a resettlement database containing the monitoring baselines.

9.2.7 Technical Advisors

The RAP Development Team will be able to call on the advice and assistance of a panel of technical advisors focussing on areas such as agricultural development and support implementation, livelihood restoration implementation and architectural and dwelling design support.

The Implementation Team will draw support of staff with specific expertise from the Project department's agencies listed below:

9.2.7.1 Land and Community Affairs

The Land and Community Affairs Team (L&CA) will provide Community Liaison Officers (CLOs) to support the implementation of resettlement activities by acting as the principal point of day to day contact with households to be relocated. They will also coordinate all consultation processes and will work closely with the Local Advocate and Compensation Advisor. In addition the RIT will also communicate and coordinate with the relevant Village Liaison Officers (VLOs) from the affected areas.

9.2.7.2 Logistics and Procurement Team

Procurement and logistical support on all materials and services necessary for physical resettlement (e.g., housing materials, water tanks, etc.) will be provided by a dedicated in-country logistical support team who will coordinate directly with the RTC. They will also be responsible for coordinating and supervising contract administration for resettlement housing, providing construction support services and other technical guidance to construction teams.

9.2.7.3 Community Health Team

The health element will be managed by the Community Health Team that reports to the Medical and Occupational Health Manager. This group will also be responsible for monitoring the health status of resettled households.

9.2.7.4 Government Affairs Team

The Government Affairs Team will support the resettlement process by coordinating communication and consultation with the relevant Local and Provincial Government Departments.

9.3 **Local Advocacy Consultant and Compensation Advisor**

The Project will implement two initiatives - Local Advocate and Compensation Advisor - to assist the Komo displaced people to be fully informed of compensation and other entitlements. These measures are a response to the low literacy levels of the affected populace and the complexity of information regarding resettlement, statutory rights under PNG legislation, and the various compensation calculations and options.

The Environmental Law Centre Ltd (ELC) will perform the advocacy function. The Advocate will assist affected people to understand their entitlements, as well as provide support for and help resolve grievances at the household level. In the event a grievance cannot be resolved, the advocate will advise the complainant on the judicial process.

The Company will provide access to the services of a Compensation Advisor who will assist people who receive compensation to spend and invest wisely. Advice will include:

- Explaining compensation processes and bases;
- Assisting in financial planning;
- Outlining investment options;
- Facilitating start-up business ventures; and
- Advising on potential training and employment opportunities.

10.0 MONITORING AND EVALUATION (M&E)

The purpose of the M&E system is to provide Project management, and directly affected persons, households and communities, with timely, concise, information on whether compensation, resettlement and development investments are on track and achieving resettlement goals. These goals are to at least restore livelihood and standards of living of the affected people and to indicate the need for any course corrections. The Resettlement Team Coordinator (RTC), supported by the Field Implementation Coordinators will coordinate M&E internal and external implementation.

10.1 M&E Components

The monitoring and evaluation framework has four components:

- Internal progress monitoring;
- Internal output monitoring;
- External outcome evaluation;
- External completion audit; and
- Reporting.

10.1.1 Internal Progress and Output Monitoring

Internal input and output monitoring are critical to keeping resettlement measures on schedule and achieving the desired outputs.

10.1.1.1 Input monitoring

Input (or progress) monitoring will measure whether the RAP measures are implemented on schedule and as defined in the RAP. Input monitoring will be done on an on-going basis during RAP implementation in order to avoid delays or resolve issues.

The RTC will be responsible for verifying that all elements of the Komo RAP are on schedule. The RTC will note delays or changes to the RAP, investigate reasons, and work with the responsible persons to identify corrective actions and ensure that they are carried out in a timely manner.

Input monitoring will result in an internal scheduling report, which will not be for public disclosure.

10.1.1.2 Output Monitoring

Output monitoring will measure the direct, usually quantitative, results of inputs intended to show whether plan components are achieving their desired outputs or need to be reoriented in a timely manner. For example, the targeted number of affected households participating

in money management sessions. Additional examples of information to be collected include socio-economic and demographic information. This will be used to identify outputs such as changes in access to schools, health facilities and employment. If these outputs are not being achieved, reasons will be explored and additional measures to facilitate participation will be implemented, through participatory methods. Formal output monitoring will be recorded on a monthly basis during the implementation of the Komo RAP and continue as long as livelihood restoration measures are implemented. These monthly reports will be consolidated every 6 months into a report for public viewing. This report will assist in increasing the participation of Project Affected Persons (PAPs). The RTC will coordinate monthly output monitoring through Field Coordinators.

10.1.2 External Outcome Evaluation

10.1.2.1 Outcome Evaluation

The objective of outcome evaluation will be to determine the extent to which inputs and outputs are achieving or are likely to achieve the overall goal and the principles of the Komo RAP, with particular emphasis on livelihood restoration and standard of living. Outcome indicators look at the products or effects of inputs and outputs and, thus, are generally more qualitative.

The RTC will coordinate and support external outcome evaluation. The actual evaluation will be conducted by an independent external entity on a semi-annual basis during RAP implementation. The final outcome evaluation will be conducted about four months prior to the expected completion of the Komo RAP implementation to allow time for necessary actions prior to the completion audit.

During the first year of Komo RAP implementation, the evaluator will focus on the:

- Effectiveness of resettlement organizational structure and resources (both human and financial);
- On-going process of consultation;
- Timeliness and effectiveness of compensation, relocation, and re-establishment assistance;
- Plans and initial implementation of livelihood restoration plans; and
- The production of an evaluation report that will be made public.

Starting in the 4th quarter of the first year and throughout the remaining Komo RAP implementation period, the evaluators will focus on livelihood restoration, including:

- Living conditions, including housing, water supply, access, sanitation and health;
- Income levels, established largely by proxy indicators;
- Effectiveness of livelihood restoration measures;
- Grievance mechanism use and effectiveness;
- General level of satisfaction with livelihood situation among resettled households, achievable through the use of participatory methods; and
- The production of a semi-annual report that will be made public.

Basic outcome evaluation methods will be finalized in collaboration with the evaluators, but will include at minimum the following activities:

- Familiarization with the Komo RAP and all baseline data;
- Review of census information on all displaced households;

- Field visits, consultation, and informal interviews with displaced households and their clans/host families;
- Observance of consultation processes;
- Review of grievances and resolutions;
- Key informant interviews; and
- Sample survey of displaced households (at least 15 Komo households to be included in the sample survey).

The evaluators will judge the effectiveness of both measures and outcomes, and will make recommendations for any changes to measures and/or implementation processes necessary to implement displacement measures in a way that achieves the goal of the Komo resettlement and meets the construction schedule. Additionally, the evaluation will capture lessons learned from the Komo resettlement process that will be useful for the Project's other resettlements.

10.2 Monitoring and Evaluation Indicators

Each M&E component will apply a different set of indicators. The following sections describe the different types of indicators for each M&E component.

10.2.1.1 Progress Monitoring

Progress will be monitored against the implementation measures and schedule set out in the Komo RAP.

10.2.1.2 Output Monitoring

Outputs will be measured by a set of mainly quantitative indicators. An indicator matrix is in preparation. The Project, for example, plans to distribute mosquito bed nets to all relocated households. The output measure would be the number of affected people who received mosquito nets. Additional examples of output measures include: the number of households that received rations for 6 months after relocation; the number of households that received replacement garden tools; and the number of displaced individuals from Komo that attended training and benefited from livelihood restoration programs.

Outcome evaluation: Outcomes will be evaluated by a core set of mainly qualitative indicators designed to demonstrate whether the RAPs have achieved their goal. Preparation of a preliminary set of core indicators is in progress. These will be finalised in collaboration with the persons who will conduct the outcome evaluation. Using the mosquito net example again, the outcome indicator would be a reduction in malaria incidence among resettled people measured against the baseline. Another example is the increase in income levels as a result of increased training (through employment) and livelihood programs

Evaluation of livelihood restoration will consider income itself, but given the subsistence nature of most baseline livelihoods and the difficulty of establishing actual "income", proxy indicators will be emphasized. In the context of Komo affected people, changes in child nutritional status as indicated by type and frequency of certain foods and reduction in incidence of nutritionally related illnesses/conditions will be a useful indicator that incomes have improved, as will household investment in income producing activities, housing improvements, and purchase of "luxury" items such bicycles and radios.

10.3 Completion Audit

An independent third party will conduct the Komo RAP completion audit. The completion audit's purpose will be to determine whether the Project's undertakings (Komo RAP measures) to at least restore affected people's livelihood and standards of living were properly conceived and executed and have had the intended outcome, measured against the baseline data on Komo affected people.

The completion audit will occur once all Komo RAP measures have been implemented and, in terms of livelihood restoration, once a sufficient amount of time has passed to produce verifiable outcomes (approximately 2 years from physical or economic relocation).

The completion audit will effectively close the resettlement process for the affected people from Komo. The audit will indicate whether any resettlement objectives have not yet been achieved, will identify actions needed to achieve them, and will set a completion target date. The Completion Report will be made public.

10.4 Reporting and Response

Progress and output monitoring will be reported each month by the RTC to the Social Program Manager, as defined in the RPF. In addition it is suggested that the output monitoring reports be disseminated every 6 months for public disclosure. This will increase the participation of PAPs as well as serve as additional means of monitoring the accuracy of internal reports. Issues will be further discussed and elevated to the relevant management team for decisions on corrective actions, based on specialist input where relevant.

In addition, Evaluation Reports will also be provided to the Social Programs Manager to examine corrective actions that may have been identified and elevate relevant issues to appropriate management teams for consideration.

11.0 RESETTLEMENT IMPLEMENTATION SCHEDULE

Table 11-1 sets out the tasks referred to and that need to be undertaken in order to implement resettlement. It should be noted that this schedule is preliminary until final resettlement planning is completed, after which a more detailed implementation schedule will be developed:

Implementation is scheduled to be undertaken over a period of six months with implementation commencing in October 2009. Development of the airstrip will be undertaken in phases, with the central area been developed first and then extending to the ends of the airstrip. This will allow for the phasing of resettlement and time for the affected households to reconstruct their houses and to re-establish their fields at their selected resettlement sites.

Table 11-1: Implementation Schedule

Activity or Task	Actions	Year and Month									
		2009					2010				2010+
		A	S	O	N	D	J	F	M	A	M+
Planning	Completion of RAP			•							
Approvals	Internal Company approval of the RAP			•							
	Issue RAP to Government			•							
	Internal approval of detailed implementation work plan		•	•							
Resources	Contract staff for Resettlement Unit	•	•								
Land Issues	Confirm resettlement sites		•	•	•						
	Confirm security of tenure		•	•	•						
	Geophysical assessment of relevant housing sites			•	•	•					
Confirm and agree entitlements	Carry out final identification of vulnerable households requiring assistance			•	•						
	Verify inventories of affected land and assets	•	•	•							
	Finalise entitlement contracts (housing options, support packages, etc)		•	•	•	•					
	All resettlement agreements concluded				•	•					
Compensation payments	Structures, trees and other business losses			•	•						
Site preparation	Project constructed housing – design & construct			•	•	•					
	Completion of physical relocation				•	•	•				
	Roads and bridges – design &, construct				•	•	•				
Provide replacement social infrastructure	Health centre - support					•	•	•	•		
	Local schools - support				•	•	•	•	•		
Replacement agricultural gardens	Land preparation and planting				•	•	•	•	•		
Relocate graves, spiritual & other cultural sites	Determine measures needed & implement			•	•						
Provide post-relocation livelihood restoration and development measures	Confirm type of livelihood restoration measures to be provided & implement				•	•	•	•	•	•	•
	Completion of livelihood restoration programs (Nov 2011)										•

Activity or Task	Actions	Year and Month									
		2009					2010				2010+
		A	S	O	N	D	J	F	M	A	M+
Relocate households to new sites	Provide transport			•	•	•					
Carry out verification and monitoring	Complete detailed design of the monitoring and evaluation system			•	•	•					
	Appoint local advocacy & compensation advisors		•	•							
	Internal monitoring			•	•	•	•	•	•	•	•
	External evaluation (including completion audit)			•	•	•	•	•	•	•	•
	Output Monitoring Reports made public								•		•

12.0 COST AND BUDGET ESTIMATE

12.1 Introduction

This chapter provides a summary of costs to replace and compensate assets as defined in the Entitlements Schedule, together with mitigation programs to at least restore affected people's livelihood and standards of living. The cost estimates provided below reflect the budget commitments of the Project relating to the resettlement of households and communal structures at Komo Airport.

Current market replacement rates have been used for all buildings and structures that are to be established at the new resettlement sites. Rates that reflect long-term experience by the L&CA managers in the Project area and the results of extensive negotiation with affected Project landowners, have also been used to determine compensation that will be awarded for other assets in kind, such as standing crops, trees and gardens.

12.2 Operations

Operating costs include salaries of Company staff, office administration, transportation, fees of consultants to undertake final planning during the implementation phase of the Project, accommodation, monitoring and evaluation, management of grievances and other miscellaneous costs associated with the broader resettlement process.

These costs have been budgeted for in 3rd party support budgets, logistical planning processes and the Social Programs Team organisational chart.

12.3 Compensation

12.3.1 Houses and other fixed assets

In addition to the 23 households within the Komo Airstrip Project footprint, provision has also been included for one household located outside the airstrip but losing all gardens. Where the Company destroys any man-made improvements of the Landowners, it will replace or repair the asset or, at the Company's discretion, provide an amount of compensation equal to the cost of replacement, in accordance with Section 118(2) (b) of the Oil & Gas Act.

12.3.2 Annual Rental - In Principle Agreement (IPA)

Through the In Principle Agreement process managed by Land & Community Affairs, the Company pays the Landowners at a rate of K 700 per year for each hectare of land occupied (but not otherwise damaged) by the Company for depriving the Landowner(s) of the use of

the surface of the land, for cutting the Landowner(s) off from other parts of their land, and for any loss or restriction of rights of way, in compliance with Section 118(2) (a), (c) and (d) of the Oil and Gas Act. In the Komo Airstrip approximately 520 hectares have been compensated for under this process.

12.3.3 Land deprivation and Environmental Damage

For activities related to resettlement, land deprivation and environmental damage³⁰ compensation has been identified and assessed by the ANUE team with direct input from the L&CA teams for the Project. The rates that have been used are either taken directly from the Valuer General's rates and/or are derived from these rates. These rates have been established by the L&CA team in conjunction with the established government Valuer General rates. When there is a difference between Valuer General's rates and L&CA rates, either no rate has been established for the affected element and/or higher rates have been paid (e.g. ditches).

12.3.4 Damage to Trees and Crops

The Company will pay the Landowner(s) for any damage by the Company to gardens or cultivated trees or plants of the Landowners at the rate used by L&CA, as this has been agreed to via the In Principle Agreement process.

12.3.5 Compensation for initial damage to naturally occurring bush, vegetation, birds, animals or fish

The Company, via the L&CA team, manages compensation issues related to components listed directly above through a single payment to the Landowner(s) for damage on their land to the natural bush, birds, and fish at the rate of K 1,030 for each hectare of land on which the Company damages the natural bush, in compliance with Section 118(2) (b) of the Oil and Gas Act.

Regarding community infrastructure, apart from two churches that will be replaced, there will be no further loss of community infrastructure. However, provision has been included for the short-term support to schools and health facilities in the resettlement areas to allow for potentially increased pressures on these services due to households choosing to postpone relocation.

12.3.6 Livelihood restoration

Provision has been made for livelihood restoration programs for resettlement-affected households as outlined in Chapter 7.0. The program will include small business development support where appropriate and also focussed agricultural support projects. The cost for this program will cover hardware e.g. tools, livestock, seed, immunisation, NGO support, training and institutional support, etc. Associated advisory costs, logistics, monitoring and evaluation costs have been allocated to relevant line-item budgets.

12.4 **Monitoring and evaluation**

Monitoring and evaluation will be undertaken by internal and external resources. An overall budget has been allocated to this activity.

12.5 **Total Costs**

Estimated total costs for the Komo Airstrip resettlement process will be in the order of US\$ 3.7 million.

³⁰ Environmental damage includes for example damage or loss of access to hunting areas.